BASE LISTING DOCUMENT DATED 18 APRIL 2024

If you are in any doubt about any of the contents of this document, you should obtain independent professional advice.

Non-collateralised Structured Products Base Listing Document relating to Structured Products to be issued by

UBS AG

(incorporated with limited liability in Switzerland)

acting through its London Branch

Sponsor

UBS Securities Asia Limited

This document, for which we accept full responsibility, includes particulars given in compliance with the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the "**Listing Rules**") for the purpose of giving information with regard to us and our standard warrants ("**Warrants**"), callable bull/bear contracts ("**CBBCs**") and other structured products (together, "**Structured Products**") to be listed on the Stock Exchange from time to time. This document may be updated and/or amended from time to time by way of addenda.

We, having made all reasonable enquiries, confirm that to the best of our knowledge and belief the information contained in this document is accurate and complete in all material respects and not misleading or deceptive, and there are no other matters the omission of which would make any statement herein or this document misleading.

The Structured Products involve derivatives. Do not invest in them unless you fully understand and are willing to assume the risks associated with them.

Investors are warned that the price of the Structured Products may fall in value as rapidly as it may rise and holders may sustain a total loss of their investment. Prospective purchasers should therefore ensure that they understand the nature of the Structured Products and carefully study the risk factors set out in this document and, where necessary, seek professional advice, before they invest in the Structured Products.

The Structured Products are complex products. You should exercise caution in relation to them. The Structured Products constitute our general unsecured contractual obligations and of no other person and will rank equally among themselves and with all our other unsecured obligations (save for those obligations preferred by law) upon liquidation. If you purchase the Structured Products, you are relying upon our creditworthiness, and have no rights under the Structured Products against (a) the company which has issued the underlying securities; (b) the fund which has issued the underlying securities, or its trustee (if applicable) or manager; or (c) the index compiler of any underlying index. If we become insolvent or default on our obligations under the Structured Products, you may not be able to recover all or even part of the amount due under the Structured Products (if any).

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IMPORTANT INFORMATION

What is this document about?

This document is for information purposes only and does not constitute an offer, an advertisement or invitation to the public to subscribe for or to acquire any Structured Products.

What documents should you read before investing in the Structured Products?

A launch announcement and supplemental listing document will be issued before the issue date of each series of Structured Products, which will include detailed commercial terms of the relevant series. You must read this document (including any addendum to this document to be issued from time to time) together with such launch announcement and supplemental listing document (including any addendum to such launch announcement and supplemental listing document to be issued from time to time) (together, the "**Listing Documents**") before investing in any Structured Product. You should carefully study the risk factors set out in the Listing Documents. You should also consider your financial position and investment objectives before deciding to invest in the Structured Products. We cannot give you investment advice. You must decide whether the Structured Products meet your investment needs before investing in the Structured Products.

Is there any guarantee or collateral for the Structured Products?

No. Our obligations under the Structured Products are neither guaranteed by any third party, nor collateralised with any of our assets or other collaterals. When you purchase our Structured Products, you are relying on our creditworthiness only, and of no other person. If we become insolvent or default on our obligations under the Structured Products, you can only claim as our unsecured creditor. In such event, you may not be able to recover all or even part of the amount due under the Structured Products (if any).

What are our credit ratings?

Our long term debt ratings are:

Rating agency	*Rating as of 17 April 2024*
Moody's Investors Service Ltd. ("**Moody's**")	Aa3 (negative outlook)
S&P Global Ratings Europe Limited ("**S&P**")	A+ (stable outlook)

Our credit ratings disclosed above are only an assessment by the rating agencies of our overall capacity to pay our long term debts.

Aa3 is among the top two major credit rating categories and is the fourth highest investment-grade ranking of the ten investment-grade ratings (including 1, 2 and 3 sub-grades) assigned by Moody's.

A+ is among the top three major credit rating categories and is the fifth highest investment-grade ranking of the ten investment-grade ratings (including + or - sub-grades) assigned by S&P.

Please refer to the brief guide in Appendix 6 to this Base Listing Document for more information about credit ratings.

Rating agencies usually receive a fee from the issuers that they rate.

When evaluating our creditworthiness, you should not solely rely on our credit ratings because:

- a credit rating is not a recommendation to buy, sell or hold the Structured Products;
- ratings of companies may involve difficult-to-quantify factors such as market competition, the success or failure of new products and markets and managerial competence;

- a high credit rating is not necessarily indicative of low risk. Our credit ratings as of the date immediately preceding the date of this document are for reference only. Any downgrading of our credit ratings could result in a reduction in the value of the Structured Products;

- a credit rating is not an indication of the liquidity or volatility of the Structured Products; and

- a credit rating may be downgraded if our credit quality declines.

The Structured Products are not rated.

Our credit ratings are subject to change or withdrawal at any time within each rating agency's sole discretion. You should conduct your own research using publicly available sources to obtain the latest information with respect to our credit ratings from time to time.

Are we regulated by the Hong Kong Monetary Authority referred to in Rule 15A.13(2) or the Securities and Futures Commission referred to in Rule 15A.13(3)?

We are a licensed bank regulated by the Hong Kong Monetary Authority. We are also authorised and regulated by the Financial Market Supervisory Authority in Switzerland, and authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority in the United Kingdom.

Are we subject to any litigation?

Save as disclosed in this document, we and our subsidiaries are not aware of any litigation or claims of material importance pending or threatened against us or them.

Authorisation for the issue of the Structured Products

The issue of the Structured Products was authorised by our board of directors on 19 September 2001.

Has our financial position changed since last financial year-end?

There has been no material adverse change in our financial or trading position since 31 December 2023.

Do you need to pay any trading fees and levies?

For each transaction effected on the Stock Exchange, the following trading fees and levies calculated on the value of the consideration for the Structured Products will be payable by each of the seller and the buyer:

(a) a trading fee of 0.00565 per cent. charged by the Stock Exchange;

(b) a transaction levy of 0.0027 per cent. charged by the Securities and Futures Commission; and

(c) a transaction levy of 0.00015 per cent. charged by the Accounting and Financial Reporting Council of Hong Kong.

The levy for the investor compensation fund is currently suspended.

Do you need to pay any tax?

Taxation in Hong Kong

No tax is payable in Hong Kong by way of withholding or otherwise in respect of any capital gains arising on the sale of the Structured Products, except that Hong Kong profits tax may be chargeable on any such gains, which is considered as trading gain, in the case of certain persons carrying on a trade, profession or business in Hong Kong.

You do not need to pay any stamp duty in respect of purely cash settled Structured Products.

Taxation in Switzerland

Under present Swiss law, if you are a non-resident of Switzerland and have not engaged in trade or business through a permanent establishment within Switzerland during the

taxable year, you will not be subject to any Swiss Federal, Cantonal or Municipal income or other tax on gains realised during the year on the sale or redemption of the Structured Products.

There is no tax liability in Switzerland in connection with the issue of the Structured Products. However, Structured Products subscribed, transferred or redeemed through a bank or other dealer resident in Switzerland or Liechtenstein may be subject to Swiss securities transfer tax.

Taxation in United States of America

FATCA Withholding Tax

Pursuant to sections 1471 to 1474 of the U.S. Internal Revenue Code of 1986, as amended, commonly known as FATCA, a "**foreign financial institution**" (as defined by FATCA) may be required to withhold on (i) certain payments of U.S. source income and (ii) "foreign passthru payments" paid to or in respect of persons that fail to meet certain certification, reporting or related requirements. A number of jurisdictions (including Switzerland) have entered into, or have agreed in substance to, intergovernmental agreements ("**IGAs**") with the United States to implement FATCA, which modify the way in which FATCA applies in their jurisdictions.

Under the provisions of the IGAs as currently in effect, a foreign financial institution in an IGA jurisdiction would generally not be required to withhold under FATCA or an IGA from payments that it makes. Certain aspects of the application of the FATCA provisions and IGAs to instruments such as Structured Products, including whether withholding would ever be required pursuant to FATCA or an IGA with respect to payments on instruments such as Structured Products, are uncertain and may be subject to change. Even if withholding would be required pursuant to FATCA or an IGA with respect to payments on instruments such as Structured Products, such withholding would not apply to foreign passthru payments prior to the date that is two years after the publication of the final regulations defining "foreign passthru payment" in the U.S. Federal Register and, provided that Structured Products are properly treated as debt for U.S. federal income tax purposes, Structured Products issued on or prior to the date that is six months after the date on which final regulations defining foreign passthru payments are filed with the U.S. Federal Register generally would be grandfathered for purposes of FATCA withholding on foreign passthru payments unless materially modified after such date or classified as equity for U.S. federal income tax purposes. However, if additional Structured Products that are not distinguishable from previously issued Structured Products are issued after the expiration of the grandfathering period and are subject to withholding under FATCA, then withholding agents may treat all Structured Products, including the Structured Products offered prior to the expiration of the grandfathering period, as subject to withholding under FATCA. Holders should consult their own tax advisors regarding how these rules may apply to their investment in the Structured Products. In the event any withholding would be required pursuant to FATCA or an IGA with respect to payments on the Structured Products, neither UBS nor any other person will be required under the terms of the Structured Products to pay additional amounts as a result of the withholding.

The U.S. federal income tax discussion set forth above is included for general information only and may not be applicable depending upon an investor's particular situation. Prospective investors should consult their own tax advisers with respect to the tax consequences to them of the ownership and disposition of the Structured Products and the underlying stock, including the tax consequences under state, local, non-U.S. and other tax laws and the possible effects of changes in U.S. federal or other tax laws.

The above information is of a general nature only and is not intended to be a comprehensive description of all potential relevant tax considerations. We do not provide any tax advice for the Structured Products. Tax treatment depends on the individual circumstances of each client and clients must therefore seek their own tax advice from a reputable service provider. Prior to entering into a transaction you should consult with your own legal, regulatory, tax, financial and accounting advisors to the extent you consider it necessary, and make your own investment, hedging and trading decisions

(including decisions regarding the suitability of this transaction) based upon your own judgment and advice from those advisors you consider necessary.

Placing, sale and grey market dealings

No offers, sales, re-sales, transfers or deliveries of any Structured Products, or distribution of any offering material relating to the Structured Products may be made in or from any jurisdiction except in circumstances which will result in compliance with any applicable laws or regulations and which will not impose any obligation on us. See the section "Placing and Sale" for further information.

Following the launch of a series of Structured Products, we may place all or part of that series with our related party.

The Structured Products may be sold to investors in the grey market in the period between the launch date and the listing date. We will report any dealings in Structured Products by us and/or any of our subsidiaries or associated companies in the grey market to the Stock Exchange by the listing date and such report will be released on the website of HKEX.

Where can you read the relevant documents?

Copies of the following documents are available on the website of the HKEX at *www.hkexnews.hk* and our website at *http://warrants.ubs.com/en*:

(a) this document and any addendum to this document, which include our latest audited consolidated financial statements and any interim or quarterly financial statements;

(b) the consent letter of our auditors, Ernst & Young Ltd ("**Auditors**"); and

(c) the launch announcement and supplemental listing document as long as the relevant series of Structured Products is listed on the Stock Exchange.

以上各文件亦可於香港交易所披露易網站 *www.hkexnews.hk* 以及本公司的網站 *http://warrants.ubs.com/tc* 瀏覽。

Have the Auditors consented to the inclusion of their report to the Listing Documents?

Our Auditors have given and have not withdrawn their written consent to the inclusion of their report dated 27 March 2024 and/or the references to their name in this document, in the form and context in which they are included. Their report was not prepared for incorporation into this document. The Auditors do not own any of our shares or shares in our subsidiaries, nor do they have the right (whether legally enforceable or not) to subscribe for or to nominate persons to subscribe for our securities or securities of any of our subsidiaries.

Authorised representatives

Vassili Reperant and Celia Jing, both of 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong, are our authorised representatives and are authorised to accept services on our behalf in Hong Kong.

How can you get further information about UBS AG or the Structured Products?

You may visit *www.ubs.com* to obtain further information about us and *http://warrants.ubs.com/en* to obtain further information about the Structured Products.

Governing law of the Structured Products

All contractual documentation for the Structured Products will be governed by, and construed in accordance with, the laws of Hong Kong.

The Listing Documents are not the sole basis for making an investment decision

The Listing Documents do not take into account your investment objectives, financial situation or particular needs. Nothing in the Listing Documents should be construed as a recommendation by us or our affiliates to invest in the Structured Products or the underlying asset of the Structured Products.

No person has been authorised to give any information or to make any representations other than those contained in this document in connection with the Structured Products, and, if given or made, such information or representations must not be relied upon as having been authorised by us.

HKEX, the Stock Exchange and HKSCC have made no assessment of, nor taken any responsibility for, our financial soundness or the merits of investing in any Structured Products, nor have they verified the accuracy or the truthfulness of statements made or opinions expressed in this document.

This document has not been reviewed by the Securities and Futures Commission. You are advised to exercise caution in relation to the offer of the Structured Products.

Capitalised terms

Unless otherwise specified, capitalised terms used in this document have the meanings set out in the terms and conditions of the relevant series of Structured Products set out in Appendix 1 and Appendix 2 (together, the "**Conditions**").

General

No action has been or will be taken by us that would permit a public offering of any series of Structured Products or possession or distribution of any offering material in relation to any Structured Products in any jurisdiction (other than Hong Kong) where action for the purpose is required.

United States of America

Each series of Structured Products has not been, and will not be, registered under the United States Securities Act of 1933, as amended (the "**Securities Act**") or the securities laws of any state or other jurisdiction of the United States. The Structured Products do not constitute, and have not been marketed as, contracts of sale of a commodity for future delivery (or options thereon) subject to the U.S. Commodity Exchange Act of 1936, as amended (the "**Commodity Exchange Act**"), and trading in the Structured Products has not been approved by the U.S. Commodity Futures Trading Commission (the "**CFTC**") under the Commodity Exchange Act.

Subject to certain exceptions, Structured Products or interests therein, may not at any time be offered, sold, resold, transferred 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, sales and transfers of Structured Products, 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 the registration requirements of the Securities Act or pursuant to an exemption therefrom. In addition, certain issues of Structured Products may not at any time be offered, sold or delivered in the United States or to, or for the account or benefit of, U.S. persons, nor may any U.S. persons at any time trade or maintain a position in such Structured Products. No person will offer, sell, re-sell, transfer or deliver any Structured Products or interests therein within the United States or to U.S. persons, except as permitted by the base placing agreement between us and the Sponsor, acting as manager. 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 national 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, (b) the Interpretive Guidance and Policy Statement Regarding Compliance with Certain Swap Regulations promulgated by the CFTC pursuant to the Commodity Exchange Act, or (c) CFTC Regulation 23.23(a)(23) (17 C.F.R. § 23.23(a)(23)), 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.

In addition, until 40 days after the commencement of the offering, an offer, sale, re-sale, transfer or delivery of Structured Products within the United States by a dealer that is not participating in the offering may violate the registration requirements of the Securities Act.

European Economic Area

Each dealer represents and agrees, and each further dealer appointed in respect of the Structured Products will be required to represent and agree, that it has not offered, sold or otherwise made available and will not offer, sell, or otherwise make available any Structured Products which are the subject of the offering as contemplated by this Base 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**"); or

    (ii) a customer within the meaning of Directive (EU) 2016/97 (as amended, the Insurance Distribution Directive),

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 and superseded, the "**Prospectus Regulation**"); and

(b) the expression "**offer**" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Structured Products to be offered so as to enable an investor to decide to purchase or subscribe for the Structured Products.

United Kingdom

Each dealer has represented and agreed, and each further dealer appointed in respect of the Structured Products will be required to represent and agree, that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Structured Products which are the subject of the offering contemplated by this Base Listing Document 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 Financial Services and Markets Act, as amended (the "**FSMA**") and any rules or regulations made under the FSMA 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 Structured Products to be offered so as to enable an investor to decide to purchase or subscribe for the Structured Products.

Each dealer has represented and agreed, and each further dealer appointed in respect of the Structured Products will be required to represent and agree that:

(a) in respect to Structured Products 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 Structured Products other than to persons whose ordinary activities involve them in acquiring, holding, managing or disposing of investments (as principal or agent) for the purposes of their businesses or 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 Structured Products would otherwise constitute a contravention of Section 19 of FSMA by us;

(b) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an 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 the Structured Products in circumstances in which section 21(1) of the FSMA does not apply to us; and

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

Switzerland

This document does not constitute an offer and does not constitute a prospectus within the meaning of the laws of Switzerland. The Structured Products may only be offered, sold or otherwise made available to (i) professional clients as defined in article 4 para. 3 and article 5 of the Federal Financial Services Act, "**FinSA**") or (ii), if a key information document within the meaning of article 58 FinSA is available, in accordance with the exemptions as set out in article 36 FinSA.

OVERVIEW OF WARRANTS

What is a Warrant?

A Warrant is a type of derivative warrants.

A derivative warrant linked to a share of a company, a unit or share of a fund, an index or other asset (each an "**Underlying Asset**") is an instrument which gives the holder a right to "buy" or "sell" the Underlying Asset at, or derives its value by reference to, a pre-set price or level called the Exercise Price/Strike Level on the Expiry Date. It usually costs a fraction of the value of the Underlying Asset.

A derivative warrant may provide leveraged return to you (but conversely, it could also magnify your losses).

How and when can you get back your investment?

Our Warrants are European style warrants. That means they can only be exercised on the Expiry Date. A warrant will, upon exercise on the Expiry Date, entitle the holder to a cash amount called the "**Cash Settlement Amount**" (if positive) according to the Conditions of that warrant.

You will receive the Cash Settlement Amount less any Exercise Expenses upon settlement at expiry. If the Cash Settlement Amount is equal to or less than the Exercise Expenses, no amount is payable to you upon expiry.

How do our warrants work?

Ordinary warrants

The potential payoff of an ordinary warrant is calculated by us by reference to the difference between:

(a) for a warrant linked to a security, the Exercise Price and the Average Price; and

(b) for a warrant linked to an index, the Strike Level and the Closing Level.

Call warrants

A call warrant is suitable for an investor holding a bullish view of the price or level of the Underlying Asset during the term of the warrant. A call warrant will be exercised if the Average Price/Closing Level is greater than the Exercise Price/Strike Level (as the case may be). The more the Average Price/Closing Level exceeds the Exercise Price/Strike Level (as the case may be), the higher the payoff upon expiry. If the Average Price/Closing Level is at or below the Exercise Price/Strike Level (as the case may be), an investor in the call warrant will lose all of his investment.

Put warrants

A put warrant is suitable for an investor holding a bearish view of the price or level of the Underlying Asset during the term of the warrant.

A put warrant will be exercised if the Average Price/Closing Level is below the Exercise Price/Strike Level (as the case may be). The more the Average Price/Closing Level is below the Exercise Price/Strike Level (as the case may be), the higher the payoff upon expiry. If the Exercise Price/Strike Level is at or below the Average Price/Closing Level (as the case may be), an investor in the put warrant will lose all of his investment.

Other types of warrants

The launch announcement and supplemental listing document applicable to other types of warrants will specify the type of such warrants and whether such warrants are exotic warrants.

The Conditions applicable to each type of our warrants are set out in Parts A to C of Appendix 1 (as may be supplemented by any addendum or the relevant launch announcement and supplemental listing document).

What are the factors determining the price of a derivative warrant?

The price of a derivative warrant generally depends on the prevailing price or level of the Underlying Asset. However, throughout the term of a derivative warrant, its price will be influenced by a number of factors, including:

(a) the Exercise Price or Strike Level;

(b) the value and volatility of the price or level of the Underlying Asset (being a measure of the fluctuation in the price or level of the Underlying Asset over time);

(c) the time remaining to expiry: generally, the longer the remaining life of a derivative warrant, the greater its value;

(d) the interim interest rates and expected dividend payments or other distributions on the Underlying Asset or on any components comprising the underlying index;

(e) the liquidity of the Underlying Asset;

(f) the supply and demand for the derivative warrants;

(g) our related transaction costs; and

(h) our creditworthiness.

What is your maximum loss?

Your maximum loss in warrants will be your entire investment amount plus any transaction costs.

How can you get information about our warrants after issue?

You may visit our website at *https://warrants.ubs.com/en* to obtain information on our warrants or any notice given by us in relation to our warrants.

OVERVIEW OF CBBCS

What are CBBCs?

CBBCs are a type of Structured Products that track the performance of an Underlying Asset. CBBCs can be issued on different types of Underlying Assets as prescribed by the Stock Exchange from time to time, including:

(a) shares listed on the Stock Exchange;

(b) Hang Seng Index, Hang Seng China Enterprises Index, Hang Seng TECH Index and Hang Seng China H-Financials Index;

(c) exchange traded funds ("**ETF**") listed on the Stock Exchange; and/or

(d) overseas shares, indices, currencies or commodities (such as oil, gold and platinum).

A list of eligible Underlying Assets for CBBCs is available on the website of HKEX at *https://www.hkex.com.hk/Products/Securities/Structured-Products/Eligible-Underlying-Assets?sc_lang=en*

CBBCs are issued either as bull CBBCs or bear CBBCs, allowing you to take either bullish or bearish positions on the Underlying Asset. Bull CBBCs are designed for investors who have an optimistic view on the Underlying Asset. Bear CBBCs are designed for investors who have a pessimistic view on the Underlying Asset.

Your maximum potential loss in a series of CBBCs is limited to the purchase price, which is generally a fraction of the value of the Underlying Asset, for the CBBCs plus the cost involved in your purchase.

CBBCs have a mandatory call feature (the "**Mandatory Call Event**") and, subject to the limited circumstances set out in the relevant Conditions in which a Mandatory Call Event may be reversed, we must terminate our CBBCs upon the occurrence of a Mandatory Call Event. See "What are the mandatory call features of CBBCs?" below.

There are 2 categories of CBBCs, namely:

(a) Category R CBBCs; and

(b) Category N CBBCs.

Your entitlement following the occurrence of a Mandatory Call Event will depend on the category of the CBBCs.

If no Mandatory Call Event occurs, the CBBCs will be exercised automatically on the Expiry Date by payment of a Cash Settlement Amount (if any) on the Settlement Date. The Cash Settlement Amount (if any) payable at expiry represents the difference between the Closing Price/Closing Level of the Underlying Asset on the Valuation Date and the Strike Price/Strike Level.

The Conditions applicable to CBBCs are set out in Parts A to C of Appendix 2 (as may be supplemented by any addendum or the relevant launch announcement and supplemental listing document).

What are the mandatory call features of CBBCs?

Mandatory Call Event

Subject to the limited circumstances set out in the relevant Conditions in which a Mandatory Call Event may be reversed, we must terminate the CBBCs if a Mandatory Call Event occurs. A Mandatory Call Event occurs if the Spot Price/Spot Level of the Underlying Asset is:

(a) at or below the Call Price/Call Level (in the case of a bull CBBC); or

(b) at or above the Call Price/Call Level (in the case of a bear CBBC),

at any time during the Observation Period.

The Observation Period starts from and including the Observation Commencement Date of the relevant CBBCs and ends on and including the Trading Day immediately preceding the Expiry Date.

Subject to the limited circumstances set out in the relevant Conditions in which a Mandatory Call Event may be reversed and such modification and amendment as may be prescribed by the Stock Exchange from time to time:

(a) all trades in the CBBCs concluded or recorded in the Stock Exchange's system after the time of the occurrence of a Mandatory Call Event; and

(b) where the Mandatory Call Event occurs during a pre-opening session or closing auction session (if applicable), all auction trades in the CBBCs concluded in such session,

will be invalid and will be cancelled, and will not be recognised by us or the Stock Exchange.

The time at which a Mandatory Call Event occurs will be determined by reference to:

(a) in respect of CBBCs over single equities or CBBCs over ETF, the Stock Exchange's automatic order matching and execution system time at which the Spot Price is at or below the Call Price (for a series of bull CBBCs) or is at or above the Call Price (for a series of bear CBBCs); or

(b) in respect of CBBCs over index, the time the relevant Spot Level is published by the Index Compiler at which the Spot Level is at or below the Call Level (for a series of bull CBBCs) or is at or above the Call Level (for a series of bear CBBCs),

subject to the rules and requirements as prescribed by the Stock Exchange from time to time.

Category R CBBCs vs. Category N CBBCs

The launch announcement and supplemental listing document for the relevant series of CBBCs will specify whether the CBBCs are Category R CBBCs or Category N CBBCs.

"**Category N CBBCs**" refer to CBBCs for which the Call Price/Call Level is equal to their Strike Price/Strike Level. In respect of a series of Category N CBBCs, you will not receive any cash payment following the occurrence of a Mandatory Call Event.

"**Category R CBBCs**" refer to CBBCs for which the Call Price/Call Level is different from their Strike Price/Strike Level. In respect of a series of Category R CBBCs, you may receive a cash payment called the Residual Value upon the occurrence of a Mandatory Call Event. The amount of the Residual Value payable (if any) is calculated by reference to:

(a) in respect of a bull CBBC, the difference between the Minimum Trade Price/ Minimum Index Level of the Underlying Asset and the Strike Price/Strike Level; and

(b) in respect of a bear CBBC, the difference between the Strike Price/Strike Level and the Maximum Trade Price/Maximum Index Level of the Underlying Asset.

You must read the relevant Conditions and the relevant launch announcement and supplemental listing document to obtain further information on the calculation formula of the Residual Value applicable to Category R CBBCs.

You may lose all of your investment in a particular series of CBBCs if:

(a) in the case of a series of bull CBBCs, the Minimum Trade Price/Minimum Index Level of the Underlying Asset is equal to or less than the Strike Price/Strike Level; or

(b) in the case of a series of bear CBBCs, the Maximum Trade Price/Maximum Index Level of the Underlying Asset is equal to or greater than the Strike Price/Strike Level.

How is the funding cost calculated?

The issue price of a CBBC represents the difference between the initial reference spot price or level of the Underlying Asset as at the launch date of the CBBC and the Strike Price/Strike Level, plus the applicable funding cost.

The initial funding cost applicable to each series of CBBCs will be specified in the relevant launch announcement and supplemental listing document for the relevant series and will fluctuate throughout the life of the CBBCs as the funding rate changes from time to time. The funding rate is a rate determined by us based on one or more of the following factors, including but not limited to the Strike Price/Strike Level, the prevailing interest rate, the expected life of the CBBCs, expected notional dividends or distributions in respect of the Underlying Asset and the margin financing provided by us.

Further details about the funding cost applicable to a series of CBBCs will be described in the relevant launch announcement and supplemental listing document.

Do you own the Underlying Asset?

CBBCs convey no interest in the Underlying Asset. We may choose not to hold the Underlying Asset or any derivatives contracts linked to the Underlying Asset. There is no restriction through the issue of the CBBCs on the ability of us and/or our affiliates to sell, pledge or otherwise convey all right, title and interest in any Underlying Asset or any derivatives products linked to the Underlying Asset.

What are the factors determining the price of a CBBC?

Although the price of a CBBC tends to follow closely the movement in the value of the Underlying Asset in dollar value (on the assumption of an entitlement ratio of one CBBC to one Underlying Asset), movement in the price of the CBBC may not always follow closely the movement in value of the Underlying Asset.

However, throughout the term of a CBBC, its price will be influenced by a number of factors, including:

(a) the Strike Price/Strike Level and the Call Price/Call Level;

(b) the likelihood of the occurrence of a Mandatory Call Event;

(c) for Category R CBBCs only, the probable range of the Residual Value (if any) payable upon the occurrence of a Mandatory Call Event;

(d) the time remaining to expiry;

(e) the interim interest rates and expected dividend payments or other distributions on the Underlying Asset or on any components comprising the underlying index;

(f) the liquidity of the Underlying Asset;

(g) the supply and demand for the CBBCs;

(h) the probable range of the Cash Settlement Amounts;

(i) the depth of the market and liquidity of the Underlying Asset or of the future contracts relating to the underlying index;

(j) our related transaction costs; and

(k) our creditworthiness.

What is your maximum loss?

Your maximum loss in CBBCs will be your entire investment amount plus any transaction costs.

How can you get information about our CBBCs after issue?

You may visit our website at *https://warrants.ubs.com/en* to obtain information on our CBBCs or any notice given by us in relation to our CBBCs.

INFORMATION IN RELATION TO US

1. Overview

UBS AG with its subsidiaries (together, "**UBS AG consolidated**", or "**UBS AG Group**"; and UBS Group AG (which is the holding company of the Issuer) and its subsidiaries (including the Issuer and its subsidiaries) is referred to herein as "**UBS**", the "**UBS Group**" or the "**Group**") provides financial advice and solutions to private, institutional and corporate clients worldwide, as well as private clients in Switzerland. UBS AG Group operates through five business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management, the Investment Bank and Non-core and Legacy. Group functions are support and control functions that provide services to the UBS AG Group.

2. Information about the Issuer

2.1. Corporate Information

The legal and commercial name of the Issuer is UBS AG.

The Issuer was incorporated under the name SBC AG on 28 February 1978 for an unlimited duration and entered in the Commercial Register of Canton Basel-City on that day. The Issuer in its present form was created on 29 June 1998 by the merger of Union Bank of Switzerland (founded 1862) and Swiss Bank Corporation (founded 1872). UBS AG is entered in the Commercial Registers of Canton Zurich and Canton Basel-City. The registration number is CHE-101.329.561.

UBS AG is incorporated and domiciled in Switzerland and operates under the Swiss Code of Obligations as an *Aktiengesellschaft*, a corporation limited by shares. UBS AG's Legal Entity Identifier (LEI) code is BFM8T61CT2L1QCEMIK50.

According to article 2 of the articles of association of UBS AG dated as of 4 April 2023, the purpose of UBS AG is the operation of a bank. Its scope of operations extends to all types of banking, financial, advisory, trading and service activities in Switzerland and abroad. UBS AG may establish branches and representative offices as well as banks, finance companies and other enterprises of any kind in Switzerland and abroad, hold equity interests in these companies, and conduct their management. UBS AG is authorized to acquire, mortgage and sell real estate and building rights in Switzerland and abroad. UBS AG may borrow and invest money on the capital markets. UBS AG is part of the group of companies controlled by the group parent company UBS Group AG. It may promote the interests of the group parent company or other group companies. It may provide loans, guarantees and other kinds of financing and security for group companies.

The addresses and telephone numbers of UBS AG's two registered offices and principal places of business are: Bahnhofstrasse 45, 8001 Zurich, Switzerland, telephone +41 44 234 1111; and Aeschenvorstadt 1, 4051 Basel, Switzerland, telephone +41 61 288 5050.

2.2. UBS's borrowing and funding structure and financing of UBS's activities

For information on UBS's expected financing of its business activities, please refer to "*Liquidity and funding management*" in the "*Capital, liquidity and funding, and balance sheet*" section of the UBS AG Annual Report 2023 published on 28 March 2024 ("**Annual Report 2023**").

3. Business Overview

3.1. Organisational Structure of UBS AG

UBS AG is a Swiss bank and the parent company of the UBS AG Group. It is 100% owned by UBS Group AG, which is the holding company of the UBS Group. UBS AG operates as a group with five business divisions, and in addition, UBS AG has Group functions as support and control functions that provide services to UBS.

In 2014, UBS began adapting its legal entity structure in response to too-big-to-fail requirements and other regulatory initiatives. First, UBS Group AG was

established as the ultimate parent holding company for the Group. In 2015, UBS AG transferred its personal & corporate banking and Swiss-booked wealth management businesses to the newly established UBS Switzerland AG, a banking subsidiary of UBS AG in Switzerland. That same year, UBS Business Solutions AG, a wholly owned subsidiary of UBS Group AG, was established and acts as the Group service company. In 2016, UBS Americas Holding LLC became the intermediate holding company for UBS's subsidiaries in the United States and UBS's wealth management subsidiaries across Europe were merged into UBS Europe SE, UBS's German-headquartered European subsidiary. In 2019, UBS Limited, UBS's United Kingdom ("**UK**") headquartered subsidiary, was merged into UBS Europe SE. On 12 June 2023, Credit Suisse Group AG merged with and into UBS Group AG (*Absorptionsfusion*), with UBS Group AG becoming the holding company of Credit Suisse AG. UBS expects to subsequently merge UBS AG with Credit Suisse AG by the end of the second quarter of 2024, and UBS Switzerland AG with Credit Suisse Schweiz AG (a banking subsidiary of Credit Suisse AG in Switzerland) and plans the transition to a single US intermediate holding company, in the third quarter of 2024. These remain subject to regulatory approvals.

UBS AG is the parent company of, and conducts a significant portion of its operations through, its subsidiaries. UBS AG has contributed a significant portion of its capital and provides substantial liquidity to subsidiaries. In addition, UBS Business Solutions AG provides substantial services to group companies including UBS AG and its subsidiaries. To this extent, UBS AG is dependent on certain of the entities of the UBS AG Group and of the UBS Group.

UBS AG's interests in subsidiaries and other entities as of 31 December 2023, including interests in significant subsidiaries, are discussed in "*Note 28 Interests in subsidiaries and other entities*" to UBS AG's consolidated financial statements included in the Annual Report 2023.

3.2. Recent Developments

3.2.1. Regulatory, legal and other developments

Refer to "*Our environment*" and "*Regulatory and legal developments*" in the Annual Report 2023, for information on key regulatory, legal and other developments.

3.3. Trend Information

Refer to the "*Our environment*", to "*Top and emerging risks*" in the "*Risk management and control*" section and to "*Regulatory and legal developments*" of the Annual Report 2023 as well as to "*Risk factors*" included in the Annual Report 2023.

4. Board of Directors

The Board of Directors ("**BoD**") consists of between 5 and 12 members. All the members of the BoD are elected individually by the shareholders at the Annual General Meeting ("**AGM**") for a term of office of one year, which expires after the completion of the next AGM. Shareholders also elect the Chairman upon proposal of the BoD.

The BoD meets as often as business requires, and at least six times a year.

4.1.1. Members of the Board of Directors

The current members of the BoD are listed below.

Member	Title	Term of office	Current principal activities outside UBS AG
Colm Kelleher	Chairman	2024	Chairman of the Board of Directors of UBS Group AG; member of the Board of Norfolk Southern Corporation (Chair of the risk and finance committee); member of the Board of Directors of the Bretton Woods Committee; member of the Board of the Swiss Finance Council; member of the International Monetary Conference; member of the Board of the Bank Policy Institute; member of the Board of Americans for Oxford; Visiting Professor of Banking and Finance, Loughborough Business School; member of the European Financial Services Round Table; member of the European Banking Group; member of the International Advisory Council of the China Securities Regulatory Commission; member of the Chief Executive's Advisory Council (Hong Kong).
Lukas Gähwiler	Vice Chairman	2024	Vice Chairman of the Board of Directors of UBS Group AG; Vice Chairman of the Board of Directors of Pilatus Aircraft Ltd; member of the Board of Directors of Ringier AG; Chairman of the Board of Directors of Credit Suisse AG; member of the Board and Board Committee of economiesuisse; Chairman of the Employers Association of Banks in Switzerland; member of the Board of Directors of the Swiss Employers Association; member of the Board of Directors and the Board of Directors Committee of the Swiss Bankers Association; member of the Board of the Swiss Finance Council; member of the Board of Trustees of Avenir Suisse.
Jeremy Anderson	Member	2024	Senior Independent Director of the Board of Directors of UBS Group AG; member of the Board of Prudential plc (Chair of the Risk Committee); vice chairman of the Board of Directors of Credit Suisse AG; member of the Board of Directors of Credit Suisse International; Trustee of the UK's Productivity Leadership Group.
Claudia Böckstiegel	Member	2024	Member of the Board of Directors of UBS Group AG; General Counsel and member of the Enlarged Executive Committee of Roche Holding AG.
William C. Dudley	Member	2024	Member of the Board of Directors of UBS Group AG; member of the Board of Treliant LLC; member of the Advisory Board of Suade Labs; Senior Advisor to the Griswold Center for Economic Policy Studies at Princeton University; member of the Group of Thirty; member of the Council on Foreign Relations; Chairman of the Bretton Woods Committee Board of Directors; member of the Board of the Council for Economic Education.
Patrick Firmenich	Member	2024	Member of the Board of Directors of UBS Group AG; Vice Chairman of the Board of dsm-firmenich (Chair of the Nomination Committee); member of the Board of INSEAD and INSEAD World Foundation; member of the Advisory Council of the Swiss Board Institute.
Fred Hu	Member	2024	Member of the Board of Directors of UBS Group AG; founder, Chairman and CEO of Primavera Capital Group; Non-Executive Chairman of the Board of Yum China Holdings (Chair of the Nomination and Governance Committee); Board Member of Industrial and Commercial Bank of China (ICBC), Chairman of the Nomination Committee; Chairman of Primavera Capital Ltd; Trustee of the China Medical Board; Co-Chairman of the Nature Conservancy Asia Pacific Council; member of the Board of Trustees of the Institute for Advanced Study; Director and member of the Executive Committee of China Venture Capital and Private Equity Association Ltd.
Mark Hughes	Member	2024	Member of the Board of Directors of UBS Group AG; member of the Board of Directors of UBS Americas Holding LLC; member of the Board of Directors of Credit Suisse AG; Chair of the Board of Directors of the Global Risk Institute; Senior Advisor to McKinsey & Company.
Nathalie Rachou	Member	2024	Member of the Board of Directors of UBS Group AG; member of the Board of Euronext N.V. (Chair of the Remuneration Committee); member of the Board of Veolia Environnement SA (Chair of the Audit Committee); member of the Board of the African Financial Institutions Investment Platform; member of the Board of Directors of Fondation Leopold Bellan.
Julie G. Richardson	Member	2024	Member of the Board of Directors of UBS Group AG; member of the Board of Yext (Chair of the Audit Committee); member of the Board of Datadog (Chair of the Audit Committee); member of the Board of Fivetran; member of the Board of Coalition, Inc.

Member	Title	Term of office	Current principal activities outside UBS AG
Dieter Wemmer	Member	2024	Member of the Board of Directors of UBS Group AG; member of the Board of Ørsted A/S (Chair of the Audit and Risk Committee); Chairman of Marco Capital Holdings Limited, Malta and subsidiaries.
Jeanette Wong	Member	2024	Member of the Board of Directors of UBS Group AG; member of the Board of Prudential plc; member of the Board of Singapore Airlines Limited; member of the Board of GIC Pte Ltd; member of the Board of PSA International; member of the Board of Pavilion Capital Holdings Pte Ltd; Chairman of the CareShield Life Council; member of the Securities Industry Council; member of the Board of Trustees of the National University of Singapore.

5. 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. 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. 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. 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.

Specific litigation, regulatory and other matters, including all such matters that management considers to be material and others that management believes to be of significance due to potential financial, reputational and other effects, are described in "*Note 17 Provisions and contingent liabilities*" to UBS AG's consolidated financial statements included in the Annual Report 2023. 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.

5.1. Material Contracts

No material contracts have been entered into outside of the ordinary course of UBS AG's or UBS AG Group's business which could result in any member of the UBS AG Group being under an obligation or entitlement that is material to UBS AG's ability to meet its obligations to the investors in relation to the issued securities.

5.2. Significant Changes in the Financial Position and Performance; Material Adverse Change in Prospects

Except as otherwise disclosed in this document (including in the documents incorporated herein by reference), there has been no material adverse change in the prospects of UBS AG or UBS AG Group since 31 December 2023.

Not all of the risk factors described below will be applicable to a particular series of the Structured Products. Please consider all risks carefully prior to investing in any Structured Products and consult your professional independent financial adviser and legal, accounting, tax and other advisers with respect to any investment in the Structured Products. Please read the following section together with the risk factors set out in the relevant launch announcement and supplemental listing document.

General risks relating to us

Non-collateralised Structured Products

The Structured Products are not secured on any of our assets or any collateral.

Each series of Structured Products constitutes our general unsecured contractual obligations and of no other person and will rank equally with our other unsecured contractual obligations and unsecured and unsubordinated debt. At any given time, the number of our Structured Products outstanding may be substantial.

Our creditworthiness

If you invest in our Structured Products, you are relying on our creditworthiness and of no other person. If we become insolvent or default on our obligations under the Structured Products, you can only claim as our unsecured creditor regardless of the performance of the Underlying Asset and you may not be able to recover all or even part of the amount due under the Structured Products (if any). You have no rights under the terms of the Structured Products against:

(a) any company which issues the underlying shares;

(b) any fund which issues the underlying securities or its trustee (if applicable) or manager; or

(c) any index compiler or any company which has issued any constituent securities of the underlying index.

We do not guarantee the repayment of your investment in any Structured Product.

Any downgrading of our credit rating by rating agencies such as Moody's or S&P, could result in a reduction in the value of the Structured Products.

Hong Kong Financial Institutions (Resolution) Ordinance

The Financial Institutions (Resolution) Ordinance (Cap. 628, the Laws of Hong Kong) (the "**FIRO**") was enacted by the Legislative Council of Hong Kong in June 2016. The FIRO (except Part 8, section 192 and Division 10 of Part 15 thereof) came into operation on 7 July 2017.

The FIRO provides a regime for the orderly resolution of financial institutions with a view to avoiding or mitigating the risks otherwise posed by their non-viability to the stability and effective working of the financial system of Hong Kong, including the continued performance of critical financial functions. The FIRO seeks to provide the relevant resolution authorities with a range of powers to bring about timely and orderly resolution in order to stabilise and secure continuity for a failing authorised institution in Hong Kong. In particular, it is envisaged that subject to certain safeguards, the relevant resolution authority would be provided with powers to affect contractual and property rights as well as payments (including in respect of any priority of payment) that creditors would receive in resolution, including but not limited to powers to write off, or convert into equity, all or a part of the liabilities of the failing financial institution.

As an authorised institution regulated by the Hong Kong Monetary Authority, we are subject to and bound by the FIRO. The exercise of any resolution power by the relevant resolution authority under the FIRO in respect of us may have a material adverse effect on the value of the Structured Products, and as a result, you may not be able to recover all or any amount due under the Structured Products.

Repurchase of our Structured Products

We, our subsidiaries and affiliates (the "**Group**") may repurchase the Structured Products from time to time in the private market or otherwise at a negotiated price or the prevailing market price

at our discretion. You should not make any assumption as to the number of Structured Products in issue for any particular series at any time.

No deposit liability or debt obligation

We are obliged to deliver to you the Cash Settlement Amount under the Conditions of each series of the Structured Products upon expiry. We do not intend (expressly, implicitly or otherwise) to create a deposit liability or a debt obligation of any kind by the issue of any Structured Product.

Conflicts of interest

The Group is a diversified financial institution with relationships in countries around the world. The Group engages in a wide range of commercial and investment banking, brokerage, funds management, hedging transactions and investment and other activities for our own account or the account of others. In addition, the Group, in connection with our other business activities, may possess or acquire material information about the Underlying Assets or may issue or update research reports on the Underlying Assets. Such activities, information and/or research reports may involve or otherwise affect the Underlying Assets in a manner that may cause consequences adverse to you or otherwise create conflicts of interests in connection with the issue of Structured Products by us. Such actions and conflicts may include, without limitation, the purchase and sale of securities, financial advisory relationships and exercise of creditor rights. The Group:

(a) has no obligation to disclose such information about the Underlying Assets or such activities. The Group and our officers and directors may engage in any such activities without regard to the issue of Structured Products by us or the effect that such activities may directly or indirectly have on any Structured Product;

(b) may from time to time engage in transactions involving the Underlying Assets for our proprietary accounts and/or for accounts under our management and/or to hedge against the market risk associated with issuing the Structured Products. Such transactions may have a positive or negative effect on the price/level of the Underlying Assets and consequently upon the value of the relevant series of Structured Products;

(c) may from time to time act in other capacities with regard to the Structured Products, such as in an agency capacity and/or as the liquidity provider;

(d) may issue other derivative instruments in respect of the Underlying Assets and the introduction of such competing products into the market place may affect the value of the relevant series of Structured Products; and

(e) may also act as underwriter in connection with future offerings of shares, units or other securities or may act as financial adviser to the issuer, or sponsor, as the case may be, of any such share, unit or other security or in a commercial banking capacity for the issuer of any share, units or other security, the trustee (if applicable) or the manager of the ETF. Such activities could present certain conflicts of interest and may affect the value of the Structured Products.

Our operating environment and strategy

Certain risks, including those as set out in Appendix 5, may affect our ability to execute our strategy or our business activities, financial condition, results of operations and prospects. We are inherently exposed to multiple risks, many of which may become apparent only with the benefit of hindsight. As a result, risks that we do not consider to be material, or of which we are not currently aware, could also adversely affect us. Within each category, the risks that we consider to be most material are presented first. The sequence in which the risk factors are set out in Appendix 5 is not indicative of their likelihood of occurrence or the potential magnitude of their financial consequences.

General risks relating to Structured Products

You may lose all your investment in the Structured Products

Structured Products involve a high degree of risk, and are subject to a number of risks which may include interest, foreign exchange, time value, market and/or political risks. Structured Products may expire worthless.

Options, warrants and asset linked instruments are priced primarily on the basis of the price/level of the Underlying Asset, the volatility of the Underlying Asset's price/level and the time remaining to expiry of the Structured Product.

The price of Structured Products generally may fall in value as rapidly as they may rise and you should be prepared to sustain a significant or total loss of the purchase price of the Structured Products. Assuming all other factors are held constant, the more the underlying share price, unit price or index level of a Structured Product moves in a direction against you and the shorter its remaining term to expiration, the greater the risk that you will lose all or a significant part of your investment.

The Structured Products are only exercisable on their respective Expiry Dates and may not be exercised by you prior to the relevant Expiry Date. Accordingly, if on such Expiry Date the Cash Settlement Amount is zero or negative, you will lose the value of your investment.

The risk of losing all or any part of the purchase price of a Structured Product means that, in order to recover and realise a return on investment, you must generally anticipate correctly the direction, timing and magnitude of any change in the price/level of the Underlying Asset as may be specified in the relevant launch announcement and supplemental listing document.

Changes in the price/level of an Underlying Asset can be unpredictable, sudden and large and such changes may result in the price/level of the Underlying Asset moving in a direction which will negatively impact upon the return on your investment. You therefore risk losing your entire investment if the price/level of the relevant Underlying Asset does not move in the anticipated direction.

The value of the Structured Products may be disproportionate or opposite to movement in price/level of the Underlying Assets

An investment in Structured Products is not the same as owning the Underlying Assets or having a direct investment in the Underlying Asset. The market values of Structured Products are linked to the relevant Underlying Assets and will be influenced (positively or negatively) by it or them but any change may not be comparable and may be disproportionate. It is possible that while the price/level of the Underlying Assets is increasing, the value of the Structured Product is falling.

If you intend to purchase any series of Structured Products to hedge against the market risk associated with investing in the Underlying Asset specified in the relevant launch announcement and supplemental listing document, you should recognise the complexities of utilizing Structured Products in this manner. For example, the value of the Structured Products may not exactly correlate with the price/level of the Underlying Asset. Due to fluctuations in supply and demand for Structured Products, there is no assurance that their value will correlate with movements of the Underlying Asset. The Structured Products may not be a perfect hedge to the Underlying Asset or portfolio of which the Underlying Asset forms a part.

It may not be possible to liquidate the Structured Products at a level which directly reflects the price/level of the Underlying Asset or portfolio of which the Underlying Asset forms a part. Therefore, it is possible that you could suffer substantial losses in the Structured Products in addition to any losses suffered with respect to investments in or exposures to the Underlying Asset.

Possible illiquidity of secondary market

It is not possible to predict if and to what extent a secondary market may develop in any series of Structured Products and at what price such series of Structured Products will trade in the secondary market and whether such market will be liquid or illiquid. The fact that the Structured Products are listed does not necessarily lead to greater liquidity than if they were not listed.

If any series of Structured Products are not listed or traded on any exchange, pricing information

for such series of Structured Products may be difficult to obtain and the liquidity of that series of Structured Products may be adversely affected.

The liquidity of any series of Structured Products may also be affected by restrictions on offers and sales of the Structured Products in some jurisdictions. Transactions in off-exchange Structured Products may be subject to greater risks than dealing in exchange-traded Structured Products. To the extent that any Structured Products of a series is closed out, the number of Structured Products outstanding in that series will decrease, which may result in a lessening of the liquidity of Structured Products. A lessening of the liquidity of the affected series of Structured Products may cause, in turn, an increase in the volatility associated with the price of such Structured Products.

While we have, or will appoint, a liquidity provider for the purposes of making a market for each series of Structured Products, there may be circumstances outside our control or the appointed liquidity provider's control where the appointed liquidity provider's ability to make a market in some or all series of Structured Products is limited, restricted, and/or without limitation, frustrated. In such circumstances we will use our best endeavours to appoint an alternative liquidity provider.

Interest rates

Investments in the Structured Products may involve interest rate risk with respect to the currency of denomination of the Underlying Assets and/or the Structured Products. A variety of factors influence interest rates such as macro economic, governmental, speculative and market sentiment factors. Such fluctuations may have an impact on the value of the Structured Products at any time prior to valuation of the Underlying Assets relating to the Structured Products.

Time decay

The settlement amount of certain series of Structured Products at any time prior to expiration may be less than the trading price of such Structured Products at that time. The difference between the trading price and the settlement amount will reflect, among other things, a "time value" of the Structured Products. The "time value" of the Structured Products will depend upon, among others, the length of the period remaining to expiration and expectations concerning the range of possible future price/level of the Underlying Assets. The value of a Structured Product will decrease over time as the length of the period remaining to expiration becomes shorter. Therefore, the Structured Products should not be viewed as products for long term investments.

Exchange rate risk

There may be an exchange rate risk in the case of Structured Products where the Cash Settlement Amount will be converted from a foreign currency into Hong Kong 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 Structured Products. Fluctuations in the exchange rate of any one currency may be offset by fluctuations in the exchange rate of other relevant currencies. There can be no assurance that rates of exchange between any relevant currencies which are current rates at the date of issue of any Structured Products will be representative of the relevant rates of exchange used in computing the value of the relevant Structured Products at any time thereafter.

Where Structured Products are described as being "quantoed", the value of the Underlying Assets will be converted from one currency (the "**Original Currency**") into a new currency (the "**New Currency**") on the date and in the manner specified in, or implied by, the Conditions using a fixed exchange rate. The cost to us of maintaining such a fixing between the Original Currency and the New Currency will have an implication on the value of the Structured Products, which will vary during the term of the Structured Products. No assurance can be given

as to whether or not, taking into account relative exchange rate and interest rate fluctuations between the Original Currency and the New Currency, a quanto feature in a Structured Product would at any time enhance the return on the Structured Product over a level of a similar Structured Product issued without such a quanto feature.

Taxes

You may be required to pay stamp duty or other taxes or other documentary charges. If you are in doubt as to your tax position, you should consult your own independent tax advisers. In addition, you 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. See "Do you need to pay any tax?" in the section headed "Important Information" on pages 4 to 6 for further information.

Modification to the Conditions

Under the Conditions, we may, without your consent, effect any modification of the terms and conditions of the Structured Products or the Instrument which, in our opinion, is:

(a) not materially prejudicial to the interest of the Structured Products holders generally (without considering your individual circumstances or the tax or other consequences of such modification in any particular jurisdiction);

(b) of a formal, minor or technical nature;

(c) made to correct a manifest error; or

(d) necessary in order to comply with mandatory provisions of the laws or regulations of Hong Kong.

Possible early termination for illegality or impracticability

If we determine in good faith and in a commercially reasonable manner that, for reasons beyond our control, the performance of our obligations under the Structured Products has become illegal or impracticable (or in the case of CBBCs only, it is no longer desirable or practical for us to maintain our hedging arrangement with respect to the CBBCs), we may terminate early such Structured Products. If we terminate early the Structured Products, we will, if and to the extent permitted by applicable law, pay an amount determined by us in good faith and in a commercially reasonable manner to be their fair market value notwithstanding the illegality or impracticability (or hedging disruption) less the cost to us of unwinding any related hedging arrangements, which may be substantially less than your initial investment and may be zero.

Risks relating to the Underlying Asset

You have no right to the Underlying Asset

Unless specifically indicated in the Conditions, you will not be entitled to:

(i) voting rights or rights to receive dividends or other distributions or any other rights that a holder of the Underlying Asset would normally be entitled to; or

(ii) voting rights or rights to receive dividends or other distributions or any other rights with respect to any company constituting any underlying index.

Valuation risk

An investment in Structured Products may involve valuation risk as regards the Underlying Assets to which the particular series of Structured Products relate. The price/level of the Underlying Asset may vary over time and may increase or decrease by reference to a variety of factors which may include corporate actions, macro economic factors, speculation and (where the Underlying Asset is an index) changes in the formula for or the method of calculating the index.

You must be experienced with dealing in these types of Structured Products and must understand the risks associated with dealing in such products. You should reach an investment decision only after careful consideration, with your advisers, of the suitability of any Structured Product in light of your particular financial circumstances, the information regarding the relevant Structured Product and the particular Underlying Asset to which the value of the relevant Structured Product relates.

Adjustment related risk

In the case of Structured Products relating to a single equity or an ETF ("**Security**"), certain corporate events relating to the Security require or, as the case may be, permit us to make certain adjustments or amendments to the Conditions. You have limited anti-dilution protection under the Conditions of the Structured Products. We may, in our sole discretion adjust, among other things, the Entitlement, the Exercise Price (if applicable), the Call Price (if applicable), the Strike Price (if applicable) or any other terms (including without limitation the Closing Price of the Security) of any series of Structured Product for events such as rights issue, bonus issue, subdivision, consolidation, cash distribution or restructuring event. However, we are not required to make an adjustment for every event that may affect a Security, in which case the market price of the Structured Products and the return upon the expiry of the Structured Products may be affected.

In addition, if the Security ceases to be listed on the Stock Exchange during the term of the Structured Products, we may make adjustments and/or amendments to the rights attaching to the Structured Products pursuant to the Conditions of the Structured Products. Such adjustments and/or amendments will be conclusive and binding on you.

In the case of Structured Products which relate to an index, the level of the index may be published by the index compiler at a time when one or more shares comprising in the index are not trading. If this occurs on the Valuation Date but such occurrence does not constitute a Market Disruption Event under the Conditions then the value of such share(s) may not be included in the level of the index. In addition, certain events relating to the index (including a material change in the formula or the method of calculating the index or a failure to publish the index) permit us to determine the level of the index on the basis of the formula or method last in effect prior to such change in formula or method.

Suspension of trading

If the Underlying Assets are suspended from trading or dealing for whatever reason on the market on which they are listed or dealt in (including the Stock Exchange), trading in the relevant series of Structured Products will be suspended for a similar period. In addition, if an Underlying Asset is an index and the calculation and/or publication of the index level by the index compiler is suspended for whatever reasons, trading in the relevant series of Structured Products may be suspended for a similar period. The value of the Structured Products will decrease over time as the length of the period remaining to expiration becomes shorter. In such circumstances, you should note that in the case of a prolonged suspension period, the market price of the Structured Products may be subject to a significant impact of time decay of such prolonged suspension period and may fluctuate significantly upon resumption of trading after the suspension period of the Structured Products. This may adversely affect your investment in the Structured Products.

Delay in settlement

Unless otherwise specified in the relevant Conditions, in the case of any expiry of Structured Products, there may be a time lag between the date on which the Structured Products expire, and the time the applicable settlement amount relating to such event is determined. Any such delay between the time of expiry and the determination of the settlement amount will be specified in the relevant Conditions.

However, such delay could be significantly longer, particularly in the case of a delay in the expiry of such Structured Products arising from our determination that a Market Disruption Event, Settlement Disruption Event or delisting of the underlying shares or units has occurred at any relevant time or that adjustments are required in accordance with the Conditions.

That applicable settlement amount may change significantly during any such period, and such movement or movements could decrease or modify the settlement amount of the Structured Products.

You should note that in the event of there being a Settlement Disruption Event or a Market Disruption Event, payment of the Cash Settlement Amount may be delayed as more fully described in the Conditions.

Risks specific to underlying asset adopting the multiple counters model

Where the Underlying Asset of Structured Products adopts the multiple counters model for trading its units or shares on the Stock Exchange in Hong Kong dollars ("**HKD**") and one or more foreign currencies (such as Renminbi and/or United States Dollars) ("**Foreign Currency**") separately, the novelty and relatively untested nature of the Stock Exchange's multiple counters model may bring the following additional risks:

(a) the Structured Products may be linked to the HKD-traded or the Foreign Currency traded units or shares. If the Underlying Asset of Structured Products is the units or shares traded in one currency counter, movements in the trading prices of the units or shares traded in another currency counter should not directly affect the price of the Structured Products;

(b) if there is a suspension of inter-counter transfer of such units or shares between different currency counters for any reason, such units or shares will only be able to be traded in the relevant currency counter on the Stock Exchange, which may affect the demand and supply of such units or shares and have an adverse effect on the price of the Structured Products; and

(c) the trading price on the Stock Exchange of the units or shares traded in one currency counter may deviate significantly from the trading price on the Stock Exchange of shares or units traded in another currency counter due to different factors, such as market liquidity, foreign exchange conversion risk, supply and demand in each counter and the exchange rate fluctuation. Changes in the trading price of the Underlying Asset of Structured Products in the relevant currency counter may adversely affect the price of the Structured Products.

Risk relating to liquidation or termination of the Underlying Asset

In the case of Structured Products which relate to shares of a company, in the event of liquidation, winding up or dissolution of the company that issues the underlying shares, the Structured Products shall lapse and cease to be valid, except that in the case of put Warrants or bear CBBCs, we may pay to you the residual value (if any) less our costs of unwinding any related hedging arrangements as determined by us, which may be substantially less than your initial investment and may be zero.

In the case of Structured Products which relate to units or shares of a fund, in the event of termination or liquidation of a fund that issues the underlying units or shares or the appointment of a receiver or administrator or analogous person to the fund, the Structured Products shall lapse and cease to be valid. You will lose all your investment.

Risks relating to Structured Products over funds

General risks

In the case of Structured Products which relate to the units or shares of a fund:

(a) neither we nor any of our affiliates have the ability to control or predict the actions of the trustee (if applicable) or the manager of the relevant fund. Neither the trustee (if applicable) nor the manager of the relevant fund (i) is involved in the offer of any Structured Product in any way, or (ii) has any obligation to consider the interest of the holders of any Structured Product in taking any corporate actions that might affect the value of any Structured Product; and

(b) we have no role in the relevant fund. The manager of the relevant fund is responsible for making strategic, investment and other trading decisions with respect to the management of the relevant fund consistent with its investment objectives and in compliance with the investment restrictions as set out in the constitutive documents of the relevant fund. The manner in which the relevant fund is managed and the timing of

actions may have a significant impact on the performance of the relevant fund. Hence, the market price of the relevant units or shares is also subject to these risks.

Exchange traded funds

Where the Underlying Asset of Structured Products comprises the units or shares of an exchange traded fund ("**ETF**"), you should note that:

(a) an ETF is exposed to the economic, political, currency, legal and other risks of a specific sector or market related to the underlying asset pool or index or market that the ETF is designed to track;

(b) there may be disparity between the performance of the ETF and the performance of the underlying asset pool or index or market that the ETF is designed to track as a result of, for example, failure of the tracking strategy, currency differences, fees and expenses; and

(c) where the underlying asset pool or index or market that the ETF tracks is subject to restricted access, the efficiency in the creation or redemption of units or shares to keep the price of the ETF in line with its net asset value may be disrupted, causing the ETF to trade at a higher premium or discount to its net asset value. Hence, the market price of the Structured Products will also be indirectly subject to these risks.

Synthetic exchange traded funds

Additionally, where the Underlying Asset of Structured Products comprises the units or shares of an ETF adopting a synthetic replication investment strategy to achieve its investment objectives by investing in financial derivative instruments linked to the performance of an underlying asset pool or index that the ETF is designed to track ("**Synthetic ETF**"), you should note that:

(a) investments in financial derivative instruments will expose the Synthetic ETF to the credit, potential contagion and concentration risks of the counterparties who issued such financial derivative instruments. As such counterparties are predominantly international financial institutions, the failure of any such counterparty may have a negative effect on other counterparties of the Synthetic ETF. Even if the Synthetic ETF has collateral to reduce the counterparty risk, there may still be a risk that the market value of the collateral has fallen substantially when the Synthetic ETF seeks to realise the collateral; and

(b) the Synthetic ETF may be exposed to higher liquidity risk if the Synthetic ETF invests in financial derivative instruments which do not have an active secondary market.

The above risks may have a significant impact on the performance of the relevant ETF or Synthetic ETF and hence the market price of Structured Products linked to such ETF or Synthetic ETF.

ETF investing through the QFI regimes and/or China Connect

Where the Underlying Asset of Structured Products comprises the units or shares of an ETF ("**China ETF**") issued and traded outside Chinese Mainland with direct investment in the Chinese Mainland's securities markets through the Qualified Foreign Institutional Investor regime and Renminbi Qualified Foreign Institutional Investor regime (collectively, "**QFI regimes**") and/or the Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect (collectively, "**China Connect**"), you should note that, amongst others:

(a) the policy and rules for the QFI regimes and China Connect prescribed by the Chinese Mainland government are subject to change, and there may be uncertainty to their interpretation and/or implementation. The uncertainty and change of the laws and regulations in Chinese Mainland may adversely impact on the performance of the China ETFs and the trading price of the relevant units or shares;

(b) a China ETF primarily invests in securities traded in the Chinese Mainland's securities markets and is subject to concentration risk. Investment in the Chinese Mainland's securities markets (which are inherently stock markets with restricted access) involves certain risks and special considerations as compared with investment in more developed economies or markets,

such as greater political, tax, economic, foreign exchange, liquidity and regulatory risks. The operation of a China ETF may also be affected by interventions by the applicable government(s) and regulators in the financial markets;

(c) trading of securities invested by a China ETF under China Connect will be subject to a daily quota which is utilised on a first-come-first-serve basis under the China Connect. In the event that the daily quota under China Connect is reached, the manager may need to suspend creation of further units or shares of such China ETF, and therefore may affect the liquidity in unit or shares trading of such China ETF. In such event, the trading price of a unit or share of such China ETF is likely to be at a significant premium to its net asset value, and may be highly volatile. The People's Bank of China and the State Administration of Foreign Exchange have jointly published the detailed implementation rules removing the investment quota under the QFI regimes with effect from 6 June 2020; and

(d) there are risks and uncertainties associated with the current Chinese Mainland's tax laws applicable to a China ETF investing in the Chinese Mainland through the QFI regimes and/or China Connect. Although such China ETF may have made a tax provision in respect of potential tax liability, the provision may be excessive or inadequate. Any shortfall between the provisions and actual tax liabilities may be covered by the assets of such China ETF and may therefore adversely affect the net asset value of such China ETF and the market value and/or potential payout of the Structured Products.

The above risks may have a significant impact on the performance of the China ETF and the price of the Structured Products linked to such China ETF.

Please read the offering documents of the China ETF to understand its key features and risks.

*Real estate investment trust ("**REIT**")*

Where the Underlying Asset of Structured Products comprises the units of a REIT, you should note that the investment objective of a REIT is to invest in a real estate portfolio. Each REIT is exposed to risks relating to investments in real estate, including but not limited to (a) adverse changes in political or economic conditions; (b) changes in interest rates and the availability of debt or equity financing, which may result in an inability by the REIT to maintain or improve the real estate portfolio and finance future acquisitions; (c) changes in environmental, zoning and other governmental rules; (d) changes in market rents; (e) any required repair and maintenance of the portfolio properties; (f) breach of any property laws or regulations; (g) the relative illiquidity of real estate investment; (h) real estate taxes; (i) any hidden interests in the portfolio properties; (j) any increase in insurance premiums and (k) any uninsurable losses.

There may also be disparity between the market price of the units of a REIT and the net asset value per unit. This is because the market price of the units of a REIT also depends on many factors, including but not limited to (a) the market value and perceived prospects of the real estate portfolio; (b) changes in economic or market conditions; (c) changes in market valuations of similar companies; (d) changes in interest rates; (e) the perceived attractiveness of the units of the REIT against those of other equity securities; (f) the future size and liquidity of the market for the units and the REIT market generally; (g) any future changes to the regulatory system, including the tax system and (h) the ability of the REIT to implement its investment and growth strategies and to retain its key personnel.

The above risks may have a significant impact on the performance of the relevant units and the price of the Structured Products.

Commodity market risk

Where the Underlying Asset comprises the units or shares of an ETF whose value relates directly to the value of a commodity, you should note that fluctuations in the price of the commodity could materially adversely affect the value of the underlying units or shares. Commodity market is generally subject to greater risks than other markets. The price of a commodity is highly volatile. Price movement of a commodity is influenced by, among other things, interest rates, changing market supply and demand

relationships, trade, fiscal, monetary and exchange control programmes and policies of governments, and international political and economic events and policies.

Risks relating to CBBCs

Correlation between the price of a CBBC and the price/level of the Underlying Asset

When the Underlying Asset of a CBBC is trading at a price/level close to its Call Price/Call Level, the price of that CBBC tends to be more volatile and any change in the value of that CBBC at such time may be incomparable and disproportionate to the change in the price/level of the Underlying Asset.

You may lose your entire investment when a Mandatory Call Event occurs

Unlike warrants, CBBCs has a mandatory call feature and trading in the CBBCs will be suspended when the Spot Level/Spot Price reaches the Call Level/Call Price (subject to the circumstances in which a Mandatory Call Event will be reversed as set out below). No investors can sell the CBBCs after the occurrence of a Mandatory Call Event. Even if the level/price of the Underlying Asset bounces back in the right direction, the CBBCs which have been terminated as a result of the Mandatory Call Event will not be revived and investors will not be able to profit from the bounce-back. Investors may receive a Residual Value after the occurrence of a Mandatory Call Event but such amount may be zero.

Mandatory Call Event is irrevocable except in limited circumstances

A Mandatory Call Event is irrevocable unless it is triggered as a result of any of the following events:

(a) system malfunction or other technical errors of HKEX (such as the setting up of wrong Call Price/Call Level and other parameters), and such event is reported by the Stock Exchange to us and we and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked; or

(b) manifest errors caused by the relevant third party price source where applicable (such as miscalculation of the index level by the relevant index compiler), and such event is reported by us to the Stock Exchange and we and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked,

in each case, such mutual agreement must be reached between the Stock Exchange and us as prescribed in the relevant procedures by the Stock Exchange from time to time. Upon revocation of the Mandatory Call Event, trading of the CBBCs will resume and any trade cancelled after such Mandatory Call Event will be reinstated.

Non-recognition of Post MCE Trades

The Stock Exchange and its recognised exchange controller, HKEX, shall not incur any liability (whether based on contract, tort (including, without limitation, negligence), or any other legal or equitable grounds and without regard to the circumstances giving rise to any purported claim except in the case of wilful misconduct on the part of the Stock Exchange and/or HKEX) for any direct, consequential, special, indirect, economic, punitive, exemplary or any other loss or damage suffered or incurred by us or any other party arising from or in connection with the Mandatory Call Event or the suspension of trading ("**Trading Suspension**") or the non-recognition of trades after a Mandatory Call Event ("**Non-Recognition of Post MCE Trades**"), including without limitation, any delay, failure, mistake or error in the Trading Suspension or Non-Recognition of Post MCE Trades.

We and our affiliates shall not have any responsibility towards you for any losses suffered as a result of the Trading Suspension and/or Non-Recognition of Post MCE Trades in connection with the occurrence of a Mandatory Call Event, notwithstanding that such Trading Suspension or Non-Recognition of Post MCE Trades may have occurred as a result of an error in the observation of the event.

Residual Value will not include residual funding cost

For Category R CBBCs, the Residual Value (if any) payable by us following the occurrence of a Mandatory Call Event will not include the residual funding cost for the CBBCs. You will not

receive any residual funding cost back from us upon early termination of a Category R CBBC following the occurrence of a Mandatory Call Event.

Delay in announcements of a Mandatory Call Event

The Stock Exchange will notify the market as soon as practicable after the CBBC has been called. You must however be aware that there may be delay in the announcements of a Mandatory Call Event due to technical errors or system failures and other factors that are beyond our control or the control of the Stock Exchange.

Our hedging activities may adversely affect the price/level of the Underlying Asset

We and/or any of our affiliates may carry out activities that minimise our risks related to the CBBCs, including effecting transactions for our own account or for the account of our customers and hold long or short positions in the Underlying Asset whether for risk reduction purposes or otherwise. In addition, in connection with the offering of any CBBCs, we and/or any of our affiliates may enter into one or more hedging transactions with respect to the Underlying Asset. In connection with such hedging or market-making activities or with respect to proprietary or other trading activities by us and/or any of our affiliates, we and/or any of our affiliates may enter into transactions in the Underlying Asset which may affect the market price, liquidity or price/level of the Underlying Asset and/or the value of CBBCs and which could be deemed to be adverse to your interests. We and/or our affiliates are likely to modify our hedging positions throughout the life of the CBBCs whether by effecting transactions in the Underlying Asset or in derivatives linked to the Underlying Asset. Further, it is possible that the advisory services which we and/or our affiliates provide in the ordinary course of our business could lead to an adverse impact on the value of the Underlying Asset.

Unwinding of hedging arrangements

The trading and/or hedging activities of us or our affiliates related to CBBCs and/or other financial instruments issued by us from time to time may have an impact on the price/level of the Underlying Asset and may trigger a Mandatory Call Event. In particular, when the Underlying Asset is trading close to the Call Price/Call Level, our unwinding activities may cause a fall or rise (as the case may be) in the trading price/level of the Underlying Asset, leading to a Mandatory Call Event as a result of such unwinding activities.

In respect of Category N CBBCs, we or our affiliates may unwind any hedging transactions entered into by us in relation to the CBBCs at any time even if such unwinding activities may trigger a Mandatory Call Event.

In respect of Category R CBBCs, before the occurrence of a Mandatory Call Event, we or our affiliates may unwind our hedging transactions relating to the CBBCs in proportion to the amount of the CBBCs we repurchase from time to time. Upon the occurrence of a Mandatory Call Event, we or our affiliates may unwind any hedging transactions in relation to the CBBCs. Such unwinding activities after the occurrence of a Mandatory Call Event may affect the trading price/level of the Underlying Asset and consequently the Residual Value for the CBBCs.

Risk relating to the legal form of the Structured Products

Each series of Structured Products will be represented by a global certificate registered in the name of HKSCC Nominees Limited (or such other nominee company as may be used by HKSCC from time to time in relation to the provision of nominee services to persons admitted for the time being by HKSCC as a participant of CCASS).

Structured Products issued in global registered form and held on your behalf within a clearing system effectively means that the evidence of your title, as well as the efficiency of ultimate delivery of the Cash Settlement Amount, will be subject to the CCASS Rules. You should be aware of the following risks:

(a) you will not receive definitive certificates where the Structured Products remain in the name of HKSCC Nominees Limited for the entire life of the Structured Products;

(b) any register that is maintained by us or on our behalf, while available for inspection by you, will not be capable of registering any

interests other than that of the legal title owner, in other words, it will record at all times that the Structured Products are being held by HKSCC Nominees Limited;

(c) you will have to rely solely upon your broker/custodians and the statements you receive from such party as evidence of your interest in the investment;

(d) notices or announcements will be published on the HKEX website and/or released by HKSCC to its participants via CCASS. You will need to check the HKEX website regularly and/or rely on your brokers/ custodians to obtain such notices/ announcements; and

(e) following the Expiry Date and the determination by us as to the Cash Settlement Amount, our obligations to you will be duly performed by payment of the Cash Settlement Amount in accordance with the Conditions to HKSCC Nominees Limited as the "holder" of the Structured Products. HKSCC or HKSCC Nominees Limited will then distribute the received Cash Settlement Amount to the respective CCASS participants in accordance with the CCASS Rules.

Fee arrangements with brokers and conflicts of interest of brokers

We may enter into fee arrangements with brokers and/or any of its affiliates with respect to the primary market in the Structured Products. You should note that any brokers with whom we have a fee arrangement does not, and cannot be expected to, deal exclusively in the Structured Products, therefore any broker and/or its subsidiaries or affiliates may from time to time engage in transactions involving the Underlying Assets and/or the structured products of other issuers over the same Underlying Assets to which the particular series of Structured Products may relate, or other underlying assets as the case may be, for their proprietary accounts and/or for the accounts or 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 Structured Products and present certain conflicts of interests.

Effect of the combination of risk factors unpredictable

Two or more risk factors may simultaneously have an effect on the value of a series of Structured Products such that the effect of any individual risk factor may not be predictable. No assurance can be given as to the effect any combination of risk factors may have on the value of a series of Structured Products.

APPENDIX 1 — TERMS AND CONDITIONS OF WARRANTS

The following pages set out the Conditions in respect of different types of Warrants.

PART A — TERMS AND CONDITIONS OF CASH SETTLED WARRANTS OVER SINGLE EQUITIES

These Conditions will, together with the supplemental provisions contained in the relevant Launch Announcement and Supplemental Listing Document, and subject to completion and amendment, be endorsed on the Global Certificate. The relevant Launch Announcement and Supplemental Listing Document in relation to the issue of any series of Warrants may specify other terms and conditions which shall, to the extent so specified or to the extent they are inconsistent with these Conditions, replace or modify these Conditions for the purpose of such series of Warrants.

1. Form, Status, Transfer, Title and Additional Costs and Expenses

(A) The Warrants (which expression shall, unless the context otherwise requires, include any further warrants issued pursuant to Condition 11) relating to the Shares of the Company are issued in registered form subject to and with the benefit of an instrument by way of deed poll (the "**Instrument**" as defined more fully in the relevant Launch Announcement and Supplemental Listing Document) executed by UBS AG (the "**Issuer**") acting through its London branch or any of its branches outside Switzerland as it may specify from time to time. The Warrantholders (as defined below) are entitled to the benefit of, are bound by, and are deemed to have notice of all the provisions of the Instrument. A copy of the Instrument is available for inspection at the offices of UBS Securities Asia Limited ("**Sponsor**") at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong.

The Warrants are represented by a global certificate ("**Global Certificate**") registered in the name of HKSCC Nominees Limited (or such other nominee company as may be used by Hong Kong Securities Clearing Company Limited ("**HKSCC**") from time to time in relation to the provision of nominee services to persons admitted for the time being by HKSCC as a participant of CCASS) (the "**Nominee**"). No definitive certificate will be issued. The Warrants can only be exercised by HKSCC or the Nominee.

(B) The settlement obligation of the Issuer in respect of the Warrants represents general unsecured contractual obligations of the Issuer and of no other person which rank, and will rank, equally among themselves and pari passu with all other present and future unsecured and unsubordinated contractual obligations of the Issuer, except for obligations accorded preference by mandatory provisions of applicable law.

Warrants represent general contractual obligations of the Issuer, and are not, nor is it the intention (expressed, implicit or otherwise) of the Issuer to create by the issue of Warrants deposit liabilities of the Issuer or a debt obligation of any kind.

(C) Transfers of Warrants may be effected only in Board Lots or integral multiples thereof in CCASS in accordance with the General Rules of CCASS and the CCASS Operational Procedures in effect from time to time (the "**CCASS Rules**").

(D) Each person who is for the time being shown in the register kept by the Issuer in Hong Kong as the holder shall be treated by the Issuer and the Sponsor as the absolute owner and holder of the Warrants. The expressions "**Warrantholder**" and "**Warrantholders**" shall be construed accordingly.

(E) Warrantholders are responsible for additional costs and expenses in connection with any exercise of the Warrants including the Exercise Expenses (as defined below) which amount shall, subject to Condition 2(B) and to the extent necessary, be payable to the Issuer and collected from the Warrantholders.

2. Warrant Rights and Exercise Expenses

(A) Every Board Lot entitles the Warrantholders, upon due exercise and upon compliance with these Conditions, in particular Condition 3, to payment of the Cash Settlement Amount (as defined below), if any.

(B) The Warrantholders will be required to pay a sum equal to all the expenses resulting from the exercise of such Warrants. To effect such payment an amount equivalent to the Exercise Expenses (defined below) shall be deducted from the Cash Settlement Amount in accordance with Condition 3(E).

(C) For the purposes of these Conditions:

"**Average Price**" means the arithmetic mean of the closing prices of one Share (as derived from the Daily Quotation Sheet of the Stock Exchange, subject to any adjustment to such closing prices as may be necessary to reflect any event as contemplated in Condition 5 such as capitalisation, rights issue, distribution or the like) in respect of each Valuation Date;

"**Board Lot**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Business Day**" means a day (excluding Saturdays) on which the Stock Exchange is scheduled to open for dealings in Hong Kong and banks are open for business in Hong Kong;

"**Cash Settlement Amount**" means, for every Board Lot, an amount in the Settlement Currency calculated by the Issuer in accordance with the following formula:

(i) In the case of a series of call Warrants:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Average Price - Exercise Price) x one Board Lot}}{\text{Number of Warrant(s) per Entitlement}}$$

(ii) In the case of a series of put Warrants:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Exercise Price - Average Price) x one Board Lot}}{\text{Number of Warrant(s) per Entitlement}}$$

For the avoidance of doubt, if the Cash Settlement Amount is a negative figure, it shall be deemed to be zero;

"**CCASS**" means the Central Clearing and Settlement System;

"**CCASS Settlement Day**" has the meaning ascribed to the term "Settlement Day" in the CCASS Rules, subject to such modification and amendment prescribed by HKSCC from time to time;

"**Company**" means the company specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Entitlement**" means the number specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 5;

"**Exercise Expenses**" means any charges or expenses including any taxes or duties which are incurred in respect of the exercise of a Board Lot of Warrants;

"**Exercise Price**" means the price specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 5;

"**Expiry Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**HKEX**" means Hong Kong Exchanges and Clearing Limited;

"**Listing Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Market Disruption Event**" means:

(1) the occurrence or existence on any Valuation Date during the one-half hour period that ends at the close of trading of any suspension of or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the Stock Exchange or otherwise) on the Stock Exchange in (a) the Shares; or (b) any options or futures contracts relating to the Shares if, in any such case, such suspension or limitation is, in the determination of the Issuer, material;

(2) the occurrence of any severe weather condition or other event on any day which either (i) results in the Stock Exchange being closed for trading for the entire day; or (ii) results in the Stock Exchange being closed prior to its regular time for close of trading for the relevant day (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning trading session only, closed prior to its regular time for close of trading for the morning session), PROVIDED THAT there shall be no Market Disruption Event solely by reason of the Stock Exchange opening for trading later than its regular time for opening of trading on any day as a result of such severe weather condition or other event; or

(3) a limitation or closure of the Stock Exchange due to any unforeseen circumstances;

"**Settlement Currency**" means the currency specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Date**" means the third CCASS Settlement Day after the later of: (i) the Expiry Date; and (ii) the day on which the Average Price is determined in accordance with the Conditions;

"**Share**" means the share specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Stock Exchange**" means The Stock Exchange of Hong Kong Limited; and

"**Valuation Date**" means each of the five Business Days immediately preceding the Expiry Date, provided that if the Issuer determines, in its sole discretion, that a Market Disruption Event has occurred on any Valuation Date, then that Valuation Date shall be postponed until the first succeeding Business Day on which there is no Market Disruption Event irrespective of whether that postponed Valuation Date would fall on a Business Day that is already or is deemed to be a Valuation Date. For the avoidance of doubt, in the event that a Market Disruption Event has occurred and a Valuation Date is postponed as aforesaid, the closing price of the Shares on the first succeeding Business Day will be used more than once in determining the Average Price, so that in no event shall there be less than five closing prices used to determine the Average Price.

If the postponement of the Valuation Date as aforesaid would result in the Valuation Date falling on or after the Expiry Date, then:

(a) the Business Day immediately preceding the Expiry Date (the "**Last Valuation Date**") shall be deemed to be the Valuation Date notwithstanding the Market Disruption Event; and

(b) the Issuer shall determine the closing price of the Shares on the basis of its good faith estimate of the price that would have prevailed on the Last Valuation Date but for the Market Disruption Event.

Trading in Warrants on the Stock Exchange shall cease prior to the Expiry Date in accordance with the requirements of the Stock Exchange.

Other capitalized terms shall, unless otherwise defined herein, have the meaning ascribed to them in the Base Listing Document, the relevant Launch Announcement and Supplemental Listing Document or the Global Certificate.

3. Exercise of Warrants

(A) Warrants may only be exercised in Board Lots or integral multiples thereof.

(B) The Warrants will automatically be exercised on the Expiry Date, if the Issuer determines that the Cash Settlement Amount (calculated in accordance with these Conditions) is positive (without notice being given to the Warrantholders). The Warrantholders will not be required to deliver any exercise notice and the Issuer or its agent will pay to the Warrantholders the Cash Settlement Amount (if any) in accordance with Condition 3(E).

Any Warrant which has not been automatically exercised in accordance with this Condition 3(B) shall expire immediately thereafter and all rights of the Warrantholders and obligations of the Issuer with respect to such Warrant shall cease.

(C) Any Exercise Expenses which are not determined by the Issuer on the Expiry Date and deducted from the Cash Settlement Amount prior to delivery to the Warrantholders in accordance with this Condition 3, shall be notified by the Issuer to the Warrantholders as soon as practicable after determination thereof and shall be paid by the Warrantholders to the Issuer immediately upon demand.

(D) Subject to exercise of Warrants in accordance with these Conditions, or in the event that Warrants have expired worthless, the Issuer will, with effect from the first Business Day following the Expiry Date, remove the name of each Warrantholder from the register of Warrantholders in respect of such Warrants and thereby cancel the relevant Warrants and, if applicable, cancel the Global Certificate.

(E) Upon exercise of Warrants in accordance with these Conditions, the Issuer will pay the Cash Settlement Amount minus the determined Exercise Expenses to the relevant Warrantholder. If the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

The aggregate Cash Settlement Amount minus the determined aggregate Exercise Expenses shall be despatched no later than the Settlement Date, by crediting that amount, in accordance with the CCASS Rules, to the relevant bank account designated by each Warrantholder (the "**Designated Bank Account**").

If as a result of an event beyond the control of the Issuer ("**Settlement Disruption Event**"), it is not possible for the Issuer to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Warrantholder on the original Settlement Date, the

Issuer shall use its reasonable endeavours to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Warrantholder as soon as reasonably practicable after the original Settlement Date. The Issuer will not be liable to the Warrantholder for any interest in respect of the amount due or any loss or damage that such Warrantholder may suffer as a result of the existence of a Settlement Disruption Event.

(F) The Issuer's obligations to pay the Cash Settlement Amount shall be discharged by payment in accordance with Condition 3(E).

4. Sponsor

(A) The Sponsor will not assume any obligation or duty to or any relationship or agency or trust for the Warrantholders.

(B) The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the initial Sponsor and to appoint another sponsor provided that it will at all times maintain a sponsor in Hong Kong for so long as the Warrants are listed on the Stock Exchange. Notice of any such termination or appointment will be given to the Warrantholders in accordance with Condition 9.

5. Adjustments

(A) *Rights Issues.* If and whenever the Company shall, by way of Rights (as defined below), offer new Shares for subscription at a fixed subscription price to the holders of existing Shares pro rata to existing holdings (a "**Rights Offer**"), the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Shares becomes ex-entitlement ("**Rights Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{1 + M}{1 + (R/S) \times M}$$

E: Existing Entitlement immediately prior to the Rights Offer

S: Cum-Rights Share price being the closing price of an existing Share as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Shares are traded on a Cum-Rights basis

R: Subscription price per new Share specified in the Rights Offer plus an amount equal to any dividends or other benefits foregone to exercise the Right

M: Number of new Share(s) (whether a whole or a fraction) per existing Share each holder thereof is entitled to subscribe

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Exercise Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Exercise Price shall take effect on the Rights Issue Adjustment Date.

For the purposes of these Conditions:

"**Rights**" means the right(s) attached to each existing Share or needed to acquire one new Share (as the case may be) which are given to the holders of existing Shares to subscribe at a fixed subscription price for new Shares pursuant to the Rights Offer (whether by the exercise of one Right, a part of a Right or an aggregate number of Rights).

(B) *Bonus Issues.* If and whenever the Company shall make an issue of Shares credited as fully paid to the holders of Shares generally by way of capitalisation of profits or reserves (other than pursuant to a scrip dividend or similar scheme for the time being operated by the Company or otherwise in lieu of a cash dividend and without any payment or other consideration being made or given by such holders) (a "**Bonus Issue**") the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Shares becomes ex-entitlement ("**Bonus Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

Adjustment Component = (1 + N)

E: Existing Entitlement immediately prior to the Bonus Issue

N: Number of additional Shares (whether a whole or a fraction) received by a holder of Shares for each Share held prior to the Bonus Issue

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Exercise Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Exercise Price shall take effect on the Bonus Issue Adjustment Date.

(C) *Subdivisions and Consolidations.* If and whenever the Company shall subdivide its Shares or any class of its outstanding share capital comprised of the Shares into a greater number of shares (a "**Subdivision**") or consolidate the Shares or any class of its outstanding share capital comprised of the Shares into a smaller number of shares (a "**Consolidation**"), then:

(i) in the case of a Subdivision, the Entitlement in effect immediately prior thereto will be increased whereas the Exercise Price (which shall be rounded to the nearest 0.001) will be decreased in the same ratio as the Subdivision; and

(ii) in the case of a Consolidation, the Entitlement in effect immediately prior thereto will be decreased whereas the Exercise Price (which shall be rounded to the nearest 0.001) will be increased in the same ratio as the Consolidation,

in each case on the day on which the Subdivision or Consolidation (as the case may be) shall have taken effect.

(D) *Restructuring Events.* If it is announced that the Company is to or may merge or consolidate with or into any other corporation (including becoming, by agreement or otherwise, a subsidiary of or controlled by any person or corporation) (except where the Company is the surviving corporation in a merger) or that it is to or may sell or transfer all or substantially all of its assets, the rights attaching to the Warrants may in the absolute discretion of the Issuer be amended no later than the Business Day preceding the consummation of such merger, consolidation, sale or

transfer (each a "**Restructuring Event**") (as determined by the Issuer in its absolute discretion) so that the Warrants shall, after such Restructuring Event, relate to the number of shares of the corporation(s) resulting from or surviving such Restructuring Event or other securities ("**Substituted Securities**") and/or cash offered in substitution for the affected Shares, as the case may be, to which the holder of such number of Shares to which the Warrants related immediately before such Restructuring Event would have been entitled upon such Restructuring Event, and thereafter the provisions hereof shall apply to such Substituted Securities, provided that any Substituted Securities may, in the absolute discretion of the Issuer, be deemed to be replaced by an amount in the relevant currency equal to the market value or, if no market value is available, fair value, of such Substituted Securities in each case as determined by the Issuer as soon as practicable after such Restructuring Event is effected. For the avoidance of doubt, any remaining Shares shall not be affected by this paragraph and, where cash is offered in substitution for Shares or is deemed to replace Substituted Securities as described above, references in these Conditions to the Shares shall include any such cash.

(E) *Cash Distribution.* No adjustment will be made for an ordinary cash dividend (whether or not it is offered with a scrip alternative) ("**Ordinary Dividend**"). For any other forms of cash distribution ("**Cash Distribution**") announced by the Company, such as a cash bonus, special dividend or extraordinary dividend, no adjustment will be made unless the value of the Cash Distribution accounts for 2 per cent. or more of the Share's closing price on the day of announcement by the Company.

If and whenever the Company shall make a Cash Distribution credited as fully paid to the holders of Shares generally, the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Shares becomes ex-entitlement in respect of the relevant Cash Distribution ("**Distribution Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{S - OD}{S - OD - CD}$$

E: The existing Entitlement immediately prior to the Cash Distribution

S: Cum-Cash Distribution Share price being the closing price of an existing Share as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Shares are traded on a cum-Cash Distribution basis

CD: The Cash Distribution per Share

OD: The Ordinary Dividend per Share, provided that the Ordinary Dividend and the Cash Distribution have the same ex-entitlement date. For avoidance of doubt, the OD shall be zero if the Ordinary Dividend and the Cash Distribution have different ex-entitlement dates

In addition, the Issuer shall adjust the Exercise Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Exercise Price shall take effect on the Distribution Adjustment Date.

(F) *Other Adjustments.* Without prejudice to and notwithstanding any prior adjustment(s) made pursuant to the applicable Conditions, the Issuer may (but shall not be obliged to) make such

other adjustments to the terms and conditions of the Warrants as appropriate where any event (including the events as contemplated in the applicable Conditions) occurs and irrespective of, in substitution for, or in addition to the provisions contemplated in the applicable Conditions, provided that such adjustment is:

(i) not materially prejudicial to the interests of the Warrantholders generally (without considering the circumstances of any individual Warrantholder or the tax or other consequences of such adjustment in any particular jurisdiction); or

(ii) determined by the Issuer in good faith to be appropriate and commercially reasonable.

(G) *Notice of Adjustments.* All determinations made by the Issuer pursuant hereto will be conclusive and binding on the Warrantholders. 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 by publication in accordance with Condition 9.

6. Purchase

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

7. Global Certificate

A Global Certificate representing the Warrants will be deposited with CCASS in the name of HKSCC Nominees Limited. No definitive certificate will be issued.

8. Meetings of Warrantholders and Modification

(A) *Meetings of Warrantholders.* The Instrument contains provisions for convening meetings of the Warrantholders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Instrument) of a modification of the provisions of the Warrants or of the Instrument.

Any resolution to be passed in a meeting of the Warrantholders shall be decided by poll. A meeting may be convened by the Issuer or by Warrantholders holding not less than 10 per cent. of the Warrants 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 Warrants for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Warrantholders whatever the number of Warrants 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 Warrantholders who, being entitled to do so, vote in person or by proxy.

An Extraordinary Resolution passed at any meeting of the Warrantholders shall be binding on all the Warrantholders, whether or not they are present at the meeting.

Resolutions can be passed in writing without a meeting of the Warrantholders being held if passed unanimously.

(B) *Modification.* The Issuer may, without the consent of the Warrantholders, effect any modification of the terms and conditions of the Warrants or the Instrument which, in the opinion of the Issuer, is (i) not materially prejudicial to the interests of the Warrantholders generally (without considering the circumstances of any individual Warrantholder or the tax or other consequences

of such modification in any particular jurisdiction); (ii) of a formal, minor or technical nature; (iii) made to correct a manifest error; or (iv) necessary in order to comply with mandatory provisions of the laws or regulations of Hong Kong. Any such modification shall be binding on the Warrantholders and shall be notified to them by the Issuer as soon as practicable thereafter in accordance with Condition 9.

9. Notices

All notices to the Warrantholders will be validly given if published in English and in Chinese on the HKEX website. In such circumstances, the Issuer shall not be required to despatch copies of the notice to the Warrantholders.

10. Liquidation

In the event of a liquidation, winding up or dissolution of the Company or the appointment of a liquidator, receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of the undertaking, property or assets of the Company (each an "**Insolvency Event**"), all unexercised Warrants shall terminate automatically upon the occurrence of any Insolvency Event and the Issuer shall have no further obligation under the Warrants, except that in the case of a series of put Warrants:

(i) if the Issuer determines in good faith and in a commercially reasonable manner that there is any residual value in the put Warrants upon the occurrence of such Insolvency Event:

(a) the Issuer shall pay to each Warrantholder the residual value of the put Warrants in cash representing the fair market value in respect of each put Warrant held by such Warrantholder on or about the occurrence of such Insolvency Event less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion, acting in good faith and in a commercially reasonable manner. Payment will be made to each Warrantholder in such manner as shall be notified to the Warrantholders in accordance with Condition 9; and

(b) the Issuer may, but shall not be obliged to, determine such cash amount by having regard to the manner in which the options contracts or futures contracts of the Shares traded on the Stock Exchange are calculated;

(ii) otherwise, if the Issuer determines in good faith and in a commercially reasonable manner that there is no residual value in the put Warrants upon the occurrence of such Insolvency Event, the put Warrants shall lapse and cease to be valid for any purpose upon the occurrence of such Insolvency Event.

For the purpose of this Condition 10, an Insolvency Event occurs:

(a) in the case of a voluntary liquidation or winding up of the Company, on the effective date of the relevant resolution; or

(b) in the case of an involuntary liquidation, winding up or dissolution of the Company, on the date of the relevant court order; or

(c) in the case of the appointment of a liquidator or receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of the undertaking, property or assets of the Company, on the date when such appointment is effective but subject (in any such case) to any contrary mandatory requirement of the applicable law.

11. Further Issues

The Issuer shall be at liberty from time to time, without the consent of the Warrantholders, to create and issue further warrants so as to form a single series with the Warrants.

12. Delisting

(A) If at any time the Shares cease to be listed on the 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 Warrants 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 Warrantholders generally are not materially prejudiced as a consequence of such delisting (without considering the circumstances of any individual Warrantholder or the tax or other consequences that may result in any particular jurisdiction).

(B) Without prejudice to the generality of Condition 12(A), where the Shares are, or, upon the delisting, become, listed on any other stock exchange, these Conditions may, in the absolute discretion of the Issuer, be amended to the extent necessary to allow for the substitution of that other stock exchange in place of the Stock Exchange and the Issuer may, without the consent of the Warrantholders, make such adjustments to the entitlements of the Warrantholders on exercise (including, if appropriate, by converting foreign currency amounts at prevailing market rates into the relevant currency) as may be appropriate in the circumstances.

(C) The Issuer shall determine, in its absolute discretion, any adjustment or amendment and its determination shall be conclusive and binding on the Warrantholders save in the case of manifest error. Notice of any adjustments or amendments shall be given to the Warrantholders in accordance with Condition 9 as soon as practicable after they are determined.

13. Illegality or Impracticability

The Issuer is entitled to terminate the Warrants if it determines in good faith and in a commercially reasonable manner that, for reasons beyond its control, it has become or it will become illegal or impracticable:

(i) for it to perform its obligations under the Warrants in whole or in part as a result of:

(a) the adoption of, or any change in, any relevant law or regulation (including any tax law); or

(b) the promulgation of, or any change in, the interpretation by any court, tribunal, governmental, administrative, legislative, regulatory or judicial authority or power with competent jurisdiction of any relevant law or regulation (including any tax law),

(each of (a) and (b), a "**Change in Law Event**"); or

(ii) for it or any of its affiliates to maintain the Issuer's hedging arrangements with respect to the Warrants due to a Change in Law Event.

Upon the occurrence of a Change in Law Event, the Issuer will, if and to the extent permitted by the applicable law or regulation, pay to each Warrantholder a cash amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value in respect of each Warrant held by such Warrantholder immediately prior to such termination (ignoring such illegality or impracticability) less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion. Payment will be made to each Warrantholder in such manner as shall be notified to the Warrantholder in accordance with Condition 9.

14. Good Faith and Commercially Reasonable Manner

Any exercise of discretion by the Issuer under these Conditions will be made in good faith and in a commercially reasonable manner.

15. Governing Law

The Warrants and the Instrument are governed by and construed in accordance with the laws of the Hong Kong Special Administrative Region of the People's Republic of China ("**Hong Kong**"). The Issuer and each Warrantholder (by its purchase of the Warrants) submit for all purposes in connection with the Warrants and the Instrument to the non-exclusive jurisdiction of the courts of Hong Kong.

16. Contracts (Rights of Third Parties) Ordinance

A person who is not a party to these Conditions has no right under the Contracts (Rights of Third Parties) Ordinance (Cap. 623 of the Laws of Hong Kong) to enforce or to enjoy the benefit of any term of the Warrants.

17. Language

In the event of any inconsistency between the Chinese translation and the English version of these Conditions, the English version of these Conditions shall prevail.

18. Prescription

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

Sponsor:
UBS Securities Asia Limited
52nd Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong

PART B — TERMS AND CONDITIONS OF CASH SETTLED INDEX WARRANTS

These Conditions will, together with the supplemental provisions contained in the relevant Launch Announcement and Supplemental Listing Document, and subject to completion and amendment, be endorsed on the Global Certificate. The relevant Launch Announcement and Supplemental Listing Document in relation to the issue of any series of Warrants may specify other terms and conditions which shall, to the extent so specified or to the extent they are inconsistent with these Conditions, replace or modify these Conditions for the purpose of such series of Warrants.

1. Form, Status, Transfer, Title and Additional Costs and Expenses

(A) The Warrants (which expression shall, unless the context otherwise requires, include any further warrants issued pursuant to Condition 10) relating to the Index are issued in registered form subject to and with the benefit of an instrument by way of deed poll (the "**Instrument**" as defined more fully in the relevant Launch Announcement and Supplemental Listing Document) executed by UBS AG (the "**Issuer**") acting through its London branch or any of its branches outside Switzerland as it may specify from time to time. The Warrantholders (as defined below) are entitled to the benefit of, are bound by, and are deemed to have notice of all the provisions of the Instrument. A copy of the Instrument is available for inspection at UBS Securities Asia Limited ("**Sponsor**") at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong.

The Warrants are represented by a global certificate ("**Global Certificate**") registered in the name of HKSCC Nominees Limited (or such other nominee company as may be used by Hong Kong Securities Clearing Company Limited ("**HKSCC**") from time to time in relation to the provision of nominee services to persons admitted for the time being by HKSCC as a participant of CCASS) (the "**Nominee**"). No definitive certificate will be issued. The Warrants can only be exercised by HKSCC or the Nominee.

(B) The settlement obligation of the Issuer in respect of the Warrants represents general unsecured contractual obligations of the Issuer and of no other person which rank, and will rank, equally among themselves and pari passu with all other present and future unsecured and unsubordinated contractual obligations of the Issuer, except for obligations accorded preference by mandatory provisions of applicable law.

Warrants represent general contractual obligations of the Issuer, and are not, nor is it the intention (expressed, implicit or otherwise) of the Issuer to create by the issue of Warrants deposit liabilities of the Issuer or a debt obligation of any kind.

(C) Transfers of Warrants may be effected only in Board Lots or integral multiples thereof in CCASS in accordance with the General Rules of CCASS and the CCASS Operational Procedures in effect from time to time (the "**CCASS Rules**").

(D) Each person who is for the time being shown in the register kept by the Issuer in Hong Kong as the holder shall be treated by the Issuer and the Sponsor as the absolute owner and holder of the Warrants. The expressions "**Warrantholder**" and "**Warrantholders**" shall be construed accordingly.

(E) Warrantholders are responsible for additional costs and expenses in connection with any exercise of the Warrants including the Exercise Expenses (as defined below) which amount shall, subject to Condition 2(B) and to the extent necessary, be payable to the Issuer and collected from the Warrantholders.

2. Warrant Rights and Exercise Expenses

(A) Every Board Lot entitles the Warrantholders, upon due exercise and upon compliance with these Conditions, in particular Condition 3, to payment of the Cash Settlement Amount (as defined below), if any.

(B) The Warrantholders will be required to pay a sum equal to all the expenses resulting from the exercise of such Warrants. To effect such payment an amount equivalent to the Exercise Expenses (defined below) shall be deducted from the Cash Settlement Amount in accordance with Condition 3(E).

(C) For the purposes of these Conditions:

"**Board Lot**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Business Day**" means a day (excluding Saturdays) on which the Stock Exchange is scheduled to open for dealings in Hong Kong and banks are open for business in Hong Kong;

"**Cash Settlement Amount**" means, for every Board Lot, an amount calculated by the Issuer in accordance with the following formula (and, if appropriate, either (i) converted (if applicable) into the Settlement Currency at the Exchange Rate or, as the case may be, (ii) converted into the Interim Currency at the First Exchange Rate and then (if applicable) converted into Settlement Currency at the Second Exchange Rate):

(i) In the case of a series of call Warrants:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{(Closing Level - Strike Level) x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

(ii) In the case of a series of put Warrants:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{(Strike Level - Closing Level) x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

For the avoidance of doubt, if the Cash Settlement Amount is a negative figure, it shall be deemed to be zero;

"**CCASS**" means the Central Clearing and Settlement System;

"**CCASS Settlement Day**" has the meaning ascribed to the term "Settlement Day" in the CCASS Rules, subject to such modification and amendment prescribed by HKSCC from time to time;

"**Closing Level**" means the level specified as such in the relevant Launch Announcement and Supplemental Listing Document subject to any adjustment in accordance with Condition 5;

"**Divisor**" means the number specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Exchange Rate**" means the rate specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Exercise Expenses**" means any charges or expenses including any taxes or duties which are incurred in respect of the exercise of a Board Lot of Warrants;

"**Expiry Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**First Exchange Rate**" means the rate specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**HKEX**" means Hong Kong Exchanges and Clearing Limited;

"**Index**" means the index specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Index Business Day**" means any day on which the Index Exchange is scheduled to open for trading for its regular trading sessions;

"**Index Compiler**" means the index compiler specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Index Currency Amount**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Index Exchange**" means the index exchange specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Interim Currency**" means the currency specified in the relevant Launch Announcement and Supplemental Listing Document;

"**Listing Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Market Disruption Event**" means:

(i) the occurrence or existence, on the Valuation Date during the one-half hour period that ends at the close of trading on the Index Exchange, of any of:

(1) the suspension or material limitation of the trading of a material number of constituent securities that comprise the Index;

(2) the suspension or material limitation of the trading of options or futures contracts relating to the Index on any exchanges on which such contracts are traded; or

(3) the imposition of any exchange controls in respect of any currencies involved in determining the Cash Settlement Amount.

For the purposes of this paragraph (i), (a) the limitation of the number of hours or days of trading will not constitute a Market Disruption Event if it results from an announced change in the regular business hours of any relevant exchange, and (b) a limitation on trading imposed by reason of the movements in price exceeding the levels permitted by any relevant exchange will constitute a Market Disruption Event;

(ii) where the Index Exchange is the Stock Exchange, the occurrence of any severe weather condition or other event on any day which either (i) results in the Stock Exchange being closed for trading for the entire day; or (ii) results in the Stock Exchange being closed prior to its regular time for close of trading for the relevant day (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning trading session

only, closed prior to its regular time for close of trading for the morning session), PROVIDED THAT there shall be no Market Disruption Event solely by reason of the Stock Exchange opening for trading later than its regular time for opening of trading on any day as a result of such severe weather condition or other event;

(iii) a limitation or closure of the Index Exchange due to any unforeseen circumstances; or

(iv) any circumstances beyond the control of the Issuer in which the Closing Level or, if applicable, the Exchange Rate, the First Exchange Rate or the Second Exchange Rate (as the case may be) cannot be determined by the Issuer in the manner set out in these Conditions or in such other manner as the Issuer considers appropriate at such time after taking into account all the relevant circumstances.

"**Second Exchange Rate**" means the rate specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Currency**" means the currency specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Date**" means the third CCASS Settlement Day after the later of: (i) the Expiry Date; and (ii) the day on which the Closing Level is determined in accordance with the Conditions;

"**Stock Exchange**" means The Stock Exchange of Hong Kong Limited;

"**Strike Level**" means the level specified as such in the relevant Launch Announcement and Supplemental Listing Document; and

"**Valuation Date**" means the date specified in the relevant Launch Announcement and Supplemental Listing Document.

Trading in Warrants on the Stock Exchange shall cease prior to the Expiry Date in accordance with the requirements of the Stock Exchange.

Other capitalised terms shall, unless otherwise defined herein, bear the meaning ascribed to them in the Base Listing Document, the relevant Launch Announcement and Supplemental Listing Document or the Global Certificate.

3. Exercise of Warrants

(A) Warrants may only be exercised in Board Lots or integral multiples thereof.

(B) The Warrants will automatically be exercised on the Expiry Date, if the Issuer determines that the Cash Settlement Amount (calculated in accordance with these Conditions) is positive (without notice being given to the Warrantholders). The Warrantholders will not be required to deliver any exercise notice and the Issuer or its agent will pay to the Warrantholders the Cash Settlement Amount (if any) in accordance with Condition 3(E).

Any Warrant which has not been automatically exercised in accordance with this Condition 3(B) shall expire immediately thereafter and all rights of the Warrantholders and obligations of the Issuer with respect to such Warrant shall cease.

(C) Any Exercise Expenses which are not determined by the Issuer on the Expiry Date and deducted from the Cash Settlement Amount prior to delivery to the Warrantholders in accordance with this Condition 3, shall be notified by the Issuer to the Warrantholders as soon as practicable after determination thereof and shall be paid by the Warrantholders to the Issuer immediately upon demand.

(D) Subject to exercise of Warrants in accordance with these Conditions, or in the event that Warrants have expired worthless, the Issuer will, with effect from the first Business Day following the Expiry Date, remove the name of each Warrantholder from the register of Warrantholders in respect of such Warrants and thereby cancel the relevant Warrants and, if applicable, cancel the Global Certificate.

(E) Upon exercise of Warrants in accordance with these Conditions, the Issuer will pay the Cash Settlement Amount minus the determined Exercise Expenses to the relevant Warrantholder. If the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

The aggregate Cash Settlement Amount minus the determined aggregate Exercise Expenses shall be despatched no later than the Settlement Date, by crediting that amount, in accordance with the CCASS Rules, to the relevant bank account designated by a Warrantholder (the "**Designated Bank Account**").

If as a result of an event beyond the control of the Issuer ("**Settlement Disruption Event**"), it is not possible for the Issuer to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of a Warrantholder on the original Settlement Date, the Issuer shall use its reasonable endeavours to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Warrantholder as soon as reasonably practicable after the original Settlement Date. The Issuer will not be liable to the Warrantholder for any interest in respect of the amount due or any loss or damage that such Warrantholder may suffer as a result of the existence of a Settlement Disruption Event.

If the Issuer determines, in its sole discretion, that a Market Disruption Event has occurred on the Valuation Date, then the Issuer shall determine the Closing Level on the basis of its good faith estimate of the Closing Level that would have prevailed on that day but for the occurrence of the Market Disruption Event provided that the Issuer, if applicable, may, but shall not be obliged to, determine such Closing Level by having regard to the manner in which futures contracts relating to the Index are calculated.

(F) The Issuer's obligations to pay the Cash Settlement Amount shall be discharged by payment in accordance with Condition 3(E).

4. Sponsor

(A) The Sponsor will not assume any obligation or duty to or any relationship or agency or trust for the Warrantholders.

(B) The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the initial Sponsor and to appoint another agent provided that it will at all times maintain a sponsor in Hong Kong for so long as the Warrants are listed on the Stock Exchange. Notice of any such termination or appointment will be given to the Warrantholders in accordance with Condition 9.

5. Adjustments to the Index

(A) *Successor Index Compiler Calculates and Reports Index.* If the Index is (i) not calculated and announced by the Index Compiler but is calculated and published by a successor to the Index Compiler (the "**Successor Index Compiler**") acceptable to the Issuer or (ii) replaced by a successor index using, in the determination of the Issuer, the same or a substantially similar formula for and method of calculation as used in the calculation of the Index, then the Index will be deemed to be the index so calculated and announced by the Successor Index Compiler or that successor index, as the case may be.

(B) *Modification and Cessation of Calculation of Index.* If (i) on or prior to the Valuation Date the Index Compiler or (if applicable) the Successor Index Compiler makes a material change in the formula for or the method of calculating the Index or in any other way materially modifies the Index (other than a modification prescribed in that formula or method to maintain the Index in the event of changes in constituent securities, contracts or commodities and other routine events), or (ii) on the Valuation Date the Index Compiler or (if applicable) the Successor Index Compiler fails to calculate and publish the Index (other than as a result of a Market Disruption Event), then the Issuer shall determine the Closing Level using, in lieu of a published level for the Index, the level for the Index as at the Valuation Date as determined by the Issuer in accordance with the formula for and method of calculating the Index last in effect prior to that change or failure, but using only those securities, contracts or commodities that comprised the Index immediately prior to that change or failure (other than those securities that have since ceased to be listed on the relevant exchange).

(C) *Other Adjustments.* Without prejudice to and notwithstanding any prior adjustment(s) made pursuant to the applicable Conditions, the Issuer may (but shall not be obliged to) make such other adjustments to the terms and conditions of the Warrants as appropriate where any event (including the events as contemplated in the applicable Conditions) occurs and irrespective of, in substitution for, or in addition to the provisions contemplated in the applicable Conditions, provided that such adjustment is:

(i) not materially prejudicial to the interests of the Warrantholders generally (without considering the circumstances of any individual Warrantholder or the tax or other consequences of such adjustment in any particular jurisdiction); or

(ii) determined by the Issuer in good faith to be appropriate and commercially reasonable.

(D) *Notice of Adjustments.* All determinations made by the Issuer pursuant hereto will be conclusive and binding on the Warrantholders. 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 by publication in accordance with Condition 9.

6. Purchase

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

7. Global Certificate

A Global Certificate representing the Warrants will be deposited with CCASS in the name of HKSCC Nominees Limited. No definitive certificate will be issued.

8. Meetings of Warrantholders and Modification

(A) *Meetings of Warrantholders.* The Instrument contains provisions for convening meetings of the Warrantholders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Instrument) of a modification of the provisions of the Warrants or of the Instrument.

Any resolution to be passed in a meeting of the Warrantholders shall be decided by poll. Such a meeting may be convened by the Issuer or by Warrantholders holding not less than 10 per cent. of the Warrants 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 Warrants for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Warrantholders whatever the number of Warrants 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 Warrantholders who, being entitled to do so, vote in person or by proxy.

An Extraordinary Resolution passed at any meeting of the Warrantholders shall be binding on all the Warrantholders, whether or not they are present at the meeting.

Resolutions can be passed in writing without a meeting of the Warrantholders being held if passed unanimously.

(B) *Modification.* The Issuer may, without the consent of the Warrantholders, effect any modification of the terms and conditions of the Warrants or the Instrument which, in the opinion of the Issuer, is (i) not materially prejudicial to the interests of the Warrantholders generally (without considering the circumstances of any individual Warrantholder or the tax or other consequences of such modification in any particular jurisdiction); (ii) of a formal, minor or technical nature; (iii) made to correct a manifest error; or (iv) necessary in order to comply with mandatory provisions of the laws or regulations of Hong Kong. Any such modification shall be binding on the Warrantholders and shall be notified to them by the Issuer as soon as practicable thereafter in accordance with Condition 9.

9. Notices

All notices to the Warrantholders will be validly given if published in English and in Chinese on the HKEX website. In such circumstances, the Issuer shall not be required to despatch copies of the notice to the Warrantholders.

10. Further Issues

The Issuer shall be at liberty from time to time, without the consent of the Warrantholders, to create and issue further warrants so as to form a single series with the Warrants.

11. Illegality or Impracticability

The Issuer is entitled to terminate the Warrants if it determines in good faith and in a commercially reasonable manner that, for reasons beyond its control, it has become or it will become illegal or impracticable:

(i) for it to perform its obligations under the Warrants in whole or in part as a result of:

(a) the adoption of, or any change in, any relevant law or regulation (including any tax law); or

(b) the promulgation of, or any change in, the interpretation by any court, tribunal, governmental, administrative, legislative, regulatory or judicial authority or power with competent jurisdiction of any relevant law or regulation (including any tax law),

(each of (a) and (b), a "**Change in Law Event**"); or

(ii) for it or any of its affiliates to maintain the Issuer's hedging arrangements with respect to the Warrants due to a Change in Law Event.

Upon the occurrence of a Change in Law Event, the Issuer will, if and to the extent permitted by the applicable law or regulation, pay to each Warrantholder a cash amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value in respect of each Warrant held by such Warrantholder immediately prior to such termination (ignoring such illegality or impracticability) less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion. Payment will be made to each Warrantholder in such manner as shall be notified to the Warrantholder in accordance with Condition 9.

12. Good Faith and Commercially Reasonable Manner

Any exercise of discretion by the Issuer under these Conditions will be made in good faith and in a commercially reasonable manner.

13. Governing Law

The Warrants and the Instrument are governed by and construed in accordance with the laws of the Hong Kong Special Administrative Region of the People's Republic of China ("**Hong Kong**"). The Issuer and each Warrantholder (by its purchase of the Warrants) submit for all purposes in connection with the Warrants and the Instrument to the non-exclusive jurisdiction of the courts of Hong Kong.

14. Contracts (Rights of Third Parties) Ordinance

A person who is not a party to these Conditions has no right under the Contracts (Rights of Third Parties) Ordinance (Cap. 623 of the Laws of Hong Kong) to enforce or to enjoy the benefit of any term of the Warrants.

15. Language

In the event of any inconsistency between the Chinese translation and the English version of these Conditions, the English version of these Conditions shall prevail.

16. Prescription

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

Sponsor:
UBS Securities Asia Limited
52nd Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong

PART C — TERMS AND CONDITIONS OF CASH SETTLED WARRANTS OVER EXCHANGE TRADED FUND

These Conditions will, together with the supplemental provisions contained in the relevant Launch Announcement and Supplemental Listing Document, and subject to completion and amendment, be endorsed on the Global Certificate. The relevant Launch Announcement and Supplemental Listing Document in relation to the issue of any series of Warrants may specify other terms and conditions which shall, to the extent so specified or to the extent they are inconsistent with these Conditions, replace or modify these Conditions for the purpose of such series of Warrants.

1. Form, Status, Transfer, Title and Additional Costs and Expenses

(A) The Warrants (which expression shall, unless the context otherwise requires, include any further warrants issued pursuant to Condition 11) relating to the Units of the Fund are issued in registered form subject to and with the benefit of an instrument by way of deed poll (the "**Instrument**" as defined more fully in the relevant Launch Announcement and Supplemental Listing Document) executed by UBS AG (the "**Issuer**") acting through its London branch or any of its branches outside Switzerland as it may specify from time to time. The Warrantholders (as defined below) are entitled to the benefit of, are bound by, and are deemed to have notice of all the provisions of the Instrument. A copy of the Instrument is available for inspection at the offices of UBS Securities Asia Limited ("**Sponsor**") at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong.

The Warrants are represented by a global certificate ("**Global Certificate**") registered in the name of HKSCC Nominees Limited (or such other nominee company as may be used by Hong Kong Securities Clearing Company Limited ("**HKSCC**") from time to time in relation to the provision of nominee services to persons admitted for the time being by HKSCC as a participant of CCASS) (the "**Nominee**"). No definitive certificate will be issued. The Warrants can only be exercised by HKSCC or the Nominee.

(B) The settlement obligation of the Issuer in respect of the Warrants represents general unsecured contractual obligations of the Issuer and of no other person which rank, and will rank, equally among themselves and pari passu with all other present and future unsecured and unsubordinated contractual obligations of the Issuer, except for obligations accorded preference by mandatory provisions of applicable law.

Warrants represent general contractual obligations of the Issuer, and are not, nor is it the intention (expressed, implicit or otherwise) of the Issuer to create by the issue of Warrants deposit liabilities of the Issuer or a debt obligation of any kind.

(C) Transfers of Warrants may be effected only in Board Lots or integral multiples thereof in CCASS in accordance with the General Rules of CCASS and the CCASS Operational Procedures in effect from time to time (the "**CCASS Rules**").

(D) Each person who is for the time being shown in the register kept by the Issuer in Hong Kong as the holder shall be treated by the Issuer and the Sponsor as the absolute owner and holder of the Warrants. The expressions "**Warrantholder**" and "**Warrantholders**" shall be construed accordingly.

(E) Warrantholders are responsible for additional costs and expenses in connection with any exercise of the Warrants including the Exercise Expenses (as defined below) which amount shall, subject to Condition 2(B) and to the extent necessary, be payable to the Issuer and collected from the Warrantholders.

2. Warrant Rights and Exercise Expenses

(A) Every Board Lot entitles the Warrantholders, upon due exercise and upon compliance with these Conditions, in particular Condition 3, to payment of the Cash Settlement Amount (as defined below), if any.

(B) The Warrantholders will be required to pay a sum equal to all the expenses resulting from the exercise of such Warrants. To effect such payment an amount equivalent to the Exercise Expenses (defined below) shall be deducted from the Cash Settlement Amount in accordance with Condition 3(E).

(C) For the purposes of these Conditions:

"**Average Price**" means the arithmetic mean of the closing prices of one Unit (as derived from the Daily Quotation Sheet of the Stock Exchange, subject to any adjustment to such closing prices as may be necessary to reflect event as contemplated in Condition 5 such as capitalisation, rights issue, distribution or the like) in respect of each Valuation Date;

"**Board Lot**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Business Day**" means a day (excluding Saturdays) on which the Stock Exchange is scheduled to open for dealings in Hong Kong and banks are open for business in Hong Kong;

"**Cash Settlement Amount**" means, for every Board Lot, an amount in the Settlement Currency calculated by the Issuer in accordance with the following formula:

(i) In the case of a series of call Warrants:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Average Price - Exercise Price) x one Board Lot}}{\text{Number of Warrant(s) per Entitlement}}$$

(ii) In the case of a series of put Warrants:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Exercise Price - Average Price) x one Board Lot}}{\text{Number of Warrant(s) per Entitlement}}$$

For the avoidance of doubt, if the Cash Settlement Amount is a negative figure, it shall be deemed to be zero;

"**CCASS**" means the Central Clearing and Settlement System;

"**CCASS Settlement Day**" has the meaning ascribed to the term "Settlement Day" in the CCASS Rules, subject to such modification and amendment prescribed by HKSCC from time to time;

"**Entitlement**" means the number specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 5;

"**Exercise Expenses**" means any charges or expenses including any taxes or duties which are incurred in respect of the exercise of a Board Lot of Warrants;

"**Exercise Price**" means the price specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 5;

"**Expiry Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Fund**" means the exchange traded fund specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**HKEX**" means Hong Kong Exchanges and Clearing Limited;

"**Listing Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Market Disruption Event**" means:

(1) the occurrence or existence on any Valuation Date during the one-half hour period that ends at the close of trading of any suspension of or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the Stock Exchange or otherwise) on the Stock Exchange in (a) the Units; or (b) any options or futures contracts relating to the Units if, in any such case, such suspension or limitation is, in the determination of the Issuer, material;

(2) the occurrence of any severe weather condition or other event on any day which either (i) results in the Stock Exchange being closed for trading for the entire day; or (ii) results in the Stock Exchange being closed prior to its regular time for close of trading for the relevant day (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning trading session only, closed prior to its regular time for close of trading for the morning session), PROVIDED THAT there shall be no Market Disruption Event solely by reason of the Stock Exchange opening for trading later than its regular time for opening of trading on any day as a result of such severe weather condition or other event; or

(3) a limitation or closure of the Stock Exchange due to any unforeseen circumstances;

"**Settlement Currency**" means the currency specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Date**" means the third CCASS Settlement Day after the later of: (i) the Expiry Date; and (ii) the day on which the Average Price is determined in accordance with the Conditions;

"**Stock Exchange**" means The Stock Exchange of Hong Kong Limited;

"**Unit**" means the unit or share of the Fund specified as such in the relevant Launch Announcement and Supplemental Listing Document; and

"**Valuation Date**" means each of the five Business Days immediately preceding the Expiry Date, provided that if the Issuer determines, in its sole discretion, that a Market Disruption Event has occurred on any Valuation Date, then that Valuation Date shall be postponed until the first succeeding Business Day on which there is no Market Disruption Event irrespective of whether that postponed Valuation Date would fall on a Business Day that is already or is deemed to be a Valuation Date. For the avoidance of doubt, in the event that a Market Disruption Event has occurred and a Valuation Date is postponed as aforesaid, the closing price of the Units on the first succeeding Business Day will be used more than once in determining the Average Price, so that in no event shall there be less than five closing prices used to determine the Average Price.

If the postponement of the Valuation Date as aforesaid would result in the Valuation Date falling on or after the Expiry Date, then:

(a) the Business Day immediately preceding the Expiry Date (the "**Last Valuation Date**") shall be deemed to be the Valuation Date notwithstanding the Market Disruption Event; and

(b) the Issuer shall determine the closing price of the Units on the basis of its good faith estimate of the price that would have prevailed on the Last Valuation Date but for the Market Disruption Event.

Trading in Warrants on the Stock Exchange shall cease prior to the Expiry Date in accordance with the requirements of the Stock Exchange.

Other capitalized terms shall, unless otherwise defined herein, have the meaning ascribed to them in the Base Listing Document, the relevant Launch Announcement and Supplemental Listing Document or the Global Certificate.

3. Exercise of Warrants

(A) Warrants may only be exercised in Board Lots or integral multiples thereof.

(B) The Warrants will automatically be exercised on the Expiry Date, if the Issuer determines that the Cash Settlement Amount (calculated in accordance with these Conditions) is positive (without notice being given to the Warrantholders). The Warrantholders will not be required to deliver any exercise notice and the Issuer or its agent will pay to the Warrantholders the Cash Settlement Amount (if any) in accordance with Condition 3(E).

Any Warrant which has not been automatically exercised in accordance with this Condition 3(B) shall expire immediately thereafter and all rights of the Warrantholders and obligations of the Issuer with respect to such Warrant shall cease.

(C) Any Exercise Expenses which are not determined by the Issuer on the Expiry Date and deducted from the Cash Settlement Amount prior to delivery to the Warrantholders in accordance with this Condition 3, shall be notified by the Issuer to the Warrantholders as soon as practicable after determination thereof and shall be paid by the Warrantholders to the Issuer immediately upon demand.

(D) Subject to exercise of Warrants in accordance with these Conditions, or in the event that Warrants have expired worthless, the Issuer will, with effect from the first Business Day following the Expiry Date, remove the name of each Warrantholder from the register of Warrantholders in respect of such Warrants and thereby cancel the relevant Warrants and, if applicable, cancel the Global Certificate.

(E) Upon exercise of Warrants in accordance with these Conditions, the Issuer will pay the Cash Settlement Amount minus the determined Exercise Expenses to the relevant Warrantholder. If the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

The aggregate Cash Settlement Amount minus the determined aggregate Exercise Expenses shall be despatched no later than the Settlement Date, by crediting that amount, in accordance with the CCASS Rules, to the relevant bank account designated by each Warrantholder (the "**Designated Bank Account**").

If as a result of an event beyond the control of the Issuer ("**Settlement Disruption Event**"), it is not possible for the Issuer to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Warrantholder on the original Settlement Date, the

Issuer shall use its reasonable endeavours to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Warrantholder as soon as reasonably practicable after the original Settlement Date. The Issuer will not be liable to the Warrantholder for any interest in respect of the amount due or any loss or damage that such Warrantholder may suffer as a result of the existence of a Settlement Disruption Event.

(F) The Issuer's obligations to pay the Cash Settlement Amount shall be discharged by payment in accordance with Condition 3(E).

4. Sponsor

(A) The Sponsor will not assume any obligation or duty to or any relationship or agency or trust for the Warrantholders.

(B) The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the initial Sponsor and to appoint another sponsor provided that it will at all times maintain a sponsor in Hong Kong for so long as the Warrants are listed on the Stock Exchange. Notice of any such termination or appointment will be given to the Warrantholders in accordance with Condition 9.

5. Adjustments

(A) *Rights Issues.* If and whenever the Fund shall, by way of Rights (as defined below), offer new Units for subscription at a fixed subscription price to the holders of existing Units pro rata to existing holdings (a "**Rights Offer**"), the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Units becomes ex-entitlement ("**Rights Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{1 + M}{1 + (R/S) \times M}$$

E: Existing Entitlement immediately prior to the Rights Offer

S: Cum-Rights Unit price being the closing price of an existing Unit as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Units are traded on a Cum-Rights basis

R: Subscription price per new Unit specified in the Rights Offer plus an amount equal to any distributions or other benefits foregone to exercise the Right

M: Number of new Unit(s) (whether a whole or a fraction) per existing Unit each holder thereof is entitled to subscribe

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Exercise Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Exercise Price shall take effect on the Rights Issue Adjustment Date.

For the purposes of these Conditions:

"**Rights**" means the right(s) attached to each existing Unit or needed to acquire one new Unit (as the case may be) which are given to the holders of existing Units to subscribe at a fixed subscription price for new Units pursuant to the Rights Offer (whether by the exercise of one Right, a part of a Right or an aggregate number of Rights).

(B) *Bonus Issues.* If and whenever the Fund shall make an issue of Units credited as fully paid to the holders of Units generally (other than pursuant to a scrip distribution or similar scheme for the time being operated by the Fund or otherwise in lieu of a cash distribution and without any payment or other consideration being made or given by such holders) (a "**Bonus Issue**") the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Units becomes ex-entitlement ("**Bonus Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

Adjustment Component = (1 + N)

E: Existing Entitlement immediately prior to the Bonus Issue

N: Number of additional Units (whether a whole or a fraction) received by a holder of Units for each Unit held prior to the Bonus Issue

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Exercise Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Exercise Price shall take effect on the Bonus Issue Adjustment Date.

(C) *Subdivisions and Consolidations.* If and whenever the Fund shall subdivide its Units or any class of its outstanding Units into a greater number of units or shares (a "**Subdivision**") or consolidate the Units or any class of its outstanding Units into a smaller number of units or shares (a "**Consolidation**"), then:

(i) in the case of a Subdivision, the Entitlement in effect immediately prior thereto will be increased whereas the Exercise Price (which shall be rounded to the nearest 0.001) will be decreased in the same ratio as the Subdivision; and

(ii) in the case of a Consolidation, the Entitlement in effect immediately prior thereto will be decreased whereas the Exercise Price (which shall be rounded to the nearest 0.001) will be increased in the same ratio as the Consolidation,

in each case on the day on which the Subdivision or Consolidation (as the case may be) shall have taken effect.

(D) *Restructuring Events.* If it is announced that the Fund is to or may merge or consolidate with or into any other trust or corporation (including becoming, by agreement or otherwise, controlled by any person or corporation) (except where the Fund is the surviving entity in a merger) or that it is to, or may, sell or transfer all or substantially all of its assets, the rights attaching to the Warrants may in the absolute discretion of the Issuer be amended no later than the Business Day preceding the consummation of such merger, consolidation, sale or transfer (each a "**Restructuring Event**") (as determined by the Issuer in its absolute discretion) so that the

Warrants shall, after such Restructuring Event, relate to the number of units or shares of the trust(s) or corporation(s) resulting from or surviving such Restructuring Event or other securities ("**Substituted Securities**") and/or cash offered in substitution for the affected Units, as the case may be, to which the holder of such number of Units to which the Warrants related immediately before such Restructuring Event would have been entitled upon such Restructuring Event, and thereafter the provisions hereof shall apply to such Substituted Securities, provided that any Substituted Securities may, in the absolute discretion of the Issuer, be deemed to be replaced by an amount in the relevant currency equal to the market value or, if no market value is available, fair value, of such Substituted Securities in each case as determined by the Issuer as soon as practicable after such Restructuring Event is effected. For the avoidance of doubt, any remaining Units shall not be affected by this paragraph and, where cash is offered in substitution for Units or is deemed to replace Substituted Securities as described above, references in these Conditions to the Units shall include any such cash.

(E) *Cash Distribution.* No adjustment will be made for an ordinary cash distribution (whether or not it is offered with a scrip alternative) ("**Ordinary Distribution**"). For any other forms of cash distribution ("**Cash Distribution**") announced by the Fund, such as a cash bonus, special distribution or extraordinary distribution, no adjustment will be made unless the value of the Cash Distribution accounts for 2 per cent. or more of the Unit's closing price on the day of announcement by the Fund.

If and whenever the Fund shall make a Cash Distribution credited as fully paid to the holders of Units generally, the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Units becomes ex-entitlement in respect of the relevant Cash Distribution ("**Distribution Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{S - OD}{S - OD - CD}$$

E: The existing Entitlement immediately prior to the Cash Distribution

S: Cum-Cash Distribution Unit price being the closing price of an existing Unit as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Units are traded on a cum-Cash Distribution basis

CD: The Cash Distribution per Unit

OD: The Ordinary Distribution per Unit, provided that the Ordinary Distribution and the Cash Distribution have the same ex-entitlement date. For avoidance of doubt, the OD shall be zero if the Ordinary Distribution and the Cash Distribution have different ex-entitlement dates

In addition, the Issuer shall adjust the Exercise Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Exercise Price shall take effect on the Distribution Adjustment Date.

(F) *Other Adjustments.* Without prejudice to and notwithstanding any prior adjustment(s) made pursuant to the applicable Conditions, the Issuer may (but shall not be obliged to) make such

other adjustments to the terms and conditions of the Warrants as appropriate where any event (including the events as contemplated in the applicable Conditions) occurs and irrespective of, in substitution for, or in addition to the provisions contemplated in the applicable Conditions, provided that such adjustment is:

(i) not materially prejudicial to the interests of the Warrantholders generally (without considering the circumstances of any individual Warrantholder or the tax or other consequences of such adjustment in any particular jurisdiction); or

(ii) determined by the Issuer in good faith to be appropriate and commercially reasonable.

(G) *Notice of Adjustments*. All determinations made by the Issuer pursuant hereto will be conclusive and binding on the Warrantholders. 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 by publication in accordance with Condition 9.

6. Purchase

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

7. Global Certificate

A Global Certificate representing the Warrants will be deposited with CCASS in the name of HKSCC Nominees Limited. No definitive certificate will be issued.

8. Meetings of Warrantholders and Modification

(A) *Meetings of Warrantholders.* The Instrument contains provisions for convening meetings of the Warrantholders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Instrument) of a modification of the provisions of the Warrants or of the Instrument.

Any resolution to be passed in a meeting of the Warrantholders shall be decided by poll. A meeting may be convened by the Issuer or by Warrantholders holding not less than 10 per cent. of the Warrants 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 Warrants for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Warrantholders whatever the number of Warrants 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 Warrantholders who, being entitled to do so, vote in person or by proxy.

An Extraordinary Resolution passed at any meeting of the Warrantholders shall be binding on all the Warrantholders, whether or not they are present at the meeting.

Resolutions can be passed in writing without a meeting of the Warrantholders being held if passed unanimously.

(B) *Modification.* The Issuer may, without the consent of the Warrantholders, effect any modification of the terms and conditions of the Warrants or the Instrument which, in the opinion of the Issuer, is (i) not materially prejudicial to the interests of the Warrantholders generally (without

considering the circumstances of any individual Warrantholder or the tax or other consequences of such modification in any particular jurisdiction); (ii) of a formal, minor or technical nature; (iii) made to correct a manifest error; or (iv) necessary in order to comply with mandatory provisions of the laws or regulations of Hong Kong. Any such modification shall be binding on the Warrantholders and shall be notified to them by the Issuer as soon as practicable thereafter in accordance with Condition 9.

9. Notices

All notices to the Warrantholders will be validly given if published in English and in Chinese on the HKEX website. In such circumstances, the Issuer shall not be required to despatch copies of the notice to the Warrantholders.

10. Termination or Liquidation

In the event of a Termination or the liquidation or dissolution of the Fund or, if applicable, the trustee of the Fund (including any successor trustee appointed from time to time) ("**Trustee**") (in its capacity as trustee of the Fund) or the appointment of a liquidator, receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of the Fund's or the Trustee's (as the case may be) undertaking, property or assets, all unexercised Warrants will lapse and shall cease to be valid for any purpose. In the case of a Termination, the unexercised Warrants will lapse and shall cease to be valid on the effective date of the Termination, in the case of a voluntary liquidation, the unexercised Warrants will lapse and shall cease to be valid 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 or receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of such Fund's or Trustee's (as the case may be) 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.

For the purpose of this Condition 10, "**Termination**" means (i) the Fund is terminated or required to be terminated for whatever reason, or the termination of the Fund commences; (ii) where applicable, the Fund is held or is conceded by the Trustee or the manager of the Fund (including any successor manager appointed from time to time) not to have been constituted or to have been imperfectly constituted; (iii) where applicable, the Trustee ceases to be authorised under the Fund to hold the property of the Fund in its name and perform its obligations under the trust deed constituting the Fund; or (iv) the Fund ceases to be authorised as an authorised collective investment scheme under the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong).

11. Further Issues

The Issuer shall be at liberty from time to time, without the consent of the Warrantholders, to create and issue further warrants so as to form a single series with the Warrants.

12. Delisting

(A) If at any time the Units cease to be listed on the 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 Warrants 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 Warrantholders generally are not materially prejudiced as a consequence of such delisting (without considering the circumstances of any individual Warrantholder or the tax or other consequences that may result in any particular jurisdiction).

(B) Without prejudice to the generality of Condition 12(A), where the Units are, or, upon the delisting, become, listed on any other stock exchange, these Conditions may, in the absolute discretion of the Issuer, be amended to the extent necessary to allow for the substitution of that other stock exchange in place of the Stock Exchange and the Issuer may, without the consent of the Warrantholders, make such adjustments to the entitlements of the Warrantholders on exercise (including, if appropriate, by converting foreign currency amounts at prevailing market rates into the relevant currency) as may be appropriate in the circumstances.

(C) The Issuer shall determine, in its absolute discretion, any adjustment or amendment and its determination shall be conclusive and binding on the Warrantholders save in the case of manifest error. Notice of any adjustments or amendments shall be given to the Warrantholders in accordance with Condition 9 as soon as practicable after they are determined.

13. Illegality or Impracticability

The Issuer is entitled to terminate the Warrants if it determines in good faith and in a commercially reasonable manner that, for reasons beyond its control, it has become or it will become illegal or impracticable:

(i) for it to perform its obligations under the Warrants in whole or in part as a result of:

(a) the adoption of, or any change in, any relevant law or regulation (including any tax law); or

(b) the promulgation of, or any change in, the interpretation by any court, tribunal, governmental, administrative, legislative, regulatory or judicial authority or power with competent jurisdiction of any relevant law or regulation (including any tax law),

(each of (a) and (b), a "**Change in Law Event**"); or

(ii) for it or any of its affiliates to maintain the Issuer's hedging arrangements with respect to the Warrants due to a Change in Law Event.

Upon the occurrence of a Change in Law Event, the Issuer will, if and to the extent permitted by the applicable law or regulation, pay to each Warrantholder a cash amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value in respect of each Warrant held by such Warrantholder immediately prior to such termination (ignoring such illegality or impracticability) less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion. Payment will be made to each Warrantholder in such manner as shall be notified to the Warrantholder in accordance with Condition 9.

14. Good Faith and Commercially Reasonable Manner

Any exercise of discretion by the Issuer under these Conditions will be made in good faith and in a commercially reasonable manner.

15. Governing Law

The Warrants and the Instrument are governed by and construed in accordance with the laws of the Hong Kong Special Administrative Region of the People's Republic of China ("**Hong Kong**"). The Issuer and each Warrantholder (by its purchase of the Warrants) submit for all purposes in connection with the Warrants and the Instrument to the non-exclusive jurisdiction of the courts of Hong Kong.

16. Contracts (Rights of Third Parties) Ordinance

A person who is not a party to these Conditions has no right under the Contracts (Rights of Third Parties) Ordinance (Cap. 623 of the Laws of Hong Kong) to enforce or to enjoy the benefit of any term of the Warrants.

17. Language

In the event of any inconsistency between the Chinese translation and the English version of these Conditions, the English version of these Conditions shall prevail.

18. Prescription

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

Sponsor:
UBS Securities Asia Limited
52nd Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong

APPENDIX 2 — TERMS AND CONDITIONS OF CBBCs

The following pages set out the Conditions in respect of different types of CBBCs.

PAGE

PART A — TERMS AND CONDITIONS OF CASH SETTLED CALLABLE BULL/BEAR CONTRACTS OVER SINGLE EQUITIES

These Conditions will, together with the supplemental provisions contained in the relevant Launch Announcement and Supplemental Listing Document, and subject to completion and amendment, be endorsed on the Global Certificate. The relevant Launch Announcement and Supplemental Listing Document in relation to the issue of any series of CBBCs may specify other terms and conditions which shall, to the extent so specified or to the extent they are inconsistent with these Conditions, replace or modify these Conditions for the purpose of such series of CBBCs.

1. Form, Status, Transfer, Title and Additional Costs and Expenses

(A) The CBBCs (which expression shall, unless the context otherwise requires, include any further CBBCs issued pursuant to Condition 12) relating to the Shares of the Company are issued in registered form subject to and with the benefit of an instrument by way of deed poll (the "**Instrument**" as defined more fully in the relevant Launch Announcement and Supplemental Listing Document) executed by UBS AG (the "**Issuer**") acting through its London branch or any of its branches outside Switzerland as it may specify from time to time. The 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 Instrument. A copy of the Instrument is available for inspection at the offices of UBS Securities Asia Limited ("**Sponsor**") at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong.

The CBBCs are represented by a global certificate ("**Global Certificate**") registered in the name of HKSCC Nominees Limited (or such other nominee company as may be used by Hong Kong Securities Clearing Company Limited ("**HKSCC**") from time to time in relation to the provision of nominee services to persons admitted for the time being by HKSCC as a participant of CCASS) (the "**Nominee**"). No definitive certificate will be issued. The CBBCs can only be exercised by HKSCC or the Nominee.

(B) The settlement obligation of the Issuer in respect of the CBBCs represents general unsecured contractual obligations of the Issuer and of no other person which rank, and will rank, equally among themselves and pari passu with all other present and future unsecured and unsubordinated contractual obligations of the Issuer, except for obligations accorded preference by mandatory provisions of applicable law.

CBBCs represent general contractual obligations of the Issuer, and are not, nor is it the intention (expressed, implicit or otherwise) of the Issuer to create by the issue of CBBCs deposit liabilities of the Issuer or a debt obligation of any kind.

(C) Transfers of CBBCs may be effected only in Board Lots or integral multiples thereof in CCASS in accordance with the General Rules of CCASS and the CCASS Operational Procedures in effect from time to time (the "**CCASS Rules**").

(D) Each person who is for the time being shown in the register kept by the Issuer in Hong Kong as the holder shall be treated by the Issuer and the Sponsor as the absolute owner and holder of the CBBCs. The expressions "**Holder**" and "**Holders**" shall be construed accordingly.

(E) Holders are responsible for additional costs and expenses in connection with any exercise of the CBBCs including the Exercise Expenses (as defined below) which amount shall, subject to Condition 4(G) and to the extent necessary, be payable to the Issuer and collected from the Holders.

2. Definitions

For the purposes of these Conditions:

"**Board Lot**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Business Day**" means a day (excluding Saturdays) on which the Stock Exchange is scheduled to open for dealings in Hong Kong and banks are open for business in Hong Kong;

"**Call Price**" means the price specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 6;

"**Cash Settlement Amount**" means, for every Board Lot, an amount in the Settlement Currency calculated by the Issuer in accordance with the following formula:

(i) following a Mandatory Call Event:

(a) in the case of a series of Category R CBBCs, the Residual Value; or

(b) in the case of a series of Category N CBBCs, zero.

(ii) at expiry:

(a) in the case of a series of bull CBBCs:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Closing Price - Strike Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

(b) in the case of a series of bear CBBCs:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Strike Price - Closing Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

For the avoidance of doubt, if the Cash Settlement Amount is a negative figure, it shall be deemed to be zero;

"**Category N CBBCs**" means a series of CBBCs where the Call Price is equal to the Strike Price;

"**Category R CBBCs**" means a series of CBBCs where the Call Price is different from the Strike Price;

"**CCASS**" means the Central Clearing and Settlement System;

"**CCASS Settlement Day**" has the meaning ascribed to the term "Settlement Day" in the CCASS Rules, subject to such modification and amendment prescribed by HKSCC from time to time;

"**Closing Price**" means the closing price of one Share (as derived from the Daily Quotation Sheet of the Stock Exchange, subject to any adjustment to such closing price as may be necessary to reflect any event as contemplated in Condition 6 such as capitalisation, rights issue, distribution or the like) on the Valuation Date;

"**Company**" means the company specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Entitlement**" means the number specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 6;

"**Exercise Expenses**" means any charges or expenses including any taxes or duties which are incurred in respect of the exercise of a Board Lot of CBBCs;

"**Expiry Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Listing Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Mandatory Call Event**" occurs when the Spot Price of the Shares on any Trading Day during the Observation Period is:

(i) in the case of a series of bull CBBCs, at or below the Call Price; or

(ii) in the case of a series of bear CBBCs, at or above the Call Price;

"**Market Disruption Event**" means:

(1) the occurrence or existence on any Trading Day during the one-half hour period that ends at the close of trading of any suspension of or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the Stock Exchange or otherwise) on the Stock Exchange in (a) the Shares; or (b) any options or futures contracts relating to the Shares if, in any such case, such suspension or limitation is, in the determination of the Issuer, material;

(2) the occurrence of any severe weather condition or other event on any day which either (i) results in the Stock Exchange being closed for trading for the entire day; or (ii) results in the Stock Exchange being closed prior to its regular time for close of trading for the relevant day (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning trading session only, closed prior to its regular time for close of trading for the morning session), PROVIDED THAT there shall be no Market Disruption Event solely by reason of the Stock Exchange opening for trading later than its regular time for opening of trading on any day as a result of such severe weather condition or other event; or

(3) a limitation or closure of the Stock Exchange due to any unforeseen circumstances;

"**Maximum Trade Price**" means the highest Spot Price of the Shares (subject to any adjustment to such Spot Price as may be necessary to reflect any event as contemplated in Condition 6 such as capitalisation, rights issue, distribution or the like) during the MCE Valuation Period;

"**MCE Valuation Period**" means the period commencing from and including the moment upon which the Mandatory Call Event occurs (the trading session during which the Mandatory Call Event occurs is the "**1st Session**") and up to the end of the trading session on the Stock Exchange immediately following the 1st Session ("**2nd Session**") unless, in the determination of the Issuer in its good faith, the 2nd Session for any reason (including, without limitation, a Market Disruption Event occurring and subsisting in the 2nd Session) does not contain any continuous period of 1 hour or more than 1 hour during which trading in the Shares is permitted on the Stock Exchange with no limitation imposed, the MCE Valuation Period shall be extended to the end of the subsequent trading session following the 2nd Session during which trading in the Shares is permitted on the Stock Exchange with no limitation imposed for a continuous period of at least 1 hour notwithstanding the existence or continuance of a Market Disruption Event in such postponed trading session, unless the Issuer determines in its good faith that each trading session on each of the four Trading Days immediately following the date on which the Mandatory Call

Event occurs does not contain any continuous period of 1 hour or more than 1 hour during which trading in the Shares is permitted on the Stock Exchange with no limitation imposed. In that case:

(i) the period commencing from the 1st Session up to, and including, the last trading session on the Stock Exchange of the fourth Trading Day immediately following the date on which the Mandatory Call Event occurs shall be deemed to be the MCE Valuation Period; and

(ii) the Issuer shall determine the Maximum Trade Price or the Minimum Trade Price (as the case may be) having regard to the then prevailing market conditions, the last reported Spot Price and such other factors as the Issuer may determine to be relevant in its good faith.

For the avoidance of doubt, all Spot Prices available throughout the extended MCE Valuation Period shall be taken into account to determine the Maximum Trade Price or the Minimum Trade Price (as the case may be) for the calculation of the Residual Value.

For the purposes of this definition,

(a) the pre-opening session, the morning session and, in the case of half day trading, the closing auction session (if any) of the same day; and

(b) the afternoon session and the closing auction session (if any) of the same day,

shall each be considered as one trading session only;

"**Minimum Trade Price**" means the lowest Spot Price of the Shares (subject to any adjustment to such Spot Price as may be necessary to reflect any event as contemplated in Condition 6 such as capitalisation, rights issue, distribution or the like) during the MCE Valuation Period;

"**Observation Commencement Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Observation Period**" means the period commencing from and including the Observation Commencement Date and ending on and including the Trading Day immediately preceding the Expiry Date;

"**Post MCE Trades**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document, subject to such modification and amendment prescribed by the Stock Exchange from time to time;

"**Residual Value**" means, for every Board Lot, an amount in the Settlement Currency calculated by the Issuer in accordance with the following formula:

(i) in the case of a series of bull CBBCs:

$$\text{Residual Value per Board Lot} = \frac{\text{Entitlement x (Minimum Trade Price - Strike Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

(ii) in the case of a series of bear CBBCs:

$$\text{Residual Value per Board Lot} = \frac{\text{Entitlement x (Strike Price - Maximum Trade Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

"**Settlement Currency**" means the currency specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Date**" means the third CCASS Settlement Day after (i) the end of the MCE Valuation Period or (ii) the later of: (a) the Expiry Date; and (b) the day on which the Closing Price is determined in accordance with the Conditions (as the case may be);

"**Share**" means the share specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Spot Price**" means:

(a) in respect of a continuous trading session of the Stock Exchange, the price per Share concluded by means of automatic order matching on the Stock Exchange as reported in the official real-time dissemination mechanism for the Stock Exchange during such continuous trading session in accordance with the Trading Rules, excluding direct business (as defined in the Trading Rules); and

(b) in respect of a pre-opening session or a closing auction session (if applicable) of the Stock Exchange, as the case may be, the final Indicative Equilibrium Price (as defined in the Trading Rules) of the Share (if any) calculated at the end of the pre-order matching period of such pre-opening session or closing auction session (if applicable), as the case may be, in accordance with the Trading Rules, excluding direct business (as defined in the Trading Rules),

subject to such modification and amendment prescribed by the Stock Exchange from time to time;

"**Stock Exchange**" means The Stock Exchange of Hong Kong Limited;

"**Strike Price**" means the price specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 6;

"**Trading Day**" means any day on which the Stock Exchange is scheduled to open for trading for its regular trading sessions;

"**Trading Rules**" means the Rules and Regulations of the Exchange prescribed by the Stock Exchange from time to time; and

"**Valuation Date**" means the Trading Day immediately preceding the Expiry Date unless, in the determination of the Issuer, a Market Disruption Event has occurred on that day in which case, the Valuation Date shall be the first succeeding Trading Day on which the Issuer determines that there is no Market Disruption Event, unless the Issuer determines that there is a Market Disruption Event occurring on each of the four Trading Days immediately following the original date which (but for the Market Disruption Event) would have been the Valuation Date. In that case:

(a) the fourth Trading Day immediately following the original date shall be deemed to be the Valuation Date (regardless of the Market Disruption Event); and

(b) the Issuer shall determine the Closing Price having regard to the then prevailing market conditions, the last reported trading price of the Share on the Stock Exchange and such other factors as the Issuer determines to be relevant.

Other capitalized terms shall, unless otherwise defined herein, have the meaning ascribed to them in the Base Listing Document, any addendum to the Base Listing Document, the relevant Launch Announcement and Supplemental Listing Document or the Global Certificate.

3. Hedging Disruption and Illegality or Impracticability

(A) Hedging Disruption

(i) *Notification.* The Issuer shall as soon as reasonably practicable give notice to the Holders in accordance with Condition 10:

(1) if it determines that a Hedging Disruption Event has occurred; and

(2) of the consequence of such Hedging Disruption Event as determined by the Issuer pursuant to Condition 3(A)(iii).

(ii) *Hedging Disruption Event.* A "**Hedging Disruption Event**" occurs if the Issuer determines in good faith and in a commercially reasonable manner that it is or has become not reasonably practicable or it has otherwise become undesirable, for any reason, for the Issuer wholly or partially to establish, re-establish, substitute or maintain a relevant hedging transaction (a "**Relevant Hedging Transaction**") it deems necessary or desirable to hedge the Issuer's obligations in respect of the CBBCs. The reasons for such determination by the Issuer may include, but are not limited to, the following:

(1) any material illiquidity in the market for the Shares;

(2) a change in any applicable law (including, without limitation, any tax law) or the promulgation of, or change in, the interpretation of any court, tribunal or regulatory authority with competent jurisdiction of any applicable law (including any action taken by a taxing authority);

(3) a material decline in the creditworthiness of a party with whom the Issuer has entered into any such Relevant Hedging Transaction; or

(4) the general unavailability of:

(A) market participants who will agree to enter into a Relevant Hedging Transaction; or

(B) market participants who will so enter into a Relevant Hedging Transaction on commercially reasonable terms.

(iii) *Consequences.* The Issuer, in the event of a Hedging Disruption Event, may determine to:

(1) terminate the CBBCs. In such circumstances the Issuer will, however, if and to the extent permitted by the applicable law, pay to each Holder in respect of each CBBC held by such Holder an amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value of the CBBC immediately prior to such termination less the cost to the Issuer of unwinding any related hedging arrangements. Payment will be made to the Holder in such manner as shall be notified to the Holder in accordance with Condition 10; or

(2) make any other adjustment to the Conditions as it considers appropriate in order to maintain the theoretical value of the CBBCs after adjusting for the relevant Hedging Disruption Event.

(B) Illegality or Impracticability

The Issuer is entitled to terminate the CBBCs if it determines in good faith and in a commercially reasonable manner that, for reasons beyond its control, it has become or it will become illegal or impracticable:

(i) for it to perform its obligations under the CBBCs in whole or in part as a result of:

(1) the adoption of, or any change in, any relevant law or regulation (including any tax law); or

(2) the promulgation of, or any change in, the interpretation by any court, tribunal, governmental, administrative, legislative, regulatory or judicial authority or power with competent jurisdiction of any relevant law or regulation (including any tax law),

(each of (1) and (2), a "**Change in Law Event**"); or

(ii) for it or any of its affiliates to maintain the Issuer's hedging arrangements with respect to the CBBCs due to a Change in Law Event.

Upon the occurrence of a Change in Law Event, the Issuer will, if and to the extent permitted by the applicable law or regulation, pay to each Holder a cash amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value in respect of each CBBC held by such Holder immediately prior to such termination (ignoring such illegality or impracticability) less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion. Payment will be made to each Holder in such manner as shall be notified to the Holder in accordance with Condition 10.

4. Exercise of CBBCs

(A) CBBCs may only be exercised in Board Lots or integral multiples thereof.

(B) If no Mandatory Call Event has occurred during the Observation Period, the CBBCs will be deemed to be automatically exercised on the Expiry Date.

(C) Mandatory Call Event

(i) Subject to paragraph (ii) below, following a Mandatory Call Event, the CBBCs will terminate automatically and the Issuer shall have no further obligation under the CBBCs except for the payment of the Cash Settlement Amount (if any) following the Mandatory Call Event on the relevant Settlement Date. The Issuer will give notice to the Holders in accordance with Condition 10. Trading in the CBBCs will be suspended immediately upon the occurrence of a Mandatory Call Event and all Post MCE Trades will be cancelled and will not be recognised by the Issuer or the Stock Exchange.

Revocation

(ii) A Mandatory Call Event is irrevocable unless it is triggered as a result of any of the following events:

(1) system malfunction or other technical errors of Hong Kong Exchanges and Clearing Limited ("**HKEX**") (such as the setting up of wrong Call Price and other parameters); or

(2) manifest errors caused by the relevant third party price source where applicable;

and

(A) in the case of a system malfunction or other technical errors prescribed in paragraph (1) above, such event is reported by the Stock Exchange to the Issuer and the Issuer and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked; and

(B) in the case of an error by the relevant price source prescribed in paragraph (2) above, such event is reported by the Issuer to the Stock Exchange and the Issuer and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked,

in each case, such mutual agreement must be reached no later than 30 minutes before the commencement of trading (including the pre-opening session) (Hong Kong time) on the Trading Day of the Stock Exchange immediately following the day on which the Mandatory Call Event occurs or such other time frame as prescribed by the Stock Exchange from time to time.

(D) Every Board Lot of CBBCs entitles the Holder to receive from the Issuer on the Settlement Date the Cash Settlement Amount (if any).

(E) Any Exercise Expenses which are not determined by the Issuer by the Business Day after the MCE Valuation Period or the Expiry Date (as the case may be) and deducted from the Cash Settlement Amount prior to delivery to the Holders in accordance with this Condition 4, shall be notified by the Issuer to the Holders as soon as practicable after determination thereof and shall be paid by the Holders to the Issuer immediately upon demand.

(F) In the event that the CBBCs have been exercised or have expired worthless, the Issuer will, with effect from the first Business Day following the MCE Valuation Period or the Expiry Date, as the case may be, remove the name of each Holder from the register of Holders in respect of such CBBCs and thereby cancel the relevant CBBCs and, if applicable, cancel the Global Certificate.

(G) Upon exercise following a Mandatory Call Event or on the Expiry Date in accordance with these Conditions, the Issuer will pay the Cash Settlement Amount minus the determined Exercise Expenses to the relevant Holder. If the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

The aggregate Cash Settlement Amount minus the determined aggregate Exercise Expenses shall be despatched no later than the Settlement Date, by crediting that amount, in accordance with the CCASS Rules, to the relevant bank account designated by each Holder (the "**Designated Bank Account**").

If as a result of an event beyond the control of the Issuer ("**Settlement Disruption Event**"), it is not possible for the Issuer to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Holder on the original Settlement Date, the Issuer shall use its reasonable endeavours to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Holder as soon as reasonably practicable after the original Settlement Date. The Issuer will not be liable to the Holder for any interest in respect of the amount due or any loss or damage that such Holder may suffer as a result of the existence of a Settlement Disruption Event.

(H) None of the Issuer, the Sponsor or their respective agents shall have any responsibility for any errors or omissions in the calculation and dissemination of any variables published by a third party and used in any calculation made pursuant to these Conditions or in the calculation of the Cash Settlement Amount arising from such errors or omissions.

The purchase of CBBCs does not confer on any Holder of such CBBCs any rights (whether in respect of voting, distributions or otherwise) in relation to the Shares.

(I) Exercise and settlement of the CBBCs is subject to all applicable laws, rules, regulations and guidelines in force at the relevant time and neither the Issuer nor the Sponsor shall incur any liability whatsoever if it is unable to effect the transactions contemplated, after using all reasonable efforts, as a result of any such laws, rules, regulations or guidelines. Neither the Issuer nor the Sponsor shall under any circumstances be liable for any acts or defaults of the CCASS in relation to the performance of its duties in relation to the CBBCs.

(J) Subject to Condition 4(C)(ii), trading in CBBCs on the Stock Exchange shall cease (i) immediately upon the occurrence of a Mandatory Call Event or (ii) at the close of trading for the Trading Day immediately preceding the Expiry Date (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning session only, at the close of trading for the morning session), whichever is the earlier. All Post MCE Trades will be invalid and will be cancelled, and will not be recognised by the Issuer or the Stock Exchange.

5. Sponsor

(A) The Sponsor will not assume any obligation or duty to or any relationship or agency or trust for the Holders.

(B) The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the initial Sponsor and to appoint another sponsor provided that it will at all times maintain a sponsor in Hong Kong for so long as the CBBCs are listed on the Stock Exchange. Notice of any such termination or appointment will be given to the Holders in accordance with Condition 10.

6. Adjustments

(A) *Rights Issues.* If and whenever the Company shall, by way of Rights (as defined below), offer new Shares for subscription at a fixed subscription price to the holders of existing Shares pro rata to existing holdings (a "**Rights Offer**"), the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Shares becomes ex-entitlement ("**Rights Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{1 + M}{1 + (R/S) \times M}$$

E: Existing Entitlement immediately prior to the Rights Offer

S: Cum-Rights Share price being the closing price of an existing Share as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Shares are traded on a Cum-Rights basis

R: Subscription price per new Share specified in the Rights Offer plus an amount equal to any dividends or other benefits foregone to exercise the Right

M: Number of new Share(s) (whether a whole or a fraction) per existing Share each holder thereof is entitled to subscribe

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Strike Price and/or the Call Price shall take effect on the Rights Issue Adjustment Date.

For the purposes of these Conditions:

"**Rights**" means the right(s) attached to each existing Share or needed to acquire one new Share (as the case may be) which are given to the holders of existing Shares to subscribe at a fixed subscription price for new Shares pursuant to the Rights Offer (whether by the exercise of one Right, a part of a Right or an aggregate number of Rights).

(B) *Bonus Issues.* If and whenever the Company shall make an issue of Shares credited as fully paid to the holders of Shares generally by way of capitalisation of profits or reserves (other than pursuant to a scrip dividend or similar scheme for the time being operated by the Company or otherwise in lieu of a cash dividend and without any payment or other consideration being made or given by such holders) (a "**Bonus Issue**") the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Shares becomes ex-entitlement ("**Bonus Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

Adjustment Component = (1 + N)

E: Existing Entitlement immediately prior to the Bonus Issue

N: Number of additional Shares (whether a whole or a fraction) received by a holder of Shares for each Share held prior to the Bonus Issue

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Strike Price and/or the Call Price shall take effect on the Bonus Issue Adjustment Date.

(C) *Subdivisions and Consolidations.* If and whenever the Company shall subdivide its Shares or any class of its outstanding share capital comprised of the Shares into a greater number of shares (a "**Subdivision**") or consolidate the Shares or any class of its outstanding share capital comprised of the Shares into a smaller number of shares (a "**Consolidation**"), then:

(i) in the case of a Subdivision, the Entitlement in effect immediately prior thereto will be increased whereas the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) will be decreased in the same ratio as the Subdivision; and

(ii) in the case of a Consolidation, the Entitlement in effect immediately prior thereto will be decreased whereas the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) will be increased in the same ratio as the Consolidation,

in each case on the day on which the Subdivision or Consolidation (as the case may be) shall have taken effect.

(D) *Restructuring Events.* If it is announced that the Company is to or may merge or consolidate with or into any other corporation (including becoming, by agreement or otherwise, a subsidiary of or controlled by any person or corporation) (except where the Company is the surviving corporation in a merger) or that it is to or may sell or transfer all or substantially all of its assets, the rights attaching to the CBBCs may in the absolute discretion of the Issuer be amended no later than the Business Day preceding the consummation of such merger, consolidation, sale or transfer (each a "**Restructuring Event**") (as determined by the Issuer in its absolute discretion) so that the CBBCs shall, after such Restructuring Event, relate to the number of shares of the corporation(s) resulting from or surviving such Restructuring Event or other securities ("**Substituted Securities**") and/or cash offered in substitution for the affected Shares, as the case may be, to which the holder of such number of Shares to which the CBBCs related immediately before such Restructuring Event would have been entitled upon such Restructuring Event, and thereafter the provisions hereof shall apply to such Substituted Securities, provided that any Substituted Securities may, in the absolute discretion of the Issuer, be deemed to be replaced by an amount in the relevant currency equal to the market value or, if no market value is available, fair value, of such Substituted Securities in each case as determined by the Issuer as soon as practicable after such Restructuring Event is effected. For the avoidance of doubt, any remaining Shares shall not be affected by this paragraph and, where cash is offered in substitution for Shares or is deemed to replace Substituted Securities as described above, references in these Conditions to the Shares shall include any such cash.

(E) *Cash Distribution.* No adjustment will be made for an ordinary cash dividend (whether or not it is offered with a scrip alternative) ("**Ordinary Dividend**"). For any other forms of cash distribution ("**Cash Distribution**") announced by the Company, such as a cash bonus, special dividend or extraordinary dividend, no adjustment will be made unless the value of the Cash Distribution accounts for 2 per cent. or more of the Share's closing price on the day of announcement by the Company.

If and whenever the Company shall make a Cash Distribution credited as fully paid to the holders of Shares generally, the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Shares becomes ex-entitlement in respect of the Cash Distribution ("**Distribution Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{S - OD}{S - OD - CD}$$

E: The existing Entitlement immediately prior to the Cash Distribution

S: Cum-Cash Distribution Share price being the closing price of an existing Share as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Shares are traded on a cum-Cash Distribution basis

CD: The Cash Distribution per Share

OD: The Ordinary Dividend per Share, provided that the Ordinary Dividend and the Cash Distribution have the same ex-entitlement date. For avoidance of doubt, the OD shall be zero if the Ordinary Dividend and the Cash Distribution have different ex-entitlement dates

In addition, the Issuer shall adjust the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Strike Price and/or the Call Price shall take effect on the Distribution Adjustment Date.

(F) *Other Adjustments.* Without prejudice to and notwithstanding any prior adjustment(s) made pursuant to the applicable Conditions, the Issuer may (but shall not be obliged to) make such other adjustments to the terms and conditions of the CBBCs as appropriate where any event (including the events as contemplated in the applicable Conditions) occurs and irrespective of, in substitution for, or in addition to the provisions contemplated in the applicable Conditions, provided that such adjustment is:

(i) not materially prejudicial to the interests of the Holders generally (without considering the circumstances of any individual Holder or the tax or other consequences of such adjustment in any particular jurisdiction); or

(ii) determined by the Issuer in good faith to be appropriate and commercially reasonable.

(G) *Notice of Adjustments.* All determinations made by the Issuer pursuant hereto will be conclusive and binding on the 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 by publication in accordance with Condition 10.

7. Purchase

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

8. Global Certificate

A Global Certificate representing the CBBCs will be deposited with CCASS in the name of HKSCC Nominees Limited. No definitive certificate will be issued.

9. Meetings of Holders and Modification

(A) *Meetings of Holders.* The Instrument contains provisions for convening meetings of the Holders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Instrument) of a modification of the provisions of the CBBCs or of the Instrument.

Any resolution to be passed in a meeting of the Holders shall be decided by poll. A meeting may be convened by the Issuer or by Holders holding not less than 10 per cent. of the CBBCs 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 CBBCs for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Holders whatever the number of CBBCs 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 Holders who, being entitled to do so, vote in person or by proxy.

An Extraordinary Resolution passed at any meeting of the Holders shall be binding on all the Holders, whether or not they are present at the meeting.

Resolutions can be passed in writing without a meeting of the Holders being held if passed unanimously.

(B) *Modification.* The Issuer may, without the consent of the Holders, effect any modification of the terms and conditions of the CBBCs or the Instrument which, in the opinion of the Issuer, is (i) not materially prejudicial to the interests of the Holders generally (without considering the circumstances of any individual Holder or the tax or other consequences of such modification in any particular jurisdiction); (ii) of a formal, minor or technical nature; (iii) made to correct a manifest error; or (iv) necessary in order to comply with mandatory provisions of the laws or regulations of Hong Kong. Any such modification shall be binding on the Holders and shall be notified to them by the Issuer as soon as practicable thereafter in accordance with Condition 10.

10. Notices

All notices to the Holders will be validly given if published in English and in Chinese on the HKEX website. In such circumstances, the Issuer shall not be required to despatch copies of the notice to the Holders.

11. Liquidation

In the event of a liquidation, winding up or dissolution of the Company or the appointment of a liquidator, receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of the undertaking, property or assets of the Company (each an "**Insolvency Event**"), all unexercised CBBCs shall terminate automatically upon the occurrence of any Insolvency Event and the Issuer shall have no further obligation under the CBBCs, except that in the case of a series of bear CBBCs:

(i) if the Issuer determines in good faith and in a commercially reasonable manner that there is any residual value in the bear CBBCs upon the occurrence of such Insolvency Event:

(a) the Issuer shall pay to each Holder the residual value of the bear CBBCs in cash representing the fair market value in respect of each bear CBBC held by such Holder on or about the occurrence of such Insolvency Event less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion, acting in good faith and in a commercially reasonable manner. Payment will be made to each Holder in such manner as shall be notified to the Holders in accordance with Condition 10; and

(b) the Issuer may, but shall not be obliged to, determine such cash amount by having regard to the manner in which the options contracts or futures contracts of the Shares traded on the Stock Exchange are calculated;

(ii) otherwise, if the Issuer determines in good faith and in a commercially reasonable manner that there is no residual value in the bear CBBCs upon the occurrence of such Insolvency Event, the bear CBBCs shall lapse and cease to be valid for any purpose upon the occurrence of such Insolvency Event.

For the purpose of this Condition 11, an Insolvency Event occurs:

(a) in the case of a voluntary liquidation or winding up of the Company, on the effective date of the relevant resolution; or

(b) in the case of an involuntary liquidation, winding up or dissolution of the Company, on the date of the relevant court order; or

(c) in the case of the appointment of a liquidator or receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of the undertaking, property or assets of the Company, on the date when such appointment is effective but subject (in any such case) to any contrary mandatory requirement of the applicable law.

12. Further Issues

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

13. Delisting

(A) If at any time the Shares cease to be listed on the 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 CBBCs 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 Holders generally are not materially prejudiced as a consequence of such delisting (without considering the circumstances of any individual Holder or the tax or other consequences that may result in any particular jurisdiction).

(B) Without prejudice to the generality of Condition 13(A), where the Shares are, or, upon the delisting, become, listed on any other stock exchange, these Conditions may, in the absolute discretion of the Issuer, be amended to the extent necessary to allow for the substitution of that other stock exchange in place of the Stock Exchange and the Issuer may, without the consent of the Holders, make such adjustments to the entitlements of the Holders on exercise (including, if appropriate, by converting foreign currency amounts at prevailing market rates into the relevant currency) as may be appropriate in the circumstances.

(C) The Issuer shall determine, in its absolute discretion, any adjustment or amendment and its determination shall be conclusive and binding on the Holders save in the case of manifest error. Notice of any adjustments or amendments shall be given to the Holders in accordance with Condition 10 as soon as practicable after they are determined.

14. Good Faith and Commercially Reasonable Manner

Any exercise of discretion by the Issuer under these Conditions will be made in good faith and in a commercially reasonable manner.

15. Governing Law

The CBBCs and the Instrument are governed by and construed in accordance with the laws of the Hong Kong Special Administrative Region of the People's Republic of China ("**Hong Kong**"). The Issuer and each Holder (by its purchase of the CBBCs) submit for all purposes in connection with the CBBCs and the Instrument to the non-exclusive jurisdiction of the courts of Hong Kong.

16. Contracts (Rights of Third Parties) Ordinance

A person who is not a party to these Conditions has no right under the Contracts (Rights of Third Parties) Ordinance (Cap. 623 of the Laws of Hong Kong) to enforce or to enjoy the benefit of any term of the CBBCs.

17. Language

In the event of any inconsistency between the Chinese translation and the English version of these Conditions, the English version of these Conditions shall prevail.

18. Prescription

Claims against the Issuer for payment of any amount in respect of the CBBCs will become void unless made within ten years after the MCE Valuation Period or the Expiry Date (as the case may be) and thereafter, any sums payable in respect of such CBBCs shall be forfeited and shall revert to the Issuer.

Sponsor:
UBS Securities Asia Limited
52nd Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong

PART B — TERMS AND CONDITIONS OF CASH SETTLED CALLABLE BULL/BEAR CONTRACTS OVER AN INDEX

These Conditions will, together with the supplemental provisions contained in the relevant Launch Announcement and Supplemental Listing Document, and subject to completion and amendment, be endorsed on the Global Certificate. The relevant Launch Announcement and Supplemental Listing Document in relation to the issue of any series of CBBCs may specify other terms and conditions which shall, to the extent so specified or to the extent they are inconsistent with these Conditions, replace or modify these Conditions for the purpose of such series of CBBCs.

1. Form, Status, Transfer, Title and Additional Costs and Expenses

(A) The CBBCs (which expression shall, unless the context otherwise requires, include any further CBBCs issued pursuant to Condition 11) relating to the Index are issued in registered form subject to and with the benefit of an instrument by way of deed poll (the "**Instrument**" as defined more fully in the relevant Launch Announcement and Supplemental Listing Document) executed by UBS AG (the "**Issuer**") acting through its London branch or any of its branches outside Switzerland as it may specify from time to time. The 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 Instrument. A copy of the Instrument is available for inspection at UBS Securities Asia Limited ("**Sponsor**") at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong.

The CBBCs are represented by a global certificate ("**Global Certificate**") registered in the name of HKSCC Nominees Limited (or such other nominee company as may be used by Hong Kong Securities Clearing Company Limited ("**HKSCC**") from time to time in relation to the provision of nominee services to persons admitted for the time being by HKSCC as a participant of CCASS) (the "**Nominee**"). No definitive certificate will be issued. The CBBCs can only be exercised by HKSCC or the Nominee.

(B) The settlement obligation of the Issuer in respect of the CBBCs represents general unsecured contractual obligations of the Issuer and of no other person which rank, and will rank, equally among themselves and pari passu with all other present and future unsecured and unsubordinated contractual obligations of the Issuer, except for obligations accorded preference by mandatory provisions of applicable law.

CBBCs represent general contractual obligations of the Issuer, and are not, nor is it the intention (expressed, implicit or otherwise) of the Issuer to create by the issue of CBBCs deposit liabilities of the Issuer or a debt obligation of any kind.

(C) Transfers of CBBCs may be effected only in Board Lots or integral multiples thereof in CCASS in accordance with the General Rules of CCASS and the CCASS Operational Procedures in effect from time to time (the "**CCASS Rules**").

(D) Each person who is for the time being shown in the register kept by the Issuer in Hong Kong as the holder shall be treated by the Issuer and the Sponsor as the absolute owner and holder of the CBBCs. The expressions "**Holder**" and "**Holders**" shall be construed accordingly.

(E) Holders are responsible for additional costs and expenses in connection with any exercise of the CBBCs including the Exercise Expenses (as defined below) which amount shall, subject to Condition 4(G) and to the extent necessary, be payable to the Issuer and collected from the Holders.

2. Definitions

For the purposes of these Conditions:

"**Board Lot**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Business Day**" means a day (excluding Saturdays) on which the Stock Exchange is scheduled to open for dealings in Hong Kong and banks are open for business in Hong Kong;

"**Call Level**" means the level specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 6;

"**Cash Settlement Amount**" means, for every Board Lot, an amount calculated by the Issuer in accordance with the following formula (and, if appropriate, either (i) converted (if applicable) into the Settlement Currency at the Exchange Rate or, as the case may be, (ii) converted into the Interim Currency at the First Exchange Rate and then (if applicable) converted into Settlement Currency at the Second Exchange Rate):

(i) following a Mandatory Call Event:

(a) in the case of a series of Category R CBBCs, the Residual Value; or

(b) in the case of a series of Category N CBBCs, zero.

(ii) at expiry:

(a) in the case of a series of bull CBBCs:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{(Closing Level - Strike Level) x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

(b) in the case of a series of bear CBBCs:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{(Strike Level - Closing Level) x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

For the avoidance of doubt, if the Cash Settlement Amount is a negative figure, it shall be deemed to be zero;

"**Category N CBBCs**" means a series of CBBCs where the Call Level is equal to the Strike Level;

"**Category R CBBCs**" means a series of CBBCs where the Call Level is different from the Strike Level;

"**CCASS**" means the Central Clearing and Settlement System;

"**CCASS Settlement Day**" has the meaning ascribed to the term "Settlement Day" in the CCASS Rules, subject to such modification and amendment prescribed by HKSCC from time to time;

"**Closing Level**" means the level specified as such in the relevant Launch Announcement and Supplemental Listing Document subject to any adjustment in accordance with Condition 6;

"**Divisor**" means the number specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Exchange Rate**" means the rate specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Exercise Expenses**" means any charges or expenses including any taxes or duties which are incurred in respect of the exercise of a Board Lot of CBBCs;

"**Expiry Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**First Exchange Rate**" means the rate specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Index**" means the index specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Index Business Day**" means any day on which the Index Exchange is scheduled to open for trading for its regular trading sessions;

"**Index Compiler**" means the index compiler specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Index Currency Amount**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Index Exchange**" means the index exchange specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Interim Currency**" means the currency specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Listing Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Mandatory Call Event**" occurs when the Spot Level of the Index is, at any time on any Index Business Day during the Observation Period:

(a) in the case of a series of bull CBBCs, at or below the Call Level; or

(b) in the case of a series of bear CBBCs, at or above the Call Level;

"**Market Disruption Event**" means:

(i) the occurrence or existence, on any Trading Day or Index Business Day during the one-half hour period that ends at the close of trading on the Index Exchange, of any of:

    (1) the suspension or material limitation of the trading of a material number of constituent securities that comprise the Index;

    (2) the suspension or material limitation of the trading of options or futures contracts relating to the Index on any exchanges on which such contracts are traded; or

    (3) the imposition of any exchange controls in respect of any currencies involved in determining the Cash Settlement Amount.

    For the purposes of this paragraph (i), (a) the limitation of the number of hours or days of trading will not constitute a Market Disruption Event if it results from an announced change in the regular business hours of any relevant exchange, and (b) a limitation on trading imposed by reason of the movements in price exceeding the levels permitted by any relevant exchange will constitute a Market Disruption Event;

(ii) where the Index Exchange is the Stock Exchange, the occurrence of any severe weather condition or other event on any day which either (i) results in the Stock Exchange being closed for trading for the entire day; or (ii) results in the Stock Exchange being closed prior to its regular time for close of trading for the relevant day (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning trading session

only, closed prior to its regular time for close of trading for the morning session), PROVIDED THAT there shall be no Market Disruption Event solely by reason of the Stock Exchange opening for trading later than its regular time for opening of trading on any day as a result of such severe weather condition or other event;

(iii) a limitation or closure of the Index Exchange due to any unforeseen circumstances; or

(iv) any circumstances beyond the control of the Issuer in which the Closing Level or, if applicable, the Exchange Rate, the First Exchange Rate or the Second Exchange Rate (as the case may be) cannot be determined by the Issuer in the manner set out in these Conditions or in such other manner as the Issuer considers appropriate at such time after taking into account all the relevant circumstances.

"**Maximum Index Level**" means the highest Spot Level of the Index during the MCE Valuation Period;

"**MCE Valuation Period**" means the period commencing from and including the moment upon which the Mandatory Call Event occurs (the trading session during which the Mandatory Call Event occurs is the "**1st Session**") and up to the end of the trading session on the Index Exchange immediately following the 1st Session ("**2nd Session**") unless, in the determination of the Issuer in its good faith, the 2nd Session for any reason (including, without limitation, a Market Disruption Event occurring and subsisting in the 2nd Session) does not contain any continuous period of 1 hour or more than 1 hour during which Spot Levels are available, the MCE Valuation Period shall be extended to the end of the subsequent trading session on the Index Exchange following the 2nd Session during which Spot Levels are available for a continuous period of at least 1 hour notwithstanding the existence or continuance of a Market Disruption Event in such postponed trading session, unless the Issuer determines in its good faith that each trading session on each of the four Index Business Days immediately following the date on which the Mandatory Call Event occurs does not contain any continuous period of 1 hour or more than 1 hour during which Spot Levels are available. In that case:

(i) the period commencing from the 1st Session up to, and including, the last trading session of the fourth Index Business Day on the Index Exchange immediately following the date on which the Mandatory Call Event occurs shall be deemed to be the MCE Valuation Period; and

(ii) the Issuer shall determine the Maximum Index Level or the Minimum Index Level (as the case may be) having regard to the then prevailing market conditions, the last reported Spot Level of the Index and such other factors as the Issuer may determine to be relevant in its good faith.

For the avoidance of doubt, all Spot Levels available throughout the extended MCE Valuation Period shall be taken into account to determine the Maximum Index Level or the Minimum Index Level (as the case may be) for the calculation of the Residual Value.

For the purposes of this definition,

(a) the pre-opening session, the morning session and, in the case of half day trading, the closing auction session (if any) of the same day; and

(b) the afternoon session and the closing auction session (if any) of the same day, shall each be considered as one trading session only;

"**Minimum Index Level**" means the lowest Spot Level of the Index during the MCE Valuation Period;

"**Observation Commencement Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Observation Period**" means the period commencing from and including the Observation Commencement Date and ending on and including the Trading Day immediately preceding the Expiry Date;

"**Post MCE Trades**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document, subject to such modification and amendment prescribed by the Stock Exchange from time to time;

"**Residual Value**" means, for every Board Lot, an amount calculated by the Issuer in accordance with the following formula (and, if appropriate, either (a) converted (if applicable) into the Settlement Currency at the Exchange Rate or, as the case may be, (b) converted into the Interim Currency at the First Exchange Rate and then (if applicable) converted into Settlement Currency at the Second Exchange Rate):

(i) in the case of a series of bull CBBCs:

$$\text{Residual Value per Board Lot} = \frac{\text{(Minimum Index Level - Strike Level) x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

(ii) in the case of a series of bear CBBCs:

$$\text{Residual Value per Board Lot} = \frac{\text{(Strike Level - Maximum Index Level) x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

"**Second Exchange Rate**" means the rate specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Currency**" means the currency specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Date**" means the third CCASS Settlement Day after (i) the end of the MCE Valuation Period or (ii) the later of: (a) the Expiry Date; and (b) the day on which the Closing Level is determined in accordance with the Conditions (as the case may be);

"**Spot Level**" means the spot level of the Index as compiled and published by the Index Compiler;

"**Stock Exchange**" means The Stock Exchange of Hong Kong Limited;

"**Strike Level**" means the level specified as such in the relevant Launch Announcement and Supplemental Listing Document subject to any adjustment in accordance with Condition 6;

"**Trading Day**" means any day on which the Stock Exchange is scheduled to open for trading for its regular trading sessions; and

"**Valuation Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document.

Other capitalised terms shall, unless otherwise defined herein, bear the meaning ascribed to them in the Base Listing Document, any addendum to the Base Listing Document, the relevant Launch Announcement and Supplemental Listing Document or the Global Certificate.

3. Hedging Disruption and Illegality or Impracticability

(A) Hedging Disruption

(i) *Notification.* The Issuer shall as soon as reasonably practicable give notice to the Holders in accordance with Condition 10:

(1) if it determines that a Hedging Disruption Event has occurred; and

(2) of the consequence of such Hedging Disruption Event as determined by the Issuer pursuant to Condition 3(A)(iii).

(ii) *Hedging Disruption Event.* A "**Hedging Disruption Event**" occurs if the Issuer determines in good faith and in a commercially reasonable manner that it is or has become not reasonably practicable or it has otherwise become undesirable, for any reason, for the Issuer wholly or partially (a) to establish, re-establish, substitute or maintain a relevant hedging transaction (including, without limitation, any hedging transaction with respect to options or futures relating to the Index, or any currency in which the components of the Index are denominated) (a "**Relevant Hedging Transaction**") it deems necessary or desirable to hedge the Issuer's obligations in respect of the CBBCs or (b) to freely realize, recover, receive, repatriate, remit or transfer the proceeds of the Relevant Hedging Transactions between accounts within the jurisdiction of the Relevant Hedging Transactions (the "**Affected Jurisdiction**") or from accounts within the Affected Jurisdiction to accounts outside of the Affected Jurisdiction. The reasons for such determination by the Issuer may include, but are not limited to, the following:

(1) any material illiquidity in the market for the components of the Index;

(2) a change in any applicable law (including, without limitation, any tax law) or the promulgation of, or change in, the interpretation of any court, tribunal or regulatory authority with competent jurisdiction of any applicable law (including any action taken by a taxing authority);

(3) a material decline in the creditworthiness of a party with whom the Issuer has entered into any such Relevant Hedging Transaction; or

(4) the general unavailability of:

(A) market participants who will agree to enter into a Relevant Hedging Transaction; or

(B) market participants who will so enter into a Relevant Hedging Transaction on commercially reasonable terms.

(iii) *Consequences.* The Issuer, in the event of a Hedging Disruption Event, may determine to:

(1) terminate the CBBCs. In such circumstances the Issuer will, however, if and to the extent permitted by the applicable law, pay to each Holder in respect of each CBBC held by such Holder an amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value of the CBBC immediately prior to such termination less the cost to the Issuer of unwinding any related hedging arrangements. Payment will be made to the Holder in such manner as shall be notified to the Holder in accordance with Condition 10; or

(2) make any other adjustment to the Conditions as it considers appropriate in order to maintain the theoretical value of the CBBCs after adjusting for the relevant Hedging Disruption Event.

(B) Illegality or Impracticability

The Issuer is entitled to terminate the CBBCs if it determines in good faith and in a commercially reasonable manner that, for reasons beyond its control, it has become or it will become illegal or impracticable:

(i) for it to perform its obligations under the CBBCs in whole or in part as a result of:

(1) the adoption of, or any change in, any relevant law or regulation (including any tax law); or

(2) the promulgation of, or any change in, the interpretation by any court, tribunal, governmental, administrative, legislative, regulatory or judicial authority or power with competent jurisdiction of any relevant law or regulation (including any tax law),

(each of (1) and (2), a "**Change in Law Event**"); or

(ii) for it or any of its affiliates to maintain the Issuer's hedging arrangements with respect to the CBBCs due to a Change in Law Event.

Upon the occurrence of a Change in Law Event, the Issuer will, if and to the extent permitted by the applicable law or regulation, pay to each Holder a cash amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value in respect of each CBBC held by such Holder immediately prior to such termination (ignoring such illegality or impracticability) less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion. Payment will be made to each Holder in such manner as shall be notified to the Holder in accordance with Condition 10.

4. Exercise of CBBCs

(A) CBBCs may only be exercised in Board Lots or integral multiples thereof.

(B) If no Mandatory Call Event has occurred during the Observation Period, the CBBCs will be deemed to be automatically exercised on the Expiry Date.

(C) Mandatory Call Event

(i) Subject to paragraph (ii) below, following a Mandatory Call Event, the CBBCs will terminate automatically and the Issuer shall have no further obligation under the CBBCs except for the payment of the Cash Settlement Amount (if any) following the Mandatory Call Event on the relevant Settlement Date. The Issuer will give notice to the Holders in accordance with Condition 10. Trading in the CBBCs will be suspended immediately upon the occurrence of a Mandatory Call Event and any Post MCE Trades will be cancelled and will not be recognised by the Issuer or the Stock Exchange.

Revocation

(ii) A Mandatory Call Event is irrevocable unless it is triggered as a result of any of the following events:

(1) system malfunction or other technical errors of Hong Kong Exchanges and Clearing Limited ("**HKEX**") (such as the setting up of wrong Call Level and other parameters); or

(2) manifest errors caused by the relevant third party price source where applicable (such as miscalculation of the index level by the relevant index compiler);

and

(A) in the case of a system malfunction or other technical errors prescribed in paragraph (1) above, such event is reported by the Stock Exchange to the Issuer and the Issuer and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked; and

(B) in the case of an error by the relevant price source prescribed in paragraph (2) above, such event is reported by the Issuer to the Stock Exchange and the Issuer and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked,

and in each case, such mutual agreement must be reached no later than 30 minutes before the commencement of trading (including the pre-opening session) (Hong Kong time) on the Trading Day of the Stock Exchange immediately following the day on which the Mandatory Call Event occurs or such other time frame as prescribed by the Stock Exchange from time to time.

(D) Every Board Lot of CBBCs entitles the Holder to receive from the Issuer on the Settlement Date the Cash Settlement Amount (if any).

(E) Any Exercise Expenses which are not determined by the Issuer by the Business Day after the MCE Valuation Period or the Expiry Date (as the case may be) and deducted from the Cash Settlement Amount prior to delivery to the Holders in accordance with this Condition 4, shall be notified by the Issuer to the Holders as soon as practicable after determination thereof and shall be paid by the Holders to the Issuer immediately upon demand.

(F) In the event that the CBBCs have been exercised or have expired worthless, the Issuer will, with effect from the first Business Day following the MCE Valuation Period or Expiry Date, as the case may be, remove the name of each Holder from the register of Holders in respect of such CBBCs and thereby cancel the relevant CBBCs and, if applicable, cancel the Global Certificate.

(G) Upon exercise following a Mandatory Call Event or on the Expiry Date in accordance with these Conditions, the Issuer will pay the Cash Settlement Amount minus the determined Exercise Expenses to the relevant Holder. If the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

The aggregate Cash Settlement Amount minus the determined aggregate Exercise Expenses shall be despatched no later than the Settlement Date, by crediting that amount, in accordance with the CCASS Rules, to the relevant bank account designated by a Holder (the "**Designated Bank Account**").

If as a result of an event beyond the control of the Issuer ("**Settlement Disruption Event**"), it is not possible for the Issuer to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of a Holder on the original Settlement Date, the Issuer shall use its reasonable endeavours to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Holder as soon as reasonably practicable after the original Settlement Date. The Issuer will not be liable to the Holder for any interest in respect of the amount due or any loss or damage that such Holder may suffer as a result of the existence of a Settlement Disruption Event.

If the Issuer determines, in its sole discretion, that a Market Disruption Event has occurred on the Valuation Date, then the Issuer shall determine the Closing Level on the basis of its good faith estimate of the Closing Level that would have prevailed on that day but for the occurrence of the Market Disruption Event provided that the Issuer may, if applicable, but shall not be obliged to, determine such Closing Level by having regard to the manner in which futures contracts relating to the Index are calculated.

(H) None of the Issuer, the Sponsor or their respective agents shall have any responsibility for any errors or omissions in the calculation and dissemination of any variables published by a third party and used in any calculation made pursuant to these Conditions or in the calculation of the Cash Settlement Amount arising from such errors or omissions.

The purchase of CBBCs does not confer on any Holder of such CBBCs any rights (whether in respect of voting, distributions or otherwise) in relation to the constituent securities, contracts, commodities or currencies comprising the Index.

(I) Exercise and settlement of the CBBCs is subject to all applicable laws, rules, regulations and guidelines in force at the relevant time and neither the Issuer nor the Sponsor shall incur any liability whatsoever if it is unable to effect the transactions contemplated, after using all reasonable efforts, as a result of any such laws, rules, regulations or guidelines. Neither the Issuer nor the Sponsor shall under any circumstances be liable for any acts or defaults of the CCASS in relation to the performance of its duties in relation to the CBBCs.

(J) Subject to Condition 4(C)(ii), trading in CBBCs on the Stock Exchange shall cease (i) immediately upon the occurrence of a Mandatory Call Event or (ii) at the close of trading for the Trading Day immediately preceding the Expiry Date (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning session only, at the close of trading for the morning session), whichever is the earlier. All Post MCE Trades will be invalid and will be cancelled, and will not be recognised by the Issuer or the Stock Exchange.

5. Sponsor

(A) The Sponsor will not assume any obligation or duty to or any relationship or agency or trust for the Holders.

(B) The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the initial Sponsor and to appoint another agent provided that it will at all times maintain a sponsor in Hong Kong for so long as the CBBCs are listed on the Stock Exchange. Notice of any such termination or appointment will be given to the Holders in accordance with Condition 10.

6. Adjustments to the Index

(A) *Successor Index Compiler Calculates and Reports Index.* If the Index is (i) not calculated and announced by the Index Compiler but is calculated and published by a successor to the Index Compiler (the "**Successor Index Compiler**") acceptable to the Issuer or (ii) replaced by a successor index using, in the determination of the Issuer, the same or a substantially similar formula for and method of calculation as used in the calculation of the Index, then the Index will be deemed to be the index so calculated and announced by the Successor Index Compiler or that successor index, as the case may be.

(B) *Modification and Cessation of Calculation of Index.* If (i) on or prior to the Valuation Date the Index Compiler or (if applicable) the Successor Index Compiler makes a material change in the formula for or the method of calculating the Index or in any other way materially modifies the Index (other than a modification prescribed in that formula or method to maintain the Index in the event of changes in constituent securities, contracts, commodities or currencies and other routine events), or (ii) on the Valuation Day the Index Compiler or (if applicable) the Successor Index Compiler fails to calculate and publish the Index (other than as a result of a Market Disruption Event), then the Issuer shall determine the Closing Level using, in lieu of a published level for the Index, the level for the Index as at that Index Business Day as determined by the Issuer in accordance with the formula for and method of calculating the Index last in effect prior to that change or failure, but using only those securities, contracts, commodities or currencies that comprised the Index immediately prior to that change or failure (other than those securities that have since ceased to be listed on the relevant exchange).

(C) *Other Adjustments.* Without prejudice to and notwithstanding any prior adjustment(s) made pursuant to the applicable Conditions, the Issuer may (but shall not be obliged to) make such other adjustments to the terms and conditions of the CBBCs as appropriate where any event (including the events as contemplated in the applicable Conditions) occurs and irrespective of, in substitution for, or in addition to the provisions contemplated in the applicable Conditions, provided that such adjustment is:

(i) not materially prejudicial to the interests of the Holders generally (without considering the circumstances of any individual Holder or the tax or other consequences of such adjustment in any particular jurisdiction); or

(ii) determined by the Issuer in good faith to be appropriate and commercially reasonable.

(D) *Notice of Adjustments.* All determinations made by the Issuer pursuant hereto will be conclusive and binding on the 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 by publication in accordance with Condition 10.

7. Purchase

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

8. Global Certificate

A Global Certificate representing the CBBCs will be deposited with CCASS in the name of HKSCC Nominees Limited. No definitive certificate will be issued.

9. Meetings of Holders and Modification

(A) *Meetings of Holders.* The Instrument contains provisions for convening meetings of the Holders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Instrument) of a modification of the provisions of the CBBCs or of the Instrument.

Any resolution to be passed in a meeting of the Holders shall be decided by poll. Such a meeting may be convened by the Issuer or by Holders holding not less than 10 per cent. of the CBBCs 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 CBBCs for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Holders whatever the number of CBBCs 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 Holders who, being entitled to do so, vote in person or by proxy.

An Extraordinary Resolution passed at any meeting of the Holders shall be binding on all the Holders, whether or not they are present at the meeting.

Resolutions can be passed in writing without a meeting of the Holders being held if passed unanimously.

(B) *Modification.* The Issuer may, without the consent of the Holders, effect any modification of the terms and conditions of the CBBCs or the Instrument which, in the opinion of the Issuer, is (i) not materially prejudicial to the interests of the Holders generally (without considering the circumstances of any individual Holder or the tax or other consequences of such modification in any particular jurisdiction); (ii) of a formal, minor or technical nature; (iii) made to correct a manifest error; or (iv) necessary in order to comply with mandatory provisions of the laws or regulations of Hong Kong. Any such modification shall be binding on the Holders and shall be notified to them by the Issuer as soon as practicable thereafter in accordance with Condition 10.

10. Notices

All notices to the Holders will be validly given if published in English and in Chinese on the HKEX website. In such circumstances, the Issuer shall not be required to despatch copies of the notice to the Holders.

11. Further Issues

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

12. Good Faith and Commercially Reasonable Manner

Any exercise of discretion by the Issuer under these Conditions will be made in good faith and in a commercially reasonable manner.

13. Governing Law

The CBBCs and the Instrument are governed by and construed in accordance with the laws of the Hong Kong Special Administrative Region of the People's Republic of China ("**Hong Kong**"). The Issuer and each Holder (by its purchase of the CBBCs) submit for all purposes in connection with the CBBCs and the Instrument to the non-exclusive jurisdiction of the courts of Hong Kong.

14. Contracts (Rights of Third Parties) Ordinance

A person who is not a party to these Conditions has no right under the Contracts (Rights of Third Parties) Ordinance (Cap. 623 of the Laws of Hong Kong) to enforce or to enjoy the benefit of any term of the CBBCs.

15. Language

In the event of any inconsistency between the Chinese translation and the English version of these Conditions, the English version of these Conditions shall prevail.

16. Prescription

Claims against the Issuer for payment of any amount in respect of the CBBCs will become void unless made within ten years after the MCE Valuation Period or the Expiry Date (as the case may be) and thereafter, any sums payable in respect of such CBBCs shall be forfeited and shall revert to the Issuer.

Sponsor:
UBS Securities Asia Limited
52nd Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong

PART C — TERMS AND CONDITIONS OF CASH SETTLED CALLABLE BULL/BEAR CONTRACTS OVER EXCHANGE TRADED FUND

These Conditions will, together with the supplemental provisions contained in the relevant Launch Announcement and Supplemental Listing Document, and subject to completion and amendment, be endorsed on the Global Certificate. The relevant Launch Announcement and Supplemental Listing Document in relation to the issue of any series of CBBCs may specify other terms and conditions which shall, to the extent so specified or to the extent they are inconsistent with these Conditions, replace or modify these Conditions for the purpose of such series of CBBCs.

1. Form, Status, Transfer, Title and Additional Costs and Expenses

(A) The CBBCs (which expression shall, unless the context otherwise requires, include any further CBBCs issued pursuant to Condition 12) relating to the Units of the Fund are issued in registered form subject to and with the benefit of an instrument by way of deed poll (the "**Instrument**" as defined more fully in the relevant Launch Announcement and Supplemental Listing Document) executed by UBS AG (the "**Issuer**") acting through its London branch or any of its branches outside Switzerland as it may specify from time to time. The 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 Instrument. A copy of the Instrument is available for inspection at the offices of UBS Securities Asia Limited ("**Sponsor**") at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong.

The CBBCs are represented by a global certificate ("**Global Certificate**") registered in the name of HKSCC Nominees Limited (or such other nominee company as may be used by Hong Kong Securities Clearing Company Limited ("**HKSCC**") from time to time in relation to the provision of nominee services to persons admitted for the time being by HKSCC as a participant of CCASS) (the "**Nominee**"). No definitive certificate will be issued. The CBBCs can only be exercised by HKSCC or the Nominee.

(B) The settlement obligation of the Issuer in respect of the CBBCs represents general unsecured contractual obligations of the Issuer and of no other person which rank, and will rank, equally among themselves and pari passu with all other present and future unsecured and unsubordinated contractual obligations of the Issuer, except for obligations accorded preference by mandatory provisions of applicable law.

CBBCs represent general contractual obligations of the Issuer, and are not, nor is it the intention (expressed, implicit or otherwise) of the Issuer to create by the issue of CBBCs deposit liabilities of the Issuer or a debt obligation of any kind.

(C) Transfers of CBBCs may be effected only in Board Lots or integral multiples thereof in CCASS in accordance with the General Rules of CCASS and the CCASS Operational Procedures in effect from time to time (the "**CCASS Rules**").

(D) Each person who is for the time being shown in the register kept by the Issuer in Hong Kong as the holder shall be treated by the Issuer and the Sponsor as the absolute owner and holder of the CBBCs. The expressions "**Holder**" and "**Holders**" shall be construed accordingly.

(E) Holders are responsible for additional costs and expenses in connection with any exercise of the CBBCs including the Exercise Expenses (as defined below) which amount shall, subject to Condition 4(G) and to the extent necessary, be payable to the Issuer and collected from the Holders.

2. Definitions

For the purposes of these Conditions:

"**Board Lot**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document;

"**Business Day**" means a day (excluding Saturdays) on which the Stock Exchange is scheduled to open for dealings in Hong Kong and banks are open for business in Hong Kong;

"**Call Price**" means the price specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 6;

"**Cash Settlement Amount**" means, for every Board Lot, an amount in the Settlement Currency calculated by the Issuer in accordance with the following formula:

(i) following a Mandatory Call Event:

(a) in the case of a series of Category R CBBCs, the Residual Value; or

(b) in the case of a series of Category N CBBCs, zero.

(ii) at expiry:

(a) in the case of a series of bull CBBCs:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Closing Price - Strike Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

(b) in the case of a series of bear CBBCs:

$$\text{Cash Settlement Amount per Board Lot} = \frac{\text{Entitlement x (Strike Price - Closing Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

For the avoidance of doubt, if the Cash Settlement Amount is a negative figure, it shall be deemed to be zero;

"**Category N CBBCs**" means a series of CBBCs where the Call Price is equal to the Strike Price;

"**Category R CBBCs**" means a series of CBBCs where the Call Price is different from the Strike Price;

"**CCASS**" means the Central Clearing and Settlement System;

"**CCASS Settlement Day**" has the meaning ascribed to the term "Settlement Day" in the CCASS Rules, subject to such modification and amendment prescribed by HKSCC from time to time;

"**Closing Price**" means the closing price of one Unit (as derived from the Daily Quotation Sheet of the Stock Exchange, subject to any adjustment to such closing price as may be necessary to reflect any event as contemplated in Condition 6 such as capitalisation, rights issue, distribution or the like) on the Valuation Date;

"**Entitlement**" means the number specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 6;

"**Exercise Expenses**" means any charges or expenses including any taxes or duties which are incurred in respect of the exercise of a Board Lot of CBBCs;

"**Expiry Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Fund**" means the exchange traded fund specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Listing Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Mandatory Call Event**" occurs when the Spot Price of the Units on any Trading Day during the Observation Period is:

(i) in the case of a series of bull CBBCs, at or below the Call Price; or

(ii) in the case of a series of bear CBBCs, at or above the Call Price;

"**Market Disruption Event**" means:

(1) the occurrence or existence on any Trading Day during the one-half hour period that ends at the close of trading of any suspension of or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the Stock Exchange or otherwise) on the Stock Exchange in (a) the Units; or (b) any options or futures contracts relating to the Units if, in any such case, such suspension or limitation is, in the determination of the Issuer, material;

(2) the occurrence of any severe weather condition or other event on any day which either (i) results in the Stock Exchange being closed for trading for the entire day; or (ii) results in the Stock Exchange being closed prior to its regular time for close of trading for the relevant day (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning trading session only, closed prior to its regular time for close of trading for the morning session), PROVIDED THAT there shall be no Market Disruption Event solely by reason of the Stock Exchange opening for trading later than its regular time for opening of trading on any day as a result of such severe weather condition or other event; or

(3) a limitation or closure of the Stock Exchange due to any unforeseen circumstances;

"**Maximum Trade Price**" means the highest Spot Price of the Units (subject to any adjustment to such Spot Price as may be necessary to reflect any event as contemplated in Condition 6 such as capitalisation, rights issue, distribution or the like) during the MCE Valuation Period;

"**MCE Valuation Period**" means the period commencing from and including the moment upon which the Mandatory Call Event occurs (the trading session during which the Mandatory Call Event occurs is the "**1st Session**") and up to the end of the trading session on the Stock Exchange immediately following the 1st Session ("**2nd Session**") unless, in the determination of the Issuer in its good faith, the 2nd Session for any reason (including, without limitation, a Market Disruption Event occurring and subsisting in the 2nd Session) does not contain any continuous period of 1 hour or more than 1 hour during which trading in the Units is permitted on the Stock Exchange with no limitation imposed, the MCE Valuation Period shall be extended to the end of the subsequent trading session following the 2nd Session during which trading in the Units is permitted on the Stock Exchange with no limitation imposed for a continuous period of at least 1 hour notwithstanding the existence or continuance of a Market Disruption Event in such postponed trading session, unless the Issuer determines in its good faith that each trading session on each of the four Trading Days immediately following the date on which the Mandatory Call Event occurs does not contain any continuous period of 1 hour or more than 1 hour during which trading in the Units is permitted on the Stock Exchange with no limitation imposed. In that case:

(i) the period commencing from the 1st Session up to, and including, the last trading session on the Stock Exchange of the fourth Trading Day immediately following the date on which the Mandatory Call Event occurs shall be deemed to be the MCE Valuation Period; and

(ii) the Issuer shall determine the Maximum Trade Price or the Minimum Trade Price (as the case may be) having regard to the then prevailing market conditions, the last reported Spot Price and such other factors as the Issuer may determine to be relevant in its good faith.

For the avoidance of doubt, all Spot Prices available throughout the extended MCE Valuation Period shall be taken into account to determine the Maximum Trade Price or the Minimum Trade Price (as the case may be) for the calculation of the Residual Value.

For the purposes of this definition,

(a) the pre-opening session, the morning session and, in the case of half day trading, the closing auction session (if any) of the same day; and

(b) the afternoon session and the closing auction session (if any) of the same day,

shall each be considered as one trading session only;

"**Minimum Trade Price**" means the lowest Spot Price of the Units (subject to any adjustment to such Spot Price as may be necessary to reflect any event as contemplated in Condition 6 such as capitalisation, rights issue, distribution or the like) during the MCE Valuation Period;

"**Observation Commencement Date**" means the date specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Observation Period**" means the period commencing from and including the Observation Commencement Date and ending on and including the Trading Day immediately preceding the Expiry Date;

"**Post MCE Trades**" has the meaning given to it in the relevant Launch Announcement and Supplemental Listing Document, subject to such modification and amendment prescribed by the Stock Exchange from time to time;

"**Residual Value**" means, for every Board Lot, an amount in the Settlement Currency calculated by the Issuer in accordance with the following formula:

(i) in the case of a series of bull CBBCs:

$$\text{Residual Value per Board Lot} = \frac{\text{Entitlement x (Minimum Trade Price - Strike Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

(ii) in the case of a series of bear CBBCs:

$$\text{Residual Value per Board Lot} = \frac{\text{Entitlement x (Strike Price - Maximum Trade Price) x one Board Lot}}{\text{Number of CBBC(s) per Entitlement}}$$

"**Settlement Currency**" means the currency specified as such in the relevant Launch Announcement and Supplemental Listing Document;

"**Settlement Date**" means the third CCASS Settlement Day after (i) the end of the MCE Valuation Period or (ii) the later of: (a) the Expiry Date; and (b) the day on which the Closing Price is determined in accordance with the Conditions (as the case may be);

"**Spot Price**" means:

(a) in respect of a continuous trading session of the Stock Exchange, the price per Unit concluded by means of automatic order matching on the Stock Exchange as reported in the official real-time dissemination mechanism for the Stock Exchange during such continuous trading session in accordance with the Trading Rules, excluding direct business (as defined in the Trading Rules); and

(b) in respect of a pre-opening session or a closing auction session (if applicable) of the Stock Exchange, as the case may be, the final Indicative Equilibrium Price (as defined in the Trading Rules) of the Unit (if any) calculated at the end of the pre-order matching period of such pre-opening session or closing auction session (if applicable), as the case may be, in accordance with the Trading Rules, excluding direct business (as defined in the Trading Rules),

subject to such modification and amendment prescribed by the Stock Exchange from time to time;

"**Stock Exchange**" means The Stock Exchange of Hong Kong Limited;

"**Strike Price**" means the price specified as such in the relevant Launch Announcement and Supplemental Listing Document, subject to any adjustment in accordance with Condition 6;

"**Trading Day**" means any day on which the Stock Exchange is scheduled to open for trading for its regular trading sessions;

"**Trading Rules**" means the Rules and Regulations of the Exchange prescribed by the Stock Exchange from time to time;

"**Unit**" means the unit or share of the Fund specified as such in the relevant Launch Announcement and Supplemental Listing Document; and

"**Valuation Date**" means the Trading Day immediately preceding the Expiry Date unless, in the determination of the Issuer, a Market Disruption Event has occurred on that day in which case, the Valuation Date shall be the first succeeding Trading Day on which the Issuer determines that there is no Market Disruption Event, unless the Issuer determines that there is a Market Disruption Event occurring on each of the four Trading Days immediately following the original date which (but for the Market Disruption Event) would have been the Valuation Date. In that case:

(a) the fourth Trading Day immediately following the original date shall be deemed to be the Valuation Date (regardless of the Market Disruption Event); and

(b) the Issuer shall determine the Closing Price having regard to the then prevailing market conditions, the last reported trading price of the Unit on the Stock Exchange and such other factors as the Issuer determines to be relevant.

Other capitalized terms shall, unless otherwise defined herein, have the meaning ascribed to them in the Base Listing Document, any addendum to the Base Listing Document, the relevant Launch Announcement and Supplemental Listing Document or the Global Certificate.

3. Hedging Disruption and Illegality or Impracticability

(A) Hedging Disruption

(i) *Notification.* The Issuer shall as soon as reasonably practicable give notice to the Holders in accordance with Condition 10:

(1) if it determines that a Hedging Disruption Event has occurred; and

(2) of the consequence of such Hedging Disruption Event as determined by the Issuer pursuant to Condition 3(A)(iii).

(ii) *Hedging Disruption Event.* A "**Hedging Disruption Event**" occurs if the Issuer determines in good faith and in a commercially reasonable manner that it is or has become not reasonably practicable or it has otherwise become undesirable, for any reason, for the Issuer wholly or partially to establish, re-establish, substitute or maintain a relevant hedging transaction (a "**Relevant Hedging Transaction**") it deems necessary or desirable to hedge the Issuer's obligations in respect of the CBBCs. The reasons for such determination by the Issuer may include, but are not limited to, the following:

(1) any material illiquidity in the market for the Units;

(2) a change in any applicable law (including, without limitation, any tax law) or the promulgation of, or change in, the interpretation of any court, tribunal or regulatory authority with competent jurisdiction of any applicable law (including any action taken by a taxing authority);

(3) a material decline in the creditworthiness of a party with whom the Issuer has entered into any such Relevant Hedging Transaction; or

(4) the general unavailability of:

(A) market participants who will agree to enter into a Relevant Hedging Transaction; or

(B) market participants who will so enter into a Relevant Hedging Transaction on commercially reasonable terms.

(iii) *Consequences.* The Issuer, in the event of a Hedging Disruption Event, may determine to:

(1) terminate the CBBCs. In such circumstances the Issuer will, however, if and to the extent permitted by the applicable law, pay to each Holder in respect of each CBBC held by such Holder an amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value of the CBBC immediately prior to such termination less the cost to the Issuer of unwinding any related hedging arrangements. Payment will be made to the Holder in such manner as shall be notified to the Holder in accordance with Condition 10; or

(2) make any other adjustment to the Conditions as it considers appropriate in order to maintain the theoretical value of the CBBCs after adjusting for the relevant Hedging Disruption Event.

(B) Illegality or Impracticability

The Issuer is entitled to terminate the CBBCs if it determines in good faith and in a commercially reasonable manner that, for reasons beyond its control, it has become or it will become illegal or impracticable:

(i) for it to perform its obligations under the CBBCs in whole or in part as a result of:

(1) the adoption of, or any change in, any relevant law or regulation (including any tax law); or

(2) the promulgation of, or any change in, the interpretation by any court, tribunal, governmental, administrative, legislative, regulatory or judicial authority or power with competent jurisdiction of any relevant law or regulation (including any tax law),

(each of (1) and (2), a "**Change in Law Event**"); or

(ii) for it or any of its affiliates to maintain the Issuer's hedging arrangements with respect to the CBBCs due to a Change in Law Event.

Upon the occurrence of a Change in Law Event, the Issuer will, if and to the extent permitted by the applicable law or regulation, pay to each Holder a cash amount that the Issuer determines in good faith and in a commercially reasonable manner to be the fair market value in respect of each CBBC held by such Holder immediately prior to such termination (ignoring such illegality or impracticability) less the cost to the Issuer of unwinding any related hedging arrangement as determined by the Issuer in its sole and absolute discretion. Payment will be made to each Holder in such manner as shall be notified to the Holder in accordance with Condition 10.

4. Exercise of CBBCs

(A) CBBCs may only be exercised in Board Lots or integral multiples thereof.

(B) If no Mandatory Call Event has occurred during the Observation Period, the CBBCs will be deemed to be automatically exercised on the Expiry Date.

(C) Mandatory Call Event

(i) Subject to paragraph (ii) below, following a Mandatory Call Event, the CBBCs will terminate automatically and the Issuer shall have no further obligation under the CBBCs except for the payment of the Cash Settlement Amount (if any) following the Mandatory Call Event on the relevant Settlement Date. The Issuer will give notice to the Holders in accordance with Condition 10. Trading in the CBBCs will be suspended immediately upon the occurrence of a Mandatory Call Event and all Post MCE Trades will be cancelled and will not be recognised by the Issuer or the Stock Exchange.

Revocation

(ii) A Mandatory Call Event is irrevocable unless it is triggered as a result of any of the following events:

(1) system malfunction or other technical errors of Hong Kong Exchanges and Clearing Limited ("**HKEX**") (such as the setting up of wrong Call Price and other parameters); or

(2) manifest errors caused by the relevant third party price source where applicable;

and

(A) in the case of a system malfunction or other technical errors prescribed in paragraph (1) above, such event is reported by the Stock Exchange to the Issuer and the Issuer and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked; and

(B) in the case of an error by the relevant price source prescribed in paragraph (2) above, such event is reported by the Issuer to the Stock Exchange and the Issuer and the Stock Exchange mutually agree that such Mandatory Call Event is to be revoked,

in each case, such mutual agreement must be reached no later than 30 minutes before the commencement of trading (including the pre-opening session) (Hong Kong time) on the Trading Day of the Stock Exchange immediately following the day on which the Mandatory Call Event occurs or such other time frame as prescribed by the Stock Exchange from time to time.

(D) Every Board Lot of CBBCs entitles the Holder to receive from the Issuer on the Settlement Date the Cash Settlement Amount (if any).

(E) Any Exercise Expenses which are not determined by the Issuer by the Business Day after the MCE Valuation Period or the Expiry Date (as the case may be) and deducted from the Cash Settlement Amount prior to delivery to the Holders in accordance with this Condition 4, shall be notified by the Issuer to the Holders as soon as practicable after determination thereof and shall be paid by the Holders to the Issuer immediately upon demand.

(F) In the event that the CBBCs have been exercised or have expired worthless, the Issuer will, with effect from the first Business Day following the MCE Valuation Period or the Expiry Date, as the case may be, remove the name of each Holder from the register of Holders in respect of such CBBCs and thereby cancel the relevant CBBCs and, if applicable, cancel the Global Certificate.

(G) Upon exercise following a Mandatory Call Event or on the Expiry Date in accordance with these Conditions, the Issuer will pay the Cash Settlement Amount minus the determined Exercise Expenses to the relevant Holder. If the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

The aggregate Cash Settlement Amount minus the determined aggregate Exercise Expenses shall be despatched no later than the Settlement Date, by crediting that amount, in accordance with the CCASS Rules, to the relevant bank account designated by each Holder (the "**Designated Bank Account**").

If as a result of an event beyond the control of the Issuer ("**Settlement Disruption Event**"), it is not possible for the Issuer to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Holder on the original Settlement Date, the Issuer shall use its reasonable endeavours to procure payment electronically through CCASS by crediting the relevant Designated Bank Account of the Holder as soon as reasonably practicable after the original Settlement Date. The Issuer will not be liable to the Holder for any interest in respect of the amount due or any loss or damage that such Holder may suffer as a result of the existence of a Settlement Disruption Event.

(H) None of the Issuer, the Sponsor or their respective agents shall have any responsibility for any errors or omissions in the calculation and dissemination of any variables published by a third party and used in any calculation made pursuant to these Conditions or in the calculation of the Cash Settlement Amount arising from such errors or omissions.

The purchase of CBBCs does not confer on any Holder of such CBBCs any rights (whether in respect of voting, distributions or otherwise) in relation to the Units.

(I) Exercise and settlement of the CBBCs is subject to all applicable laws, rules, regulations and guidelines in force at the relevant time and neither the Issuer nor the Sponsor shall incur any liability whatsoever if it is unable to effect the transactions contemplated, after using all reasonable efforts, as a result of any such laws, rules, regulations or guidelines. Neither the Issuer nor the Sponsor shall under any circumstances be liable for any acts or defaults of the CCASS in relation to the performance of its duties in relation to the CBBCs.

(J) Subject to Condition 4(C)(ii), trading in CBBCs on the Stock Exchange shall cease (i) immediately upon the occurrence of a Mandatory Call Event or (ii) at the close of trading for the Trading Day immediately preceding the Expiry Date (for the avoidance of doubt, in the case when the Stock Exchange is scheduled to open for the morning session only, at the close of trading for the morning session), whichever is the earlier. All Post MCE Trades will be invalid and will be cancelled, and will not be recognised by the Issuer or the Stock Exchange.

5. Sponsor

(A) The Sponsor will not assume any obligation or duty to or any relationship or agency or trust for the Holders.

(B) The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the initial Sponsor and to appoint another sponsor provided that it will at all times maintain a sponsor in Hong Kong for so long as the CBBCs are listed on the Stock Exchange. Notice of any such termination or appointment will be given to the Holders in accordance with Condition 10.

6. Adjustments

(A) *Rights Issues.* If and whenever the Fund shall, by way of Rights (as defined below), offer new Units for subscription at a fixed subscription price to the holders of existing Units pro rata to existing holdings (a "**Rights Offer**"), the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Units becomes ex-entitlement ("**Rights Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{1 + M}{1 + (R/S) \times M}$$

E: Existing Entitlement immediately prior to the Rights Offer

S: Cum-Rights Unit price being the closing price of an existing Unit as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Units are traded on a Cum-Rights basis

R: Subscription price per new Unit specified in the Rights Offer plus an amount equal to any distributions or other benefits foregone to exercise the Right

M: Number of new Unit(s) (whether a whole or a fraction) per existing Unit each holder thereof is entitled to subscribe

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Strike Price and/or the Call Price shall take effect on the Rights Issue Adjustment Date.

For the purposes of these Conditions:

"**Rights**" means the right(s) attached to each existing Unit or needed to acquire one new Unit (as the case may be) which are given to the holders of existing Units to subscribe at a fixed subscription price for new Units pursuant to the Rights Offer (whether by the exercise of one Right, a part of a Right or an aggregate number of Rights).

(B) *Bonus Issues.* If and whenever the Fund shall make an issue of Units credited as fully paid to the holders of Units generally (other than pursuant to a scrip distribution or similar scheme for the time being operated by the Fund or otherwise in lieu of a cash distribution and without any payment or other consideration being made or given by such holders) (a "**Bonus Issue**") the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Units becomes ex-entitlement ("**Bonus Issue Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

Adjustment Component = (1 + N)

E: Existing Entitlement immediately prior to the Bonus Issue

N: Number of additional Units (whether a whole or a fraction) received by a holder of Units for each Unit held prior to the Bonus Issue

Provided that if the above formula would result in an adjustment to the Entitlement which would amount to one per cent. or less of the Entitlement immediately prior to the adjustment, then no adjustment will be made. In addition, the Issuer shall adjust the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Strike Price and/or the Call Price shall take effect on the Bonus Issue Adjustment Date.

(C) *Subdivisions and Consolidations.* If and whenever the Fund shall subdivide its Units or any class of its outstanding Units into a greater number of units or shares (a "**Subdivision**") or consolidate the Units or any class of its outstanding Units into a smaller number of units or shares (a "**Consolidation**"), then:

(i) in the case of a Subdivision, the Entitlement in effect immediately prior thereto will be increased whereas the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) will be decreased in the same ratio as the Subdivision; and

(ii) in the case of a Consolidation, the Entitlement in effect immediately prior thereto will be decreased whereas the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) will be increased in the same ratio as the Consolidation,

in each case on the day on which the Subdivision or Consolidation (as the case may be) shall have taken effect.

(D) *Restructuring Events.* If it is announced that the Fund is to or may merge or consolidate with or into any other trust or corporation (including becoming, by agreement or otherwise, controlled by any person or corporation) (except where the Fund is the surviving entity in a merger) or that it is to, or may, sell or transfer all or substantially all of its assets, the rights attaching to the CBBCs may in the absolute discretion of the Issuer be amended no later than the Business Day preceding the consummation of such merger, consolidation, sale or transfer (each a "**Restructuring Event**") (as determined by the Issuer in its absolute discretion) so that the CBBCs shall, after such Restructuring Event, relate to the number of units or shares of the trust(s) or corporation(s) resulting from or surviving such Restructuring Event or other securities ("**Substituted Securities**") and/or cash offered in substitution for the affected Units, as the case may be, to which the holder of such number of Units to which the CBBCs related immediately before such Restructuring Event would have been entitled upon such Restructuring Event, and thereafter the provisions hereof shall apply to such Substituted Securities, provided that any Substituted Securities may, in the absolute discretion of the Issuer, be deemed to be replaced by an amount in the relevant currency equal to the market value or, if no market value is available, fair value, of such Substituted Securities in each case as determined by the Issuer as soon as practicable after such Restructuring Event is effected. For the avoidance of doubt, any remaining Units shall not be affected by this paragraph and, where cash is offered in substitution for Units or is deemed to replace Substituted Securities as described above, references in these Conditions to the Units shall include any such cash.

(E) *Cash Distribution.* No adjustment will be made for an ordinary cash distribution (whether or not it is offered with a scrip alternative) ("**Ordinary Distribution**"). For any other forms of cash distribution ("**Cash Distribution**") announced by the Fund, such as a cash bonus, special distribution or extraordinary distribution, no adjustment will be made unless the value of the Cash Distribution accounts for 2 per cent. or more of the Unit's closing price on the day of announcement by the Fund.

If and whenever the Fund shall make a Cash Distribution credited as fully paid to the holders of Units generally, the Entitlement shall be adjusted to take effect on the Business Day on which trading in the Units becomes ex-entitlement in respect of the Cash Distribution ("**Distribution Adjustment Date**") in accordance with the following formula:

Adjusted Entitlement = Adjustment Component x E

Where:

$$\text{Adjustment Component} = \frac{S - OD}{S - OD - CD}$$

E: The existing Entitlement immediately prior to the Cash Distribution

S: Cum-Cash Distribution Unit price being the closing price of an existing Unit as derived from the Daily Quotation Sheet of the Stock Exchange on the last Business Day on which the Units are traded on a cum-Cash Distribution basis

CD: The Cash Distribution per Unit

OD: The Ordinary Distribution per Unit, provided that the Ordinary Distribution and the Cash Distribution have the same ex-entitlement date. For avoidance of doubt, the OD shall be zero if the Ordinary Distribution and the Cash Distribution have different ex-entitlement dates

In addition, the Issuer shall adjust the Strike Price and/or the Call Price (which shall be rounded to the nearest 0.001) by the reciprocal of the Adjustment Component, where the "**reciprocal of the Adjustment Component**" means one divided by the relevant Adjustment Component. The adjustment to the Strike Price and/or the Call Price shall take effect on the Distribution Adjustment Date.

(F) *Other Adjustments.* Without prejudice to and notwithstanding any prior adjustment(s) made pursuant to the applicable Conditions, the Issuer may (but shall not be obliged to) make such other adjustments to the terms and conditions of the CBBCs as appropriate where any event (including the events as contemplated in the applicable Conditions) occurs and irrespective of, in substitution for, or in addition to the provisions contemplated in the applicable Conditions, provided that such adjustment is:

(i) not materially prejudicial to the interests of the Holders generally (without considering the circumstances of any individual Holder or the tax or other consequences of such adjustment in any particular jurisdiction); or

(ii) determined by the Issuer in good faith to be appropriate and commercially reasonable.

(G) *Notice of Adjustments.* All determinations made by the Issuer pursuant hereto will be conclusive and binding on the 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 by publication in accordance with Condition 10.

7. Purchase

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

8. Global Certificate

A Global Certificate representing the CBBCs will be deposited with CCASS in the name of HKSCC Nominees Limited. No definitive certificate will be issued.

9. Meetings of Holders and Modification

(A) *Meetings of Holders.* The Instrument contains provisions for convening meetings of the Holders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Instrument) of a modification of the provisions of the CBBCs or of the Instrument.

Any resolution to be passed in a meeting of the Holders shall be decided by poll. A meeting may be convened by the Issuer or by Holders holding not less than 10 per cent. of the CBBCs 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 CBBCs for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Holders whatever the number of CBBCs 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 Holders who, being entitled to do so, vote in person or by proxy.

An Extraordinary Resolution passed at any meeting of the Holders shall be binding on all the Holders, whether or not they are present at the meeting.

Resolutions can be passed in writing without a meeting of the Holders being held if passed unanimously.

(B) *Modification.* The Issuer may, without the consent of the Holders, effect any modification of the terms and conditions of the CBBCs or the Instrument which, in the opinion of the Issuer, is (i) not materially prejudicial to the interests of the Holders generally (without considering the circumstances of any individual Holder or the tax or other consequences of such modification in any particular jurisdiction); (ii) of a formal, minor or technical nature; (iii) made to correct a manifest error; or (iv) necessary in order to comply with mandatory provisions of the laws or regulations of Hong Kong. Any such modification shall be binding on the Holders and shall be notified to them by the Issuer as soon as practicable thereafter in accordance with Condition 10.

10. Notices

All notices to the Holders will be validly given if published in English and in Chinese on the HKEX website. In such circumstances, the Issuer shall not be required to despatch copies of the notice to the Holders.

11. Termination or Liquidation

In the event of a Termination or the liquidation or dissolution of the Fund or, if applicable, the trustee of the Fund (including any successor trustee appointed from time to time) ("**Trustee**") (in its capacity as trustee of the Fund) or the appointment of a liquidator, receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of the Fund's or the Trustee's (as the case may be) undertaking, property or assets, all unexercised CBBCs will lapse and shall cease to be valid for any purpose. In the case of a Termination, the unexercised CBBCs will lapse and shall cease to be valid on the effective date of the Termination, in the case of a voluntary liquidation, the unexercised CBBCs will lapse and shall cease to be valid 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 or receiver or administrator or analogous person under any applicable law in respect of the whole or substantially the whole of such Fund's or Trustee's (as the case may be) 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.

For the purpose of this Condition 11, "**Termination**" means (i) the Fund is terminated or required to be terminated for whatever reason, or the termination of the Fund commences; (ii) where applicable, the Fund is held or is conceded by the Trustee or the manager of the Fund (including any successor manager appointed from time to time) not to be have been constituted or to have been imperfectly constituted; (iii) where applicable, the Trustee ceases to be authorised under the Fund to hold the property of the Fund in its name and perform its obligations under the trust deed constituting the Fund; or (iv) the Fund ceases to be authorised as an authorised collective investment scheme under the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong).

12. Further Issues

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

13. Delisting

(A) If at any time the Units cease to be listed on the 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 CBBCs 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 Holders generally are not materially prejudiced as a consequence of such delisting (without considering the circumstances of any individual Holder or the tax or other consequences that may result in any particular jurisdiction).

(B) Without prejudice to the generality of Condition 13(A), where the Units are, or, upon the delisting, become, listed on any other stock exchange, these Conditions may, in the absolute discretion of the Issuer, be amended to the extent necessary to allow for the substitution of that other stock exchange in place of the Stock Exchange and the Issuer may, without the consent of the Holders, make such adjustments to the entitlements of the Holders on exercise (including, if appropriate, by converting foreign currency amounts at prevailing market rates into the relevant currency) as may be appropriate in the circumstances.

(C) The Issuer shall determine, in its absolute discretion, any adjustment or amendment and its determination shall be conclusive and binding on the Holders save in the case of manifest error. Notice of any adjustments or amendments shall be given to the Holders in accordance with Condition 10 as soon as practicable after they are determined.

14. Good Faith and Commercially Reasonable Manner

Any exercise of discretion by the Issuer under these Conditions will be made in good faith and in a commercially reasonable manner.

15. Governing Law

The CBBCs and the Instrument are governed by and construed in accordance with the laws of the Hong Kong Special Administrative Region of the People's Republic of China ("**Hong Kong**"). The Issuer and each Holder (by its purchase of the CBBCs) submit for all purposes in connection with the CBBCs and the Instrument to the non-exclusive jurisdiction of the courts of Hong Kong.

16. Contracts (Rights of Third Parties) Ordinance

A person who is not a party to these Conditions has no right under the Contracts (Rights of Third Parties) Ordinance (Cap. 623 of the Laws of Hong Kong) to enforce or to enjoy the benefit of any term of the CBBCs.

17. Language

In the event of any inconsistency between the Chinese translation and the English version of these Conditions, the English version of these Conditions shall prevail.

18. Prescription

Claims against the Issuer for payment of any amount in respect of the CBBCs will become void unless made within ten years after the MCE Valuation Period or the Expiry Date (as the case may be) and thereafter, any sums payable in respect of such CBBCs shall be forfeited and shall revert to the Issuer.

Sponsor:
UBS Securities Asia Limited
52nd Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong

APPENDIX 3 — AUDITOR'S REPORT AND OUR CONSOLIDATED FINANCIAL STATEMENTS AS AT AND FOR THE YEAR ENDED 31 DECEMBER 2023

This information in this Appendix has been extracted from the Annual Report 2023 as at and for the year ended 31 December 2023. The page numbers of such document appear on the bottom left or right hand side of the pages in this Appendix.

Please refer to the Issuer's base listing document dated 22 March 2024 for the auditor's report and consolidated financial statements as at and for the year ended 31 December 2022.

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To the General Meeting of

UBS AG, Zurich & Basel

Basel, 27 March 2024

Statutory auditor's report on the audit of the consolidated financial statements

Opinion

We have audited the consolidated financial statements of UBS AG and its subsidiaries ("the Group"), which comprise the consolidated balance sheets as of 31 December 2023 and 31 December 2022, and the consolidated income statements, statements of comprehensive income, statements of changes in equity and statements of cash flows for each of the three years in the period ended 31 December 2023, and the related notes to the consolidated financial statements, including the information identified as "audited" as described in Note 1 (collectively referred to as the "consolidated financial statements").

In our opinion, the accompanying consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at 31 December 2023 and 31 December 2022, and of its consolidated financial performance and its consolidated cash flows for each of the three years in the period ended 31 December 2023 in accordance with IFRS Accounting Standards and comply with Swiss law.

Basis for opinion

We conducted our audit in accordance with Swiss law, International Standards on Auditing (ISA) and Swiss Standards on Auditing (SA-CH). Our responsibilities under those provisions and standards are further described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report.

We are independent of the Group in accordance with the provisions of Swiss law, together with the requirements of the Swiss audit profession, as well as those of the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (including International Independence Standards) (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

We have fulfilled the responsibilities described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the consolidated financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying consolidated financial statements.

Valuation of complex or illiquid instruments at fair value

Area of focus

At 31 December 2023, as explained in Notes 1 and 20 to the consolidated financial statements, the Group held financial assets and liabilities measured at fair value of USD 358,139 million and USD 328,401 million, respectively, including financial instruments that did not trade in active markets. These instruments are reported within the following accounts: financial assets and liabilities at fair value held for trading, derivative financial instruments, financial assets at fair value not held for trading, debt issued designated at fair value, brokerage payables designated at fair value, and other financial liabilities designated at fair value. In determining the fair value of these financial instruments, the Group used valuation techniques, modelling assumptions, and estimates of unobservable market inputs which required significant management judgment.

Auditing management's judgments and assumptions used in the estimation of the fair value of these instruments was complex due to the highly judgmental nature of valuation techniques, key modelling assumptions and significant unobservable inputs. Auditing the valuation of complex or illiquid instruments at fair value included consideration of any incremental risks arising from the impact of current macroeconomic influences on valuation techniques and inputs, such as geopolitics and inflation. The valuation techniques that required especially complex judgment were comprised of discounted cash flow and earnings-based valuation techniques. Highly judgmental modelling assumptions result from a range of different models or model calibrations used by market participants. Valuation inputs which were particularly complex and subjective included those with a limited degree of observability and the associated extrapolation, interpolation or calibration of curves using limited and proxy data points. Examples of such inputs included unobservable credit spreads and bond prices, and volatility.

Our audit response

We obtained an understanding, evaluated the design and tested the operating effectiveness of the controls over management's financial instrument valuation processes, including controls over market data inputs, model and methodology governance, and valuation adjustments.

We tested the valuation techniques, models and methodologies, and the inputs used in those models, as outlined above, by performing an independent revaluation of certain complex or illiquid financial assets and liabilities with the support of specialists. We used independent models and inputs and compared inputs to available market data among other procedures. We also independently challenged key judgments in relation to a sample of fair value adjustments.

We also assessed management's disclosures regarding fair value measurement (within Notes 1 and 20 to the consolidated financial statements).

Legal provisions and contingent liabilities

Area of focus

At 31 December 2023, the Group's provisions for litigation, regulatory and similar matters and contingent liabilities (legal provisions) were USD 1,810 million. As explained in Note 17 to the consolidated financial statements, the Group operates in a legal and regulatory environment that is exposed to significant litigation and similar risks arising from disputes and regulatory proceedings. Such matters are subject to many uncertainties and the outcomes may be difficult to predict. These uncertainties inherently

affect the amount and timing of potential outflows with respect to the legal provisions which have been established.

Auditing management's assessment of legal provisions was complex and judgmental due to the significant subjectivity involved in management's estimate of the amount and probability that an outflow of resources will be required for existing legal matters, including inquiries regarding cross-border wealth management businesses (Note 17b 1). The legal provisions for these matters are based on management's estimation of the amount and likelihood of the occurrence of certain scenarios.

Our audit response

We obtained an understanding, evaluated the design and tested the operational effectiveness of management's controls over the legal provision process. Our procedures included testing management's review of the accuracy of the inputs to the estimation of the amount and likelihood of the occurrence of certain scenarios.

Where appropriate, we assessed the methodologies on which the provision amounts were based with the involvement of specialists, recalculated the provisions and tested the underlying information. We inspected internal and external legal analyses of the matters supporting the judgmental aspects impacted by legal interpretations. We obtained correspondence directly from external legal counsel to assess the information provided by management and performed inquiries with external counsel as necessary.

We also assessed management's disclosure regarding legal provisions (within Note 17 to the consolidated financial statements).

Recognition of deferred tax assets

Area of focus

At 31 December 2023, the Group's deferred tax assets ("DTAs") were USD 9,244 million (see Note 8 to the consolidated financial statements). DTAs are recognized to the extent it is probable that taxable profits will be available, against which applicable deductible temporary differences or the carryforward of unused tax losses within the loss carryforward period can be utilized. There is significant judgment exercised when estimating future taxable income that is not based on the reversal of taxable temporary differences. Management's estimate of future taxable profits is based on its strategic plan that is sensitive to the assumptions made in estimating future taxable income.

Auditing management's assessment of the recognition of the Group's DTAs was complex due to the highly judgmental nature of estimating future taxable profits. Estimating future profitability is inherently subjective as it is sensitive to future economic, market and other conditions, which are difficult to predict, such as the impact of geopolitics, inflation, and interest rates. Specifically, some of the more subjective key macro-economic assumptions used included gross domestic product growth rates, equity market performance, and interest rate expectations.

Our audit response

We obtained an understanding, evaluated the design, and tested the operating effectiveness of management's controls over DTA valuation, which included the assumptions used in developing the strategic plans and estimating future taxable income.

We assessed the completeness and accuracy of the data used for the estimations of future taxable income. This included recalculating the outputs of models applied to the recognition process for DTAs.

We involved specialists to assist in assessing the key economic assumptions embedded in the strategic plans. We compared key assumptions used to forecast future taxable income to externally available historical and prospective data and assumptions and assessed the sensitivity of the outcomes using reasonably possible changes in assumptions.

We also assessed management's disclosure regarding recognized and unrecognized deferred tax assets (within Note 8 to the consolidated financial statements).

Expected credit losses

Area of focus

At 31 December 2023, the Group's allowances and provisions for expected credit losses ("ECL") were USD 1,244 million. As explained in Notes 1, 9 and 19 to the consolidated financial statements, ECL is recognized for financial assets measured at amortized cost, financial assets measured at fair value through other comprehensive income, fee and lease receivables, financial guarantees, and loan commitments not measured at fair value. ECL is also recognized on the undrawn portion of committed unconditionally revocable credit lines, which include the Group's credit card limits and master credit facilities. The allowances and provisions for ECL consists of exposures that are in default which are individually evaluated for impairment (stage 3), as well as losses inherent in the loan portfolio that are not specifically identified (stage 1 and stage 2). Management's ECL estimates represent the difference between contractual cash flows and those the Group expects to receive, discounted at the effective interest rate. The method used to calculate ECL is based on a combination of the following principal factors: probability of default ("PD"), loss given default ("LGD") and exposure at default ("EAD").

Auditing management's estimate of the allowances and provisions for ECL was complex due to the highly judgmental nature of forward-looking economic scenarios that form the basis of the ECL calculation, their probability weightings, related post-model adjustments, and the credit risk models used to estimate stage 1 and stage 2 ECL. The macroeconomic developments during 2023, including persisting geopolitical tensions and inflation, contributed to further uncertainty and complexity in estimating ECL. As a result, the ECL estimation required higher management judgment, specifically within the following two areas: (i) scenario selection, including assumptions about the scenario severity, underlying macroeconomic variables, and the number of scenarios necessary to sufficiently cover the bandwidth of potential outcomes, as well as related scenario weights and post-model adjustments; and (ii) credit risk models, since the output from historic data based models may not be indicative of current or future conditions.

Additionally, auditing the measurement of individual ECL for stage 3 was complex due to the high degree of judgment involved in management's process for estimating ECL based on assumptions. These assumptions take into account expected future cash flows from collateral and other credit enhancements or expected payouts from bankruptcy proceedings for unsecured claims and, where applicable, time to realization of collateral and the seniority of claims.

Our audit response

We obtained an understanding, evaluated the design and tested the operating effectiveness of management's controls over the ECL estimate, including management's choice of forward-looking economic scenarios used to measure ECL and the probability weighting assigned to such scenarios. We evaluated management's methodologies and governance controls for developing and monitoring the economic scenarios used and the probability weightings assigned to them, and related post-model adjustments. Supported by specialists, we assessed the key macroeconomic variables used in the forward-looking scenarios, such as real gross domestic product growth, unemployment rate, interest rates and house price indices, and evaluated the modelled correlation and translation of those macroeconomic factors to the ECL estimate. We further assessed the appropriateness of the post-model adjustments by considering management's governance process, assumptions used and sensitivity analysis.

We also obtained an understanding, evaluated the design and tested the operating effectiveness of controls over credit risk models used in the ECL estimate, including controls over the completeness and accuracy of model input data, calculation logic, and output data used in the overall ECL calculation. With the support of specialists, on a sample basis, we performed an evaluation of management's models and tested the model outcomes by inspecting model documentation, reperforming model calculations, and comparing data used as inputs to management's forecast to external sources, among other procedures.

For the measurement of stage 3, we obtained an understanding, evaluated the design and tested the operating effectiveness of controls over management's process, including an evaluation of the assumptions used by management regarding the future cash flows from debtors' continuing operations and/or the liquidation of collateral. Supported by specialists in certain areas, we additionally tested collateral valuation, cash flow assumptions and exit strategies by performing inquiries of management, inspecting underlying documents, such as loan contracts, financial statements, covenants, budgets and business plans, and by re-performing discounted cash flow calculations among other procedures, on a sample basis.

We also assessed management's disclosures regarding financial assets at amortized cost and other positions in scope of expected credit loss measurement (within Notes 1, 9 and 19 to the consolidated financial statements).

Other information in the annual report

The Board of Directors is responsible for the other information in the annual report. The other information comprises all information included in the annual report, but does not include the consolidated financial statements of UBS Group AG and UBS AG, the standalone financial statements of UBS Group AG, the compensation report[1], and our auditor's reports thereon.

Our opinions on the consolidated financial statements of UBS Group AG and UBS AG, the standalone financial statements of UBS Group AG and the compensation report[1] do not cover the other information in the annual report and we do not express any form of assurance conclusion thereon.

[1] Specifically, the following tables in the compensation report: "Share ownership/entitlements of GEB members," "Total of all vested and unvested shares of GEB members," "Number of shares of BoD members," and "Total of all blocked and unblocked shares of BoD Members."

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information in the annual report and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Board of Directors' responsibilities for the consolidated financial statements

The Board of Directors is responsible for the preparation of the consolidated financial statements, which give a true and fair view in accordance with IFRS Accounting Standards and the provisions of Swiss law, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law, ISA and SA-CH will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

A further description of our responsibilities for the audit of the consolidated financial statements is located on EXPERTsuisse's website at: https://www.expertsuisse.ch/en/audit-report. This description forms part of our auditor's report.

Report on other legal and regulatory requirements

In accordance with article 728a para. 1 item 3 CO and PS-CH 890, we confirm that an internal control system exists, which has been designed for the preparation of the consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

Ernst & Young Ltd

Maurice McCormick
Licensed audit expert
(Auditor in charge)

Robert E. Jacob, Jr.
Certified Public Accountant (U.S.)

UBS AG consolidated financial statements

Primary financial statements and share information

Audited I

Income statement

		For the year ended		
USD m	Note	31.12.23	31.12.22	31.12.21
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3	22,444	11,803	8,534
Interest expense from financial instruments measured at amortized cost	3	(19,643)	(6,696)	(3,366)
Net interest income from financial instruments measured at fair value through profit or loss and other	3	1,765	1,410	1,437
Net interest income	3	4,566	6,517	6,605
Other net income from financial instruments measured at fair value through profit or loss	3	9,934	7,493	5,844
Fee and commission income	4	20,399	20,846	24,422
Fee and commission expense	4	(1,790)	(1,823)	(1,985)
Net fee and commission income	4	18,610	19,023	22,438
Other income	5	566	1,882	941
Total revenues		33,675	34,915	35,828
Credit loss expense / (release)	19	143	29	(148)
Personnel expenses	6	15,655	15,080	15,661
General and administrative expenses	7	11,118	9,001	9,476
Depreciation, amortization and impairment of non-financial assets	11, 12	2,238	1,845	1,875
Operating expenses		29,011	25,927	27,012
Operating profit / (loss) before tax		4,521	8,960	8,964
Tax expense / (benefit)	8	1,206	1,844	1,903
Net profit / (loss)		3,315	7,116	7,061
Net profit / (loss) attributable to non-controlling interests		25	32	29
Net profit / (loss) attributable to shareholders		3,290	7,084	7,032

Statement of comprehensive income

USD m	Note	For the year ended 31.12.23	31.12.22	31.12.21
Comprehensive income attributable to shareholders				
Net profit / (loss)		3,290	7,084	7,032
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		1,747	(869)	(1,046)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax		(912)	319	492
Foreign currency translation differences on foreign operations reclassified to the income statement		58	32	(1)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement		(28)	(4)	10
Income tax relating to foreign currency translations, including the effect of net investment hedges		(17)	4	35
Subtotal foreign currency translation, net of tax		849[1]	(519)	(510)
Financial assets measured at fair value through other comprehensive income				
Net unrealized gains / (losses), before tax		4	(440)	(203)
Net realized (gains) / losses reclassified to the income statement from equity		1	1	(9)
Reclassification of financial assets to Other financial assets measured at amortized cost[2]			449	
Income tax relating to net unrealized gains / (losses)		0	(3)	55
Subtotal financial assets measured at fair value through other comprehensive income, net of tax		5	6	(157)
Cash flow hedges of interest rate risk	25			
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax		(36)	(5,758)	(992)
Net (gains) / losses reclassified to the income statement from equity		1,745	(159)	(1,073)
Income tax relating to cash flow hedges		(309)	1,124	390
Subtotal cash flow hedges, net of tax		1,400[3]	(4,793)	(1,675)
Cost of hedging	25			
Cost of hedging, before tax		(19)	45	(32)
Income tax relating to cost of hedging		0	0	6
Subtotal cost of hedging, net of tax		(19)	45	(26)
Total other comprehensive income that may be reclassified to the income statement, net of tax		2,235	(5,260)	(2,368)
Other comprehensive income that will not be reclassified to the income statement				
Defined benefit plans	26			
Gains / (losses) on defined benefit plans, before tax		(103)	40	133
Income tax relating to defined benefit plans		(33)	41	(31)
Subtotal defined benefit plans, net of tax		(136)	81	102
Own credit on financial liabilities designated at fair value	20			
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax		(861)	867	46
Income tax relating to own credit on financial liabilities designated at fair value		71	(71)	0
Subtotal own credit on financial liabilities designated at fair value, net of tax		(790)[4]	796	46
Total other comprehensive income that will not be reclassified to the income statement, net of tax		(927)	877	148
Total other comprehensive income		1,308	(4,383)	(2,220)
Total comprehensive income attributable to shareholders		4,598	2,701	4,813
Comprehensive income attributable to non-controlling interests				
Net profit / (loss)		25	32	29
Total other comprehensive income that will not be reclassified to the income statement, net of tax		2	(14)	(16)
Total comprehensive income attributable to non-controlling interests		27	18	13
Total comprehensive income				
Net profit / (loss)		3,315	7,116	7,061
Other comprehensive income		1,311	(4,396)	(2,235)
of which: other comprehensive income that may be reclassified to the income statement		*2,235*	*(5,260)*	*(2,368)*
of which: other comprehensive income that will not be reclassified to the income statement		*(924)*	*864*	*132*
Total comprehensive income		4,625	2,719	4,826

1 Mainly reflects a significant strengthening of the Swiss franc and the euro against the US dollar. 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 13a for more information. 3 Mainly reflects net losses on hedging instruments that were reclassified from OCI to the income statement. 4 Mainly reflects a tightening of our own credit spreads.

Balance sheet

USD m	Note	31.12.23	31.12.22
Assets			
Cash and balances at central banks		171,806	169,445
Amounts due from banks	9	28,206	14,671
Receivables from securities financing transactions measured at amortized cost	9, 21	74,128	67,814
Cash collateral receivables on derivative instruments	9, 21	32,300	35,033
Loans and advances to customers	9	405,633	390,027
Other financial assets measured at amortized cost	9, 13a	54,334	53,389
Total financial assets measured at amortized cost		766,407	730,379
Financial assets at fair value held for trading	20	135,098	108,034
of which: assets pledged as collateral that may be sold or repledged by counterparties		*44,524*	*36,742*
Derivative financial instruments	10, 20, 21	131,728	150,109
Brokerage receivables	20	20,883	17,576
Financial assets at fair value not held for trading	20	63,754	59,408
Total financial assets measured at fair value through profit or loss		351,463	335,127
Financial assets measured at fair value through other comprehensive income	20	2,233	2,239
Investments in associates	28b	983	1,101
Property, equipment and software	11	11,044	11,316
Goodwill and intangible assets	12	6,265	6,267
Deferred tax assets	8	9,244	9,354
Other non-financial assets	13b	8,377	9,652
Total assets		1,156,016	1,105,436
Liabilities			
Amounts due to banks		16,720	11,596
Payables from securities financing transactions measured at amortized cost	21	5,782	4,202
Cash collateral payables on derivative instruments	21	34,886	36,436
Customer deposits	14a	555,673	527,171
Funding from UBS Group AG measured at amortized cost	14b	67,282	56,147
Debt issued measured at amortized cost	16	69,784	59,499
Other financial liabilities measured at amortized cost	18a	12,713	10,391
Total financial liabilities measured at amortized cost		762,840	705,442
Financial liabilities at fair value held for trading	20	31,712	29,515
Derivative financial instruments	10, 20, 21	140,707	154,906
Brokerage payables designated at fair value	20	42,275	45,085
Debt issued designated at fair value	15, 20	86,341	71,842
Other financial liabilities designated at fair value	18b, 20	27,366	32,033
Total financial liabilities measured at fair value through profit or loss		328,401	333,382
Provisions	17a	2,524	3,183
Other non-financial liabilities	18c	6,682	6,489
Total liabilities		1,100,448	1,048,496
Equity			
Share capital		386	338
Share premium		24,638	24,648
Retained earnings		28,235	31,746
Other comprehensive income recognized directly in equity, net of tax		1,974	(133)
Equity attributable to shareholders		55,234	56,598
Equity attributable to non-controlling interests		335	342
Total equity		55,569	56,940
Total liabilities and equity		1,156,016	1,105,436

Statement of changes in equity

USD m	Share capital	Share premium	Retained earnings
Balance as of 31 December 2020	**338**	**24,580**	**25,251**
Premium on shares issued and warrants exercised		(7)[2]	
Tax (expense) / benefit		(102)	
Dividends			(4,539)
Translation effects recognized directly in retained earnings			18
Share of changes in retained earnings of associates and joint ventures			1
New consolidations / (deconsolidations) and other increases / (decreases)[3]		182	
Total comprehensive income for the year			7,180
of which: net profit / (loss)			*7,032*
of which: OCI, net of tax			*148*
Balance as of 31 December 2021	**338**	**24,653**	**27,912**
Premium on shares issued and warrants exercised		(14)[2]	
Tax (expense) / benefit		5	
Dividends			(4,200)
Translation effects recognized directly in retained earnings			69
Share of changes in retained earnings of associates and joint ventures			0
New consolidations / (deconsolidations) and other increases / (decreases)		4	3
Total comprehensive income for the year			7,961
of which: net profit / (loss)			*7,084*
of which: OCI, net of tax			*877*
Balance as of 31 December 2022	**338**	**24,648**	**31,746**
Premium on shares issued and warrants exercised		(19)[2]	
Tax (expense) / benefit		12	
Dividends			(6,000)
Translation effects recognized directly in retained earnings			127
Share of changes in retained earnings of associates and joint ventures			(1)
Share capital currency change	48	(48)	
New consolidations / (deconsolidations) and other increases / (decreases)		45[4]	0
Total comprehensive income for the year			2,363
of which: net profit / (loss)			*3,290*
of which: OCI, net of tax			*(927)*
Balance as of 31 December 2023	**386**	**24,638**	**28,235**

1 Excludes other comprehensive income related to defined benefit plans and own credit, which is recorded directly in Retained earnings. 2 Includes decreases related to recharges by UBS Group AG for share-based compensation awards granted to employees of UBS AG or its subsidiaries. 3 Includes the effects related to the launch of UBS AG's new operational partnership entity with Sumitomo Mitsui Trust Holdings, Inc in 2021. 4 Includes an increase of USD 45m related to the issuance of high-trigger loss-absorbing additional tier 1 capital with an equity conversion feature.

Other comprehensive income recognized directly in equity, net of tax[1]	*of which: foreign currency translation*	*of which: financial assets at fair value through OCI*	*of which: cash flow hedges*	Total equity attributable to shareholders	Non-controlling interests	Total equity
7,585	***5,126***	***151***	***2,321***	**57,754**	**319**	**58,073**
				(7)		(7)
				(102)		(102)
				(4,539)	(4)	(4,542)
(18)		*0*	*(18)*	0		0
				1		1
				182	12	193
(2,368)	*(510)*	*(157)*	*(1,675)*	4,813	13	4,826
				7,032	*29*	*7,061*
(2,368)	*(510)*	*(157)*	*(1,675)*	*(2,220)*	*(16)*	*(2,235)*
5,200	***4,617***	***(7)***	***628***	**58,102**	**340**	**58,442**
				(14)		(14)
				5		5
				(4,200)	(9)	(4,209)
(69)		*0*	*(69)*	0		0
				0		0
(3)		*(3)*		4	(7)	(3)
(5,260)	*(519)*	*6*	*(4,793)*	2,701	18	2,719
				7,084	*32*	*7,116*
(5,260)	*(519)*	*6*	*(4,793)*	*(4,383)*	*(14)*	*(4,396)*
(133)	***4,098***	***(4)***	***(4,234)***	**56,598**	**342**	**56,940**
				(19)		**(19)**
				12		**12**
				(6,000)	**(4)**	**(6,004)**
(127)		***0***	***(127)***	**0**		**0**
				(1)		**(1)**
				0		**0**
				45	**(31)**	**15**
2,235	***849***	***5***	***1,400***	**4,598**	**27**	**4,625**
				3,290	***25***	***3,315***
2,235	***849***	***5***	***1,400***	***1,308***	***2***	***1,311***
1,974	***4,947***	***1***	***(2,961)***	**55,234**	**335**	**55,569**

Share information and earnings per share

Ordinary share capital

As of 31 December 2023, UBS AG had 3,858,408,466 issued shares (31 December 2022: 3,858,408,466 shares). In the second quarter of 2023, the share capital currency of UBS AG was changed from the Swiss franc to the US dollar, as approved by shareholders at the 2023 Annual General Meeting (the AGM). As a result, the nominal value per share has changed from CHF 0.10 to USD 0.10, resulting in a reclassification between share capital and capital contribution reserve (presented as share premium in the consolidated financial statements) and leading to a share capital of USD 385,840,846.60. The shares were entirely held by UBS Group AG.

Conditional share capital

As of 31 December 2023, the following conditional share capital was available to the Board of Directors (the BoD) of UBS AG:

– A maximum of USD 38,000,000 represented by up to 380,000,000 fully paid registered shares with a nominal value of USD 0.10 each, to be issued through the voluntary or mandatory exercise of conversion rights and / or warrants granted in connection with the issuance of bonds or similar financial instruments on national or international capital markets. This conditional capital allowance was approved at the Extraordinary General Meeting held on 26 November 2014, having originally been approved at the AGM of UBS AG on 14 April 2010. The BoD has not made use of such allowance.

Capital band, conversion capital and reserve capital

As of 31 December 2023, UBS AG has not introduced a capital band, any conversion capital or any reserve capital.

Earnings per share

In 2015, UBS AG shares were delisted from the SIX Swiss Exchange and the New York Stock Exchange. As of 31 December 2023, 100% of UBS AG's issued shares were held by UBS Group AG and therefore were not publicly traded. Accordingly, earnings per share information is not provided for UBS AG.

Statement of cash flows

	For the year ended		
USD m	31.12.23	31.12.22	31.12.21
Cash flow from / (used in) operating activities			
Net profit / (loss)	3,315	7,116	7,061
Non-cash items included in net profit and other adjustments:			
Depreciation, amortization and impairment of non-financial assets	2,238	1,845	1,875
Credit loss expense / (release)	143	29	(148)
Share of net (profit) / loss of associates and joint ventures and impairment related to associates	163	(32)	(105)
Deferred tax expense / (benefit)	(222)	491	432
Net loss / (gain) from investing activities	(225)	(1,515)	(230)
Net loss / (gain) from financing activities	4,919	(16,587)	100
Other net adjustments[1]	(10,383)	5,792	3,790
Net change in operating assets and liabilities:[1,2]			
Amounts due from banks and amounts due to banks	(10,093)[3]	(1,088)	2,148
Receivables from securities financing transactions measured at amortized cost	(4,993)	5,690	(1,565)
Payables from securities financing transactions measured at amortized cost	1,543	(1,247)	(751)
Cash collateral on derivative instruments	1,162	73	(3,311)
Loans and advances to customers	3,707	1,653	(26,943)
Customer deposits	6,521	(9,409)	29,349
Financial assets and liabilities at fair value held for trading and derivative financial instruments	(16,017)	8,173	(10,635)
Brokerage receivables and payables	(6,101)	6,019	8,115
Financial assets at fair value not held for trading and other financial assets and liabilities	(4,661)	5,557	19,793
Provisions and other non-financial assets and liabilities	2,325	(437)	2,617
Income taxes paid, net of refunds	(1,541)	(1,495)	(1,026)
Net cash flow from / (used in) operating activities	(28,202)	10,630	30,563
Cash flow from / (used in) investing activities			
Purchase of subsidiaries, associates and intangible assets	(4)	(3)	(1)
Disposal of subsidiaries, associates and intangible assets	109	1,729	593
Purchase of property, equipment and software	(1,283)	(1,478)	(1,581)
Disposal of property, equipment and software	33	161	295
Net (purchase) / redemption of financial assets measured at fair value through other comprehensive income	30	(699)	(750)
Purchase of debt securities measured at amortized cost	(14,244)	(30,792)	(4,922)
Disposal and redemption of debt securities measured at amortized cost	10,435	18,799	4,507
Net cash flow from / (used in) investing activities	(4,924)	(12,283)	(1,860)

Table continues below.

Statement of cash flows (continued)

Table continued from above.

USD m	For the year ended 31.12.23	31.12.22	31.12.21
Cash flow from / (used in) financing activities			
Net issuance (repayment) of short-term debt measured at amortized cost	7,181	(12,249)	(3,093)
Distributions paid on UBS AG shares	(6,000)	(4,200)	(4,539)
Issuance of debt designated at fair value and long-term debt measured at amortized cost[4]	104,551	79,457	98,619
Repayment of debt designated at fair value and long-term debt measured at amortized cost[4]	(85,541)	(67,670)	(79,799)
Net cash flows from other financing activities	(501)	(595)	(261)
Net cash flow from / (used in) financing activities	19,690	(5,257)	10,927
Total cash flow			
Cash and cash equivalents at the beginning of the year	195,200	207,755	173,430
Net cash flow from / (used in) operating, investing and financing activities	(13,435)	(6,911)	39,630
Effects of exchange rate differences on cash and cash equivalents[1]	8,704	(5,645)	(5,306)
Cash and cash equivalents at the end of the year[5]	190,469	195,200	207,755
of which: cash and balances at central banks[6]	*171,723*	*169,363*	*192,706*
of which: amounts due from banks[6]	*12,078*	*13,329*	*13,822*
of which: money market paper[6,7]	*6,668*	*12,508*	*1,227*
Additional information			
Net cash flow from / (used in) operating activities includes:			
Interest received in cash	32,576	15,730	11,170
Interest paid in cash	26,711	8,315	4,802
Dividends on equity investments, investment funds and associates received in cash[8]	2,241	1,907	2,531

1 Foreign currency translation and foreign exchange effects on operating assets and liabilities and on cash and cash equivalents are presented within the Other net adjustments line. Does not include foreign currency hedge effects related to foreign exchange swaps. 2 Effective from 2023, UBS AG has refined the presentation in the statement of cash flows and now presents cash flows from Loans and advances to customers, Customer deposits, Receivables from securities financing transactions measured at amortized cost and Payables from securities financing transactions measured at amortized cost as separate lines. The presentation change has had no effect on Net cash flows from / (used in) operating activities. Prior periods have been aligned with this change in presentation. 3 Mainly reflects funding provided to Credit Suisse. 4 Includes funding from UBS Group AG measured at amortized cost (recognized on the balance sheet in Funding from UBS Group AG) and measured at fair value (recognized on the balance sheet in Other financial liabilities designated at fair value). 5 USD 4,553m, USD 4,253m and USD 3,408m of Cash and cash equivalents (mainly reflected in Amounts due from banks) were restricted as of 31 December 2023, 31 December 2022 and 31 December 2021, respectively. Refer to Note 22 for more information. 6 Includes only balances with an original maturity of three months or less. 7 Money market paper is included in the balance sheet under Financial assets at fair value not held for trading (31 December 2023: USD 6,345m; 31 December 2022: USD 6,048m; 31 December 2021: USD 1,066m), Other financial assets measured at amortized cost (31 December 2023: USD 295m; 31 December 2022: USD 6,459m; 31 December 2021: USD 141m) and Financial assets at fair value held for trading (31 December 2023: USD 29m; 31 December 2022: USD 2m; 31 December 2021: USD 20m). 8 Includes dividends received from associates reported within Net cash flow from / (used in) investing activities.

Changes in liabilities arising from financing activities

USD m	Debt issued measured at amortized cost	*of which: short-term[1]*	*of which: long-term[2]*	Debt issued designated at fair value	Over-the-counter debt instruments[3]	Funding from UBS Group AG[4]	Total
Balance as of 1 January 2022	82,432	*43,098*	*39,334*	71,460	2,128	59,635	215,655
Cash flows	(19,390)	*(12,249)*	*(7,141)*	13,277	(251)	5,903	(461)
Non-cash changes	(3,543)	*(1,173)*	*(2,370)*	(12,895)	(193)	(7,595)	(24,225)
of which: foreign currency translation	*(2,233)*	*(1,173)*	*(1,061)*	*(1,405)*	*(113)*	*(1,285)*	*(5,036)*
of which: fair value changes				*(11,490)*	*(80)*	*(1,060)*	*(12,629)*
of which: hedge accounting and other effects	*(1,310)*		*(1,310)*			*(5,250)*	*(6,560)*
Balance as of 31 December 2022	59,499	*29,676*	*29,823*	71,842	1,684	57,943	190,968
Cash flows	7,979	*7,181*	*798*	8,433	(122)	9,901	26,191
Non-cash changes	2,306	*428*	*1,878*	6,066	4	2,389	10,764
of which: foreign currency translation	*1,718*	*428*	*1,290*	*1,033*	*(50)*	*766*	*3,467*
of which: fair value changes				*5,033*	*53*	*374*	*5,461*
of which: hedge accounting and other effects	*588*		*588*			*1,249*	*1,836*
Balance as of 31 December 2023	69,784	*37,285*	*32,499*	86,341	1,566	70,232	227,923

1 Debt with an original contractual maturity of less than one year. 2 Debt with an original 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 Included in balance sheet line Other financial liabilities designated at fair value. 4 Includes funding from UBS Group AG measured at amortized cost (refer to Note 14b) and measured at fair value (refer to Note 18b).

Notes to the UBS AG consolidated financial statements

Note 1 Summary of material accounting policies

The following table provides an overview of information included in this Note.

Note 1 Summary of material accounting policies (continued)

a) Material accounting policies

This Note describes the material accounting policies applied in the preparation of the consolidated financial statements (the Financial Statements) of UBS AG and its subsidiaries (UBS AG). On 21 March 2024, the Financial Statements were authorized for issue by the Board of Directors (the BoD).

Basis of accounting

The Financial Statements have been prepared in accordance with IFRS Accounting Standards, as issued by the International Accounting Standards Board (the IASB), and are presented in US dollars.

Disclosures marked as audited in the "Risk, capital, liquidity and funding, and balance sheet" section of this report form an integral part of the Financial Statements. These disclosures relate to requirements under IFRS 7, *Financial Instruments: Disclosures*, and IAS 1, *Presentation of Financial Statements*, and are not repeated in this section.

The accounting policies described in this Note have been applied consistently in all years presented unless otherwise stated in Note 1b.

Critical accounting estimates and judgments

Preparation of these Financial Statements under IFRS Accounting Standards requires management to apply judgment and make estimates and assumptions that affect reported amounts of assets, liabilities, income and expenses and disclosure, of contingent assets and liabilities, and may involve significant uncertainty at the time they are made. Such estimates and assumptions are based on the best available information. UBS AG regularly reassesses such estimates and assumptions, which encompass historical experience, expectations of the future and other pertinent factors, to determine their continuing relevance based on current conditions, updating them as necessary. Changes in those estimates and assumptions may have a significant effect on the Financial Statements. Furthermore, actual results may differ significantly from UBS AG's estimates, which could result in significant losses to UBS AG, beyond what was anticipated or provided for.

The following areas contain estimation uncertainty or require critical judgment and have a significant effect on amounts recognized in the Financial Statements:

- expected credit loss measurement (refer to item 2g in this Note and to Note 19);
- fair value measurement (refer to item 2f in this Note and to Note 20);
- income taxes (refer to item 6 in this Note and to Note 8);
- provisions and contingent liabilities (refer to item 10 in this Note and to Note 17);
- post-employment benefit plans (refer to item 5 in this Note and to Note 26);
- goodwill (refer to item 9 in this Note and to Note 12); and
- consolidation of structured entities (refer to item 1 in this Note and to Note 28).

1) Consolidation

The Financial Statements include the financial statements of UBS AG and its subsidiaries, presented as a single economic entity; intercompany transactions and balances have been eliminated. UBS AG consolidates all entities that it controls, including structured entities (SEs), which is the case when it has: (i) power over the relevant activities of the entity; (ii) exposure to the entity's variable returns; and (iii) the ability to use its power to affect its own returns.

Consideration is given to all facts and circumstances to determine whether UBS AG has power over another entity, i.e., the current ability to direct the relevant activities of an entity when decisions about those activities need to be made.

Subsidiaries, including SEs, are consolidated from the date when control is gained and deconsolidated from the date when control ceases. Control, or the lack thereof, is reassessed if facts and circumstances indicate that there is a change to one or more elements required to establish that control is present.

Business combinations are accounted for using the acquisition method. The amount of non-controlling interests, if any, is measured at the non-controlling interest's proportionate share of the acquiree's identifiable net assets.

› **Refer to Note 28 for more information**

Critical accounting estimates and judgments

Each individual entity is assessed for consolidation in line with the aforementioned consolidation principles. The assessment of control can be complex and requires the use of significant judgment, in particular in determining whether UBS AG has power over the entity. As the nature and extent of UBS AG's involvement is unique for each entity, there is no uniform consolidation outcome by entity. Certain entities within a class may be consolidated while others may not. When carrying out the consolidation assessment, judgment is exercised considering all the relevant facts and circumstances, including the nature and activities of the investee, as well as the substance of voting and similar rights.

› **Refer to Note 28 for more information**

2) Financial instruments

a. Recognition

UBS AG generally recognizes financial instruments when it becomes a party to contractual provisions of an instrument. However, UBS AG does not recognize assets received in transfers that do not qualify for derecognition by the transferor (applying derecognition principles under IFRS Accounting Standards as described in item 2e below). UBS AG applies settlement date accounting to all standard purchases and sales of non-derivative financial instruments.

UBS AG may act in a fiduciary capacity, which results in it holding or placing assets on behalf of individuals, trusts, retirement benefit plans and other institutions. Unless these items meet the definition of an asset and the recognition criteria are satisfied, they are not recognized on UBS AG's balance sheet and the related income is excluded from the Financial Statements.

Client cash balances associated with derivatives clearing and execution services are not recognized on the balance sheet if, through contractual agreement, regulation or practice, UBS AG neither obtains benefits from nor controls such cash balances.

b. Classification, measurement and presentation

Financial assets

Where the contractual terms of a debt instrument result in cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding, the debt instrument is classified as measured at amortized cost if it is held within a business model that has an objective of holding financial assets to collect contractual cash flows, or at fair value through other comprehensive income (FVOCI) if it is held within a business model with the objective of both collecting contractual cash flows and selling financial assets.

All other financial assets are measured at fair value through profit or loss (FVTPL), including those held for trading or those managed on a fair value basis, except for derivatives designated in certain hedge accounting relationships (refer to item 2j in this Note for more information).

Business model assessment and contractual cash flow characteristics

UBS AG determines the nature of a business model by considering the way financial assets are managed to achieve a particular business objective at the time an asset is recognized.

In assessing whether contractual cash flows are SPPI, UBS AG considers whether the contractual terms of the financial asset contain a term that could change the timing or amount of contractual cash flows arising over the life of the instrument. This assessment includes contractual cash flows that may vary due to environmental, social and governance (ESG) triggers.

Financial liabilities

Financial liabilities measured at amortized cost

Financial liabilities measured at amortized cost include *Debt issued measured at amortized cost* and *Funding from UBS Group AG measured at amortized cost*. The latter includes contingent capital instruments issued to UBS Group AG prior to November 2023 that contain contractual provisions under which the principal amounts would be written down upon either a specified common equity tier 1 (CET1) ratio breach or a determination by the Swiss Financial Market Supervisory Authority (FINMA) that a viability event has occurred. Such contractual provisions are not derivatives, as the underlying is deemed to be a non-financial variable specific to a party to the contract. Issuances after November 2023 include a contractual equity conversion feature with the same triggers, i.e., a CET1 ratio breach or FINMA viability event. When the debt is issued in US dollars, these conversion features are classified as equity and are accounted for in *Share premium* separately from the amortized cost debt host.

When the legal bail-in mechanism for write-down or conversion into equity does not form part of the contractual terms of issued debt instruments, it does not affect the accounting classification of these instruments as debt or equity.

If a debt were to be written down or converted into equity in a future period, it would be partially or fully derecognized, with the difference between its carrying amount and the fair value of any equity issued recognized in the income statement.

Financial liabilities measured at fair value through profit or loss

UBS AG designates certain issued debt instruments as financial liabilities at fair value through profit or loss, on the basis that such financial instruments include embedded derivatives that are not closely related and which significantly impact the cash flows of the instrument and / or are managed on a fair value basis (refer to the table below for more information). Financial instruments including embedded derivatives arise predominantly from the issuance of certain structured debt instruments.

Measurement and presentation

After initial recognition, UBS AG classifies, measures and presents its financial assets and liabilities in accordance with IFRS 9, as described in the table below.

Classification, measurement and presentation of financial assets

Financial assets classification		Significant items included	Measurement and presentation
Measured at amortized cost		This classification includes: – cash and balances at central banks; – amounts due from banks; – receivables from securities financing transactions; – cash collateral receivables on derivative instruments; – residential and commercial mortgages; – corporate loans; – secured loans, including Lombard loans, and unsecured loans; – loans to financial advisors; and – debt securities held as high-quality liquid assets (HQLA).	Measured at amortized cost using the effective interest method less allowances for expected credit losses (ECL) (refer to items 2d and 2g in this Note for more information). The following items are recognized in the income statement: – interest income, which is accounted for in accordance with item 2d in this Note; – ECL and reversals; and – foreign exchange (FX) translation gains and losses. When a financial asset at amortized cost is derecognized, the gain or loss is recognized in the income statement. For amounts arising from settlement of certain derivatives, see below in this table.
Measured at FVOCI	Debt instruments measured at FVOCI	This classification primarily includes debt securities held as HQLA.	Measured at fair value, with unrealized gains and losses reported in *Other comprehensive income*, net of applicable income taxes, until such investments are derecognized. Upon derecognition, any accumulated balances in *Other comprehensive income* are reclassified to the income statement and reported within *Other income*. The following items, which are determined on the same basis as for financial assets measured at amortized cost, are recognized in the income statement: – interest income, which is accounted for in accordance with item 2d in this Note; – ECL and reversals; and – FX translation gains and losses.

Classification, measurement and presentation of financial assets

Financial assets classification		Significant items included	Measurement and presentation
Measured at FVTPL	Held for trading	Financial assets held for trading include: – all derivatives with a positive replacement value, except those that are designated and effective hedging instruments; and – other financial assets acquired principally for the purpose of selling or repurchasing in the near term, or that are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking. Included in this category are debt instruments (including those in the form of securities, money market paper, and traded corporate and bank loans) and equity instruments.	Measured at fair value, with changes recognized in the income statement. Derivative assets (including derivatives that are designated and effective hedging instruments) are generally presented as *Derivative financial instruments*, except those exchange-traded derivatives (ETD) and over-the-counter (OTC)-cleared derivatives that are legally settled on a daily basis or economically net settled on a daily basis, which are presented within *Cash collateral receivables on derivative instruments.* Changes in fair value, initial transaction costs, dividends and gains and losses arising on disposal or redemption are recognized in *Other net income from financial instruments measured at fair value through profit or loss*, except interest income on instruments other than derivatives (refer to item 2d in this Note), interest on derivatives designated as hedging instruments in hedges of interest rate risk and forward points on certain short- and long-duration FX contracts acting as economic hedges, which are reported in *Net interest income.* Changes in the fair value of derivatives that are designated and effective hedging instruments are presented either in the income statement or *Other comprehensive income*, depending on the type of hedge relationship (refer to item 2j in this Note for more information).
	Mandatorily measured at FVTPL – Other	Financial assets mandatorily measured at FVTPL that are not held for trading include: – certain structured instruments, certain commercial loans, and receivables from securities financing transactions that are managed on a fair value basis; – loans managed on a fair value basis, including those hedged with credit derivatives; – certain debt securities held as HQLA and managed on a fair value basis; – certain investment fund holdings and assets held to hedge delivery obligations related to cash-settled employee compensation plans; – brokerage receivables, for which contractual cash flows do not meet the SPPI criterion because the aggregate balance is accounted for as a single unit of account, with interest being calculated on the individual components; – auction rate securities, for which contractual cash flows do not meet the SPPI criterion because interest may be reset at rates that contain leverage; – equity instruments; and – assets held under unit-linked investment contracts.	

Classification, measurement and presentation of financial liabilities

Financial liabilities classification		Significant items included	Measurement and presentation
Measured at amortized cost		This classification includes: – demand and time deposits; – retail savings / deposits; – sweep deposits; – payables from securities financing transactions; – non-structured debt issued; – subordinated debt; – commercial paper and certificates of deposit; – obligations against funding from UBS Group AG; and – cash collateral payables on derivative instruments.	Measured at amortized cost using the effective interest method. When a financial liability at amortized cost is derecognized, the gain or loss is recognized in the income statement. Interest income generated from client deposits derecognized pursuant to certain deposit sweep programs is presented within *Net interest income from financial instruments measured at fair value through profit or loss and other*.
Measured at FVTPL	Held for trading	Financial liabilities held for trading include: – all derivatives with a negative replacement value (including certain loan commitments), except those that are designated and effective hedging instruments; and – obligations to deliver financial instruments, such as debt and equity instruments, that UBS AG has sold to third parties but does not own (short positions).	Measurement and presentation of financial liabilities classified at FVTPL follow the same principles as for financial assets classified at FVTPL, except that the amount of change in the fair value of a financial liability designated at FVTPL that is attributable to changes in UBS AG's own credit risk is presented in *Other comprehensive income* directly within *Retained earnings* and is never reclassified to the income statement. Derivative liabilities (including derivatives that are designated and effective hedging instruments) are generally presented as *Derivative financial instruments*, except those exchange-traded and OTC-cleared derivatives that are legally settled on a daily basis or economically net settled on a daily basis, which are presented within *Cash collateral payables on derivative instruments*.
	Designated at FVTPL	Financial liabilities designated at FVTPL include: – issued hybrid debt instruments, primarily equity-linked, credit-linked and rates-linked bonds or notes; – issued debt instruments managed on a fair value basis; – obligations against funding from UBS Group AG managed on a fair value basis; – certain payables from securities financing transactions; – amounts due under unit-linked investment contracts, the cash flows of which are linked to financial assets measured at FVTPL and eliminate an accounting mismatch; and – brokerage payables, which arise in conjunction with brokerage receivables and are measured at FVTPL to achieve measurement consistency.	

c. Loan commitments and financial guarantees

Loan commitments are arrangements to provide credit under defined terms and conditions. Irrevocable loan commitments are classified as: (i) derivative loan commitments measured at fair value through profit or loss; (ii) loan commitments designated at fair value through profit or loss; or (iii) loan commitments not measured at fair value. Financial guarantee contracts are contracts that require UBS AG to make specified payments to reimburse the holder for an incurred loss because a specified debtor fails to make payments when due in accordance with the terms of a specified debt instrument.

d. Interest income and expense

Interest income and expense are recognized in the income statement based on the effective interest method. When calculating the effective interest rate (the EIR) for financial instruments (other than credit-impaired financial instruments), UBS AG estimates future cash flows considering all contractual terms of the instrument, but not expected credit losses, with the EIR applied to the gross carrying amount of the financial asset or the amortized cost of a financial liability. However, when a financial asset becomes credit impaired after initial recognition, interest income is determined by applying the EIR to the amortized cost of the instrument, which represents the gross carrying amount adjusted for any credit loss allowance.

Upfront fees, including fees on loan commitments not measured at fair value where a loan is expected to be issued, and direct costs are included within the initial measurement of a financial instrument measured at amortized cost or FVOCI and recognized over the expected life of the instrument as part of its EIR.

Fees related to loan commitments where no loan is expected to be issued, as well as loan syndication fees where UBS AG does not retain a portion of the syndicated loan or where UBS AG does retain a portion of the syndicated loan at the same effective yield for comparable risk as other participants, are included in *Net fee and commission income* and either recognized over the life of the commitment or when syndication occurs.

› **Refer to item 3 in this Note for more information**

Interest income on financial assets, excluding derivatives, is included in interest income when positive and in interest expense when negative. Similarly, interest expense on financial liabilities, excluding derivatives, is included in interest expense, except when interest rates are negative, in which case it is included in interest income.

› **Refer to item 2b in this Note and Note 3 for more information**

e. Derecognition

Financial assets

UBS AG derecognizes a transferred financial asset, or a portion of a financial asset, if the purchaser has obtained substantially all the risks and rewards of the asset or a significant part of the risks and rewards combined with a practical ability to sell or pledge the asset.

Where financial assets have been pledged as collateral or in similar arrangements, they are considered to have been transferred if the counterparty has received the contractual rights to the cash flows of the pledged assets, as may be evidenced by, for example, the counterparty's right to sell or repledge the assets. In transfers where control over the financial asset is retained, UBS AG continues to recognize the asset to the extent of its continuing involvement, determined by the extent to which it is exposed to changes in the value of the transferred asset following the transfer.

› **Refer to Note 22 for more information**

Financial liabilities

UBS AG derecognizes a financial liability when it is extinguished, i.e., when the obligation specified in the contract is discharged, canceled or expires. When an existing financial liability is exchanged for a new one from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, the original liability is derecognized and a new liability recognized with any difference in the respective carrying amounts recorded in the income statement.

Certain OTC derivative contracts and most exchange-traded futures and option contracts cleared through central clearing counterparties and exchanges are considered to be settled on a daily basis, as the payment or receipt of a variation margin on a daily basis represents a legal or economic settlement, which results in derecognition of the associated derivatives.

› **Refer to Note 21 for more information**

f. Fair value of financial instruments

UBS AG accounts for a significant portion of its assets and liabilities at fair value. Fair value is the price on the measurement date that would be received for the sale of an asset or paid to transfer a liability in an orderly transaction between market participants in the principal market, or in the most advantageous market in the absence of a principal market.

› **Refer to Note 20 for more information**

Critical accounting estimates and judgments

The use of valuation techniques, modeling assumptions and estimates of unobservable market inputs in the fair valuation of financial instruments requires significant judgment and could affect the amount of gain or loss recorded for a particular position. Valuation techniques that rely more heavily on unobservable inputs and sophisticated models inherently require a higher level of judgment and may require adjustment to reflect factors that market participants would consider in estimating fair value, such as close-out costs, which are presented in Note 20d.

UBS AG's governance framework over fair value measurement is described in Note 20b, and UBS AG provides a sensitivity analysis of the estimated effects arising from changing significant unobservable inputs in Level 3 financial instruments to reasonably possible alternative assumptions in Note 20f.

› **Refer to Note 20 for more information**

g. Allowances and provisions for expected credit losses

ECL are recognized for financial assets measured at amortized cost, financial assets measured at FVOCI, fee and lease receivables, financial guarantees, and loan commitments not measured at fair value. ECL are also recognized on the undrawn portion of committed unconditionally revocable credit lines, which include UBS AG's credit card limits and master credit facilities, as UBS AG is exposed to credit risk because the borrower has the ability to draw down funds before UBS AG can take credit risk mitigation actions.

Recognition of expected credit losses

ECL are recognized on the following basis.

- Stage 1 instruments: Maximum 12-month ECL are recognized from initial recognition, reflecting the portion of lifetime ECL that would result if a default occurs in the 12 months after the reporting date, weighted by the risk of a default occurring.
- Stage 2 instruments: Lifetime ECL are recognized if a significant increase in credit risk (an SICR) is observed subsequent to the instrument's initial recognition, reflecting lifetime cash shortfalls that would result from all possible default events over the expected life of a financial instrument, weighted by the risk of a default occurring. When an SICR is no longer observed, the instrument will move back to stage 1.
- Stage 3 instruments: Lifetime ECL are always recognized for credit-impaired financial instruments, as determined by the occurrence of one or more loss events, by estimating expected cash flows based on a chosen recovery strategy. Credit-impaired exposures may include positions for which no allowance has been recognized, for example because they are expected to be fully recoverable through collateral held.
- Changes in lifetime ECL since initial recognition are also recognized for assets that are purchased credit impaired (PCI). PCI financial instruments include those that are purchased at a deep discount or newly originated with a defaulted counterparty; they remain a separate category until derecognition.

All or part of a financial asset is written off if it is deemed uncollectible or forgiven. Write-offs reduce the principal amount of a claim and are charged against related allowances for credit losses. Recoveries, in part or in full, of amounts previously written off are generally credited to *Credit loss expense / (release)*.

ECL are recognized in the income statement in *Credit loss expense / (release)*. A corresponding ECL allowance is reported as a decrease in the carrying amount of financial assets measured at amortized cost on the balance sheet. For financial assets that are measured at FVOCI, the carrying amount is not reduced, but an accumulated amount is recognized in *Other comprehensive income*. For off-balance sheet financial instruments and other credit lines, provisions for ECL are presented in *Provisions*.

Default and credit impairment

UBS AG applies a single definition of default for credit risk management purposes, regulatory reporting and ECL, with a counterparty classified as defaulted based on quantitative and qualitative criteria.

› **Refer to the "Risk management and control" section of this report for more information**

Measurement of expected credit losses

IFRS 9 ECL reflect an unbiased, probability-weighted estimate based on loss expectations resulting from default events. The method used to calculate ECL applies the following principal factors: probability of default (PD), loss given default (LGD) and exposure at default (EAD). Parameters are generally determined on an individual financial asset level. Based on the materiality of the portfolio, for credit card exposures and personal account overdrafts in Switzerland, a portfolio approach is applied that derives an average PD and LGD for the entire portfolio. PDs and LGDs used in the ECL calculation are point-in-time(PIT)-based for key portfolios and consider both current conditions and expected cyclical changes. For material portfolios, PDs and LGDs are determined for different scenarios, whereas EAD projections are treated as scenario independent.

For the purpose of determining the ECL-relevant parameters, UBS AG leverages its Basel III advanced internal ratings-based (A-IRB) models that are also used in determining expected loss (EL) and risk-weighted assets under the Basel III framework and Pillar 2 stress loss models. Adjustments have been made to these models and IFRS 9-related models have been developed that consider the complexity, structure and risk profile of relevant portfolios and take account of the fact that PDs and LGDs used in the ECL calculation are PIT-based, as opposed to the corresponding Basel III through-the-cycle (TTC) parameters. All models that are relevant for measuring expected credit losses are subject to UBS AG's model validation and oversight processes.

Probability of default: PD represents the probability of a default over a specified time period. A 12-month PD represents the probability of default determined for the next 12 months and a lifetime PD represents the probability of default over the remaining lifetime of the instrument. PIT PDs are derived from TTC PDs and scenario forecasts. The modeling is region, industry and client segment specific and considers both macroeconomic scenario dependencies and client-idiosyncratic information.

Exposure at default: EAD represents an estimate of the exposure to credit risk at the time of a potential default occurring, considering expected repayments, interest payments and accruals, discounted at the EIR. Future drawdowns on facilities are considered through a credit conversion factor (a CCF) that is reflective of historical drawdown and default patterns and the characteristics of the respective portfolios.

Loss given default: LGD represents an estimate of the loss at the time of a potential default occurring, taking into account expected future cash flows from collateral and other credit enhancements, or expected payouts from bankruptcy proceedings for unsecured claims and, where applicable, time to realization of collateral and the seniority of claims. LGD is commonly expressed as a percentage of EAD.

Estimation of expected credit losses

Number of scenarios and estimation of scenario weights
Determination of probability-weighted ECL requires evaluating a range of diverse and relevant future economic conditions, especially with a view to modeling the non-linear effect of assumptions about macroeconomic factors on the estimate.

To accommodate this requirement, UBS AG uses different economic scenarios in the ECL calculation. Each scenario is represented by a specific scenario narrative, which is relevant considering the exposure of key portfolios to economic risks, and for which a set of consistent macroeconomic variables is determined. The estimation of the appropriate weights for these scenarios is predominantly judgment-based. The assessment is based on a holistic review of the prevailing economic or political conditions, which may exhibit different levels of uncertainty. It takes into account the impact of changes in the nature and severity of the underlying scenario narratives and the projected economic variables.

The determined weights constitute the probabilities that the respective set of macroeconomic conditions will occur and not that the chosen particular narratives with the related macroeconomic variables will materialize.

Macroeconomic and other factors
The range of macroeconomic, market and other factors that is modeled as part of the scenario determination is wide, and historical information is used to support the identification of the key factors. As the forecast horizon increases, the availability of information decreases, requiring an increase in judgment. For cycle-sensitive PD and LGD determination purposes, UBS AG projects the relevant economic factors for a period of three years before reverting, over a specified period, to cycle-neutral PD and LGD for longer-term projections.

Factors relevant for ECL calculation vary by type of exposure. Regional and client-segment characteristics are generally taken into account, with specific focus on Switzerland and the US, considering UBS AG's key ECL-relevant portfolios.

For UBS AG, the following forward-looking macroeconomic variables represent the most relevant factors for ECL calculation:
- gross domestic product (GDP) growth rates, given their significant effect on borrowers' performance;
- unemployment rates, given their significant effect on private clients' ability to meet contractual obligations;
- house price indices, given their significant effect on mortgage collateral valuations;
- interest rates, given their significant effect on counterparties' abilities to service debt;
- consumer price indices, given their overall relevance for companies' performance, private clients' purchasing power and economic stability; and
- equity indices, given that they are an important factor in UBS AG's corporate rating tools.

Scenario generation, review process and governance
A team of economists, which is part of Group Risk Control, develops the forward-looking macroeconomic assumptions with involvement from a broad range of experts.

The scenarios, their weights and the key macroeconomic and other factors are subject to a critical assessment by the IFRS 9 Scenario Sounding Sessions and ECL Management Forum, which include senior management from Group Risk and Group Finance. Important aspects for the review include whether there may be particular credit risk concerns that may not be capable of being addressed systematically and require post-model adjustments for stage allocation and ECL allowance.

The Group Model Governance Committee (the GMGC), as the highest authority under UBS AG's model governance framework, ratifies the decisions taken by the ECL Management Forum.

› **Refer to Note 19 for more information**

ECL measurement period

The period for which lifetime ECL are determined is based on the maximum contractual period that UBS AG is exposed to credit risk, taking into account contractual extension, termination and prepayment options. For irrevocable loan commitments and financial guarantee contracts, the measurement period represents the maximum contractual period for which UBS AG has an obligation to extend credit.

Additionally, some financial instruments include both an on-demand loan and a revocable undrawn commitment, where the contractual cancellation right does not limit UBS AG's exposure to credit risk to the contractual notice period, as the client has the ability to draw down funds before UBS AG can take risk-mitigating actions. In such cases UBS AG is required to estimate the period over which it is exposed to credit risk. This applies to UBS AG's credit card limits, which do not have a defined contractual maturity date, are callable on demand and where the drawn and undrawn components are managed as one exposure. The exposure arising from UBS AG's credit card limits is not significant and is managed at a portfolio level, with credit actions triggered when balances are past due. An ECL measurement period of seven years is applied for credit card limits, capped at 12 months for stage 1 balances, as a proxy for the period that UBS AG is exposed to credit risk.

Customary master credit agreements in the Swiss corporate market also include on-demand loans and revocable undrawn commitments. For smaller commercial facilities, a risk-based monitoring (RbM) approach is in place that highlights negative trends as risk events, at an individual facility level, based on a combination of continuously updated risk indicators. The risk events trigger additional credit reviews by a risk officer, enabling informed credit decisions to be taken. Larger corporate facilities are not subject to RbM, but are reviewed at least annually through a formal credit review. UBS AG has assessed these credit risk management practices and considers both the RbM approach and formal credit reviews as substantive credit reviews resulting in a re-origination of the given facility. Following this, a 12-month measurement period from the reporting date is used for both types of facilities as an appropriate proxy of the period over which UBS AG is exposed to credit risk, with 12 months also used as a look-back period for assessing an SICR, always from the respective reporting date.

Significant increase in credit risk

Financial instruments subject to ECL are monitored on an ongoing basis. To determine whether the recognition of a maximum 12-month ECL continues to be appropriate, an assessment is made as to whether an SICR has occurred since initial recognition of the financial instrument, applying both quantitative and qualitative factors.

Primarily, UBS AG assesses changes in an instrument's risk of default on a quantitative basis by comparing the annualized forward-looking and scenario-weighted lifetime PD of an instrument determined at two different dates:
– at the reporting date; and
– at inception of the instrument.

If, based on UBS AG's quantitative modeling, an increase exceeds a set threshold, an SICR is deemed to have occurred and the instrument is transferred to stage 2 with lifetime ECL recognized.

The threshold applied varies depending on the original credit quality of the borrower, with a higher SICR threshold set for those instruments with a low PD at inception. The SICR assessment based on PD changes is made at an individual financial asset level. A high-level overview of the SICR trigger, which is a multiple of the annualized remaining lifetime PIT PD expressed in rating downgrades, is provided in the "SICR thresholds" table below. The actual SICR thresholds applied are defined on a more granular level by interpolating between the values shown in the table.

SICR thresholds

Internal rating at origination of the instrument	Rating downgrades / SICR trigger
0–3	3
4–8	2
9–13	1

› **Refer to the "Risk management and control" section of this report for more details about UBS AG's internal rating system**

Irrespective of the SICR assessment based on default probabilities, credit risk is generally deemed to have significantly increased for an instrument if contractual payments are more than 30 days past due. For certain less material portfolios, specifically the Swiss credit card portfolio, the 30-day past due criterion is used as the primary indicator of an SICR. Where instruments are transferred to stage 2 due to the 30-day past due criterion, a minimum period of six months is applied before a transfer back to stage 1 can be triggered, where applicable. For instruments in Personal & Corporate Banking and Global Wealth Management Region Switzerland that are between 90 and 180 days past due but have not been reclassified to stage 3, a one-year period is applied before a transfer back to stage 1 can be triggered.

Additionally, based on individual counterparty-specific indicators, external market indicators of credit risk or general economic conditions, counterparties may be moved to a watch list, which is used as a secondary qualitative indicator for an SICR. Exception management is further applied, allowing for individual and collective adjustments on exposures sharing the same credit risk characteristics to take account of specific situations that are not otherwise fully reflected.

In general, the overall SICR determination process does not apply to Lombard loans, securities financing transactions and certain other asset-based lending transactions, because of the risk management practices adopted, including daily monitoring processes with strict margining. If margin calls are not satisfied, a position is closed out and classified as a stage 3 position. In exceptional cases, an individual adjustment and a transfer into stage 2 may be made to take account of specific facts.

Credit risk officers are responsible for the identification of an SICR, which for accounting purposes is in some respects different from internal credit risk management processes. This difference mainly arises because ECL accounting requirements are instrument-specific, such that a borrower can have multiple exposures allocated to different stages, and maturing loans in stage 2 will migrate to stage 1 upon renewal irrespective of the actual credit risk at that time. Under a risk-based approach, a holistic counterparty credit assessment and the absolute level of risk at any given date will determine what risk-mitigating actions may be warranted.

› **Refer to the "Risk management and control" section of this report for more information**

Critical accounting estimates and judgments

The calculation of ECL requires management to apply significant judgment and make estimates and assumptions that can result in significant changes to the timing and the amount of ECL recognized.

Determination of a significant increase in credit risk
IFRS 9 does not include a definition of what constitutes an SICR, with UBS AG's assessment considering qualitative and quantitative criteria. An IFRS 9 ECL Management Forum has been established to review and challenge the SICR results.

Scenarios, scenario weights and macroeconomic variables
ECL reflect an unbiased and probability-weighted amount, which UBS AG determines by evaluating a range of possible outcomes. Management selects forward-looking scenarios that include relevant macroeconomic variables and management's assumptions around future economic conditions. IFRS 9 Scenario Sounding Sessions, in addition to the IFRS 9 ECL Management Forum, are in place to derive, review and challenge the scenario selection and weights, and to determine whether any additional post-model adjustments are required that may significantly affect ECL.

ECL measurement period
Lifetime ECL are generally determined based upon the contractual maturity of the transaction, which significantly affects ECL. For credit card limits and Swiss callable master credit facilities, judgment is required, as UBS AG must determine the period over which it is exposed to credit risk. A seven-year period is applied for credit card limits, capped at 12 months for stage 1 positions, and a 12-month period applied for master credit facilities.

Modeling and post-model adjustments
A number of complex models have been developed or modified to calculate ECL, with additional post-model adjustments required that may significantly affect ECL. The models are governed by UBS AG's model validation controls and approved by the GMGC. The post-model adjustments are approved by the ECL Management Forum and endorsed by the GMGC.

A sensitivity analysis covering key macroeconomic variables, scenario weights and SICR trigger points on ECL measurement is provided in Note 19f.

› **Refer to Note 19 for more information**

h. Restructured and modified financial assets

When payment default is expected, or where default has already occurred, UBS AG may grant concessions to borrowers in financial difficulties that it would not consider in the normal course of its business, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc.

› **Refer to the "Risk management and control" section of this report for more information**

Modifications result in an alteration of future contractual cash flows and can occur within UBS AG's normal risk tolerance or as part of a credit restructuring where a counterparty is in financial difficulties. The restructuring or modification of a financial asset could lead to a substantial change in the terms and conditions, resulting in the original financial asset being derecognized and a new financial asset being recognized. Where the modification does not result in a derecognition, any difference between the modified contractual cash flows discounted at the original EIR and the existing gross carrying amount of the given financial asset is recognized in the income statement as a modification gain or loss.

i. Offsetting

UBS AG presents financial assets and liabilities on its balance sheet net if (i) it has a legally enforceable right to set off the recognized amounts and (ii) it intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. Netted positions include, for example, certain derivatives and repurchase and reverse repurchase transactions with various counterparties, exchanges and clearing houses.

In assessing whether UBS AG intends to either settle on a net basis, or to realize the asset and settle the liability simultaneously, emphasis is placed on the effectiveness of operational settlement mechanics in eliminating substantially all credit and liquidity exposure between the counterparties. This condition precludes offsetting on the balance sheet for substantial amounts of UBS AG's financial assets and liabilities, even though they may be subject to enforceable netting arrangements. Repurchase arrangements and securities financing transactions are presented net only to the extent that the settlement mechanism eliminates, or results in insignificant, credit and liquidity risk, and processes the receivables and payables in a single settlement process or cycle.

› **Refer to Note 21 for more information**

j. Hedge accounting

UBS AG applies hedge accounting requirements of IFRS 9 where the criteria for documentation and hedge effectiveness are met. If a hedge relationship no longer meets the criteria for hedge accounting, hedge accounting is discontinued. Voluntary discontinuation of hedge accounting is not permitted under IFRS 9.

Fair value hedges of interest rate risk related to debt instruments and loan assets
The fair value change of the hedged item attributable to a hedged risk is reflected as an adjustment to the carrying amount of the hedged item and recognized in the income statement along with the change in the fair value of the hedging instrument.

Fair value hedges of FX risk related to debt instruments
The fair value change of the hedged item attributable to the hedged risk is reflected in the measurement of the hedged item and recognized in the income statement along with the change in the fair value of the hedging instrument. The foreign currency basis spread of cross-currency swaps designated as hedging derivatives is excluded from the designation and accounted for as a cost of hedging with amounts deferred in *Other comprehensive income* within *Equity*. These amounts are released to the income statement over the term of the hedged item.

Discontinuation of fair value hedges
Discontinuations for reasons other than derecognition of the hedged item result in an adjustment to the carrying amount, which is amortized to the income statement over the remaining life of the hedged item using the effective interest method. If the hedged item is derecognized, the unamortized fair value adjustment or deferred cost of hedging amount is recognized immediately in the income statement as part of any derecognition gain or loss.

Cash flow hedges of forecast transactions
Fair value gains or losses associated with the effective portion of derivatives designated as cash flow hedges for cash flow repricing risk are recognized initially in *Other comprehensive income* within *Equity* and reclassified to *Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income* or *Interest expense from financial instruments measured at amortized cost* in the periods when the hedged forecast cash flows affect profit or loss, including discontinued hedges for which forecast cash flows are expected to occur. If the forecast transactions are no longer expected to occur, the deferred gains or losses are immediately reclassified to the income statement.

Hedges of net investments in foreign operations
Gains or losses on the hedging instrument relating to the effective portion of a hedge are recognized directly in *Other comprehensive income* within *Equity*, while any gains or losses relating to the ineffective and / or undesignated portion (for example, the interest element of a forward contract) are recognized in the income statement. Upon disposal or partial disposal of the foreign operation, the cumulative value of any such gains or losses recognized in *Equity* associated with the entity is reclassified to *Other income*.

Interest Rate Benchmark Reform
UBS AG continued hedge accounting during the period of uncertainty before existing interest rate benchmarks were replaced with alternative risk-free interest rates. During this period, UBS AG assumed that the current benchmark rates would continue to exist, such that forecast transactions were considered highly probable and hedge relationships remain, with little or no consequential impact on the financial statements. Upon replacement of existing interest rate benchmarks by alternative risk-free interest rates, UBS AG applied the requirements of *Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 (Interest Rate Benchmark Reform – Phase 2)*, where applicable.

› **Refer to Note 25 for more information**

3) Fee and commission income and expenses

UBS AG earns fee income from the diverse range of services it provides to its clients. Fee income can be divided into two broad categories: fees earned from services that are provided over a certain period of time, such as management of clients' assets, custody services and certain advisory services; and fees earned from PIT services, such as underwriting fees, deal-contingent merger and acquisitions fees, and brokerage fees (e.g., securities and derivatives execution and clearing). UBS AG recognizes fees earned from PIT services when it has fully provided the service to the client. Where the contract requires services to be provided over time, income is recognized on a systematic basis over the life of the agreement.

Consideration received is allocated to the separately identifiable performance obligations in a contract. Owing to the nature of UBS AG's business, contracts that include multiple performance obligations are typically those that are considered to include a series of similar performance obligations fulfilled over time with the same pattern of transfer to the client, e.g., management of client assets and custodial services. As a consequence, UBS AG is not required to apply significant judgment in allocating the consideration received across the various performance obligations.

PIT services are generally for a fixed price or dependent on deal size, e.g., a fixed number of basis points of trade size, where the amount of revenue is known when the performance obligation is met. Fixed-over-time fees are recognized on a straight-line basis over the performance period. Custodial and asset management fees can be variable through reference to the size of the customer portfolio. However, they are generally billed on a monthly or quarterly basis once the customer's portfolio size is known or known with near certainty and therefore also recognized ratably over the performance period. UBS AG does not recognize performance fees related to management of clients' assets or fees related to contingencies beyond UBS AG's control until such uncertainties are resolved.

UBS AG's fees are generally earned from short-term contracts. As a result, UBS AG's contracts do not include a financing component or result in the recognition of significant receivables or prepayment assets. Furthermore, due to the short-term nature of such contracts, UBS AG has not capitalized any material costs to obtain or fulfill a contract or generated any significant contract assets or liabilities.

UBS AG presents expenses primarily in line with their nature in the income statement, differentiating between expenses that are directly attributable to the satisfaction of specific performance obligations associated with the generation of revenues, which are generally presented within *Total revenues* as *Fee and commission expense*, and those that are related to personnel, general and administrative expenses, or depreciation and amortization which are presented within *Operating expenses*. For derivatives execution and clearing services (where UBS AG acts as an agent), UBS AG only records its specific fees in the income statement, with fees payable to other parties not recognized as an expense but instead directly offset against the associated income collected from the given client.

› **Refer to Note 4 for more information, including the disaggregation of revenues**

4) Share-based and other deferred compensation plans

UBS AG recognizes expenses for deferred compensation awards over the period that the employee is required to provide service to become entitled to the award. Where the service period is shortened, for example in the case of employees affected by restructuring programs or mutually agreed termination provisions, recognition of such expense is accelerated to the termination date. Where no future service is required, such as for employees who are eligible for retirement or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized over the performance year or, in the case of off-cycle awards, immediately on the grant date.

Share-based compensation plans

UBS Group AG is the grantor of and maintains the obligation to settle share-based compensation plans that are awarded to employees of UBS AG. As a consequence, UBS AG classifies the awards of UBS Group AG shares as equity-settled share-based payment transactions. UBS AG recognizes the fair value of awards granted to its employees by reference to the fair value of UBS Group AG's equity instruments on the date of grant, taking into account the terms and conditions inherent in the award, including, where relevant, dividend rights, transfer restrictions in effect beyond the vesting date, market conditions, and non-vesting conditions.

For equity-settled awards, fair value is not remeasured unless the terms of the award are modified such that there is an incremental increase in value. Expenses are recognized, on a per-tranche basis, over the service period based on an estimate of the number of instruments expected to vest and are adjusted to reflect the actual outcomes of service or performance conditions.

For equity-settled awards, forfeiture events resulting from a breach of a non-vesting condition (i.e., one that does not relate to a service or performance condition) do not result in any adjustment to the share-based compensation expense.

For cash-settled share-based awards, fair value is remeasured at each reporting date, so that the cumulative expense recognized equals the cash distributed.

Other deferred compensation plans

Compensation expense for other deferred compensation plans is recognized on a per-tranche or straight-line basis, depending on the nature of the plan. The amount recognized is measured based on the present value of the amount expected to be paid under the plan and is remeasured at each reporting date, so that the cumulative expense recognized equals the cash or the fair value of respective financial instruments distributed.

› **Refer to Note 27 for more information**

5) Post-employment benefit plans

Defined benefit plans

Defined benefit plans specify an amount of benefit that an employee will receive, which usually depends on one or more factors, such as age, years of service and compensation. The defined benefit liability recognized in the balance sheet is the present value of the defined benefit obligation, measured using the projected unit credit method, less the fair value of the plan's assets at the balance sheet date, with changes resulting from remeasurements recorded immediately in *Other comprehensive income*. If the fair value of the plan's assets is higher than the present value of the defined benefit obligation, the recognition of the resulting net asset is limited to the present value of economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. Calculation of the net defined benefit obligation or asset takes into account the specific features of each plan, including risk sharing between employee and employer, and is calculated periodically by independent qualified actuaries.

Critical accounting estimates and judgments

The net defined benefit liability or asset at the balance sheet date and the related personnel expense depend on the expected future benefits to be provided, determined using a number of economic and demographic assumptions. A range of assumptions could be applied, and different assumptions could significantly alter the defined benefit liability or asset and pension expense recognized. The most significant assumptions include life expectancy, discount rate, expected salary increases, pension increases and interest credits on retirement savings account balances. Sensitivity analysis for reasonable possible movements in each significant assumption for UBS AG's post-employment obligations is provided in Note 26.

› **Refer to Note 26 for more information**

Defined contribution plans

A defined contribution plan pays fixed contributions into a separate entity from which post-employment and other benefits are paid. UBS AG has no legal or constructive obligation to pay further amounts if the plan does not hold sufficient assets to pay employees the benefits relating to employee service in the current and prior periods. Compensation expense is recognized when the employees have rendered services in exchange for contributions. This is generally in the year of contribution. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in future payments is available.

6) Income taxes

UBS AG is subject to the income tax laws of Switzerland and those of the non-Swiss jurisdictions in which UBS AG has business operations.

UBS AG's provision for income taxes is composed of current and deferred taxes. Current income taxes represent taxes to be paid or refunded for the current period or previous periods.

Deferred tax assets (DTAs) and deferred tax liabilities (DTLs) are recognized for temporary differences between the carrying amounts and tax bases of assets and liabilities that will result in deductible or taxable amounts, respectively in future periods. DTAs may also arise from other sources, including unused tax losses and unused tax credits. DTAs and DTLs are measured using the applicable tax rates and laws that have been enacted or substantively enacted by the end of the reporting period and that will be in effect when such differences are expected to reverse.

DTAs are recognized only to the extent it is probable that sufficient taxable profits will be available against which these differences can be used. When an entity or tax group has a history of recent losses, DTAs are only recognized to the extent that there are sufficient taxable temporary differences or there is convincing other evidence that sufficient taxable profit will be available against which the unused tax losses can be utilized.

Deferred and current tax assets and liabilities are offset when: (i) they arise in the same tax reporting group; (ii) they relate to the same tax authority; (iii) the legal right to offset exists; and (iv) with respect to current taxes they are intended to be settled net or realized simultaneously.

Current and deferred taxes are recognized as income tax benefit or expense in the income statement, except for current and deferred taxes recognized in relation to: (i) the acquisition of a subsidiary (for which such amounts would affect the amount of goodwill arising from the acquisition); (ii) unrealized gains or losses on financial instruments that are classified at FVOCI; (iii) changes in fair value of derivative instruments designated as cash flow hedges; (iv) remeasurements of defined benefit plans; or (v) certain foreign currency translations of foreign operations. Amounts relating to points (ii) through (v) above are recognized in *Other comprehensive income* within *Equity*.

UBS AG reflects the potential effect of uncertain tax positions for which acceptance by the relevant tax authority is not considered probable by adjusting current or deferred taxes, as applicable, using either the most likely amount or expected value methods, depending on which method is deemed a better predictor of the basis on which, and extent to which, the uncertainty will be resolved.

Critical accounting estimates and judgments

Tax laws are complex, and judgment and interpretations about the application of such laws are required when accounting for income taxes. UBS AG considers the performance of its businesses and the accuracy of historical forecasts and other factors when evaluating the recoverability of its DTAs, including the remaining tax loss carry-forward period, and its assessment of expected future taxable profits in the forecast period used for recognizing DTAs. Estimating future profitability and business plan forecasts is inherently subjective and is particularly sensitive to future economic, market and other conditions.

Forecasts are reviewed annually, but adjustments may be made at other times, if required. If recent losses have been incurred, convincing evidence is required to prove there is sufficient future profitability given that the value of UBS AG's DTAs may be affected, with effects primarily recognized through the income statement.

In addition, judgment is required to assess the expected value of uncertain tax positions and the related probabilities, including interpretation of tax laws, the resolution of any income tax-related appeals and litigation.

› **Refer to Note 8 for more information**

7) Investments in associates

Interests in entities where UBS AG has significant influence over the financial and operating policies of these entities but does not have control are classified as investments in associates and accounted for under the equity method of accounting. Typically, UBS AG has significant influence when it holds, or has the ability to hold, between 20% and 50% of an entity's voting rights. Investments in associates are initially recognized at cost, and the carrying amount is increased or decreased after the date of acquisition to recognize UBS AG's share of the investee's comprehensive income and any impairment losses. The net investment in an associate is impaired if there is objective evidence of a loss event and the carrying amount of the investment in the associate exceeds its recoverable amount.

› **Refer to Note 28 for more information**

8) Property, equipment and software

Property, equipment and software is measured at cost less accumulated depreciation and impairment losses. Software development costs are capitalized only when the costs can be measured reliably and it is probable that future economic benefits will arise. Depreciation of property, equipment and software begins when they are available for use and is calculated on a straight-line basis over an asset's estimated useful life.

Property, equipment and software are generally tested for impairment at the appropriate cash-generating unit level, alongside goodwill and intangible assets as described in item 9 in this Note. An impairment charge is recognized for such assets if the recoverable amount is below its carrying amount. The recoverable amounts of such assets, other than property that has a market price, are generally determined using a replacement cost approach that reflects the amount that would be currently required by a market participant to replace the service capacity of the asset. If such assets are no longer used, they are tested individually for impairment.

› **Refer to Note 11 for more information**

9) Goodwill

Goodwill represents the excess of the consideration over the fair value of identifiable assets, liabilities and contingent liabilities acquired that arises in a business combination. Goodwill is not amortized but is assessed for impairment at the end of each reporting period, or when indicators of impairment exist. UBS AG tests goodwill for impairment annually, irrespective of whether there is any indication of impairment.

An impairment charge is recognized in the income statement if the carrying amount exceeds the recoverable amount of a cash-generating-unit.

Critical accounting estimates and judgments

UBS AG's methodology for goodwill impairment testing is based on a model that is most sensitive to the following key assumptions: (i) forecasts of earnings available to shareholders (typically estimated on a discrete basis for years one to three but could extend up to five years, as permitted under IFRS Accounting Standards, in order to reflect facts and circumstances specific to a cash-generating unit); (ii) changes in the discount rates; and (iii) changes in the long-term growth rate.

Earnings available to shareholders are estimated on the basis of forecast results, which are part of the business plan approved by the BoD. The discount rates and growth rates are determined using external information, and also considering inputs from both internal and external analysts and the view of management.

The key assumptions used to determine the recoverable amounts of each cash-generating unit are tested for sensitivity by applying reasonably possible changes to those assumptions.

› **Refer to Notes 2 and 12 for more information**

10) Provisions and contingent liabilities

Provisions are liabilities of uncertain timing or amount, and are generally recognized in accordance with IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*, when: (i) UBS AG has a present obligation as a result of a past event; (ii) it is probable that an outflow of resources will be required to settle the obligation; and (iii) a reliable estimate of the amount of the obligation can be made.

The majority of UBS AG's provisions relate to litigation, regulatory and similar matters, restructuring, and employee benefits. Restructuring provisions are generally recognized as a consequence of management agreeing to materially change the scope of the business or the manner in which it is conducted, including changes in management structures. Provisions for employee benefits relate mainly to service anniversaries and sabbatical leave, and are recognized in accordance with measurement principles set out in item 4 in this Note. In addition, UBS AG presents expected credit loss allowances within *Provisions* if they relate to a loan commitment, financial guarantee contract or a revolving revocable credit line.

IAS 37 provisions are measured considering the best estimate of the consideration required to settle the present obligation at the balance sheet date.

When conditions required to recognize a provision are not met, a contingent liability is disclosed, unless the likelihood of an outflow of resources is remote. Contingent liabilities are also disclosed for possible obligations that arise from past events, the existence of which will be confirmed only by uncertain future events not wholly within the control of UBS AG.

Critical accounting estimates and judgments

Recognition of provisions often involves significant judgment in assessing the existence of an obligation that results from past events and in estimating the probability, the timing and the amount of any outflows of resources. This is particularly the case for litigation, regulatory and similar matters, which, due to their nature, are subject to many uncertainties, making their outcome difficult to predict.

The amount of any provision recognized is sensitive to the assumptions used, and there could be a wide range of possible outcomes for any particular matter.

Management regularly reviews all the available information regarding such matters, including legal advice, to assess whether the recognition criteria for provisions have been satisfied and to determine the timing and the amount of any potential outflows.

› **Refer to Note 17 for more information**

11) Foreign currency translation

Transactions denominated in a foreign currency are translated into the functional currency of the reporting entity at the spot exchange rate on the date of the transaction. At the balance sheet date, all monetary assets, including those at FVOCI, and monetary liabilities denominated in foreign currency are translated into the functional currency using the closing exchange rate. Translation differences are reported in *Other net income from financial instruments measured at fair value through profit or loss*.

Non-monetary items measured at historical cost are translated at the exchange rate on the date of the transaction.

Upon consolidation, assets and liabilities of foreign operations are translated into US dollars, UBS AG's presentation currency, at the closing exchange rate on the balance sheet date, and income and expense items and other comprehensive income are translated at the average rate for the period. The resulting foreign currency translation differences are recognized in *Equity* and reclassified to the income statement when UBS AG disposes of, partially or in its entirety, the foreign operation and UBS AG no longer controls the foreign operation.

Share capital issued and share premium held are translated at the historic average rate, with the difference between the historic average rate and the spot rate realized upon repayment of share capital reported as *Share premium*. Cumulative amounts recognized in *Other comprehensive income* in respect of cash flow hedges and financial assets measured at FVOCI are translated at the closing exchange rate as of the balance sheet dates, with any translation effects adjusted through *Retained earnings*.

› **Refer to Note 32 for more information**

b) Changes in accounting policies, comparability and other adjustments

New or amended accounting standards

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.

Amendments to IAS 12, Income Taxes

In May 2023, the IASB issued amendments to IAS 12, *Income Taxes*, in relation to top-up taxes on income under Global Anti-Base Erosion Rules that is imposed under legislation that has been enacted or substantively enacted to implement the Pillar Two model rules published by the Organisation for Economic Co-operation and Development.

Certain countries in which UBS AG operates had enacted such legislation by 31 December 2023, including Switzerland, which introduced a tax with effect from 1 January 2024 that is expected to be a qualified domestic minimum top-up tax, and other countries (including Germany, France and Italy) also introduced top-up taxes in respect of a non-domestic UBS AG's worldwide operations with effect from 1 January 2025. Moreover, it is expected that other countries will enact such legislation in 2024.

The amendments to IAS 12 introduced an exception, whereby deferred tax assets and deferred tax liabilities should not be recognized or disclosed in respect of top-up taxes, which has been applied for the purposes of these financial statements.

An assessment was performed of UBS AG's potential exposure to top-up taxes under legislation that was enacted or substantively enacted to implement the Pillar Two model rules by 31 December 2023, reflecting country-by-country reporting and, also, the corporate tax expenses of UBS AG entities for recent years and those expected in future years. This assessment indicated that UBS AG's profits in future years are expected to be almost entirely earned in countries with corporate tax expenses that are at a tax rate of 15% or more and will not, therefore, be subject to top-up taxes. Consequently, UBS AG is not expected to have a material annual exposure to top-up taxes for future years under this legislation.

c) IFRS Accounting Standards and Interpretations to be adopted in 2024 and later and other changes

Other amendments to IFRS Accounting Standards

The IASB has issued a number of minor amendments to IFRS Accounting Standards, effective from 1 January 2024 and later. These amendments are not expected to have a significant effect on UBS AG when they are adopted.

Note 2a Segment reporting

UBS AG's businesses are organized globally into five business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management, the Investment Bank, and Non-core and Legacy. All five business divisions are supported by Group Items and qualify as reportable segments for the purpose of segment reporting. Together with Group Items, the five business divisions reflect the management structure of UBS AG.

- **Global Wealth Management** provides financial services, advice and solutions to private wealth clients. Its offering ranges from investment management to estate planning and corporate finance advice, in addition to specific wealth management and banking products and services.
- **Personal & Corporate Banking** serves its private, corporate and institutional clients' needs, from banking to retirement, financing, investments and strategic transactions, in Switzerland, through its branch network and digital channels.
- **Asset Management** is a global, large-scale and diversified asset manager. It offers investment capabilities and styles across all major traditional and alternative asset classes, as well as advisory support to institutions, wholesale intermediaries and wealth management clients.
- The **Investment Bank** provides a range of services to institutional, corporate and wealth management clients globally, to help them raise capital, grow their businesses, invest and manage risks. Its offering includes research, advisory services, facilitating clients raising debt and equity from the public and private markets and capital markets, cash and derivatives trading across equities and fixed income, and financing.
- **Non-core and Legacy** includes positions and businesses not aligned with our strategy and policies previously reported in Group Functions and smaller amounts of assets and liabilities of UBS AG's business divisions that have been assessed as not strategic in light of the acquisition of the Credit Suisse Group.
- Our Group functions are support and control functions that provide services to the Group. Virtually all costs incurred by the support and control functions are allocated to the business divisions, leaving a residual amount that we refer to as **Group Items** in our segment reporting. Group functions is made up of the following major areas: Group Services (which consists of the Group Operations and Technology Office, Corporate Services, Compliance, Regulatory & Governance, Finance, Risk Control, Human Resources, Communications & Branding, Legal, the Group Integration Office, Group Sustainability and Impact, and Chief Strategy Office) and Group Treasury.

Financial information about the five business divisions and Group Items is presented separately in internal management reports to the Executive Board, which is considered the "chief operating decision-maker" pursuant to IFRS 8, *Operating Segments*.

UBS AG's internal accounting policies, which include management accounting policies and service-level agreements, determine the revenues and expenses directly attributable to each reportable segment. Transactions between the reportable segments are carried out at internally agreed rates and are reflected in the operating results of the reportable segments. Revenue-sharing agreements are used to allocate external client revenues to reportable segments where several reportable segments are involved in the value creation chain. Total intersegment revenues for UBS AG are immaterial, as the majority of the revenues are allocated across the segments by means of revenue-sharing agreements. Interest income earned from managing UBS AG's consolidated equity is allocated to the reportable segments based on average attributed equity and currency composition. Assets and liabilities of the reportable segments are funded through and invested with Group functions, and the net interest margin is reflected in the results of each reportable segment.

Segment assets are based on a third-party view and do not include intercompany balances. This view is in line with internal reporting to management. If one operating segment is involved in an external transaction together with another operating segment or Group function, additional criteria are considered to determine the segment that will report the associated assets. This will include a consideration of which segment's business needs are being addressed by the transaction and which segment is providing the funding and / or resources. Allocation of liabilities follows the same principles.

Non-current assets disclosed for segment reporting purposes represent assets that are expected to be recovered more than 12 months after the reporting date, excluding financial instruments, deferred tax assets and post-employment benefits.

Note 2a Segment reporting (continued)

USD m	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Non-core and Legacy[1]	Group Items[1]	UBS AG
For the year ended 31 December 2023							
Net interest income	5,436	3,128	(39)	(2,612)	25	(1,372)	4,566
Non-interest income	13,194	2,158	2,108	10,371	34	1,244	29,109
Total revenues	18,631	5,285	2,069	7,759	59	(128)	33,675
Credit loss expense / (release)	25	50	(1)	67	1	1	143
Operating expenses	14,900	2,889	1,706	7,588	1,010	919	29,011
Operating profit / (loss) before tax	**3,705**	**2,346**	**364**	**104**	**(952)**	**(1,048)**	**4,521**
Tax expense / (benefit)							1,206
Net profit / (loss)							**3,315**
Additional information							
Total assets	369,176	257,068	19,662	381,023	13,845	115,242	1,156,016
Additions to non-current assets	666	219	70	445	0	0	1,400

USD m	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Non-core and Legacy[1]	Group Items[1]	UBS AG
For the year ended 31 December 2022							
Net interest income	5,274	2,192	(19)	(241)	1	(690)	6,517
Non-interest income	13,689	2,113	2,980[2]	8,958	236	423	28,398
Total revenues	18,963	4,304	2,961	8,717	237	(267)	34,915
Credit loss expense / (release)	0	39	0	(12)	2	0	29
Operating expenses	14,069	2,475	1,565	6,890	104	823	25,927
Operating profit / (loss) before tax	**4,894**	**1,790**	**1,396**	**1,839**	**131**	**(1,091)**	**8,960**
Tax expense / (benefit)							1,844
Net profit / (loss)							**7,116**
Additional information							
Total assets	388,624	235,330	16,971	391,495	13,367	59,649	1,105,436
Additions to non-current assets	42	13	1	33	0	1,773	1,862

USD m	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Non-core and Legacy[1]	Group Items[1]	UBS AG
For the year ended 31 December 2021							
Net interest income	4,244	2,120	(15)	481	(11)	(215)	6,605
Non-interest income	15,175	2,144	2,632	8,978	70	224	29,222
Total revenues	19,419	4,264	2,617	9,459	60	9	35,828
Credit loss expense / (release)	(29)	(86)	1	(34)	0	0	(148)
Operating expenses	14,743	2,623	1,593	6,902	138	1,014	27,012
Operating profit / (loss) before tax	**4,706**	**1,726**	**1,023**	**2,592**	**(78)**	**(1,005)**	**8,964**
Tax expense / (benefit)							1,903
Net profit / (loss)							**7,061**
Additional information							
Total assets[3]	395,235	225,425	25,202	346,641	25,153	98,488	1,116,145
Additions to non-current assets	56	16	1	30	0	1,689	1,791

1 As of or for the year ended 31 December 2023, Non-core and Legacy (previously reported within Group Functions) became a separate reportable segment and Group Functions has been renamed Group Items. Prior periods have been revised to reflect these changes. 2 Includes an USD 848m gain in Asset Management related to the sale of UBS AG's shareholding in Mitsubishi Corp.-UBS Realty Inc. 3 During 2022, UBS AG refined the methodology applied to allocate balance sheet resources from Group Items to the business divisions, with prospective effect. If the new methodology had been applied as of 31 December 2021, balance sheet assets allocated to business divisions would have been USD 26bn higher, of which USD 14bn would have related to the Investment Bank.

Note 2b Segment reporting by geographic location

The operating regions shown in the table below correspond to the regional management structure of UBS AG. The allocation of total revenues to these regions reflects, and is consistent with, the basis on which the business is managed and its performance is evaluated. These allocations involve assumptions and judgments that management considers to be reasonable, and may be refined to reflect changes in estimates or management structure. The main principles of the allocation methodology are that client revenues are attributed to the domicile of the given client and trading and portfolio management revenues are attributed to the country where the risk is managed. This revenue attribution is consistent with the mandate of the regional Presidents. Certain revenues, such as those related to Non-core and Legacy Portfolio, are managed at a Group level. These revenues are included in the *Global* line.

The geographic analysis of non-current assets is based on the location of the entity in which the given assets are recorded.

For the year ended 31 December 2023

	Total revenues		Total non-current assets	
	USD bn	Share %	USD bn	Share %
Americas[1]	13.3	39	8.6	47
Asia Pacific	5.2	15	1.2	7
Europe, Middle East and Africa (excluding Switzerland)	6.1	18	2.6	14
Switzerland	9.2	27	5.9	32
Global	(0.1)	0	0.0	0
Total	33.7	100	18.3	100

For the year ended 31 December 2022

	Total revenues		Total non-current assets	
	USD bn	Share %	USD bn	Share %
Americas[1]	13.8	40	9.0	48
Asia Pacific	5.6	16	1.5	8
Europe, Middle East and Africa (excluding Switzerland)	7.0	20	2.6	14
Switzerland	7.7	22	5.6	30
Global	0.8	2	0.0	0
Total	34.9	100	18.7	100

For the year ended 31 December 2021

	Total revenues		Total non-current assets	
	USD bn	Share %	USD bn	Share %
Americas[1]	14.5	40	9.0	47
Asia Pacific	6.5	18	1.4	7
Europe, Middle East and Africa (excluding Switzerland)	7.0	20	2.6	13
Switzerland	7.8	22	6.3	33
Global	0.1	0	0.0	0
Total	35.8	100	19.3	100

1 Predominantly related to the US.

Income statement notes

Note 3 Net interest income and other net income from financial instruments measured at fair value through profit or loss

	For the year ended		
USD m	31.12.23	31.12.22	31.12.21
Net interest income from financial instruments measured at fair value through profit or loss and other	1,765	1,410	1,437
Other net income from financial instruments measured at fair value through profit or loss[1]	9,934	7,493	5,844
Total net income from financial instruments measured at fair value through profit or loss and other	11,698	8,903	7,281
Net interest income			
Interest income from loans and deposits[2]	19,637	9,634	6,489
Interest income from securities financing transactions measured at amortized cost[3]	3,450	1,378	513
Interest income from other financial instruments measured at amortized cost	1,152	545	284
Interest income from debt instruments measured at fair value through other comprehensive income	103	74	115
Interest resulting from derivative instruments designated as cash flow hedges	(1,898)	173	1,133
Total interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	22,444	11,803	8,534
Interest expense on loans and deposits[4]	14,977	4,488	1,655
Interest expense on securities financing transactions measured at amortized cost[5]	1,714	1,089	1,102
Interest expense on debt issued	2,855	1,031	512
Interest expense on lease liabilities	97	88	98
Total interest expense from financial instruments measured at amortized cost	19,643	6,696	3,366
Total net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	2,801	5,108	5,168
Total net interest income from financial instruments measured at fair value through profit or loss and other	1,765	1,410	1,437
Total net interest income	4,566	6,517	6,605

1 Includes net losses from financial liabilities designated at fair value of USD 4,065m (net gains of USD 17,036m in 2022 and net losses of USD 6,457m in 2021). This complementary "of which" information for financial liabilities designated at fair value excludes fair value changes on hedges related to financial liabilities designated at fair value, and foreign currency translation effects arising from translating foreign currency transactions into the respective functional currency, both of which are reported within Other net income from financial instruments measured at fair value through profit or loss. Net gains / (losses) from financial liabilities designated at fair value included net losses of 2,045m (net gains of USD 4,112m and net losses of USD 2,068m in 2022 and 2021, respectively) from financial liabilities related to unit-linked investment notes issued by UBS AG's Asset Management business. These gains / (losses) are fully offset within Other net income from financial instruments measured at fair value through profit or loss by the fair value change on the financial assets hedging the unit-linked investment contracts, which are not disclosed as part of Net gains / (losses) from financial liabilities designated at fair value. 2 Consists of interest income from cash and balances at central banks, amounts due from 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. 3 Includes negative interest, including fees, on payables from securities financing transactions measured at amortized cost. 4 Consists of interest expense on amounts due to banks, cash collateral payables on derivative instruments, customer deposits, and funding from UBS Group AG measured at amortized cost, as well as negative interest on cash and balances at central banks, amounts due from banks, and cash collateral receivables on derivative instruments. 5 Includes negative interest, including fees, on receivables from securities financing transactions measured at amortized cost.

Note 4 Net fee and commission income

	For the year ended		
USD m	31.12.23	31.12.22	31.12.21
Underwriting fees	637	633	1,512
M&A and corporate finance fees	669	804	1,102
Brokerage fees	3,323	3,487	4,383
Investment fund fees	4,730	4,942	5,790
Portfolio management and related services	9,091	9,059	9,762
Other	1,950	1,921	1,874
Total fee and commission income[1]	20,399	20,846	24,422
of which: recurring	*14,008*	*14,229*	*15,410*
of which: transaction-based	*6,320*	*6,550*	*8,743*
of which: performance-based	*71*	*68*	*269*
Fee and commission expense	1,790	1,823	1,985
Net fee and commission income	18,610	19,023	22,438

1 For the year ended 31 December 2023, reflects third-party fee and commission income of USD 12,687m for Global Wealth Management, USD 1,840m for Personal & Corporate Banking, USD 2,723m for Asset Management, USD 3,153m for the Investment Bank, USD 7m for Non-core and Legacy and negative USD 11m for Group Items (for the year ended 31 December 2022: USD 12,990m for Global Wealth Management, USD 1,657m for Personal & Corporate Banking, USD 2,840m for Asset Management, USD 3,350m for the Investment Bank, USD 0m for Non-core and Legacy and USD 10m for Group Items; for the year ended 31 December 2021: USD 14,545m for Global Wealth Management, USD 1,645m for Personal & Corporate Banking, USD 3,337m for Asset Management, USD 4,863m for the Investment Bank, USD 0m for Non-core and Legacy and USD 33m for Group Items). For the year ended 31 December 2023, Non-core and Legacy (previously reported within Group Functions) represents a separate reportable segment and Group Functions has been renamed Group Items. Prior periods have been revised to reflect these changes.

Note 5 Other income

	For the year ended		
USD m	31.12.23	31.12.22	31.12.21
Associates, joint ventures and subsidiaries			
Net gains / (losses) from acquisitions and disposals of subsidiaries[1]	24	148	(11)
Net gains / (losses) from disposals of investments in associates and joint ventures	0	844[2]	41
Share of net profits of associates and joint ventures	(163)[3]	32	105
Total	(138)	1,024	134
Net gains / (losses) from disposals of financial assets measured at fair value through other comprehensive income	(1)	(1)	9
Income from properties[4]	18	20	22
Net gains / (losses) from properties held for sale	8	71	100[5]
Income from shared services provided to UBS Group AG or its subsidiaries	568	460	451
Other[6]	112	308[7]	224[8]
Total other income	566	1,882	941

1 Includes foreign exchange gains / (losses) reclassified from other comprehensive income related to the disposal or closure of foreign operations. Refer to Note 29 for more information about UBS AG's acquisitions and disposals of subsidiaries and businesses. 2 Includes an USD 848m gain related to the sale of UBS AG's shareholding in Mitsubishi Corp.-UBS Realty Inc. 3 Includes a USD 255m share of proportionate impairment losses reflected in the SIX Group profit and loss, of which USD 191m reported in Personal and Corporate Banking and USD 64m reported in Global Wealth Management. 4 Includes rent received from third parties. 5 Mainly relates to the sale of a property in Basel. 6 Includes gains of USD 21m related to the repurchase of UBS AG's own debt instruments (compared with a gain of USD 23m in 2022 and a loss of USD 17m in 2021). 7 Mainly relates to a portion of the total USD 133m gain on the sale of UBS AG's domestic wealth management business in Spain of USD 111m (with the remaining amount disclosed within Net gains / (losses) from acquisitions and disposals of subsidiaries) and income of USD 111m related to a legacy litigation settlement and a legacy bankruptcy claim. 8 Includes a gain of USD 100m from the sale of UBS AG's domestic wealth management business in Austria.

Note 6 Personnel expenses

	For the year ended		
USD m	31.12.23	31.12.22	31.12.21
Salaries[1]	5,898	5,528	5,723
Variable compensation[2]	7,669	7,636	7,973
of which: performance awards	*2,841*	*2,910*	*2,916*
of which: financial advisors[3]	*4,549*	*4,508*	*4,860*
of which: other	*279*	*217*	*196*
Contractors	98	119	142
Social security	835	730	762
Post-employment benefit plans[4]	579	555	582
of which: defined benefit plans	*259*	*256*	*280*
of which: defined contribution plans	*320*	*299*	*303*
Other personnel expenses	576	513	479
Total personnel expenses	15,655	15,080	15,661

1 Includes role-based allowances. 2 Refer to Note 27 for more information. 3 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. 4 Refer to Note 26 for more information. Includes curtailment gains of USD 3m for the year ended 31 December 2023 (for the year ended 31 December 2022: USD 13m; for the year ended 31 December 2021: USD 49m), which represent a reduction in the defined benefit obligation related to the Swiss pension plan resulting from a decrease in headcount following restructuring activities.

Personnel expenses increased by USD 575m to USD 15,655m and included integration-related expenses of USD 626m.

Note 7 General and administrative expenses

	For the year ended		
USD m	31.12.23	31.12.22	31.12.21
Outsourcing costs	478	451	426
Technology costs	558	502	490
Consulting, legal and audit fees	650	494	465
Real estate and logistics costs	679	507	530
Market data services	400	367	367
Marketing and communication	209	195	171
Travel and entertainment	205	156	66
Litigation, regulatory and similar matters[1]	816	348	910
Other	7,123	5,981	6,051
of which: shared services costs charged by UBS Group AG or its subsidiaries	*6,203*	*5,264*	*5,321*
Total general and administrative expenses	11,118	9,001	9,476

1 Reflects the net increase, including recoveries from third parties, in provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to Note 17 for more information.

General and administrative expenses increased by USD 2,117m to USD 11,118m, which included integration-related expenses of USD 491m, largely reflected in higher consulting and real estate costs.

Note 8 Income taxes

USD m	For the year ended 31.12.23	31.12.22	31.12.21
Tax expense / (benefit)			
Swiss			
Current	810	664	614
Deferred	39	(22)	26
Total Swiss	849	642	640
Non-Swiss			
Current	618	689	857
Deferred	(262)	513	406
Total non-Swiss	356	1,202	1,263
Total income tax expense / (benefit) recognized in the income statement	1,206	1,844	1,903

Income tax recognized in the income statement

The Swiss current tax expenses related to taxable profits of UBS Switzerland AG and other Swiss entities.

The non-Swiss current tax expenses related to expenses of USD 100m in respect of US corporate alternative minimum tax (CAMT) and USD 518m in respect of other taxable profits of non-Swiss subsidiaries and branches.

The non-Swiss net deferred tax benefit primarily related to a benefit of USD 274m in respect of an increase in deferred tax assets (DTAs) that resulted from an increase in the expected value of future tax deductions for deferred compensation awards due to an increase in the Group's share price during the year. In addition, the net deferred tax benefit included a benefit of USD 100m in respect of the recognition of DTAs for tax credits carried forward in respect of CAMT. These benefits were partly offset by a net deferred tax expense of USD 112m that primarily related to the amortization of DTAs previously recognized in relation to tax losses carried forward.

Excluding any potential effects from the remeasurement of DTAs in connection with the business planning process and any material jurisdictional statutory tax rate changes that could be enacted, UBS AG expects a tax rate for 2024 of around 24%.

USD m	For the year ended 31.12.23	31.12.22	31.12.21
Operating profit / (loss) before tax	4,521	8,960	8,964
of which: Swiss	*3,174*	*4,052*	*2,983*
of which: non-Swiss	*1,347*	*4,907*	*5,981*
Income taxes at Swiss tax rate of 18.5% for 2023, 18% for 2022 and 18.5% for 2021	836	1,613	1,658
Increase / (decrease) resulting from:			
Non-Swiss tax rates differing from Swiss tax rate	(43)	267	217
Tax effects of losses not recognized	71	74	124
Previously unrecognized tax losses now utilized	(401)	(217)	(179)
Non-taxable and lower-taxed income	(165)	(316)	(252)
Non-deductible expenses and additional taxable income	1,017	414	487
Adjustments related to prior years, current tax	(15)	(33)	(38)
Adjustments related to prior years, deferred tax	10	19	(3)
Change in deferred tax recognition	(273)	(217)	(341)
Adjustments to deferred tax balances arising from changes in tax rates	0	0	(1)
Other items	169	240	230
Income tax expense / (benefit)	1,206	1,844	1,903

Note 8 Income taxes (continued)

The components of operating profit before tax, and the differences between income tax expense reflected in the financial statements and the amounts calculated at the Swiss tax rate, are provided in the table above and explained below.

Component	Description
Non-Swiss tax rates differing from the Swiss tax rate	To the extent that UBS AG profits or losses arise outside Switzerland, the applicable local tax rate may differ from the Swiss tax rate. This item reflects, for such profits, an adjustment from the tax expense that would arise at the Swiss tax rate to the tax expense that would arise at the applicable local tax rate. Similarly, it reflects, for such losses, an adjustment from the tax benefit that would arise at the Swiss tax rate to the tax benefit that would arise at the applicable local tax rate.
Tax effects of losses not recognized	This item relates to tax losses of entities arising in the year that are not recognized as DTAs and where no tax benefit arises in relation to those losses. Therefore, the tax benefit calculated by applying the local tax rate to those losses as described above is reversed.
Previously unrecognized tax losses now utilized	This item relates to taxable profits of the year that are offset by tax losses of previous years for which no DTAs were previously recorded. Consequently, no current tax or deferred tax expense arises in relation to those taxable profits and the tax expense calculated by applying the local tax rate on those profits is reversed.
Non-taxable and lower-taxed income	This item relates to tax deductions for the year in respect of permanent differences. These include deductions in respect of profits that are either not taxable or are taxable at a lower rate of tax than the local tax rate. They also include deductions made for tax purposes, which are not reflected in the accounts.
Non-deductible expenses and additional taxable income	This item relates to additional taxable income for the year in respect of permanent differences. These include income that is recognized for tax purposes by an entity but is not included in its profit that is reported in the financial statements, as well as expenses for the year that are non-deductible (e.g., client entertainment costs are not deductible in certain locations).
Adjustments related to prior years, current tax	This item relates to adjustments to current tax expense for prior years (e.g., if the tax payable for a year is agreed with the tax authorities in an amount that differs from the amount previously reflected in the financial statements).
Adjustments related to prior years, deferred tax	This item relates to adjustments to deferred tax positions recognized in prior years (e.g., if a tax loss for a year is fully recognized and the amount of the tax loss agreed with the tax authorities is expected to differ from the amount previously recognized as DTAs in the accounts).
Change in deferred tax recognition	This item relates to changes in DTAs, including changes in DTAs previously recognized resulting from reassessments of expected future taxable profits. It also includes changes in temporary differences in the year, for which deferred tax is not recognized.
Adjustments to deferred tax balances arising from changes in tax rates	This item relates to remeasurements of DTAs and liabilities recognized due to changes in tax rates. These have the effect of changing the future tax saving that is expected from tax losses or deductible tax differences and therefore the amount of DTAs recognized or, alternatively, changing the tax cost of additional taxable income from taxable temporary differences and therefore the deferred tax liability.
Other items	Other items include other differences between profits or losses at the local tax rate and the actual local tax expense or benefit, including movements in provisions for uncertain positions in relation to the current year and other items.

Income tax recognized directly in equity

A net tax expense of USD 288m was recognized in *Other comprehensive income* (2022: net benefit of USD 1,095m) and a net tax benefit of USD 12m was recognized in *Share premium* (2022: net benefit of USD 5m).

Note 8 Income taxes (continued)

Deferred tax assets and liabilities

UBS AG has gross DTAs, valuation allowances and recognized DTAs related to tax loss carry-forwards and deductible temporary differences, as well as deferred tax liabilities in respect of taxable temporary differences, as shown in the table below. The valuation allowances reflect DTAs that were not recognized because, as of the last remeasurement period, management did not consider it probable that there would be sufficient future taxable profits available to utilize the related tax loss carry-forwards and deductible temporary differences.

The recognition of DTAs is supported by forecasts of taxable profits for the entities concerned. In addition, tax planning opportunities are available that would result in additional future taxable income and these would be utilized, if necessary.

Deferred tax liabilities are recognized in respect of investments in subsidiaries, branches and associates, and interests in joint arrangements, except to the extent that UBS AG can control the timing of the reversal of the associated taxable temporary difference, and it is probable that such will not reverse in the foreseeable future. However, as of 31 December 2023, this exception was not considered to apply to any taxable temporary differences.

USD m	31.12.23			31.12.22		
Deferred tax assets[1]	Gross	Valuation allowance	Recognized	Gross	Valuation allowance	Recognized
Tax loss carry-forwards	11,453	(8,496)	2,957	12,708	(8,720)	3,988
Unused tax credits	95	0	95	0	0	0
Temporary differences	6,771	(579)	6,192	5,774	(408)	5,365
of which: related to real estate costs capitalized for US tax purposes	*2,703*	*0*	*2,703*	*2,485*	*0*	*2,485*
of which: related to compensation and benefits	*1,457*	*(205)*	*1,252*	*1,169*	*(175)*	*993*
of which: related to cash flow hedges	*619*	*0*	*619*	*947*	*0*	*947*
of which: other	*1,992*	*(374)*	*1,618*	*1,173*	*(233)*	*940*
Total deferred tax assets	18,319	(9,076)	9,244[2]	18,482	(9,128)	9,354[2]
of which: related to the US			*8,505*			*8,294*
of which: related to other locations			*739*			*1,060*
Deferred tax liabilities						
Total deferred tax liabilities			162			233

1 After offset of DTLs, as applicable. 2 As of 31 December 2023, UBS AG recognized DTAs of USD 408m (31 December 2022: USD 471m) in respect of entities that incurred losses in either the current or preceding year.

In general, US federal tax losses incurred prior to 31 December 2017 can be carried forward for 20 years. US federal tax losses incurred after that date can be carried forward indefinitely, although the utilization of such losses is limited to 80% of the entity's future year taxable profits. UK tax losses can also be carried forward indefinitely; they can shelter up to either 25% or 50% of future year taxable profits, depending on when the tax losses arose. The amounts of US tax loss carry-forwards that are included in the table below are based on their amount for federal tax purposes rather than for state and local tax purposes.

Unrecognized tax loss carry-forwards

USD m	31.12.23	31.12.22
Within 1 year	192	231
From 2 to 5 years	10,278	2,184
From 6 to 10 years	2,708	11,106
From 11 to 20 years	1,199	1,610
No expiry	16,252	16,960
Total	30,630	32,091
of which: related to the US[1]	*12,354*	*13,350*
of which: related to the UK	*14,333*	*14,332*
of which: related to other locations	*3,943*	*4,409*

1 Related to UBS AG's US branch.

Note 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement

The tables below provide information about financial instruments and certain credit lines that are subject to expected credit loss (ECL) requirements. UBS AG's ECL disclosure segments, or "ECL segments" are aggregated portfolios based on shared risk characteristics and on the same or similar rating methods applied. The key segments are presented in the table below.

› **Refer to Note 19 for more information about expected credit loss measurement**

Segment	Segment description	Description of credit risk sensitivity	Business division
Private clients with mortgages	Lending to private clients secured by owner-occupied real estate and personal account overdrafts of those clients	Sensitive to the interest rate environment, unemployment levels, real estate collateral values and other regional aspects	– Personal & Corporate Banking – Global Wealth Management
Real estate financing	Rental or income-producing real estate financing to private and corporate clients secured by real estate	Sensitive to unemployment levels, the interest rate environment, real estate collateral values and other regional aspects	– Personal & Corporate Banking – Global Wealth Management – Investment Bank
Large corporate clients	Lending to large corporate and multi-national clients	Sensitive to GDP developments, unemployment levels, seasonality, business cycles and collateral values (diverse collateral, including real estate and other collateral types)	– Personal & Corporate Banking – Investment Bank
SME clients	Lending to small and medium-sized corporate clients	Sensitive to GDP developments, unemployment levels, the interest rate environment and, to some extent, seasonality, business cycles and collateral values (diverse collateral, including real estate and other collateral types)	– Personal & Corporate Banking
Lombard	Loans secured by pledges of marketable securities, guarantees and other forms of collateral (including concentration in hedge funds, private equity and unlisted equities), as well as unsecured recourse lending	Sensitive to equity and debt markets (e.g., changes in collateral values)	– Global Wealth Management
Credit cards	Credit card solutions in Switzerland and the US	Sensitive to unemployment levels	– Personal & Corporate Banking – Global Wealth Management
Commodity trade finance	Working capital financing of commodity traders, generally extended on a self-liquidating transactional basis	Sensitive primarily to the strength of individual transaction structures and collateral values (price volatility of commodities), as the primary source for debt service is directly linked to the shipments financed	– Personal & Corporate Banking
Financial intermediaries and hedge funds	Lending to financial institutions and pension funds, including exposures to broker-dealers and clearing houses	Sensitive to GDP development, the interest rate environment, price and volatility risks in financial markets, and regulatory and political risk	– Personal & Corporate Banking – Investment Bank

› **Refer to Note 19f for more details regarding sensitivity**

Note 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

The tables below provide ECL exposure and ECL allowance and provision information about financial instruments and certain non-financial instruments that are subject to ECLs.

USD m	31.12.23							
	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	171,806	171,788	18	0	(26)	0	(26)	0
Amounts due from banks	28,206	28,191	14	0	(7)	(6)	(1)	0
Receivables from securities financing transactions measured at amortized cost	74,128	74,128	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	32,300	32,300	0	0	0	0	0	0
Loans and advances to customers	405,633	385,493	18,131	2,009	(935)	(173)	(185)	(577)
of which: Private clients with mortgages	*174,400*	*163,617*	*9,955*	*828*	*(156)*	*(39)*	*(89)*	*(28)*
of which: Real estate financing	*54,305*	*50,252*	*4,038*	*15*	*(46)*	*(20)*	*(25)*	*(1)*
of which: Large corporate clients	*14,431*	*12,594*	*1,331*	*506*	*(241)*	*(34)*	*(32)*	*(174)*
of which: SME clients	*12,694*	*10,662*	*1,524*	*508*	*(262)*	*(34)*	*(24)*	*(204)*
of which: Lombard	*117,924*	*117,874*	*0*	*50*	*(22)*	*(5)*	*0*	*(17)*
of which: Credit cards	*2,041*	*1,564*	*438*	*39*	*(42)*	*(6)*	*(11)*	*(24)*
of which: Commodity trade finance	*2,889*	*2,873*	*12*	*4*	*(119)*	*(7)*	*0*	*(111)*
Other financial assets measured at amortized cost	54,334	53,882	312	141	(87)	(16)	(5)	(66)
of which: Loans to financial advisors	*2,615*	*2,422*	*79*	*114*	*(49)*	*(4)*	*(1)*	*(44)*
Total financial assets measured at amortized cost	**766,407**	**745,782**	**18,475**	**2,150**	**(1,057)**	**(197)**	**(217)**	**(643)**
Financial assets measured at fair value through other comprehensive income	**2,233**	**2,233**	**0**	**0**	**0**	**0**	**0**	**0**
Total on-balance sheet financial assets within the scope of ECL requirements	**768,640**	**748,015**	**18,475**	**2,150**	**(1,057)**	**(197)**	**(217)**	**(643)**

	Total exposure				ECL provisions			
Off-balance sheet (within the scope of ECL)	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	33,211	32,332	761	118	(40)	(14)	(7)	(19)
of which: Large corporate clients	*3,624*	*3,051*	*486*	*87*	*(10)*	*(3)*	*(2)*	*(6)*
of which: SME clients	*1,506*	*1,299*	*177*	*31*	*(7)*	*(1)*	*(1)*	*(5)*
of which: Financial intermediaries and hedge funds	*22,549*	*22,504*	*46*	*0*	*(12)*	*(8)*	*(3)*	*0*
of which: Lombard	*3,009*	*3,009*	*0*	*0*	*(1)*	*0*	*0*	*(1)*
of which: Commodity trade finance	*1,811*	*1,803*	*8*	*0*	*(1)*	*(1)*	*0*	*0*
Irrevocable loan commitments	44,018	42,085	1,878	56	(95)	(55)	(38)	(2)
of which: Large corporate clients	*26,096*	*24,444*	*1,622*	*30*	*(76)*	*(45)*	*(28)*	*(2)*
Forward starting reverse repurchase and securities borrowing agreements	10,373	10,373	0	0	0	0	0	0
Committed unconditionally revocable credit lines	47,421	45,452	1,913	56	(49)	(39)	(10)	0
of which: Real estate financing	*9,439*	*8,854*	*585*	*0*	*(4)*	*(3)*	*(1)*	*0*
of which: Large corporate clients	*5,110*	*4,951*	*151*	*8*	*(6)*	*(4)*	*(3)*	*0*
of which: SME clients	*5,408*	*5,188*	*191*	*29*	*(21)*	*(17)*	*(3)*	*0*
of which: Lombard	*8,964*	*8,964*	*0*	*1*	*0*	*0*	*0*	*0*
of which: Credit cards	*10,458*	*9,932*	*522*	*4*	*(10)*	*(8)*	*(2)*	*0*
of which: Commodity trade finance	*537*	*537*	*0*	*0*	*0*	*0*	*0*	*0*
Irrevocable committed prolongation of existing loans	4,183	4,169	11	4	(4)	(3)	0	0
Total off-balance sheet financial instruments and credit lines	**139,206**	**134,410**	**4,562**	**234**	**(188)**	**(111)**	**(56)**	**(21)**
Total allowances and provisions					**(1,244)**	**(308)**	**(272)**	**(664)**

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

Note 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

USD m	31.12.22							
	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	169,445	169,402	44	0	(12)	0	(12)	0
Amounts due from banks	14,671	14,670	1	0	(6)	(5)	(1)	0
Receivables from securities financing transactions measured at amortized cost	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)
of which: Private clients with mortgages	*156,930*	*147,651*	*8,579*	*699*	*(161)*	*(27)*	*(107)*	*(28)*
of which: Real estate financing	*46,470*	*43,112*	*3,349*	*9*	*(41)*	*(17)*	*(23)*	*0*
of which: Large corporate clients	*12,226*	*10,733*	*1,189*	*303*	*(130)*	*(24)*	*(14)*	*(92)*
of which: SME clients	*13,903*	*12,211*	*1,342*	*351*	*(251)*	*(26)*	*(22)*	*(203)*
of which: Lombard	*132,287*	*132,196*	*0*	*91*	*(26)*	*(9)*	*0*	*(17)*
of which: Credit cards	*1,834*	*1,420*	*382*	*31*	*(36)*	*(7)*	*(10)*	*(19)*
of which: Commodity trade finance	*3,272*	*3,261*	*0*	*11*	*(96)*	*(6)*	*0*	*(90)*
Other financial assets measured at amortized cost	53,389	52,829	413	147	(86)	(17)	(6)	(63)
of which: Loans to financial advisors	*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 income	**2,239**	**2,239**	**0**	**0**	**0**	**0**	**0**	**0**
Total on-balance sheet financial assets within the scope of ECL requirements	**732,618**	**714,889**	**16,044**	**1,685**	**(890)**	**(154)**	**(199)**	**(537)**

	Total exposure				ECL provisions			
Off-balance sheet (within the 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)
of which: Large corporate clients	*3,663*	*2,883*	*721*	*58*	*(26)*	*(2)*	*(3)*	*(21)*
of which: SME clients	*1,337*	*1,124*	*164*	*49*	*(5)*	*(1)*	*(1)*	*(3)*
of which: Financial intermediaries and hedge funds	*11,833*	*10,513*	*1,320*	*0*	*(12)*	*(8)*	*(4)*	*0*
of which: Lombard	*2,376*	*2,376*	*0*	*1*	*(1)*	*0*	*0*	*(1)*
of which: Commodity trade finance	*2,121*	*2,121*	*0*	*0*	*(1)*	*(1)*	*0*	*0*
Irrevocable loan commitments	39,996	37,531	2,341	124	(111)	(59)	(52)	0
of which: Large corporate clients	*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
Committed unconditionally revocable credit lines	43,677	41,809	1,833	36	(40)	(32)	(8)	0
of which: Real estate financing	*8,711*	*8,528*	*183*	*0*	*(6)*	*(6)*	*0*	*0*
of which: Large corporate clients	*4,578*	*4,304*	*268*	*5*	*(4)*	*(1)*	*(2)*	*0*
of which: SME clients	*4,723*	*4,442*	*256*	*26*	*(19)*	*(16)*	*(3)*	*0*
of which: Lombard	*7,855*	*7,854*	*0*	*1*	*0*	*0*	*0*	*0*
of which: Credit cards	*9,390*	*8,900*	*487*	*3*	*(7)*	*(5)*	*(2)*	*0*
of which: Commodity trade finance	*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 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.

Note 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

Coverage ratios are calculated for the core loan portfolio by taking ECL allowances and provisions divided by the gross carrying amount of the exposures. Core loan exposure is defined as the sum of *Loans and advances to customers* and *Loans to financial advisors*.

These ratios are influenced by the following key factors:
- Lombard loans are generally secured with marketable securities in portfolios that are, as a rule, highly diversified, with strict lending policies that are intended to ensure that credit risk is minimal under most circumstances;
- mortgage loans to private clients and real estate financing are controlled by conservative eligibility criteria, including low loan-to-value ratios and strong debt service capabilities;
- the amount of unsecured retail lending (including credit cards) is insignificant;
- lending in Switzerland includes government-backed COVID-19 loans;
- contractual maturities in the loan portfolio, which are a factor in the calculation of ECLs, are generally short, with Lombard lending typically having average contractual maturities of 12 months or less, real estate lending generally between two and three years in Switzerland, with long-dated maturities in the US, and corporate lending between one and two years with related loan commitments up to four years; and
- write-offs of ECL allowances against the gross loan balances when all or part of a financial asset is deemed uncollectible or forgiven, reduces the coverage ratios.

The total combined on- and off-balance sheet coverage ratio was at 22 basis points as of 31 December 2023, 1 basis point higher than on 31 December 2022. The combined stage 1 and 2 ratio of 10 basis points was unchanged compared with 31 December 2022; the stage 3 ratio was 22%, materially unchanged compared with 31 December 2022.

	31.12.23								
	Gross carrying amount (USD m)				ECL coverage (bps)				
On-balance sheet	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 1&2	Stage 3
Private clients with mortgages	174,555	163,656	10,044	856	9	2	88	7	326
Real estate financing	54,351	50,272	4,063	16	9	4	61	8	594
Total real estate lending	228,906	213,928	14,107	872	9	3	81	8	331
Large corporate clients	14,671	12,628	1,363	680	164	27	237	48	2,558
SME clients	12,956	10,696	1,548	712	202	32	155	47	2,861
Total corporate lending	27,627	23,324	2,911	1,392	182	29	193	48	2,714
Lombard	117,946	117,879	0	67	2	0	0	0	2,487
Credit cards	2,083	1,571	449	63	200	40	253	87	3,801
Commodity trade finance	3,008	2,881	12	115	394	25	62	25	9,676
Other loans and advances to customers	26,997	26,083	837	77	18	10	44	11	2,379
Loans to financial advisors	2,665	2,426	80	159	185	17	122	20	2,793
Total other lending	152,699	150,840	1,378	481	18	3	117	4	4,462
Total[1]	**409,232**	**388,092**	**18,396**	**2,744**	**24**	**5**	**101**	**9**	**2,263**

	Gross exposure (USD m)				ECL coverage (bps)				
Off-balance sheet	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 1&2	Stage 3
Private clients with mortgages	6,801	6,560	226	15	8	7	29	8	40
Real estate financing	10,662	10,064	599	0	6	5	22	6	0
Total real estate lending	17,463	16,624	824	15	6	6	24	6	40
Large corporate clients	34,829	32,446	2,259	125	27	16	147	25	628
SME clients	7,872	7,337	456	80	47	29	230	41	626
Total corporate lending	42,702	39,782	2,715	205	30	18	161	28	627
Lombard	13,609	13,609	0	1	1	1	0	1	0
Credit cards	10,458	9,932	522	4	10	8	35	10	0
Commodity trade finance	2,354	2,346	8	0	4	4	36	4	0
Financial intermediaries and hedge funds	25,378	25,148	230	0	5	4	157	5	0
Other off-balance sheet commitments	16,869	16,596	264	9	12	5	170	8	0
Total other lending	68,668	67,630	1,024	14	7	4	97	6	5,921
Total[2]	**128,833**	**124,037**	**4,562**	**234**	**15**	**9**	**122**	**13**	**908**
Total on- and off-balance sheet[3]	**538,065**	**512,129**	**22,958**	**2,978**	**22**	**6**	**105**	**10**	**2,157**

1 Includes Loans and advances to customers and Loans to financial advisors, which are presented on the balance sheet line Other financial 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 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

	31.12.22								
	Gross carrying amount (USD m)				ECL coverage (bps)				
On-balance sheet	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
Total[1]	**393,480**	**375,396**	**15,896**	**2,188**	**21**	**4**	**114**	**8**	**2,398**

	Gross exposure (USD m)				ECL coverage (bps)				
Off-balance sheet	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
Total[2]	**110,537**	**103,745**	**6,522**	**270**	**18**	**10**	**106**	**16**	**980**
Total on- and off-balance sheet[3]	**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 financial 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 10 Derivative instruments

Overview

Over-the-counter (OTC) derivative contracts are usually traded under a standardized International Swaps and Derivatives Association (ISDA) master agreement or other recognized local industry-standard master agreements between UBS AG and its counterparties. Terms are negotiated directly with counterparties and the contracts have industry-standard settlement mechanisms prescribed by ISDA or similar industry-standard solutions. Other OTC derivatives are cleared through clearing houses, in particular interest rate swaps with LCH, where a settled-to-market method has been generally adopted, under which cash collateral exchanged on a daily basis is considered to legally settle the market value of the derivatives. Regulators in various jurisdictions have introduced rules requiring the payment and collection of initial and variation margins on certain OTC derivative contracts, which may have a bearing on price and other relevant terms.

Exchange-traded derivatives (ETD) are standardized in terms of their amounts and settlement dates, and are bought and sold on regulated exchanges. Exchanges offer the benefits of pricing transparency, standardized daily settlement of changes in value and, consequently, reduced credit risk.

Most of UBS AG's derivative transactions relate to sales and market-making activity. Sales activities include the structuring and marketing of derivative products to customers to enable them to take, transfer, modify or reduce current or expected risks. Market-making aims to directly support the facilitation and execution of client activity, and involves quoting bid and offer prices to other market participants with the aim of generating revenues based on spread and volume. UBS AG also uses various derivative instruments for hedging purposes.

- **Refer to Notes 15 and 20 for more information about derivative instruments**
- **Refer to Note 25 for more information about derivatives designated in hedge accounting relationships**

Risks of derivative instruments

The derivative financial assets shown on the balance sheet can be an important component of UBS AG's credit exposure; however, the positive replacement values related to a respective counterparty are rarely an adequate reflection of UBS AG's credit exposure in its derivatives business with that counterparty. This is generally the case because, on the one hand, replacement values can increase over time (potential future exposure), while, on the other hand, exposure may be mitigated by entering into master netting agreements and bilateral collateral arrangements. Both the exposure measures used internally by UBS AG to control credit risk and the capital requirements imposed by regulators reflect these additional factors.

- **Refer to Note 21 for more information about derivative financial assets and liabilities after consideration of netting potential permitted under enforceable netting arrangements**
- **Refer to the "Risk management and control" section of this report for more information about the risks arising from derivative instruments**

Derivative instruments

	31.12.23				31.12.22			
USD bn	Derivative financial assets	Derivative financial liabilities	Notional amounts related to derivative financial assets and liabilities[2,3]	Other notional amounts[2,4]	Derivative financial assets	Derivative financial liabilities	Notional amounts related to derivative financial assets and liabilities[2,3]	Other notional amounts[2,4]
Interest rate	35.3	32.8	2,471.7	13,749.0	39.8	37.5	2,080.3	11,255.4
of which: forwards (OTC)[1]	*0.1*	*0.0*	*114.0*	*1,061.4*	*0.2*	*0.0*	*72.3*	*792.7*
of which: swaps (OTC)	*23.0*	*18.2*	*788.0*	*11,884.1*	*25.2*	*19.8*	*607.1*	*9,728.6*
of which: options (OTC)	*12.1*	*14.4*	*1,569.4*		*14.2*	*17.5*	*1,392.5*	
of which: futures (ETD)				*707.4*				*606.3*
of which: options (ETD)	*0.0*	*0.0*	*0.2*	*96.1*	*0.0*	*0.0*	*8.3*	*127.7*
Credit derivatives	1.8	1.6	93.1		1.0	1.2	73.9	
of which: credit default swaps (OTC)	*1.6*	*1.5*	*91.4*		*0.9*	*1.0*	*71.0*	
of which: total return swaps (OTC)	*0.0*	*0.1*	*0.7*		*0.1*	*0.2*	*1.2*	
Foreign exchange	65.4	71.7	6,367.1	179.6	85.5	88.5	6,080.1	40.1
of which: forwards (OTC)	*15.6*	*18.9*	*1,881.7*		*26.5*	*28.6*	*1,763.8*	
of which: swaps (OTC)	*43.5*	*46.7*	*3,587.2*	*178.7*	*49.6*	*50.4*	*3,233.0*	*38.4*
of which: options (OTC)	*6.2*	*6.1*	*892.6*		*9.3*	*9.2*	*1,073.2*	
Equity / index	27.3	32.9	1,191.1	84.3	22.2	26.1	885.8	63.4
of which: swaps (OTC)	*6.0*	*8.9*	*263.4*		*5.3*	*6.6*	*217.4*	
of which: options (OTC)	*2.8*	*5.9*	*193.4*		*2.8*	*4.4*	*140.6*	
of which: futures (ETD)				*77.3*				*52.2*
of which: options (ETD)	*10.3*	*10.0*	*732.7*	*6.9*	*9.0*	*8.1*	*526.7*	*11.2*
of which: client-cleared transactions (ETD)	*8.1*	*8.0*			*5.1*	*7.0*		
Commodities	1.6	1.3	128.6	15.5	1.4	1.4	132.3	17.6
of which: swaps (OTC)	*0.7*	*0.5*	*44.8*		*0.5*	*0.7*	*38.5*	
of which: options (OTC)	*0.6*	*0.3*	*38.4*		*0.4*	*0.3*	*29.1*	
of which: futures (ETD)				*13.0*				*16.4*
of which: forwards (ETD)	*0.0*	*0.0*	*31.5*		*0.0*	*0.0*	*47.7*	
of which: client-cleared transactions (ETD)	*0.2*	*0.3*			*0.2*	*0.3*		
Other[5]	0.3	0.4	86.0		0.2	0.1	49.7	
Total derivative instruments, based on IFRS netting[6]	131.7	140.7	10,337.6	14,028.4	150.1	154.9	9,302.1	11,376.5

1 Includes certain forward starting repurchase and reverse repurchase agreements that are classified as measured at fair value through profit or loss and are recognized within derivative instruments. 2 In cases where derivative financial instruments are presented on a net basis on the balance sheet, the respective notional amounts of the netted derivative financial instruments are still presented on a gross basis. 3 Notional amounts of client-cleared ETD and OTC transactions through central clearing counterparties are not disclosed, as they have a significantly different risk profile. 4 Other notional amounts 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 any of the periods presented. 5 Includes mainly derivative 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. 6 Derivative 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 the entity and all of the counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. Refer to Note 21 for more information on netting arrangements.

Note 10 Derivative instruments (continued)

On a notional amount basis, approximately 51% of OTC interest rate contracts held as of 31 December 2023 (31 December 2022: 46%) mature within one year, 30% (31 December 2022: 32%) within one to five years and 19% (31 December 2022: 22%) after five years.

Notional amounts of interest rate contracts cleared through either a central counterparty or an exchange that are legally settled or economically net settled on a daily basis are presented under *Other notional amounts* in the table above and are categorized into maturity buckets on the basis of contractual maturities of the cleared underlying derivative contracts. Other notional amounts related to interest rate contracts increased by USD 2.5trn compared with 31 December 2022, mainly reflecting lower compression activity and higher business volumes driven by elevated interest rate volatility and inflation.

Note 11 Property, equipment and software

At historical cost less accumulated depreciation

USD m	Owned properties and equipment[1]	Leased properties and equipment[2]	Software	Projects in progress	2023[3]	2022[3]
Historical cost						
Balance at the beginning of the year	10,352	4,275	9,220	1,046	24,893	24,542
Additions	106	96	81	1,110	1,393	1,859
Disposals / write-offs[4]	(299)	(63)	(1,087)	0	(1,449)	(414)
Reclassifications	550	0	1,390	(1,561)	378	(894)
Foreign currency translation	653	71	185	45	954	(200)
Balance at the end of the year	11,362	4,379	9,789	640	26,169	24,893
Accumulated depreciation						
Balance at the beginning of the year	6,697	1,638	5,242	0	13,577	12,830
Depreciation	457	446	1,070	0	1,974	1,819
Impairment[5]	15	0	223	0	238	2
Disposals / write-offs[4]	(296)	(62)	(1,087)	0	(1,445)	(410)
Reclassifications	207	0	(2)	0	206	(566)
Foreign currency translation	439	36	101	0	576	(99)
Balance at the end of the year	7,520	2,058	5,548	0	15,126	13,577
Net book value						
Net book value at the beginning of the year	3,655	2,637	3,978	1,046	11,316	11,712
Net book value at the end of the year	**3,842**	**2,321**	**4,241**	**640[6]**	**11,044**	**11,316**

1 Includes leasehold improvements and IT hardware. 2 Represents right-of-use assets recognized by UBS AG as lessee. UBS AG predominantly enters into lease contracts, or contracts that include lease components, in relation to real estate, including offices, retail branches and sales offices. The total cash outflow for leases during 2023 was USD 594m (2022: USD 589m). Interest expense on lease liabilities is included within Interest expense from financial instruments measured at amortized cost and Lease liabilities are included within Other financial liabilities measured at amortized cost. Refer to Notes 3 and 18a, respectively. There were no material gains or losses arising from sale-and-leaseback transactions in 2023 and in 2022. 3 The total reclassification amount for the respective periods represents net reclassifications from / to Properties and other non-current assets held for sale. 4 Includes write-offs of fully depreciated assets. 5 Impairment charges recorded in 2023 generally relate to assets that are no longer used, for which the recoverable amount based on a value-in-use approach was determined to be zero. 6 Consists of USD 415m related to software and USD 224m related to Owned properties and equipment.

Note 12 Goodwill and intangible assets

Introduction

UBS AG performs an impairment test on its goodwill assets on an annual basis or when indicators of impairment exist.

UBS AG considers Asset Management, as reported in Note 2a, as a separate cash-generating unit (a CGU), as that is the level at which the performance of investment (and the related goodwill) is reviewed and assessed by management. Given that a significant amount of goodwill in Global Wealth Management relates to the acquisition of PaineWebber Group, Inc. in 2000, which mainly affected the Americas portion of the business, this goodwill remains separately monitored by the Americas, despite the formation of Global Wealth Management in 2018. Therefore, goodwill for Global Wealth Management is separately considered for impairment at the level of two CGUs: Americas; and Switzerland and International (consisting of EMEA, Asia Pacific and Global).

The impairment test is performed for each CGU to which goodwill is allocated by comparing the recoverable amount with the carrying amount of the respective CGU. UBS AG determines the recoverable amount of the respective CGUs based on their value in use. An impairment charge is recognized if the carrying amount exceeds the recoverable amount.

As of 31 December 2023, total goodwill recognized on the balance sheet was USD 6.0bn, of which USD 3.7bn was carried by the Global Wealth Management Americas CGU, USD 1.2bn was carried by the Global Wealth Management Switzerland and International CGU, and USD 1.1bn was carried by Asset Management. Based on the impairment testing methodology described below, UBS AG concluded that the goodwill balances as of 31 December 2023 allocated to these CGUs were not impaired. For each of the CGUs, the recoverable amount substantially exceeded the carrying value as of 31 December 2023 and there was no indication of a significant risk of goodwill impairment based on the testing performed as of 31 December 2023.

Methodology for goodwill impairment testing

The recoverable amounts are determined using a discounted cash flow model, which has been adapted to use inputs that consider features of the banking business and its regulatory environment. The recoverable amount of a CGU is the sum of the discounted earnings attributable to shareholders from the first three forecast years and the terminal value, adjusted for the effect of the capital assumed to be needed over the next three years and to support growth beyond that period. The terminal value, which covers all periods beyond the third year, is calculated on the basis of the forecast of the third-year profit, the discount rate and the long-term growth rate, as well as the implied perpetual capital growth. For the Global Wealth Management Americas CGU, the methodology is consistently applied, however, the forecast period was extended from three to five years (with a terminal value thereafter) in 2023 to provide for the CGU's specific planning assumptions, namely the ongoing investments in the core banking infrastructure in the US to enhance the product capabilities and offerings in this market in the mid term. The extension of the forecast period from three to five years did not trigger, defer or avoid an impairment of goodwill as of 31 December 2023.

The carrying amount for each CGU is determined by reference to UBS's equity attribution framework. Within this framework, UBS attributes equity to the businesses on the basis of their risk-weighted assets and leverage ratio denominator (both metrics include resource allocations from Group Items to the business divisions), their goodwill and their intangible assets, as well as attributed equity related to certain common equity tier 1 deduction items. The framework is primarily used for the purpose of measuring the performance of the businesses and includes certain management assumptions. Attributed equity is equal to the capital a CGU requires to conduct its business and is currently considered a reasonable approximation of the carrying amount of the CGUs. The attributed equity methodology is also applied in the business planning process, the inputs from which are used in calculating the recoverable amounts of the respective CGU.

Assumptions

Valuation parameters used within UBS AG's impairment test model are linked to external market information, where applicable. The model used to determine the recoverable amount is most sensitive to changes in the forecast earnings available to shareholders in years one to three, to changes in the discount rates and to changes in the long-term growth rate. The applied long-term growth rate is based on long-term economic growth rates for different regions worldwide. Earnings available to shareholders are estimated on the basis of forecast results, which are part of the business plan approved by the Board of Directors.

The discount rates are determined by applying a capital asset pricing model-based approach, as well as considering quantitative and qualitative inputs from both internal and external analysts and the view of management. They also take into account regional differences in risk-free rates at the level of the individual CGUs. In line with discount rates, long-term growth rates are determined at the regional level based on nominal GDP growth rate forecasts.

Key assumptions used to determine the recoverable amounts of each CGU are tested for sensitivity by applying a reasonably possible change to those assumptions. Forecast earnings available to shareholders were changed by 20%, the discount rates were changed by 1.5 percentage points, and the long-term growth rates were changed by 0.75 percentage points. Under all scenarios, reasonably possible changes in key assumptions did not result in an impairment of goodwill or intangible assets reported by Global Wealth Management Americas, Global Wealth Management Switzerland and International, and Asset Management.

If the estimated earnings and other assumptions in future periods deviate from the current outlook, the value of goodwill attributable to Global Wealth Management Americas, Global Wealth Management Switzerland and International, and Asset Management may become impaired in the future, giving rise to losses in the income statement. Recognition of any impairment of goodwill would reduce IFRS Accounting Standards equity and net profit. It would not affect cash flows and, as goodwill is required to be deducted from capital under the Basel III capital framework, no effect would be expected on UBS AG's capital ratios.

Discount and growth rates

	Discount rates		Growth rates	
In %	**31.12.23**	31.12.22	**31.12.23**	31.12.22
Global Wealth Management Americas	**9.5**	10.5	**3.8**	3.8
Global Wealth Management Switzerland and International	**9.5**	9.4	**3.4**	3.6
Asset Management	**9.0**	9.5	**3.3**	3.4

Note 12 Goodwill and intangible assets (continued)

USD m	Goodwill	Intangible assets[1]	2023	2022
Historical cost				
Balance at the beginning of the year	6,043	1,598	7,641	7,739
Additions	0	6	6	0
Disposals[2]	(10)	(30)	(40)	(22)
Foreign currency translation	10	28	38	(76)
Balance at the end of the year	6,043	1,602	7,645	7,641
Accumulated amortization and impairment				
Balance at the beginning of the year	0	1,374	1,374	1,360
Amortization		26	26	26
Impairment / (reversal of impairment)	0	0	0	(1)
Disposals[2]	0	(30)	(30)	0
Foreign currency translation	0	9	9	(11)
Balance at the end of the year	0	1,379	1,379	1,374
Net book value at the end of the year	6,043	223	6,265	6,267
of which: Global Wealth Management Americas	*3,712*	*36*	*3,748*	*3,740*
of which: Global Wealth Management Switzerland and International	*1,182*	*52*	*1,233*	*1,225*
of which: Asset Management	*1,149*	*0*	*1,149*	*1,167*
of which: Investment Bank	*0*	*135*	*135*	*135*

1 Intangible assets mainly include customer relationships, contractual rights and the fully amortized branch network intangible asset recognized in connection with the acquisition of PaineWebber Group, Inc. in 2000.
2 Reflects the derecognition of goodwill allocated to business and intangible assets held by entities that have been disposed of. Refer to Note 29 for more information.

The table below presents estimated aggregated amortization expenses for intangible assets.

USD m	Intangible assets
Estimated aggregated amortization expenses for:	
2024	27
2025	26
2026	26
2027	25
2028	19
Thereafter	98
Not amortized due to indefinite useful life	2
Total	223

Note 13 Other assets

a) Other financial assets measured at amortized cost

USD m	31.12.23	31.12.22
Debt securities	43,245	44,594
Loans to financial advisors	2,615	2,611
Fee- and commission-related receivables	1,883	1,803
Finance lease receivables	1,427	1,314
Settlement and clearing accounts	311	1,174
Accrued interest income	2,004	1,276
Other	2,849[1]	618
Total other financial assets measured at amortized cost	54,334	53,389

1 Predominantly includes cash collateral provided to exchanges and clearing houses to secure securities trading activity through those counterparties.

Effective from 1 April 2022, UBS has reclassified a portfolio of financial assets from Financial assets measured at fair value through other comprehensive income with a fair value of USD 6.9bn (the Portfolio) to Other financial assets measured at amortized cost.

Note 13 Other assets (continued)

The Portfolio's 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 on the reclassification date, so that the Portfolio is measured as if the assets had always been classified at amortized cost, with a value of USD 7.4bn as on 1 April 2022. The reclassification had no effect on the income statement. The reclassified Portfolio is made up of high-quality liquid assets, primarily US government treasuries and US government agency mortgage-backed securities, held and separately managed by UBS Bank USA. The accounting reclassification has arisen as a direct result of the transformation of UBS's Global Wealth Management Americas business, which has significantly impacted UBS Bank USA. This includes initiatives approved by the Group Executive Board to significantly grow and extend the business, as disclosed on 1 February 2022 during UBS's fourth quarter 2021 earnings presentation. Over the two years preceding the reclassification date, UBS Bank USA's deposit base grew by more than 100% generating substantial cash balances, with a number of new products being launched, including new deposit types that are longer in duration, additional lending and a broader range of customer segments targeted. Following the commencement of these activities and the announcement made in the first quarter of 2022, the Portfolio is no longer held in a business model to collect the contractual cash flows and sell the assets but is instead solely held to collect the contractual cash flows until the assets mature, requiring a reclassification of the Portfolio in line with IFRS 9 with effect from 1 April 2022.

b) Other non-financial assets

USD m	31.12.23	31.12.22
Precious metals and other physical commodities	4,426	4,471
Deposits and collateral provided in connection with litigation, regulatory and similar matters[1]	1,379	2,205
Prepaid expenses	1,062	709
VAT, withholding tax and other tax receivables	746	1,405
Properties and other non-current assets held for sale	105	279
Other	660	583
Total other non-financial assets	**8,377**	9,652

1 Refer to Note 17 for more information.

Note 14 Customer deposits, and funding from UBS Group AG

a) Customer deposits

USD m	31.12.23	31.12.22
Demand deposits	146,163	182,307
Retail savings / deposits	152,683	149,310
Sweep deposits	41,045	69,223
Time deposits[1]	215,782	126,331
Total customer deposits	**555,673**	527,171

1 Includes customer deposits in UBS AG Jersey Branch placed by UBS Switzerland AG on behalf of its clients.

Customer deposits increased mainly due to net inflows into time deposit products, and positive foreign currency effects, partly offset by continued shifts into money market funds and US-government securities. In addition, customers continued to shift funds from Demand and Sweep deposits into time deposits.

b) Funding from UBS Group AG measured at amortized cost

USD m	31.12.23	31.12.22
Debt contributing to total loss-absorbing capacity (TLAC)	51,102	42,073
Debt eligible as high-trigger loss-absorbing additional tier 1 capital instruments	11,286	10,654
Debt eligible as low-trigger loss-absorbing additional tier 1 capital instruments	1,212	1,187
Other[1]	3,682	2,232
Total funding from UBS Group AG measured at amortized cost[2,3]	**67,282**	56,147

1 Includes debt not eligible as TLAC having a residual maturity of less than one year and high-trigger loss-absorbing additional tier 1 capital instruments that ceased to be eligible when UBS Group AG issued notice of redemption. 2 The Total funding from UBS Group AG measured at amortized cost consists of subordinated debt of UBS AG and its subsidiaries toward UBS Group AG. Subordinated debt consists of unsecured debt obligations that are contractually subordinated in right of payment to all other present and future non-subordinated obligations of the respective issuing entity. All instruments contributing to TLAC are subordinated since 1.1.2020. 3 UBS AG has also recognized funding from UBS Group AG that is designated at fair value. Refer to Note 18b for more information.

UBS AG uses interest rate and foreign exchange derivatives to manage the risks inherent in certain debt instruments held at amortized cost. In some cases, UBS AG applies hedge accounting for interest rate risk as discussed in item 2j in Note 1a and Note 25. As a result of applying hedge accounting, the life-to-date adjustment to the carrying amount of *Funding from UBS Group AG measured at amortized cost* was a decrease of USD 3.2bn as of 31 December 2023 and a decrease of USD 5.1bn as of 31 December 2022, reflecting changes in fair value due to interest rate movements.

Of the *Total funding from UBS Group AG measured at amortized cost* outstanding as of 31 December 2023, USD 65.6bn pays a fixed interest rate and USD 1.7bn pays a floating rate of interest.

› **Refer to Note 23 for maturity information**

Note 15 Debt issued designated at fair value

USD m	31.12.23	31.12.22
Issued debt instruments		
Equity-linked[1]	46,269	41,901
Rates-linked	16,880	16,276
Credit-linked	4,506	2,170
Fixed-rate	14,295	6,538
Commodity-linked	3,704	4,294
Other	687	663
Total debt issued designated at fair value	86,341	71,842
of which: issued by UBS AG with original maturity greater than one year[2]	*73,544*	*57,750*

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

Note 16 Debt issued measured at amortized cost

USD m	31.12.23	31.12.22
Short-term debt[1]	37,285	29,676
Senior unsecured debt	18,450	17,892
of which: issued by UBS AG with original maturity greater than one year	*18,446*	*17,892*
Covered bonds	1,006	0
Subordinated debt	3,008	2,968
of which: eligible as low-trigger loss-absorbing tier 2 capital instruments	*0*	*2,422*
of which: eligible as non-Basel III-compliant tier 2 capital instruments	*538*	*536*
Debt issued through the Swiss central mortgage institutions	10,035	8,962
Long-term debt[2]	32,499	29,823
Total debt issued measured at amortized cost[3,4]	69,784	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. 4 Except for Covered bonds and Debt issued through the Swiss central mortgage institutions, 100% of the balance was unsecured as of 31 December 2023.

UBS AG uses interest rate and foreign exchange derivatives to manage the risks inherent in certain debt instruments held at amortized cost. In some cases, UBS AG applies hedge accounting for interest rate risk as discussed in item 2j in Note 1a and Note 25. As a result of applying hedge accounting, the life-to-date adjustment to the carrying amount of *Debt issued measured at amortized cost* was a decrease of USD 0.4bn as of 31 December 2023 and a decrease of USD 1.0bn as of 31 December 2022, reflecting changes in fair value due to interest rate movements.

Subordinated debt consists of unsecured debt obligations that are contractually subordinated in right of payment to all other present and future non-subordinated obligations of the respective issuing entity. All of the subordinated debt instruments outstanding as of 31 December 2023 pay a fixed rate of interest.

› **Refer to Note 23 for maturity information**

Note 17 Provisions and contingent liabilities

a) Provisions

The table below presents an overview of total provisions.

USD m	31.12.23	31.12.22
Provisions other than provisions for expected credit losses	2,336	2,982
Provisions for expected credit losses[1]	188	201
Total provisions	2,524	3,183

1 Refer to Note 9 for more information about ECL provisions recognized for off-balance sheet financial instruments and credit lines.

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

USD m	Litigation, regulatory and similar matters[1]	Restructuring[2]	Real estate[3]	Other[4]	Total 2023
Balance at the beginning of the year	2,586	98	122	175	2,982
Increase in provisions recognized in the income statement	866	234	8	41	1,148
Release of provisions recognized in the income statement	(47)	(13)	0	(17)	(77)
Provisions used in conformity with designated purpose	(1,642)	(114)	(12)	(27)	(1,795)
Foreign currency translation and other movements	48	4	18	10	79
Balance at the end of the year	1,810	209	135	181	2,336

1 Consists of provisions for losses resulting from legal, liability and compliance risks. 2 Consists of USD 146m of provisions for onerous contracts related to real estate as of 31 December 2023 (31 December 2022: USD 28m) and USD 64m of personnel-related restructuring provisions as of 31 December 2023 (31 December 2022: USD 70m). 3 Mainly includes provisions for reinstatement costs with respect to leased properties. 4 Mainly includes provisions related to employee benefits and operational risks.

Restructuring provisions relate to onerous contracts and personnel-related provisions. Onerous contracts for property are recognized when UBS AG is committed to pay for non-lease components, such as utilities, service charges, taxes and maintenance, when a property is vacated or not fully recovered from sub-tenants. Personnel-related restructuring provisions are generally used within a short period of time. The level of personnel-related provisions can change when natural staff attrition reduces the number of people affected by a restructuring event, and therefore results in lower estimated costs.

Information about provisions and contingent liabilities in respect of litigation, regulatory and similar matters, as a class, is included in Note 17b. There are no material contingent liabilities associated with the other classes of provisions.

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; 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 17a 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.

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, liquidity and funding, and balance sheet" section of this report.

Note 17 Provisions and contingent liabilities (continued)

Provisions for litigation, regulatory and similar matters by business division and in Group Items[1]

USD m	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Non-core and Legacy[2]	Group Items[2]	Total 2023
Balance at the beginning of the year	1,182	159	8	308	771	158	2,586
Increase in provisions recognized in the income statement	113	0	5	81	665	2	866
Release of provisions recognized in the income statement	(7)	(9)	0	(2)	0	(29)	(47)
Provisions used in conformity with designated purpose	(98)	0	(1)	(106)	(1,435)	(1)	(1,642)
Foreign currency translation and other movements	31	6	0	5	4	1	48
Balance at the end of the year	1,220	156	12	286	4	132	1,810

1 Provisions, if any, for the matters described in item 2 of this Note are recorded in Global Wealth Management, and provisions, if any, for the matters described in items 1 and 4 of this Note are allocated between Global Wealth Management and Personal & Corporate Banking. Provisions, if any, for the matters described in item 3 are allocated between the Investment Bank and Group Items. 2 Starting with the third quarter of 2023, Non-core and Legacy represents a separate reportable segment and Group Functions has been renamed Group Items. Prior periods have been revised to reflect these changes.

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 Paris 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 appealed the decision to the French Supreme Court. The Supreme Court rendered its judgment on 15 November 2023. It upheld the Court of Appeal's decision regarding unlawful solicitation and aggravated laundering of the proceeds of tax fraud, but overturned the confiscation of EUR 1bn, the penalty of EUR 3.75m and the EUR 800m of civil damages awarded to the French state. The case has been remanded to the Court of Appeal for a retrial regarding these overturned elements. The French state has reimbursed the EUR 800m of civil damages to UBS AG.

Our balance sheet at 31 December 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.

2. 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.

3. 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.

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 moved to dismiss the amended complaint. In October 2023, the court dismissed the amended complaint with prejudice. In January 2024, plaintiffs appealed the dismissal to the Ninth Circuit Court of Appeals. Defendants filed their response to the appeal in March 2024.

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, and in February 2024, the Second Circuit affirmed the district court's dismissal. Similar class actions have been filed concerning European government bonds and other government bonds.

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 31 December 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.

4. 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 31 December 2023 reflected a provision with respect to matters described in this item 4 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 18 Other liabilities

a) Other financial liabilities measured at amortized cost

USD m	31.12.23	31.12.22
Other accrued expenses	1,613	1,564
Accrued interest expenses	4,186	2,008
Settlement and clearing accounts	1,314	1,060
Lease liabilities	2,904	3,211
Other	2,695	2,549
Total other financial liabilities measured at amortized cost	12,713	10,391

b) Other financial liabilities designated at fair value

USD m	31.12.23	31.12.22
Financial liabilities related to unit-linked investment contracts	15,922	13,221
Securities financing transactions	6,927	15,333
Over-the-counter debt instruments and other	1,566	1,684
Funding from UBS Group AG[1]	2,950	1,796
Total other financial liabilities designated at fair value	27,366	32,033

1 The Funding from UBS Group AG consists of subordinated debt of UBS AG and its subsidiaries toward UBS Group AG. Subordinated debt consists of unsecured debt obligations that are contractually subordinated in right of payment to all other present and future non-subordinated obligations of the respective issuing entity.

c) Other non-financial liabilities

USD m	31.12.23	31.12.22
Compensation-related liabilities	4,526	4,424
of which: financial advisor compensation plans	*1,472*	*1,463*
of which: other compensation plans	*1,955*	*2,023*
of which: net defined benefit liability	*487*	*449*
of which: other compensation-related liabilities[1]	*611*	*490*
Current tax liabilities	932	1,044
Deferred tax liabilities	162	233
VAT, withholding tax and other tax payables	712	472
Deferred income	276	233
Other	74	84
Total other non-financial liabilities	6,682	6,489

1 Includes liabilities for payroll taxes and untaken vacation.

Note 19 Expected credit loss measurement

a) Expected credit losses in the period

Total net credit loss expenses were USD 143m in 2023, reflecting net credit loss expenses of USD 23m related to stage 1 and 2 positions and net credit loss expenses of USD 120m related to credit-impaired (stage 3) positions.

› **Refer to Note 19b for more information regarding changes to expected credit loss models, scenarios, scenario weights and the post-model adjustments and to Note 19c for more information regarding the development of ECL allowances and provisions**

Stage 3 net expenses of USD 120m were recognized across a number of defaulted positions, with net expenses of USD 56m in the Investment Bank, USD 37m in Personal & Corporate Banking and USD 27m in Global Wealth Management.

Credit loss expense / (release)

	Performing positions	Credit-impaired positions	
USD m	Stages 1 and 2	Stage 3	**Total**
For the year ended 31.12.23			
Global Wealth Management	(2)	27	25
Personal & Corporate Banking	13	37	50
Asset Management	0	(1)	(1)
Investment Bank	11	56	67
Non-core and Legacy	0	1	1
Group Items[1]	1	0	1
Total	23	120	143
For the year ended 31.12.22			
Global Wealth Management	(5)	5	0
Personal & Corporate Banking	27	12	39
Asset Management	0	0	0
Investment Bank	6	(18)	(12)
Non-core and Legacy	0	2	2
Group Items[1]	0	0	0
Total	29	0	29
For the year ended 31.12.21			
Global Wealth Management	(28)	(1)	(29)
Personal & Corporate Banking	(62)	(24)	(86)
Asset Management	0	1	1
Investment Bank	(34)	0	(34)
Non-core and Legacy	0	0	0
Group Items[1]	0	0	0
Total	(123)	(25)	(148)

1 Starting with the third quarter of 2023, Non-core and Legacy became a separate reportable segment and Group Functions has been renamed Group Items. Prior periods have been restated to reflect these changes.

b) Changes to ECL models, scenarios, scenario weights and key inputs

Refer to Note 1a for information about the principles governing expected credit loss (ECL) models, scenarios, scenario weights and key inputs applied.

Governance

Comprehensive cross-functional and cross-divisional governance processes are in place and are used to discuss and approve scenario updates and weights, to assess whether significant increases in credit risk resulted in stage transfers, to review model outputs and to reach conclusions regarding post-model adjustments.

Model changes

During 2023, the model review and enhancement process led to adjustments of the probability of default (PD), loss given default (LGD) and credit conversion factor (CCF) models, resulting in a USD 27m increase in ECL allowances. This includes an increase of USD 16m in the Investment Bank, mainly related to lending to *Large corporate clients*, and a USD 12m increase in Personal & Corporate Banking, mainly related to lending to *Large corporate clients* and *SME clients.*

Scenario and key input updates

During 2023, the scenarios and related macroeconomic factors were updated from those applied at the end of 2022 by considering the prevailing economic and political conditions and uncertainty. The review focused on events that significantly changed the economic outlook during the year: the inflation outlook and economic growth in Europe, and rising global interest rates due to central banks' adoption of more restrictive monetary policies.

Baseline scenario: the projections of the baseline scenario, which are aligned to the economic and market assumptions used for UBS's business planning purposes, are broadly in line with external benchmarks, such as that from Bloomberg Consensus, Oxford Economics and the International Monetary Fund World Economic Outlook. The expectation for 2024 is that global growth slows down under the weight of monetary policy tightening and continued pressure on real purchasing power due to high, though falling inflation, and fading fiscal support. Unemployment rates are forecast to increase slightly from their 2023 levels. Interest rates are expected to remain high, given the persistence of inflationary pressures, leading to a less optimistic outlook for house prices worldwide, including in Switzerland.

Mild debt crisis scenario: The first hypothetical downside scenario is the mild debt crisis scenario. At the beginning of the second quarter of 2023, UBS replaced the global crisis scenario applied at the end of 2022 and at the end of the first quarter of 2023 with the mild debt crisis scenario. Economic, market and political developments suggested 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 shocks are 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.

Stagflationary geopolitical crisis scenario: The second downside scenario is aligned with the 2024 Group binding stress scenario and was updated in 2023 to reflect expected risks, resulting in minimal changes. Geopolitical tensions cause an escalation of security concerns and undermine globalization. The ensuing economic regionalization leads to a surge in global commodity prices and further disruptions of supply chains, and raises the specter of prolonged stagflation. Central banks are forced to further tighten monetary policy to contain inflationary pressures. The severe interest rate and house price assumptions in the scenario had a substantive impact on model-based ECL allowances for loans secured by mortgages in Switzerland and the US. These effects were partly offset by post-model adjustment releases related to loans secured by mortgages. Refer to the section below on "Scenario weights and post-model adjustments" for more details.

Asset price inflation scenario: The upside scenario is based on positive developments, such as an easing of geopolitical tensions across the globe and a rebound in Chinese economic growth. A combination of lower commodity prices, effective monetary policies and easing supply chain disruptions helps to reduce inflation. Improved consumer and business sentiment lead to a global economic rebound, enabling central banks to normalize interest rates, which causes asset prices to increase significantly.

The table below details the key assumptions for the four scenarios applied as of 31 December 2023.

Scenario weights and post-model adjustments

The scenario weights did not change during 2023, but the scenario suite was adjusted in the second quarter of 2023 to replace one of the two severe downside scenarios with a mild downside scenario. The mild debt crisis scenario, developed in early 2023, was introduced in the scenario suite with the same weight as the more severe global crisis scenario, i.e., 15%, to balance a somewhat more optimistic outlook with milder scenario assumptions. The weights were kept unchanged for the stagflationary geopolitical crisis, baseline and asset price inflation scenarios, i.e., 25%, 60% and 0%, respectively. The weights are shown in the table below.

Note 19 Expected credit loss measurement (continued)

However, unquantifiable risks continue to be relevant, as the geopolitical risks remained high in 2023, and the impact on the world economy from escalations with unforeseeable consequences could be severe. In the near term, this uncertainty relates primarily to developments in the Russia–Ukraine and Middle East conflicts. Models, which are based on supportable statistical information from past experiences regarding interdependencies of macroeconomic factors and their implications for credit risk portfolios, cannot comprehensively reflect such extraordinary events, such as a pandemic or a fundamental change in the world political order. Rather than creating multiple additional scenarios to attempt gauging these risks and applying model parameters that lack supportable information and cannot be robustly validated, management continued to also apply post-model adjustments.

Total stage 1 and 2 allowances and provisions were USD 580m as of 31 December 2023 and included post-model adjustments of USD 133m (31 December 2022: USD 131m). Overlays are to cover for uncertainty levels, including the geopolitical situation.

Economic scenarios and weights applied

	Assigned weights in %	
ECL scenario	31.12.23	31.12.22
Asset price inflation	0.0	0.0
Baseline	60.0	60.0
Mild debt crisis	15.0	0.0
Stagflationary geopolitical crisis	25.0	25.0
Global crisis	0.0	15.0

Scenario assumptions	One year				Three years cumulative			
31.12.23	Asset price inflation	Baseline	Mild debt crisis	Stagflationary geopolitical crisis	Asset price inflation	Baseline	Mild debt crisis	Stagflationary geopolitical crisis
Real GDP growth (% change)								
United States	4.0	0.1	(1.6)	(4.8)	9.1	4.4	0.6	(4.4)
Eurozone	3.0	0.5	(1.7)	(5.6)	6.2	2.9	(0.1)	(5.7)
Switzerland	3.0	1.4	(1.2)	(4.8)	6.6	4.4	0.3	(4.9)
Consumer price index (% change)								
United States	2.5	2.3	(0.1)	10.0	8.1	7.1	2.3	15.8
Eurozone	2.3	2.0	(0.2)	9.6	7.4	6.1	1.8	14.8
Switzerland	2.1	1.5	(0.4)	5.8	6.2	4.3	0.8	10.7
Unemployment rate (end-of-period level, %)								
United States	3.0	4.4	6.3	9.2	3.0	4.4	7.7	11.8
Eurozone	6.0	6.9	8.2	10.6	6.0	6.8	9.0	11.8
Switzerland	1.6	2.3	2.9	4.1	1.5	2.3	3.8	5.0
Fixed income: 10-year government bonds (change in yields, basis points)								
USD	13	(82)	(215)	270	37	(78)	(155)	245
EUR	20	(90)	(185)	225	58	(78)	(140)	195
CHF	25	(41)	(73)	195	63	(34)	(28)	180
Equity indices (% change)								
S&P 500	20.0	15.3	(26.6)	(51.5)	51.7	28.1	(12.2)	(45.6)
EuroStoxx 50	20.0	12.0	(26.4)	(51.6)	46.6	22.9	(16.6)	(47.2)
SPI	15.0	4.6	(24.5)	(51.6)	39.2	15.9	(11.2)	(47.2)
Swiss real estate (% change)								
Single-Family Homes	6.6	(1.5)	(4.4)	(18.5)	14.0	0.8	(3.0)	(28.6)
Other real estate (% change)								
United States (S&P / Case–Shiller)	8.1	0.6	(8.6)	(20.0)	19.7	5.8	(5.2)	(30.2)
Eurozone (House Price Index)	7.0	0.6	(5.9)	(8.4)	15.4	6.4	(5.2)	(12.9)

Note 19 Expected credit loss measurement (continued)

Scenario assumptions	One year				Three years cumulative			
31.12.22	Asset price inflation	Baseline	Stagflationary geopolitical crisis	Global crisis	Asset price inflation	Baseline	Stagflationary geopolitical crisis	Global crisis
Real GDP growth (% change)								
United States	4.0	(0.3)	(4.8)	(6.4)	9.1	3.2	(4.4)	(1.8)
Eurozone	3.0	0.6	(5.6)	(8.5)	6.2	2.5	(5.7)	(8.3)
Switzerland	3.0	0.7	(4.8)	(6.7)	6.6	3.5	(4.9)	(3.7)
Consumer price index (% change)								
United States	2.5	2.6	10.0	(0.5)	8.1	6.5	15.8	1.2
Eurozone	2.3	5.0	9.6	(0.7)	7.4	9.6	14.8	(0.7)
Switzerland	2.1	1.6	5.8	(1.8)	6.2	3.9	10.7	(1.6)
Unemployment rate (end-of-period level, %)								
United States	3.0	3.9	9.2	10.0	3.0	5.3	11.8	9.4
Eurozone	6.0	7.0	10.9	11.9	6.0	7.1	12.2	13.0
Switzerland	1.7	2.3	4.3	4.4	1.5	2.6	5.1	4.9
Fixed income: 10-year government bonds (change in yields, basis points)								
USD	25	(6)	235	(326)	70	(13)	205	(291)
EUR	20	48	250	(271)	58	45	220	(247)
CHF	25	46	220	(210)	63	57	205	(160)
Equity indices (% change)								
S&P 500	20.0	7.4	(51.5)	(50.0)	51.7	22.8	(45.6)	(27.9)
EuroStoxx 50	17.0	17.2	(51.6)	(50.0)	42.9	29.2	(47.2)	(39.3)
SPI	14.0	5.6	(51.6)	(46.0)	37.9	19.3	(47.2)	(32.9)
Swiss real estate (% change)								
Single-Family Homes	6.6	1.1	(16.7)	(19.9)	14.0	2.3	(32.9)	(23.9)
Other real estate (% change)								
United States (S&P / Case–Shiller)	7.8	(4.5)	(12.8)	(19.3)	19.1	(0.6)	(35.8)	(32.7)
Eurozone (House Price Index)	7.0	(2.7)	(8.4)	(8.9)	15.4	2.0	(14.7)	(17.5)

c) Development of ECL allowances and provisions

The ECL allowances and provisions recognized in the period are impacted by a variety of factors, such as:
- the effect of selecting and updating forward-looking scenarios and the respective weights;
- origination of new instruments during the period;
- the effect of passage of time (lower residual lifetime PD and the effect of discount unwind) as the ECL on an instrument for the remaining lifetime decreases (all other factors remaining the same);
- derecognition of instruments in the period;
- change in individual asset quality of instruments;
- movements from a maximum 12-month ECL to the recognition of lifetime ECL (and vice versa) following transfers between stages 1 and 2;
- movements from stages 1 and 2 to stage 3 (credit-impaired status) when default has become certain and PD increases to 100% (or vice versa);
- changes in models or updates to model parameters;
- write-off; and
- foreign exchange translations for assets denominated in foreign currencies.

Note 19 Expected credit loss measurement (continued)

The table below explains the changes in the ECL allowances and provisions for on- and off-balance sheet financial instruments and credit lines in scope of ECL requirements between the beginning and the end of the period due to the factors listed above.

Development of ECL allowances and provisions

USD m	Total	Stage 1	Stage 2	Stage 3
Balance as of 31 December 2022	(1,091)	(260)	(267)	(564)
Net movement from new and derecognized transactions[1]	(11)	(27)	9	7
of which: Private clients with mortgages	*(5)*	*(8)*	*3*	*0*
of which: Real estate financing	*(2)*	*(4)*	*3*	*0*
of which: Large corporate clients	*2*	*(8)*	*3*	*7*
of which: SME clients	*(3)*	*(3)*	*0*	*0*
of which: Other	*(4)*	*(4)*	*0*	*0*
of which: Financial intermediaries and hedge funds	*(1)*	*(1)*	*0*	*0*
of which: Loans to financial advisors	*0*	*0*	*0*	*0*
Remeasurements with stage transfers[2]	(140)	8	(7)	(142)
of which: Private clients with mortgages	*3*	*1*	*3*	*(1)*
of which: Real estate financing	*(2)*	*2*	*(5)*	*0*
of which: Large corporate clients	*(76)*	*3*	*(3)*	*(76)*
of which: SME clients	*(56)*	*1*	*(1)*	*(55)*
of which: Other	*(10)*	*1*	*0*	*(11)*
of which: Financial intermediaries and hedge funds	*0*	*0*	*1*	*0*
of which: Loans to financial advisors	*1*	*0*	*0*	*0*
Remeasurements without stage transfers[3]	35	7	14	14
of which: Private clients with mortgages	*5*	*(5)*	*14*	*(3)*
of which: Real estate financing	*5*	*2*	*3*	*(1)*
of which: Large corporate clients	*15*	*13*	*10*	*(8)*
of which: SME clients	*44*	*(1)*	*1*	*44*
of which: Other	*(34)*	*(2)*	*(14)*	*(18)*
of which: Sovereigns	*(15)*	*0*	*(15)*	*0*
of which: Loans to financial advisors	*(7)*	*1*	*0*	*(8)*
Model changes[4]	(27)	(18)	(9)	0
Movements with profit or loss impact[5]	(143)	(30)	7	(120)
Movements without profit or loss impact (write-off, FX and other)[6]	(10)	(18)	(13)	21
Balance as of 31 December 2023	(1,244)	(308)	(272)	(664)

1 Represents the increase and decrease in allowances and provisions resulting from financial instruments (including guarantees and facilities) that were newly originated, purchased or renewed and from the final derecognition of loans or facilities on their maturity date or earlier. 2 Represents the remeasurement between 12-month and lifetime ECL due to stage transfers. 3 Represents the change in allowances and provisions related to changes in model inputs or assumptions, including changes in forward-looking macroeconomic conditions, changes in the exposure profile, PD and LGD changes, and unwinding of the time value. 4 Represents the change in the allowances and provisions related to changes in models and methodologies. 5 Includes ECL movements from new and derecognized transactions, remeasurement changes, and model and methodology changes. 6 Represents the decrease in allowances and provisions resulting from write-offs of the ECL allowance against the gross carrying amount when all or part of a financial asset is deemed uncollectible or forgiven and movements in foreign exchange rates.

Movements with profit or loss impact: Stages 1 and 2 ECL allowances and provisions increased on a net basis by USD 23m:

- *Net movement from new and derecognized transactions* includes USD 27m stage 1 expenses and USD 9m stage 2 releases: Stage 1 expenses are primarily driven by new loans secured by real estate and corporate lending. The residual effect is spread across other lending segments. Stage 2 releases are largely driven by redemption of real estate lending in Personal & Corporate Banking and Global Wealth Management.
- *Remeasurements with stage transfers* include USD 8m releases in stage 1 and USD 7m expenses in stage 2. This mainly includes the transfer of a few large corporate and real estate financing transactions from stage 1 to 2 (i.e., releases in stage 1 and related but generally higher expenses in stage 2), driven by rating downgrades and scenario effects.
- *Remeasurements without stage transfers* include stage 1 releases of USD 7m and stage 2 releases of USD 14m. These releases of USD 21m relate to large corporate lending (USD 23m) and real estate lending (USD 14m), substantially due to scenario effects, partly offset by expenses to a single sovereign counterparty (USD 15m).
- *Model changes*: refer to Note 19b for more information.

Movements without profit or loss impact: Stages 1 and 2 allowances increased by USD 31m, almost entirely driven by FX. Stage 3 allowances decreased by USD 21m, driven by FX and other movements of USD 48m, partly offset by net write-offs / recoveries of USD 69m.

Note 19 Expected credit loss measurement (continued)

Development of ECL allowances and provisions

USD m	Total	Stage 1	Stage 2	Stage 3
Balance as of 31 December 2021	(1,165)	(282)	(220)	(662)
Net movement from new and derecognized transactions[1]	(7)	(21)	16	(2)
of which: Private clients with mortgages	*(6)*	*(6)*	*0*	*0*
of which: Real estate financing	*(3)*	*(5)*	*2*	*0*
of which: Large corporate clients	*8*	*(1)*	*11*	*(2)*
of which: SME clients	*(1)*	*(1)*	*0*	*0*
of which: Other	*(6)*	*(8)*	*3*	*0*
of which: Financial intermediaries and hedge funds	*0*	*(2)*	*2*	*0*
of which: Loans to financial advisors	*0*	*0*	*0*	*0*
Remeasurements with stage transfers[2]	(65)	20	(39)	(46)
of which: Private clients with mortgages	*(10)*	*3*	*(12)*	*0*
of which: Real estate financing	*7*	*(1)*	*8*	*0*
of which: Large corporate clients	*(33)*	*16*	*(28)*	*(21)*
of which: SME clients	*(23)*	*2*	*(2)*	*(22)*
of which: Other	*(6)*	*1*	*(4)*	*(3)*
of which: Financial intermediaries and hedge funds	*0*	*0*	*0*	*0*
of which: Loans to financial advisors	*1*	*2*	*(1)*	*0*
Remeasurements without stage transfers[3]	13	(8)	(27)	48
of which: Private clients with mortgages	*(12)*	*5*	*(18)*	*1*
of which: Real estate financing	*13*	*3*	*10*	*0*
of which: Large corporate clients	*32*	*(11)*	*2*	*41*
of which: SME clients	*(6)*	*(10)*	*(9)*	*14*
of which: Other	*(15)*	*5*	*(12)*	*(8)*
of which: Sovereigns	*(8)*	*0*	*(8)*	*0*
of which: Loans to financial advisors	*(3)*	*3*	*(1)*	*(6)*
Model changes[4]	30	29	1	0
Movements with profit or loss impact[5]	(29)	20	(49)	0
Movements without profit or loss impact (write-off, FX and other)[6]	104	3	1	99
Balance as of 31 December 2022	(1,091)	(260)	(267)	(564)

1 Represents the increase and decrease in allowances and provisions resulting from financial instruments (including guarantees and facilities) that were newly originated, purchased or renewed and from the final derecognition of loans or facilities on their maturity date or earlier. 2 Represents the remeasurement between 12-month and lifetime ECL due to stage transfers. 3 Represents the change in allowances and provisions related to changes in model inputs or assumptions, including changes in forward-looking macroeconomic conditions, changes in the exposure profile, PD and LGD changes, and unwinding of the time value. 4 Represents the change in the allowances and provisions related to changes in models and methodologies. 5 Includes ECL movements from new and derecognized transactions, remeasurement changes, and model and methodology changes. 6 Represents the decrease in allowances and provisions resulting from write-offs of the ECL allowance against the gross carrying amount when all or part of a financial asset is deemed uncollectible or forgiven and movements in foreign exchange rates.

As explained in Note 1a, the assessment of a significant increase in credit risk (an SICR) considers a number of qualitative and quantitative factors to determine whether a stage transfer between stage 1 and stage 2 is required, although the primary assessment considers changes in PD based on rating analyses and economic outlook. Additionally, UBS AG takes into consideration counterparties that have moved to a credit watch list and those with payments that are at least 30 days past due.

ECL stage 2 ("significant deterioration in credit risk") allowances / provisions as of 31 December 2023 – classification by trigger

USD m	Stage 2	*of which: PD layer*	*of which: watch list*	*of which: ≥30 days past due*
On- and off-balance sheet	(272)	*(197)*	*(23)*	*(53)*
of which: Private clients with mortgages	*(89)*	*(69)*	*0*	*(21)*
of which: Real estate financing	*(26)*	*(21)*	*0*	*(5)*
of which: Large corporate clients	*(66)*	*(48)*	*(15)*	*(2)*
of which: SME clients	*(38)*	*(23)*	*(5)*	*(9)*
of which: Financial intermediaries and hedge funds	*(4)*	*(4)*	*0*	*0*
of which: Loans to financial advisors	*(1)*	*0*	*0*	*(1)*
of which: Credit cards	*(13)*			*(13)*
of which: Other	*(33)*	*(31)*	*(2)*	*(1)*

d) Maximum exposure to credit risk

The tables below provide UBS AG's maximum exposure to credit risk for financial instruments subject to ECL requirements and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

Note 19 Expected credit loss measurement (continued)

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS Accounting Standards.

Maximum exposure to credit risk

	31.12.23								
		Collateral[1,2]				Credit enhancements[1]			
USD bn	Maximum exposure to credit risk	Cash collateral received	Collateralized by equity and debt instruments	Secured by real estate	Other collateral[3]	Netting	Credit derivative contracts	Guarantees and sub-participations	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at amortized cost on the balance sheet									
Cash and balances at central banks	171.8								171.8
Amounts due from banks[4]	28.2		0.2		4.8			0.1	23.1
Receivables from securities financing transactions measured at amortized cost	74.1	0.0	70.7		2.8				0.7
Cash collateral receivables on derivative instruments[5,6]	32.3					22.8			9.5
Loans and advances to customers	405.6	31.4	105.2	222.7	24.9			2.8	18.7
Other financial assets measured at amortized cost	54.3	0.1	0.8	0.0	1.5				51.9
Total financial assets measured at amortized cost	766.4	31.5	176.8	222.7	33.9	22.8	0.0	2.9	275.7
Financial assets measured at fair value through other comprehensive income – debt	2.2								2.2
Total maximum exposure to credit risk reflected on the balance sheet within the scope of ECL	768.6	31.5	176.8	222.7	33.9	22.8	0.0	2.9	277.9
Guarantees[7]	33.2	1.6	19.8	0.2	1.8			2.0	7.8
Irrevocable loan commitments	43.9	0.2	2.0	1.8	8.9		0.0	1.0	30.0
Forward starting reverse repurchase and securities borrowing agreements	10.4		10.4						0.0
Committed unconditionally revocable credit lines	47.4	0.5	9.1	7.1	5.1			0.6	25.1
Total maximum exposure to credit risk not reflected on the balance sheet within the scope of ECL	134.8	2.3	41.3	9.0	15.7	0.0	0.0	3.5	62.9

	31.12.22								
		Collateral[1,2]				Credit enhancements[1]			
USD bn	Maximum exposure to credit risk	Cash collateral received	Collateralized by equity and debt instruments	Secured by real estate	Other collateral[3]	Netting	Credit derivative contracts	Guarantees and sub-participations	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at amortized cost on the balance sheet									
Cash and balances at central banks	169.4								169.4
Amounts due from banks[4]	14.7		0.0					0.1	14.6
Receivables from securities financing transactions measured at amortized cost	67.8	0.0	64.5		2.4				0.9
Cash collateral receivables on derivative instruments[5,6]	35.0					22.9			12.1
Loans and advances to customers	390.0	36.1	115.9	197.8	19.6			3.0	17.6
Other financial assets measured at amortized cost	53.4	0.1	0.5	0.0	1.3				51.4
Total financial assets measured at amortized cost	730.4	36.2	181.0	197.9	23.4	22.9	0.0	3.0	266.1
Financial assets measured at fair value through other comprehensive income – debt	2.2								2.2
Total maximum exposure to credit risk reflected on the balance sheet within the scope of ECL	732.6	36.2	181.0	197.9	23.4	22.9	0.0	3.0	268.3
Guarantees[7]	22.1	1.2	9.3	0.1	2.0			1.8	7.7
Irrevocable loan commitments	39.9	0.2	3.1	1.3	6.5		0.1	1.0	27.8
Forward starting reverse repurchase and securities borrowing agreements	3.8		3.8						0.0
Committed unconditionally revocable credit lines	43.6	0.2	8.2	6.0	6.2			0.5	22.5
Total maximum exposure to credit risk not reflected on the balance sheet within the scope of ECL	109.4	1.6	24.4	7.5	14.7	0.0	0.1	3.3	58.0

1 Of which: USD 1,637m for 31 December 2023 (31 December 2022: USD 1,372m) relates to total credit-impaired financial assets measured at amortized cost and USD 105m for 31 December 2023 (31 December 2022: USD 113m) to total off-balance sheet financial instruments and credit lines for credit-impaired positions. 2 Collateral arrangements generally incorporate a range of collateral, including cash, equity and debt instruments, real estate and other collateral. For the purpose of this disclosure, UBS AG applies a risk-based approach that generally prioritizes collateral according to its liquidity profile. In the case of loan facilities with funded and unfunded elements, the collateral is first allocated to the funded element. 3 Includes but is not limited to life insurance contracts, rights in respect of subscription or capital commitments from fund partners, inventory, mortgage loans, gold and other commodities. 4 Amounts due from banks include amounts held with third-party banks on behalf of clients. The credit risk associated with these balances may be borne by those clients. 5 Included within Cash collateral receivables on derivative instruments are margin balances due from exchanges or clearing houses. Some of these margin balances reflect amounts transferred on behalf of clients who retain the associated credit risk. 6 The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 21 for more information. 7 Guarantees collateralized by equity and debt instruments include certain overnight repurchase and reverse repurchase transactions where UBS acts as a sponsoring member for eligible clients when clearing through the Fixed Income Clearing Corporation (FICC). As part of this arrangement, UBS guarantees FICC for prompt and full payment and performance of the clients' respective obligations under the FICC rules. The Group minimizes its liability under these guarantees by obtaining a security interest in the cash or high-quality securities collateral that the clients place with the clearing house; therefore, the risk of loss is expected to be remote.

Note 19 Expected credit loss measurement (continued)

e) Financial assets subject to credit risk by rating category

The table below shows the credit quality and the maximum exposure to credit risk based on UBS AG's internal credit rating system and year-end stage classification. Under IFRS 9, the credit risk rating reflects UBS AG's assessment of the probability of default of individual counterparties, prior to substitutions. The amounts presented are gross of impairment allowances.

› **Refer to the "Risk management and control" section of this report for more details regarding UBS AG's internal grading system**

Financial assets subject to credit risk by rating category

USD m	31.12.23								
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total gross carrying amount	ECL allowances	Net carrying amount (maximum exposure to credit risk)
Financial assets measured at amortized cost									
Cash and balances at central banks	171,573	215	0	0	43	0	171,832	(26)	171,806
of which: stage 1	*171,573*	*215*	*0*	*0*	*0*	*0*	*171,788*	*0*	*171,788*
of which: stage 2	*0*	*0*	*0*	*0*	*43*	*0*	*43*	*(26)*	*18*
Amounts due from banks	811	25,095	1,359	463	485	0	28,213	(7)	28,206
of which: stage 1	*811*	*25,095*	*1,354*	*462*	*476*	*0*	*28,198*	*(6)*	*28,191*
of which: stage 2	*0*	*0*	*5*	*1*	*9*	*0*	*15*	*(1)*	*14*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Receivables from securities financing transactions	36,689	15,958	6,073	14,319	1,091	0	74,130	(2)	74,128
of which: stage 1	*36,689*	*15,958*	*6,073*	*14,319*	*1,091*	*0*	*74,130*	*(2)*	*74,128*
Cash collateral receivables on derivative instruments	8,009	13,575	6,423	4,095	198	0	32,300	0	32,300
of which: stage 1	*8,009*	*13,575*	*6,423*	*4,095*	*198*	*0*	*32,300*	*0*	*32,300*
Loans and advances to customers	5,993	196,897	82,867	89,738	28,486	2,586	406,568	(935)	405,633
of which: stage 1	*5,993*	*195,590*	*80,534*	*82,633*	*20,916*	*0*	*385,666*	*(173)*	*385,493*
of which: stage 2	*0*	*1,307*	*2,333*	*7,106*	*7,570*	*0*	*18,316*	*(185)*	*18,131*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*2,586*	*2,586*	*(577)*	*2,009*
Other financial assets measured at amortized cost	25,727	20,541	678	6,770	499	206	54,421	(87)	54,334
of which: stage 1	*25,727*	*20,539*	*659*	*6,619*	*353*	*0*	*53,897*	*(16)*	*53,882*
of which: stage 2	*0*	*2*	*19*	*151*	*146*	*0*	*317*	*(5)*	*312*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*206*	*206*	*(66)*	*141*
Total financial assets measured at amortized cost	248,802	272,281	97,400	115,386	30,802	2,792	767,462	(1,057)	766,407
On-balance sheet financial instruments									
Financial assets measured at FVOCI – debt instruments	1,222	850	0	161	0	0	2,233	0	2,233
Total on-balance sheet financial instruments	250,024	273,131	97,400	115,547	30,802	2,792	769,696	(1,057)	768,640

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Off-balance sheet positions subject to expected credit loss by rating category

USD m	31.12.23							
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total off-balance sheet exposure (maximum exposure to credit risk)	ECL provision
Off-balance sheet financial instruments								
Guarantees	17,771	7,306	4,268	2,800	948	118	33,211	(40)
of which: stage 1	*17,771*	*7,267*	*4,219*	*2,301*	*774*	*0*	*32,332*	*(14)*
of which: stage 2	*0*	*39*	*49*	*499*	*174*	*0*	*761*	*(7)*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*118*	*118*	*(19)*
Irrevocable loan commitments	1,720	13,920	9,834	11,142	7,345	56	44,018	(95)
of which: stage 1	*1,720*	*13,920*	*9,781*	*10,845*	*5,818*	*0*	*42,085*	*(55)*
of which: stage 2	*0*	*0*	*53*	*298*	*1,527*	*0*	*1,878*	*(38)*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*56*	*56*	*(2)*
Forward starting reverse repurchase and securities borrowing agreements	10,152	2	84	135	0	0	10,373	0
Total off-balance sheet financial instruments	29,643	21,228	14,186	14,077	8,293	174	87,601	(134)
Credit lines								
Committed unconditionally revocable credit lines	2,604	17,303	10,893	11,950	4,616	56	47,421	(49)
of which: stage 1	*2,604*	*16,903*	*10,553*	*11,452*	*3,941*	*0*	*45,452*	*(39)*
of which: stage 2	*0*	*400*	*341*	*497*	*675*	*0*	*1,913*	*(10)*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*56*	*56*	*0*
Irrevocable committed prolongation of existing loans	4	1,803	1,045	826	501	4	4,183	(4)
of which: stage 1	*4*	*1,803*	*1,045*	*824*	*493*	*0*	*4,169*	*(3)*
of which: stage 2	*0*	*0*	*0*	*2*	*9*	*0*	*11*	*0*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*4*	*4*	*0*
Total credit lines	2,609	19,105	11,939	12,776	5,117	59	51,604	(53)

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Note 19 Expected credit loss measurement (continued)

Financial assets subject to credit risk by rating category

USD m	31.12.22								
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total gross carrying amount	ECL allowances	Net carrying amount (maximum exposure to credit risk)
Financial assets measured at amortized cost									
Cash and balances at central banks	168,525	877	0	0	56	0	169,457	(12)	169,445
of which: stage 1	*168,525*	*877*	*0*	*0*	*0*	*0*	*169,402*	*0*	*169,402*
of which: stage 2	*0*	*0*	*0*	*0*	*56*	*0*	*56*	*(12)*	*44*
Amounts due from banks	862	11,150	832	996	837	0	14,676	(6)	14,671
of which: stage 1	*862*	*11,150*	*832*	*996*	*836*	*0*	*14,675*	*(5)*	*14,670*
of which: stage 2	*0*	*0*	*0*	*0*	*1*	*0*	*1*	*(1)*	*1*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Receivables from securities financing transactions measured at amortized cost	27,158	15,860	8,870	15,207	721	0	67,816	(2)	67,814
of which: stage 1	*27,158*	*15,860*	*8,870*	*15,207*	*721*	*0*	*67,816*	*(2)*	*67,814*
Cash collateral receivables on derivative instruments	10,613	12,978	7,138	4,157	147	0	35,034	0	35,033
of which: stage 1	*10,613*	*12,978*	*7,138*	*4,157*	*147*	*0*	*35,034*	*0*	*35,033*
Loans and advances to customers	6,491	216,824	68,444	76,147	20,891	2,012	390,810	(783)	390,027
of which: stage 1	*6,491*	*215,332*	*66,202*	*69,450*	*15,557*	*0*	*373,032*	*(129)*	*372,903*
of which: stage 2	*0*	*1,493*	*2,242*	*6,698*	*5,334*	*0*	*15,767*	*(180)*	*15,587*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*2,012*	*2,012*	*(474)*	*1,538*
Other financial assets measured at amortized cost	29,011	16,649	447	6,708	450	210	53,475	(86)	53,389
of which: stage 1	*29,011*	*16,646*	*427*	*6,426*	*336*	*0*	*52,846*	*(17)*	*52,829*
of which: stage 2	*0*	*2*	*20*	*283*	*114*	*0*	*419*	*(6)*	*413*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*210*	*210*	*(63)*	*147*
Total financial assets measured at amortized cost	242,660	274,337	85,731	103,216	23,102	2,222	731,269	(890)	730,379
On-balance sheet financial instruments									
Financial assets measured at FVOCI – debt instruments	1,307	840	0	92	0	0	2,239	0	2,239
Total on-balance sheet financial instruments	243,966	275,178	85,731	103,308	23,102	2,222	733,508	(890)	732,618

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Off-balance sheet positions subject to expected credit loss by rating category

USD m	31.12.22							
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total off-balance sheet exposure (maximum exposure to credit risk)	ECL provisions
Off-balance sheet financial instruments								
Guarantees	7,252	5,961	4,772	3,049	1,025	108	22,167	(48)
of which: stage 1	*7,252*	*5,917*	*3,812*	*2,229*	*596*	*0*	*19,805*	*(13)*
of which: stage 2	*0*	*44*	*960*	*821*	*429*	*0*	*2,254*	*(9)*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*108*	*108*	*(26)*
Irrevocable loan commitments	1,770	14,912	6,986	10,097	6,107	124	39,996	(111)
of which: stage 1	*1,770*	*14,789*	*6,818*	*9,625*	*4,529*	*0*	*37,531*	*(59)*
of which: stage 2	*0*	*123*	*168*	*472*	*1,578*	*0*	*2,341*	*(52)*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*124*	*124*	*0*
Forward starting reverse repurchase and securities borrowing agreements	2,781	2	11	1,007	0	0	3,801	0
Total off-balance sheet financial instruments	11,803	20,874	11,769	14,153	7,132	233	65,964	(159)
Credit lines								
Committed unconditionally revocable credit lines	2,288	16,483	9,247	11,885	3,739	36	43,677	(40)
of which: stage 1	*2,288*	*15,777*	*8,960*	*11,355*	*3,429*	*0*	*41,809*	*(32)*
of which: stage 2	*0*	*705*	*287*	*531*	*310*	*0*	*1,833*	*(8)*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*36*	*36*	*0*
Irrevocable committed prolongation of existing loans	7	1,939	1,489	868	392	2	4,696	(2)
of which: stage 1	*7*	*1,938*	*1,411*	*864*	*380*	*0*	*4,600*	*(2)*
of which: stage 2	*0*	*1*	*78*	*4*	*11*	*0*	*94*	*0*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*2*	*2*	*0*
Total credit lines	2,295	18,421	10,736	12,753	4,131	37	48,373	(42)

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

f) Sensitivity information

As outlined in Note 1a, ECL estimates involve significant uncertainties at the time they are made.

ECL models

The models applied to determine point-in-time PD and LGD rely on market and statistical data, which has been found to correlate well with historically observed defaults in sufficiently homogeneous segments. The risk sensitivities for each of the ECL reporting segments to such factors are summarized in Note 9.

Sustainability and climate risk

Sustainability and climate risk may negatively affect clients or portfolios due to direct or indirect transition costs, or exposure to physical risks in locations likely to be impacted by climate change. Such effects could lead to a deterioration in credit worthiness, which in turn would have an impact on ECLs. While some macroeconomic indicators used in the current PD models could be influenced by climate change, UBS currently does not use a specific sustainability and climate risk scenario in addition to the typically four general economic scenarios applied to derive the weighted-average ECL. The rationale for the approach at this point in time is the significance of model risks and challenges in calibration and probability weight assessment given the paucity of data.

Instead, UBS AG focuses on the process of vetting clients and business transactions and takes individual actions, where transition risk is deemed to be a significant driver of a counterparty's credit worthiness. This review process may lead to a downward revision of the counterparty's credit rating, or the adoption of risk mitigating actions, and hence affect the individual contribution to ECLs.

At the portfolio level, UBS has started to use stress loss assumptions to assess the extent to which sustainability and climate risk may affect the quality of the loans extended to small and medium-sized enterprises, large corporate clients and financial institutions. Initial tests were based on a set of assumptions presented by external parties (such as the Bank of England), and complemented by internally derived climate pathway scenarios. Such analysis undertaken during 2022, and reassessed during 2023, concluded that the counterparties are not expected to be significantly impacted by physical or transition risks, mainly as there are no material risk concentrations in high-risk sectors. The analysis of the corporate loan book has also shown that any potential significant impacts from transition costs or physical risks would materialize over a time horizon that exceeds in most cases the contractual lifetime of the underlying assets. Based on current information on regulatory developments, this would also apply to the portfolio of private clients' mortgages and real estate financing, given the long lead times for investments in upgrading the housing stock.

As a result of the aforementioned factors, it was assessed that the magnitude of any impact of sustainability and climate risk on the weighted-average ECL would not be material as of 31 December 2023. Therefore, no specific post-model adjustment was made in this regard.

› **Refer to "UBS AG consolidated supplemental disclosures required under SEC regulations" for the maturity profile of UBS AG's core loan book**

Forward-looking scenarios

Depending on the scenario selection and related macroeconomic assumptions for the risk factors, the components of the relevant weighted-average ECL change. This is particularly relevant for interest rates, which can move in both directions under a given growth assumption, e.g., low growth with high interest rates in a stagflation scenario, versus low growth and falling interest rates in a recession. Management generally looks for scenario narratives that reflect the key risk drivers of a given credit portfolio.

As forecasting models are complex, due to the combination of multiple factors, simple what-if analyses involving a change of individual parameters do not necessarily provide realistic information on the exposure of segments to changes in the macroeconomy. Portfolio-specific analyses based on their key risk factors would also not be meaningful, as potential compensatory effects in other segments would be ignored. The table below indicates some sensitivities to ECLs, if a key macroeconomic variable for the forecasting period is amended across all scenarios with all other factors remaining unchanged.

Note 19 Expected credit loss measurement (continued)

Potential effect on stage 1 and stage 2 positions from changing key parameters as of 31 December 2023

USD m	100% Baseline	100% Stagflationary geopolitical crisis	100% Mild Debt Crisis	Weighted average
Change in key parameters				
Fixed income: Government bonds (absolute change)				
–0.50%	(3)	(104)	(3)	(14)
+0.50%	3	125	6	17
+1.00%	7	274	14	42
Unemployment rate (absolute change)				
–1.00%	(4)	(142)	(6)	(20)
–0.50%	(2)	(76)	(3)	(11)
+0.50%	2	89	3	13
+1.00%	5	188	7	26
Real GDP growth (relative change)				
–2.00%	10	27	11	14
–1.00%	6	13	6	8
+1.00%	(3)	(12)	(6)	(6)
+2.00%	(5)	(22)	(7)	(10)
House Price Index (relative change)				
–5.00%	16	174	25	46
–2.50%	8	84	12	21
+2.50%	(7)	(76)	(9)	(18)
+5.00%	(11)	(149)	(19)	(34)
Equity (S&P500, EuroStoxx, SMI) (relative change)				
–10.00%	4	10	8	6
–5.00%	2	5	3	2
+5.00%	(2)	(5)	(3)	(2)
+10.00%	(3)	(8)	(5)	(4)

Sensitivities can be more meaningfully assessed in the context of coherent scenarios with consistently developed macroeconomic factors. The table above outlines favorable and unfavorable effects, based on reasonably possible alternative changes to the economic conditions for stage 1 and stage 2 positions. The ECL impact is calculated for material portfolios and disclosed for each scenario.

The forecasting horizon is limited to three years, with a model-based mean reversion of PD and LGD assumed thereafter. Changes to these timelines may have an effect on ECLs: depending on the cycle, a longer or shorter forecasting horizon will lead to different annualized lifetime PD and average LGD estimations. This is currently not deemed to be material for UBS, as a large proportion of loans, including mortgages in Switzerland, have maturities that are within the forecasting horizon.

Scenario weights and stage allocation

Potential effect on stage 1 and stage 2 positions from changing scenario weights or moving to an ECL lifetime calculation as of 31 December 2023

	Actual ECL allowances and provisions, including staging (as per Note 9)	Pro forma ECL allowances and provisions, including staging and assuming application of 100% scenario weighting				Pro forma ECL allowances and provisions, assuming all positions being subject to lifetime ECL
Scenarios	Weighted average	100% Baseline	100% Asset price inflation	100% Stagflationary geopolitical crisis	100% Mild debt crisis	Weighted average
USD m, except where indicated						
Segmentation						
Private clients with mortgages	(133)	(43)	(10)	(521)	(63)	(368)
Real estate financing	(52)	(34)	(21)	(200)	(36)	(125)
Large corporate clients	(152)	(108)	(53)	(252)	(146)	(234)
SME clients	(103)	(85)	(57)	(186)	(96)	(164)
Other segments	(140)	(126)	(78)	(162)	(151)	(302)
Total	(580)	(396)	(219)	(1,322)	(492)	(1,193)

Note 19 Expected credit loss measurement (continued)

Potential effect on stage 1 and stage 2 positions from changing scenario weights or moving to an ECL lifetime calculation as of 31 December 2022

	Actual ECL allowances and provisions, including staging (as per Note 9)	Pro forma ECL allowances and provisions, including staging and assuming application of 100% scenario weighting				Pro forma ECL allowances and provisions, assuming all positions being subject to lifetime ECL
Scenarios	Weighted average	100% Baseline	100% Asset price inflation	100% Stagflationary geopolitical crisis	100% Global crisis	Weighted average
USD m, except where indicated						
Segmentation						
Private clients with mortgages	(136)	(25)	(13)	(523)	(184)	(473)
Real estate financing	(43)	(26)	(22)	(176)	(30)	(126)
Large corporate clients	(136)	(97)	(84)	(199)	(174)	(235)
SME clients	(86)	(67)	(66)	(162)	(97)	(153)
Other segments	(125)	(114)	(111)	(145)	(153)	(281)
Total	(526)	(329)	(295)	(1,204)	(638)	(1,267)

Scenario weights

ECL is sensitive to changing scenario weights, in particular if narratives and parameters are selected that are not close to the baseline scenario, highlighting the non-linearity of credit losses.

As shown in the table above, the ECLs for stage 1 and stage 2 positions would have been USD 396m (31 December 2022: USD 329m) instead of USD 580m (31 December 2022: USD 526m) if ECLs had been determined solely on the *baseline scenario*. The weighted-average ECL therefore amounted to 146% (31 December 2022: 160%) of the baseline value. The effects of weighting each of the four scenarios 100% are shown in the table above.

Stage allocation and SICR

The determination of what constitutes an SICR is based on management judgment, as explained in Note 1a. Changing the SICR trigger will have a direct effect on ECLs, as more or fewer positions would be subject to lifetime ECLs under any scenario.

The relevance of the SICR trigger on overall ECL is demonstrated in the table above with the indication that the ECL allowances and provisions for stage 1 and stage 2 positions would have been USD 1,193m, if all non-impaired positions across the portfolio had been measured for lifetime ECLs irrespective of their actual SICR status. This amount compares with actual stage 1 and 2 allowances and provisions of USD 580m as of 31 December 2023.

Maturity profile

The maturity profile is an important driver in ECLs, in particular for transactions in stage 2. A transfer of a transaction into stage 2 may therefore have a significant effect on ECLs. The current maturity profile of most lending books is relatively short.

Lending to large corporate clients is generally between one and two years, with related loan commitments up to four years. Real estate lending is generally between two and three years in Switzerland, with long-dated maturities in the US. Lombard-lending contracts typically have average contractual maturities of 12 months or less, and include callable features.

A significant portion of our lending to SMEs and Real estate financings is documented under multi-purpose credit agreements, which allow for various forms of utilization but are unconditionally cancelable by UBS at any time: (i) for drawings under such agreements with a fixed maturity, the respective term is applied for ECL calculations, or a maximum of 12 months in stage 1; (ii) for unused credit lines and all drawings that have no fixed maturity (e.g., current accounts), UBS generally applies a 12-month maturity from the reporting date, given the credit review policies, which require either continuous monitoring of key indicators and behavioral patterns for smaller positions or an annual formal review for any other limit. The ECLs for these products are sensitive to shortening or extending the maturity assumption.

Note 20 Fair value measurement

a) Valuation principles

All financial and non-financial assets and liabilities measured or disclosed at fair value are categorized into one of three fair value hierarchy levels in accordance with IFRS Accounting Standards. The fair value hierarchy is based on the transparency of inputs to the valuation of an asset or liability as of the measurement date. In certain cases, the inputs used to measure fair value may fall within different levels of the fair value hierarchy. For disclosure purposes, the level in the hierarchy within which an instrument is classified in its entirety is based on the lowest level input that is significant to the position's fair value measurement:

- Level 1 – quoted prices (unadjusted) in active markets for identical assets and liabilities;
- Level 2 – valuation techniques for which all significant inputs are, or are based on, observable market data; or
- Level 3 – valuation techniques for which significant inputs are not based on observable market data.

Fair values are determined using quoted prices in active markets for identical assets or liabilities, where available. Where the market for a financial instrument or non-financial asset or liability is not active, fair value is established using a valuation technique, including pricing models. Valuation adjustments may be made to allow for additional factors, including model, liquidity, credit and funding risks, which are not explicitly captured within the valuation technique, but which would nevertheless be considered by market participants when establishing a price. The limitations inherent in a particular valuation technique are considered in the determination of the classification of an asset or liability within the fair value hierarchy. Generally, the unit of account for a financial instrument is the individual instrument, and UBS AG applies valuation adjustments at an individual instrument level, consistent with that unit of account. However, if certain conditions are met, UBS AG may estimate the fair value of a portfolio of financial assets and liabilities with substantially similar and offsetting risk exposures on the basis of the net open risks.

› **Refer to Note 20d for more information**

b) Valuation governance

UBS AG's fair value measurement and model governance framework includes numerous controls and other procedural safeguards that are intended to maximize the quality of fair value measurements reported in the financial statements. New products and valuation techniques must be reviewed and approved by key stakeholders from the risk and finance control functions. Responsibility for the ongoing measurement of financial and non-financial instruments at fair value is with the business divisions.

Fair value estimates are validated by the risk and finance control functions, which are independent of the business divisions. Independent price verification is performed by Finance through benchmarking the business divisions' fair value estimates with observable market prices and other independent sources. A governance framework and associated controls are in place in order to monitor the quality of third-party pricing sources where used. For instruments where valuation models are used to determine fair value, independent valuation and model control groups within Finance and Risk Control evaluate UBS AG's models on a regular basis, including valuation and model input parameters, as well as pricing. As a result of the valuation controls employed, valuation adjustments may be made to the business divisions' estimates of fair value to align with independent market data and the relevant accounting standard.

› **Refer to Note 20d for more information**

Note 20 Fair value measurement (continued)

c) Fair value hierarchy

The table below provides the fair value hierarchy classification of financial and non-financial assets and liabilities measured at fair value. The narrative that follows describes valuation techniques used in measuring their fair value of different product types (including significant valuation inputs and assumptions used) and the factors considered in determining their classification within the fair value hierarchy.

During 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. In the fourth quarter of 2023, UBS AG has prospectively amended its approach to testing for observability as part of an accounting methodology alignment following the acquisition of Credit Suisse. This methodological change enhances UBS AG's assessment of sensitivities to unobservable valuation parameters. Application of the new methodology as of 31 December 2022 would have resulted in USD 1.3bn lower Level 3 liabilities (as of 31 December 2023 the balance of affected liabilities in Level 3 was USD 1.9bn), with an offsetting impact to Level 2 liabilities.

Determination of fair values from quoted market prices or valuation techniques[1]

	31.12.23				31.12.22			
USD m	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	115,345	17,936	1,817	135,098	96,263	10,284	1,488	108,034
of which: Equity instruments	*99,510*	*721*	*140*	*100,372*	*83,095*	*789*	*126*	*84,010*
of which: Government bills / bonds	*6,843*	*2,195*	*14*	*9,052*	*5,496*	*950*	*18*	*6,464*
of which: Investment fund units	*8,008*	*1,082*	*9*	*9,098*	*6,673*	*596*	*61*	*7,330*
of which: Corporate and municipal bonds	*982*	*11,956*	*648*	*13,586*	*976*	*6,509*	*541*	*8,026*
of which: Loans	*0*	*1,870*	*904*	*2,775*	*0*	*1,179*	*628*	*1,807*
of which: Asset-backed securities	*3*	*111*	*101*	*215*	*22*	*261*	*114*	*397*
Derivative financial instruments	593	129,871	1,264	131,728	769	147,876	1,464	150,109
of which: Foreign exchange	*317*	*65,070*	*0*	*65,387*	*575*	*84,882*	*2*	*85,459*
of which: Interest rate	*0*	*35,028*	*284*	*35,311*	*0*	*39,345*	*460*	*39,805*
of which: Equity / index	*0*	*26,649*	*667*	*27,317*	*1*	*21,542*	*653*	*22,195*
of which: Credit	*0*	*1,452*	*301*	*1,752*	*0*	*719*	*318*	*1,038*
of which: Commodities	*0*	*1,627*	*12*	*1,639*	*0*	*1,334*	*30*	*1,365*
Brokerage receivables	0	20,883	0	20,883	0	17,576	0	17,576
Financial assets at fair value not held for trading	29,529	30,124	4,101	63,754	26,572	29,110	3,725	59,408
of which: Financial assets for unit-linked investment contracts	*15,814*	*0*	*0*	*15,814*	*13,071*	*1*	*0*	*13,072*
of which: Corporate and municipal bonds	*62*	*16,716*	*215*	*16,994*	*35*	*14,101*	*230*	*14,366*
of which: Government bills / bonds	*13,262*	*3,332*	*0*	*16,594*	*13,103*	*3,638*	*0*	*16,741*
of which: Loans	*0*	*4,172*	*1,254*	*5,426*	*0*	*3,602*	*736*	*4,337*
of which: Securities financing transactions	*0*	*5,541*	*4*	*5,545*	*0*	*7,590*	*114*	*7,704*
of which: Auction rate securities	*0*	*0*	*1,208*	*1,208*	*0*	*0*	*1,326*	*1,326*
of which: Investment fund units	*367*	*233*	*205*	*804*	*307*	*178*	*190*	*675*
of which: Equity instruments	*24*	*0*	*1,088*	*1,112*	*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	68	2,165	0	2,233	57	2,182	0	2,239
of which: Commercial paper and certificates of deposit	*0*	*1,948*	*0*	*1,948*	*0*	*1,878*	*0*	*1,878*
of which: Corporate and municipal bonds	*68*	*207*	*0*	*276*	*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	4,471	0	0	4,471
Non-financial assets measured at fair value on a non-recurring basis								
Other non-financial assets[2]	0	0	17	17	0	0	21	21
Total assets measured at fair value	149,962	200,979	7,198	358,139	128,132	207,028	6,698	341,858

Note 20 Fair value measurement (continued)

Determination of fair values from quoted market prices or valuation techniques (continued)[1]

	31.12.23				31.12.22			
USD m	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	25,451	6,110	151	31,712	23,578	5,823	114	29,515
of which: Equity instruments	*16,310*	*236*	*87*	*16,632*	*16,521*	*352*	*78*	*16,951*
of which: Corporate and municipal bonds	*28*	*4,893*	*58*	*4,979*	*36*	*4,643*	*27*	*4,707*
of which: Government bills / bonds	*8,320*	*806*	*0*	*9,126*	*5,880*	*706*	*1*	*6,587*
of which: Investment fund units	*794*	*117*	*4*	*915*	*1,141*	*84*	*3*	*1,229*
Derivative financial instruments	716	136,833	3,158	140,707	640	152,582	1,684	154,906
of which: Foreign exchange	*400*	*71,322*	*21*	*71,743*	*587*	*87,897*	*24*	*88,508*
of which: Interest rate	*0*	*32,656*	*107*	*32,763*	*0*	*37,429*	*116*	*37,545*
of which: Equity / index	*0*	*30,209*	*2,717*	*32,926*	*0*	*24,963*	*1,184*	*26,148*
of which: Credit	*0*	*1,341*	*273*	*1,614*	*0*	*920*	*279*	*1,199*
of which: Commodities	*0*	*1,271*	*20*	*1,291*	*0*	*1,309*	*52*	*1,361*
Financial liabilities designated at fair value on a recurring basis								
Brokerage payables designated at fair value	0	42,275	0	42,275	0	45,085	0	45,085
Debt issued designated at fair value	0	78,509	7,832	86,341	0	62,603	9,240	71,842
Other financial liabilities designated at fair value	0	25,069	2,297	27,366	0	30,055	1,978	32,033
of which: Financial liabilities related to unit-linked investment contracts	*0*	*15,922*	*0*	*15,922*	*0*	*13,221*	*0*	*13,221*
of which: Securities financing transactions	*0*	*6,927*	*0*	*6,927*	*0*	*15,333*	*0*	*15,333*
of which: Funding from UBS Group AG	*0*	*1,327*	*1,623*	*2,950*	*0*	*508*	*1,287*	*1,796*
of which: Over-the-counter debt instruments and other	*0*	*892*	*674*	*1,566*	*0*	*993*	*691*	*1,684*
Total liabilities measured at fair value	26,167	288,796	13,438	328,401	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.

Valuation techniques

UBS AG uses widely recognized valuation techniques for determining the fair value of financial and non-financial instruments that are not actively traded and quoted. The most frequently applied valuation techniques include discounted value of expected cash flows, relative value and option pricing methodologies.

Discounted value of expected cash flows is a valuation technique that measures fair value using estimated expected future cash flows from assets or liabilities and then discounts these cash flows using a discount rate or discount margin that reflects the credit and / or funding spreads required by the market for instruments with similar risk and liquidity profiles to produce a present value. When using such valuation techniques, expected future cash flows are estimated using an observed or implied market price for the future cash flows or by using industry-standard cash flow projection models. The discount factors within the calculation are generated using industry-standard yield curve modeling techniques and models.

Relative value models measure fair value based on the market prices of equivalent or comparable assets or liabilities, making adjustments for differences between the characteristics of the observed instrument and the instrument being valued.

Option pricing models incorporate assumptions regarding the behavior of future price movements of an underlying referenced asset or assets to generate a probability-weighted future expected payoff for the option. The resulting probability-weighted expected payoff is then discounted using discount factors generated from industry-standard yield curve modeling techniques and models. The option pricing model may be implemented using a closed-form analytical formula or other mathematical techniques (e.g., binomial tree or Monte Carlo simulation).

Where available, valuation techniques use market-observable assumptions and inputs. If such data is not available, inputs may be derived by reference to similar assets in active markets, from recent prices for comparable transactions or from other observable market data. In such cases, the inputs selected are based on historical experience and practice for similar or analogous instruments, derivation of input levels based on similar products with observable price levels, and knowledge of current market conditions and valuation approaches.

For more complex instruments, fair values may be estimated using a combination of observed transaction prices, consensus pricing services and relevant quotes. Consideration is given to the nature of the quotes (e.g., indicative or firm) and the relationship of recently evidenced market activity to the prices provided by consensus pricing services. UBS AG also uses internally developed models, which are typically based on valuation methods and techniques recognized as standard within the industry. Assumptions and inputs used in valuation techniques include benchmark interest rate curves, credit and funding spreads used in estimating discount rates, bond and equity prices, equity index prices, foreign exchange rates, levels of market volatility and correlation. Refer to Note 20e for more information. The discount curves used by UBS AG incorporate the funding and credit characteristics of the instruments to which they are applied.

Note 20 Fair value measurement (continued)

Financial instruments excluding derivatives: valuation and classification in the fair value hierarchy

Product	Valuation and classification in the fair value hierarchy	
Government bills and bonds	Valuation	– Generally valued using prices obtained directly from the market. – Instruments not priced directly using active-market data are valued using discounted cash flow valuation techniques that incorporate market data for similar government instruments.
	Fair value hierarchy	– Generally traded in active markets with prices that can be obtained directly from these markets, resulting in classification as Level 1, while the remaining positions are classified as Level 2 and Level 3.
Corporate and municipal bonds	Valuation	– Generally valued using prices obtained directly from the market for the security, or similar securities, adjusted for seniority, maturity and liquidity. – When prices are not available, instruments are valued using discounted cash flow valuation techniques incorporating the credit spread of the issuer or similar issuers. – For convertible bonds without directly comparable prices, issuances may be priced using a convertible bond model.
	Fair value hierarchy	– Generally classified as Level 1 or Level 2, depending on the depth of trading activity behind price sources. – Level 3 instruments have no suitable pricing information available.
Traded loans and loans measured at fair value	Valuation	– Valued directly using market prices that reflect recent transactions or quoted dealer prices, where available. – Where no market price data is available, loans are valued by relative value benchmarking using pricing derived from debt instruments in comparable entities or different products in the same entity, or by using a credit default swap valuation technique, which requires inputs for credit spreads, credit recovery rates and interest rates. Recently originated commercial real estate loans are measured using a securitization approach based on rating agency guidelines.
	Fair value hierarchy	– Instruments with suitably deep and liquid pricing information are classified as Level 2. – Positions requiring the use of valuation techniques, or for which the price sources have insufficient trading depth, are classified as Level 3.
Investment fund units	Valuation	– Predominantly exchange-traded, with readily available quoted prices in liquid markets. Where market prices are not available, fair value may be measured using net asset values (NAVs).
	Fair value hierarchy	– Listed units are classified as Level 1, provided there is sufficient trading activity to justify active-market classification, while other positions are classified as Level 2. – Positions for which NAVs are not available, or where the unit or underlying investments are illiquid are classified as Level 3.
Asset-backed securities (ABS)	Valuation	– For liquid securities, the valuation process will use trade and price data, updated for movements in market levels between the time of trading and the time of valuation. Less liquid instruments are measured using discounted expected cash flows incorporating price data for instruments or indices with similar risk profiles.
	Fair value hierarchy	– Residential mortgage-backed securities, commercial mortgage-backed securities and other ABS are generally classified as Level 2. However, if significant inputs are unobservable, or if market or fundamental data is not available, they are classified as Level 3.
Auction rate securities (ARS)	Valuation	– ARS are valued utilizing a discounted cash flow methodology. The model captures interest rate risk emanating from the note coupon, credit risk attributable to the underlying closed-end fund investments, liquidity risk as a function of the level of trading volume in these positions, and extension risk, as ARS are perpetual instruments that require an assumption regarding their maturity or issuer redemption date.
	Fair value hierarchy	– Granular and liquid pricing information is generally not available for ARS. As a result, these securities are classified as Level 3.
Equity instruments	Valuation	– Listed equity instruments are generally valued using prices obtained directly from the market. – Unlisted equity holdings, including private equity positions, are initially marked at their transaction price and are revalued when reliable evidence of price movement becomes available or when the position is deemed to be impaired.
	Fair value hierarchy	– The majority of equity securities are actively traded on public stock exchanges where quoted prices are readily and regularly available, resulting in Level 1 classification. – Equity securities less actively traded will be classified as Level 2 and illiquid positions as Level 3.
Financial assets for unit-linked investment contracts	Valuation	– The majority of assets are listed on exchanges and fair values are determined using quoted prices.
	Fair value hierarchy	– Most assets are classified as Level 1 if actively traded, or Level 2 if trading is not active. – Instruments for which prices are not readily available are classified as Level 3.
Securities financing transactions	Valuation	– These instruments are valued using discounted expected cash flow techniques. The discount rate applied is based on funding curves that are relevant to the collateral eligibility terms.
	Fair value hierarchy	– Collateral funding curves for these instruments are generally observable and, as a result, these positions are classified as Level 2. – Where the collateral terms are non-standard, the funding curve may be considered unobservable and these positions are classified as Level 3.
Brokerage receivables and payables	Valuation	– Fair value is determined based on the value of the underlying balances.
	Fair value hierarchy	– Due to their on-demand nature, these receivables and payables are deemed as Level 2.

Product	Valuation and classification in the fair value hierarchy	
Financial liabilities related to unit-linked investment contracts	Valuation	– The fair values of investment contract liabilities are determined by reference to the fair value of the corresponding assets.
	Fair value hierarchy	– The liabilities themselves are not actively traded, but are mainly referenced to instruments that are actively traded and are therefore classified as Level 2.
Precious metals and other physical commodities	Valuation	– Physical assets are valued using the spot rate observed in the relevant market.
	Fair value hierarchy	– Generally traded in active markets with prices that can be obtained directly from these markets, resulting in classification as Level 1.
Debt issued designated at fair value	Valuation	– The risk management and the valuation approaches for these instruments are closely aligned with the equivalent derivatives business and the underlying risk, and the valuation techniques used for this component are the same as the relevant valuation techniques described below.
	Fair value hierarchy	– The observability is closely aligned with the equivalent derivatives business and the underlying risk.
Commercial paper and certificates of deposit	Valuation	– Generally valued using discounted cash flow valuation techniques incorporating the spread of the issuer or similar issuers over the underlying currency risk-free curve.
	Fair value hierarchy	– Due to the short-dated nature of the positions and liquid underlying pricing inputs, they are generally classified as Level 2.

Derivative instruments: valuation and classification in the fair value hierarchy

The curves used for discounting expected cash flows in the valuation of collateralized derivatives reflect the funding terms associated with the relevant collateral arrangement for the instrument being valued. These collateral arrangements differ across counterparties with respect to the eligible currency and interest terms of the collateral. The majority of collateralized derivatives are measured using a discount curve based on funding rates derived from overnight interest in the cheapest eligible currency for the respective counterparty collateral agreement.

Uncollateralized and partially collateralized derivatives are discounted using the alternative reference rate (the ARR) (or equivalent) curve for the currency of the instrument. As described in Note 20d, the fair value of uncollateralized and partially collateralized derivatives is then adjusted by credit valuation adjustments (CVAs), debit valuation adjustments (DVAs) and funding valuation adjustments (FVAs), as applicable, to reflect an estimation of the effect of counterparty credit risk, UBS AG's own credit risk, and funding costs and benefits.

› **Refer to Note 10 for more information about derivative instruments**

Derivative product	Valuation and classification in the fair value hierarchy	
Interest rate contracts	Valuation	– Interest rate swap contracts are valued by estimating future interest cash flows and discounting those cash flows using a rate that reflects the appropriate funding rate for the position being measured. The yield curves used to estimate future index levels and discount rates are generated using market-standard yield curve models using interest rates associated with current market activity. The key inputs to the models are interest rate swap rates, forward rate agreement rates, short-term interest rate futures prices, basis swap spreads and inflation swap rates. – Interest rate option contracts are valued using various market-standard option models, using inputs that include interest rate yield curves, inflation curves, volatilities and correlations. – When the maturity of an interest rate swap or option contract exceeds the term for which standard market quotes are observable for a significant input parameter, the contracts are valued by extrapolation from the last observable point using standard assumptions or by reference to another observable comparable input parameter to represent a suitable proxy for that portion of the term.
	Fair value hierarchy	– The majority of interest rate swaps are classified as Level 2, as the standard market contracts that form the inputs for yield curve models are generally traded in active and observable markets. – Options are generally treated as Level 2, as the calibration process enables the model output to be validated to active-market levels. Models calibrated in this way are then used to revalue the portfolio of both standard options and more exotic products. – Interest rate swap or option contracts are classified as Level 3 when the terms exceed standard market-observable quotes. – Exotic options for which appropriate volatility or correlation input levels cannot be implied from observable market data are classified as Level 3.
Credit derivative contracts	Valuation	– Credit derivative contracts are valued using industry-standard models based primarily on market credit spreads, upfront pricing points and implied recovery rates. Where a derivative credit spread is not directly available, it may be derived from the price of the reference cash bond. – Asset-backed credit derivatives are valued using a valuation technique similar to that of the underlying security with an adjustment to reflect the funding differences between cash and synthetic form.
	Fair value hierarchy	– Single-entity and portfolio credit derivative contracts are classified as Level 2 when credit spreads and recovery rates are determined from actively traded observable market data. Where the underlying reference name(s) are not actively traded and the correlation cannot be directly mapped to actively traded tranche instruments, these contracts are classified as Level 3. – Asset-backed credit derivatives follow the characteristics of the underlying security and are therefore distributed across Level 2 and Level 3.

Derivative product	Valuation and classification in the fair value hierarchy	
Foreign exchange contracts	Valuation	– Open spot foreign exchange (FX) contracts are valued using the FX spot rate observed in the market. – Forward FX contracts are valued using the FX spot rate adjusted for forward pricing points observed from standard market-based sources. – Over-the-counter (OTC) FX option contracts are valued using market-standard option valuation models. The models used for shorter-dated options (i.e., maturities of five years or less) tend to be different than those used for longer-dated options because the models needed for longer-dated OTC FX contracts require additional consideration of interest rate and FX rate interdependency. – The valuation for multi-dimensional FX options uses a multi-local volatility model, which is calibrated to the observed FX volatilities for all relevant FX pairs.
	Fair value hierarchy	– The markets for FX spot and FX forward pricing points are both actively traded and observable and therefore such FX contracts are generally classified as Level 2. – A significant proportion of OTC FX option contracts are classified as Level 2 as inputs are derived mostly from standard market contracts traded in active and observable markets.
Equity / index contracts	Valuation	– Equity forward contracts have a single stock or index underlying and are valued using market-standard models. The key inputs to the models are stock prices, estimated dividend rates and equity funding rates (which are implied from prices of forward contracts observed in the market). Estimated cash flows are then discounted using market-standard discounted cash flow models using a rate that reflects the appropriate funding rate for that portion of the portfolio. When no market data is available for the instrument maturity, they are valued by extrapolation of available data, use of historical dividend data, or use of data for a related equity. – Equity option contracts are valued using market-standard models that estimate the equity forward level as described for equity forward contracts and incorporate inputs for stock volatility and for correlation between stocks within a basket. The probability-weighted expected option payoff generated is then discounted using market-standard discounted cash flow models applying a rate that reflects the appropriate funding rate for that portion of the portfolio. When volatility, forward or correlation inputs are not available, they are valued using extrapolation of available data, historical dividend, correlation or volatility data, or the equivalent data for a related equity.
	Fair value hierarchy	– As inputs are derived mostly from standard market contracts traded in active and observable markets, a significant proportion of equity forward contracts are classified as Level 2. – Equity option positions for which inputs are derived from standard market contracts traded in active and observable markets are also classified as Level 2. Level 3 positions are those for which volatility, forward or correlation inputs are not observable.
Commodity contracts	Valuation	– Commodity forward and swap contracts are measured using market-standard models that use market forward levels on standard instruments. – Commodity option contracts are measured using market-standard option models that estimate the commodity forward level as described for commodity forward and swap contracts, incorporating inputs for the volatility of the underlying index or commodity. For commodity options on baskets of commodities or bespoke commodity indices, the valuation technique also incorporates inputs for the correlation between different commodities or commodity indices.
	Fair value hierarchy	– Individual commodity contracts are typically classified as Level 2, because active forward and volatility market data is available.

d) Valuation adjustments and other items

The output of a valuation technique is always an estimate of a fair value that cannot be measured with complete certainty. As a result, valuations are adjusted where appropriate and when such factors would be considered by market participants in estimating fair value, to reflect close-out costs, credit exposure, model-driven valuation uncertainty, funding costs and benefits, trading restrictions and other factors.

Deferred day-1 profit or loss reserves

For new transactions where the valuation technique used to measure fair value requires significant inputs that are not based on observable market data, the financial instrument is initially recognized at the transaction price. The transaction price may differ from the fair value obtained using a valuation technique, where any such difference is deferred and not initially recognized in the income statement.

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 pricing of equivalent products or the underlying parameters becomes observable or when the transaction is closed out.

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

Deferred day-1 profit or loss reserves

USD m	2023	2022	2021
Reserve balance at the beginning of the year	422	418	269
Profit / (loss) deferred on new transactions	250	299	459
(Profit) / loss recognized in the income statement	(275)	(295)	(308)
Foreign currency translation	0	0	(2)
Reserve balance at the end of the year	397	422	418

Own credit

Own credit risk is reflected in the valuation of UBS AG's fair value option liabilities where this component is considered relevant for valuation purposes by UBS AG's counterparties and other market participants.

Changes in the fair value of financial liabilities designated at fair value through profit or loss related to own credit are recognized in *Other comprehensive income* directly within *Retained earnings, with no reclassification to the income statement in future periods.* This presentation neither creates nor increases an accounting mismatch in the income statement, as UBS AG does not hedge changes in own credit.

Own credit is estimated using own credit adjustment (OCA) curves, which incorporate observable market data, including market-observed secondary prices for UBS's debt and debt curves of peers. In the table below, the change in unrealized own credit consists of changes in fair value that are attributable to the change in UBS AG's credit spreads, as well as the effect of changes in fair values attributable to factors other than credit spreads, such as redemptions, effects from time decay and changes in interest and other market rates. Realized own credit is recognized when an instrument with an associated unrealized OCA is repurchased prior to the contractual maturity date. Life-to-date amounts reflect the cumulative unrealized change since initial recognition.

› **Refer to Note 15 for more information about debt issued designated at fair value**

Own credit adjustments on financial liabilities designated at fair value

	Included in Other comprehensive income		
	For the year ended		
USD m	31.12.23	31.12.22	31.12.21
Recognized during the period:			
Realized gain / (loss)	8	1	(14)
Unrealized gain / (loss)	(869)	866	60
Total gain / (loss), before tax	(861)	867	46
USD m	31.12.23	31.12.22	31.12.21
Recognized on the balance sheet as of the end of the period:			
Unrealized life-to-date gain / (loss)	(312)	556	(315)
of which: debt issued designated at fair value	*(208)*	*289*	*(144)*
of which: other financial liabilities designated at fair value	*(105)*	*266*	*(172)*

Credit valuation adjustments

In order to measure the fair value of OTC derivative instruments, including funded derivative instruments that are classified as *Financial assets at fair value not held for trading,* CVAs are needed to reflect the credit risk of the counterparty inherent in these instruments. This amount represents the estimated fair value of protection required to hedge the counterparty credit risk of such instruments. A CVA is determined for each counterparty, considering all exposures with that counterparty, and is dependent on the expected future value of exposures, default probabilities and recovery rates, applicable collateral or netting arrangements, break clauses, funding spreads, and other contractual factors.

Funding valuation adjustments

FVAs reflect the costs and benefits of funding associated with uncollateralized and partially collateralized derivative receivables and payables and are calculated as the valuation effect from moving the discounting of the uncollateralized derivative cash flows from the ARR to OCA using the CVA framework, including the probability of counterparty default. An FVA is also applied to collateralized derivative assets in cases where the collateral cannot be sold or repledged.

Debit valuation adjustments

A DVA is estimated to incorporate own credit in the valuation of derivatives where an FVA is not already recognized. The DVA calculation is effectively consistent with the CVA framework, being determined for each counterparty, considering all exposures with that counterparty and taking into account collateral netting agreements, expected future mark-to-market movements and UBS AG's credit default spreads.

Other valuation adjustments

Instruments that are measured as part of a portfolio of combined long and short positions are valued at mid-market levels to ensure consistent valuation of the long- and short-component risks. A liquidity valuation adjustment is then made to the overall net long or short exposure to move the fair value to bid or offer as appropriate, reflecting current levels of market liquidity. The bid–offer spreads used in the calculation of this valuation adjustment are obtained from market transactions and other relevant sources and are updated periodically.

Uncertainties associated with the use of model-based valuations are incorporated into the measurement of fair value through the use of model reserves. These reserves reflect the amounts that UBS AG estimates should be deducted from valuations produced directly by models to incorporate uncertainties in the relevant modeling assumptions, in the model and market inputs used, or in the calibration of the model output to adjust for known model deficiencies. In arriving at these estimates, UBS AG considers a range of market practices, including how it believes market participants would assess these uncertainties. Model reserves are reassessed periodically in light of data from market transactions, consensus pricing services and other relevant sources.

Balance sheet valuation adjustments on financial instruments

	As of	
USD m	31.12.23	31.12.22
Credit valuation adjustments[1]	(37)	(33)
Funding and debit valuation adjustments	(82)	(46)
Other valuation adjustments	(730)	(839)
of which: liquidity	*(308)*	*(311)*
of which: model uncertainty	*(423)*	*(529)*

1 Amounts do not include reserves against defaulted counterparties.

Note 20 Fair value measurement (continued)

e) 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, the inputs used in a given valuation technique that are considered significant as of 31 December 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 ranges will therefore vary from period to period and parameter to parameter based on characteristics of the instruments held at each balance sheet date. Furthermore, the ranges of unobservable inputs may differ across other financial institutions, reflecting the diversity of the products in each firm's inventory.

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

	Fair value						Range of inputs						
	Assets		Liabilities				31.12.23			31.12.22			
USD bn	31.12.23	31.12.22	31.12.23	31.12.22	Valuation technique(s)	Significant unobservable input(s)[1]	low	high	weighted average[2]	low	high	weighted average[2]	unit[1]
Financial assets and liabilities at fair value held for trading and Financial assets at fair value not held for trading													
Corporate and municipal bonds	*0.9*	*0.8*	*0.1*	*0.0*	Relative value to market comparable	Bond price equivalent	9	114	93	14	112	85	points
					Discounted expected cash flows	Discount margin	491	491		412	412		basis points
Traded loans, loans measured at fair value, loan commitments and guarantees	*2.3*	*1.7*	*0.0*	*0.0*	Relative value to market comparable	Loan price equivalent	6	101	98	30	100	97	points
					Discounted expected cash flows	Credit spread	200	275	252	200	200	200	basis points
					Market comparable and securitization model	Credit spread	162	1,849	318	145	1,350	322	basis points
Auction rate securities	*1.2*	*1.3*			Discounted expected cash flows	Credit spread	135	205	150	115	196	144	basis points
Investment fund units[3]	*0.2*	*0.3*	*0.0*	*0.0*	Relative value to market comparable	Net asset value							
Equity instruments[3]	*1.2*	*0.9*	*0.1*	*0.1*	Relative value to market comparable	Price							
Debt issued designated at fair value[4]			7.8	9.2									
Other financial liabilities designated at fair value			2.3	2.0	Discounted expected cash flows	Funding spread	51	201		23	175		basis points
Derivative financial instruments													
Interest rate	*0.3*	*0.5*	*0.1*	*0.1*	Option model	Volatility of interest rates	84	112		75	143		basis points
Credit	*0.3*	*0.3*	*0.3*	*0.3*	Discounted expected cash flows	Credit spreads	1	306		9	565		basis points
						Bond price equivalent	2	242		3	277		points
Equity / index	*0.7*	*0.7*	*2.7*	*1.2*	Option model	Equity dividend yields	0	14		0	20		%
						Volatility of equity stocks, equity and other indices	4	104		4	120		%
						Equity-to-FX correlation	(40)	70		(29)	84		%
						Equity-to-equity correlation	13	100		(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.

Significant unobservable inputs in Level 3 positions

This section discusses the significant unobservable inputs used in the valuation of Level 3 instruments and assesses the potential effect that a change in each unobservable input in isolation may have on a fair value measurement. Relationships between observable and unobservable inputs have not been included in the summary below.

Input	Description
Bond price equivalent	– Where market prices are not available for a bond, fair value is measured by comparison with observable pricing data from similar instruments. Factors considered when selecting comparable instruments include credit quality, maturity and industry of the issuer. Fair value may be measured either by a direct price comparison or by conversion of an instrument price into a yield (either as an outright yield or as a spread to the relevant benchmark rate). – For corporate and municipal bonds, the range represents the range of prices from reference issuances used in determining fair value. Bonds priced at 0 are distressed to the point that no recovery is expected, while prices significantly in excess of 100 or par relate to inflation-linked or structured issuances that pay a coupon in excess of the market benchmark as of the measurement date. – For credit derivatives, the bond price range represents the range of prices used for reference instruments, which are typically converted to an equivalent yield or credit spread as part of the valuation process.
Loan price equivalent	– Where market prices are not available for a traded loan or a loan commitment, fair value is measured by comparison with observable pricing data for similar instruments. Factors considered when selecting comparable instruments include industry segment, collateral quality, maturity and issuer-specific covenants. Fair value may be measured either by a direct price comparison or by conversion of an instrument price into a yield. The range represents the range of prices derived from reference issuances of a similar credit quality used to measure fair value for loans classified as Level 3. Loans priced at 0 are distressed to the point that no recovery is expected, while a current price of 100 represents a loan that is expected to be repaid in full.
Credit spread	– Valuation models for many credit derivatives and other credit sensitive products require an input for the credit spread, which is a reflection of the credit quality of the associated referenced underlying. The credit spread of a particular security is quoted in relation to the yield on a benchmark security or reference rate, typically either US Treasury or ARR, and is generally expressed in terms of basis points. An increase / (decrease) in credit spread will increase / (decrease) the value of credit protection offered by credit default swaps and other credit derivative products. The income statement effect from such changes depends on the nature and direction of the positions held. Credit spreads may be negative where the asset is more creditworthy than the benchmark against which the spread is calculated. A wider credit spread represents decreasing creditworthiness. The range represents a diverse set of underlyings, with the lower end of the range representing credits of the highest quality and the upper end of the range representing greater levels of credit risk.
Discount margin	– The discount margin (DM) spread represents the discount rates applied to present value cash flows of an asset to reflect the market return required for uncertainty in the estimated cash flows. DM spreads are a rate or rates applied on top of a floating index (e.g., Secured Overnight Financing Rate (SOFR)) to discount expected cash flows. Generally, a decrease / (increase) in the DM in isolation would result in a higher / (lower) fair value. – The high end of the range relates to securities that are priced low within the market relative to the expected cash flow schedule. This indicates that the market is pricing an increased risk of credit loss into the security that is greater than what is being captured by the expected cash flow generation process. The low ends of the ranges are typical of funding rates on better-quality instruments.
Funding spread	– Structured financing transactions are valued using synthetic funding curves that best represent the assets that are pledged as collateral for the transactions. They are not representative of where UBS AG can fund itself on an unsecured basis but provide an estimate of where UBS AG can source and deploy secured funding with counterparties for a given type of collateral. The funding spreads are expressed in terms of basis points, and if funding spreads widen, this increases the effect of discounting. – A small proportion of structured debt instruments and non-structured fixed-rate bonds within financial liabilities designated at fair value had an exposure to funding spreads that was longer in duration than the actively traded market.
Volatility	– Volatility measures the variability of future prices for a particular instrument and is generally expressed as a percentage, where a higher number reflects a more volatile instrument, for which future price movements are more likely to occur. Volatility is a key input into option models, where it is used to derive a probability-based distribution of future prices for the underlying instrument. The effect of volatility on individual positions within the portfolio is driven primarily by whether the option contract is a long or short position. In most cases, the fair value of an option increases as a result of an increase in volatility and is reduced by a decrease in volatility. Generally, volatility used in the measurement of fair value is derived from active-market option prices (referred to as implied volatility). A key feature of implied volatility is the volatility "smile" or "skew," which represents the effect of pricing options of different option strikes at different implied volatility levels. – Volatilities of low interest rates tend to be much higher than volatilities of high interest rates. In addition, different currencies may have significantly different implied volatilities.

Input	Description
Correlation	– Correlation measures the interrelationship between the movements of two variables. It is expressed as a percentage between –100% and +100%, where +100% represents perfectly correlated variables (meaning a movement of one variable is associated with a movement of the other variable in the same direction) and –100% implies that the variables are inversely correlated (meaning a movement of one variable is associated with a movement of the other variable in the opposite direction). The effect of correlation on the measurement of fair value depends on the specific terms of the instruments being valued, reflecting the range of different payoff features within such instruments.
Equity dividend yields	– The derivation of a forward price for an individual stock or index is important for measuring fair value for forward or swap contracts and for measuring fair value using option pricing models. The relationship between the current stock price and the forward price is based on a combination of expected future dividend levels and payment timings, and, to a lesser extent, the relevant funding rates applicable to the stock in question. Dividend yields are generally expressed as an annualized percentage of the share price, with the lowest limit of 0% representing a stock that is not expected to pay any dividend. The dividend yield and timing represent the most significant parameter in determining fair value for instruments that are sensitive to an equity forward price.

f) 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 favorable and unfavorable alternative assumptions would change fair value significantly, and the estimated effect thereof. The table below does not represent the estimated effect of stress scenarios. Interdependencies between Level 1, 2 and 3 parameters have not been incorporated in the table. Furthermore, direct interrelationships between the Level 3 parameters discussed below are not a significant element of the valuation uncertainty.

Sensitivity data is estimated using a number of techniques, including the estimation of price dispersion among different market participants, variation in modeling approaches and reasonably possible changes to assumptions used within the fair value measurement process. The sensitivity ranges are not always symmetrical around the fair values, as the inputs used in valuations are not always precisely in the middle of the favorable and unfavorable range.

Sensitivity data is determined at a product or parameter level and then aggregated assuming no diversification benefit. Diversification would incorporate estimated correlations across different sensitivity results and, as such, would result in an overall sensitivity that would be less than the sum of the individual component sensitivities. However, UBS AG believes that the diversification benefit is not significant to this analysis.

Sensitivity of fair value measurements to changes in unobservable input assumptions[1]

	31.12.23		31.12.22	
USD m	Favorable changes	Unfavorable changes	Favorable changes	Unfavorable changes
Traded loans, loans measured at fair value, loan commitments and guarantees	22[2]	(29)[2]	19	(12)
Securities financing transactions	24	(24)	33	(37)
Auction rate securities	67	(21)	46	(46)
Asset-backed securities	25	(22)	27	(27)
Equity instruments	189	(178)	183	(161)
Interest rate derivatives, net	27	(18)	18	(12)
Credit derivatives, net	2	(5)	3	(4)
Foreign exchange derivatives, net	5	(4)	10	(5)
Equity / index derivatives, net	358	(285)	361	(330)
Other	62	(62)	39	(62)
Total	781	(648)	738	(696)

1 Sensitivity of issued and over-the-counter debt instruments is reported with the equivalent derivative or Other. 2 Includes refinements applied in estimating valuation uncertainty across various parameters.

Note 20 Fair value measurement (continued)

g) 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.

Movements of Level 3 instruments

USD bn	Balance at the beginning of the period	Net gains / losses included in comprehensive income[1]	*of which: related to instruments held at the end of the period*	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 twelve months ended 31 December 2023[2]											
Financial assets at fair value held for trading	1.5	(0.1)	*(0.1)*	0.4	(0.8)	0.8	0.0	0.2	(0.3)	0.0	1.8
of which: Equity instruments	*0.1*	*(0.1)*	*(0.1)*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.2*	*(0.0)*	*0.0*	*0.1*
of which: Corporate and municipal bonds	*0.5*	*(0.0)*	*(0.0)*	*0.4*	*(0.3)*	*0.0*	*0.0*	*0.0*	*(0.0)*	*0.0*	*0.6*
of which: Loans	*0.6*	*(0.1)*	*(0.1)*	*0.1*	*(0.4)*	*0.8*	*0.0*	*0.0*	*(0.2)*	*0.0*	*0.9*
Derivative financial instruments – assets	1.5	(0.3)	*(0.3)*	0.0	(0.0)	0.7	(0.5)	0.1	(0.3)	0.0	1.3
of which: Interest rate	*0.5*	*0.0*	*(0.0)*	*0.0*	*0.0*	*0.1*	*(0.2)*	*0.0*	*(0.1)*	*(0.0)*	*0.3*
of which: Equity / index	*0.7*	*(0.2)*	*(0.2)*	*0.0*	*0.0*	*0.6*	*(0.1)*	*0.0*	*(0.2)*	*0.0*	*0.7*
of which: Credit	*0.3*	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.1*	*(0.1)*	*0.1*	*(0.0)*	*0.0*	*0.3*
Financial assets at fair value not held for trading	3.7	0.2	*0.2*	0.8	(0.7)	0.0	(0.0)	0.1	(0.1)	0.0	4.1
of which: Loans	*0.7*	*0.3*	*0.3*	*0.3*	*(0.0)*	*0.0*	*(0.0)*	*0.1*	*(0.1)*	*(0.0)*	*1.3*
of which: Auction rate securities	*1.3*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.2*
of which: Equity instruments	*0.8*	*0.1*	*0.0*	*0.4*	*(0.2)*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*1.1*
Derivative financial instruments – liabilities	1.7	0.3	*0.3*	0.0	(0.0)	1.9	(0.6)	0.0	(0.2)	0.0	3.2
of which: Interest rate	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*(0.0)*	*0.0*	*0.1*
of which: Equity / index	*1.2*	*0.3*	*0.3*	*0.0*	*0.0*	*1.8*	*(0.4)*	*0.0*	*(0.2)*	*0.0*	*2.7*
of which: Credit	*0.3*	*(0.0)*	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*(0.1)*	*(0.0)*	*0.3*
Debt issued designated at fair value	9.2	0.4	*0.3*	0.0	0.0	3.5	(3.2)	0.5	(2.6)	0.0	7.8
Other financial liabilities designated at fair value	2.0	0.3	*0.4*	0.0	0.0	0.2	(0.2)	0.0	(0.0)	0.0	2.3
For the twelve months ended 31 December 2022											
Financial assets at fair value held for trading	2.3	(0.3)	*(0.3)*	0.3	(1.8)	0.5	0.0	0.7	(0.3)	(0.0)	1.5
of which: Investment fund units	*0.0*	*(0.0)*	*(0.0)*	*0.0*	*(0.0)*	*0.0*	*0.0*	*0.1*	*(0.0)*	*(0.0)*	*0.1*
of which: Corporate and municipal bonds	*0.6*	*(0.0)*	*(0.0)*	*0.3*	*(0.6)*	*0.0*	*0.0*	*0.4*	*(0.0)*	*(0.0)*	*0.5*
of which: Loans	*1.4*	*(0.1)*	*(0.1)*	*0.0*	*(1.1)*	*0.5*	*0.0*	*0.0*	*(0.2)*	*0.0*	*0.6*
Derivative financial instruments – assets	1.1	0.6	*0.3*	0.0	0.0	0.4	(0.7)	0.1	(0.0)	(0.0)	1.5
of which: Interest rate	*0.5*	*0.3*	*0.3*	*0.0*	*0.0*	*0.0*	*(0.2)*	*0.0*	*(0.1)*	*(0.0)*	*0.5*
of which: Equity / index	*0.4*	*0.2*	*0.1*	*0.0*	*0.0*	*0.4*	*(0.3)*	*0.1*	*(0.0)*	*(0.0)*	*0.7*
of which: Credit	*0.2*	*0.1*	*(0.1)*	*0.0*	*0.0*	*0.0*	*(0.2)*	*0.0*	*0.1*	*0.0*	*0.3*
Financial assets at fair value not held for trading	4.2	0.1	*0.1*	0.7	(1.2)	0.1	(0.0)	0.2	(0.3)	(0.0)	3.7
of which: Loans	*0.9*	*(0.0)*	*(0.0)*	*0.4*	*(0.4)*	*0.1*	*0.0*	*0.1*	*(0.3)*	*(0.0)*	*0.7*
of which: Auction rate securities	*1.6*	*0.1*	*0.0*	*0.0*	*(0.3)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.3*
of which: Equity instruments	*0.7*	*0.0*	*0.0*	*0.1*	*(0.1)*	*0.0*	*0.0*	*0.1*	*0.0*	*(0.0)*	*0.8*
Derivative financial instruments – liabilities	2.2	(0.8)	*(0.4)*	0.0	0.0	1.1	(0.9)	0.3	(0.2)	(0.1)	1.7
of which: Interest rate	*0.3*	*(0.3)*	*(0.0)*	*0.0*	*0.0*	*0.1*	*(0.0)*	*0.0*	*(0.0)*	*(0.0)*	*0.1*
of which: Equity / index	*1.5*	*(0.4)*	*(0.3)*	*0.0*	*0.0*	*0.8*	*(0.7)*	*0.1*	*(0.2)*	*(0.0)*	*1.2*
of which: Credit	*0.3*	*(0.1)*	*(0.0)*	*0.0*	*0.0*	*0.1*	*(0.1)*	*0.1*	*(0.0)*	*(0.0)*	*0.3*
Debt issued designated at fair value	11.9	(1.3)	*(0.9)*	0.0	0.0	4.7	(3.1)	0.7	(3.3)	(0.3)	9.2
Other financial liabilities designated at fair value	3.2	(1.0)	*(1.0)*	0.0	0.0	0.0	(0.1)	0.1	(0.2)	(0.0)	2.0

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 31 December 2023 were USD 7.2bn (31 December 2022: USD 6.7bn). Total Level 3 liabilities as of 31 December 2023 were USD 13.4bn (31 December 2022: USD 13.0bn).

Note 20 Fair value measurement (continued)

h) Maximum exposure to credit risk for financial instruments measured at fair value

The tables below provide UBS AG's maximum exposure to credit risk for financial instruments measured at fair value and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS Accounting Standards.

Maximum exposure to credit risk

	31.12.23								
		Collateral				Credit enhancements			
USD bn	Maximum exposure to credit risk	Cash collateral received	Collateralized by equity and debt instruments	Secured by real estate	Other collateral	Netting	Credit derivative contracts	Guarantees and sub-participations	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at fair value on the balance sheet[1]									
Financial assets at fair value held for trading – debt instruments[2,3]	25.6								25.6
Derivative financial instruments[4]	131.7		5.1			117.6			9.1
Brokerage receivables	20.9		20.5						0.4
Financial assets at fair value not held for trading – debt instruments[5]	46.0		10.2						35.8
Total financial assets measured at fair value	224.3	0.0	35.8	0.0	0.0	117.6	0.0	0.0	70.9
Guarantees	0.1							0.1	0.0

	31.12.22								
		Collateral				Credit enhancements			
USD bn	Maximum exposure to credit risk	Cash collateral received	Collateralized by equity and debt instruments	Secured by real estate	Other collateral	Netting	Credit derivative contracts	Guarantees and sub-participations	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at fair value on the balance sheet[1]									
Financial assets at fair value held for trading – debt instruments[2,3]	16.7								16.7
Derivative financial instruments[4]	150.1		5.9			133.5			10.7
Brokerage receivables	17.6		17.3						0.3
Financial assets at fair value not held for trading – debt instruments[5]	44.8		11.4						33.4
Total financial assets measured at fair value	229.2	0.0	34.6	0.0	0.0	133.5	0.0	0.0	61.2
Guarantees	0.2							0.2	0.0

1 The maximum exposure to loss is generally equal to the carrying amount and subject to change over time with market movements. 2 For the purpose of this disclosure, collateral and credit enhancements were not considered as these positions are generally managed under the market risk framework. 3 Does not include investment fund units. 4 The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 21 for more information. 5 Does not include unit-linked investment contracts and investment fund units. Financial assets at fair value not held for trading collateralized by equity and debt instruments consisted of structured loans and reverse repurchase and securities borrowing agreements.

Note 20 Fair value measurement (continued)

i) Financial instruments not measured at fair value

The table below provides the estimated fair values of financial instruments not measured at fair value.

Financial instruments not measured at fair value

	31.12.23						31.12.22					
	Carrying amount	Fair value					Carrying amount	Fair value				
USD bn	Total	Carrying amount approximates fair value[1]	Level 1	Level 2	Level 3	Total	Total	Carrying amount approximates fair value[1]	Level 1	Level 2	Level 3	Total
Assets												
Cash and balances at central banks	171.8	171.7	0.0	0.1	0.0	171.8	169.4	169.4	0.1	0.0	0.0	169.4
Amounts due from banks	28.2	12.5	0.0	15.4	0.2	28.2	14.7	13.9	0.0	0.7	0.0	14.6
Receivables from securities financing transactions measured at amortized cost	74.1	68.7	0.0	3.9	1.5	74.1	67.8	64.3	0.0	1.8	1.7	67.8
Cash collateral receivables on derivative instruments	32.3	32.3	0.0	0.0	0.0	32.3	35.0	35.0	0.0	0.0	0.0	35.0
Loans and advances to customers	405.6	131.8	0.0	44.3	220.4	396.5	390.0	136.9	0.0	45.9	195.0	377.7
Other financial assets measured at amortized cost	54.3	9.0	12.8	29.6	2.6	54.1	53.4	13.0	10.3	25.1	2.5	51.0
Liabilities												
Amounts due to banks	16.7	8.8	0.0	8.0	0.0	16.7	11.6	8.9	0.0	2.7	0.0	11.6
Payables from securities financing transactions measured at amortized cost	5.8	5.1	0.0	0.4	0.4	5.8	4.2	3.5	0.0	0.7	0.0	4.2
Cash collateral payables on derivative instruments	34.9	34.9	0.0	0.0	0.0	34.9	36.4	36.4	0.0	0.0	0.0	36.4
Customer deposits	555.7	482.1	0.0	74.5	0.0	556.6	527.2	493.0	0.0	33.9	0.0	526.9
Funding from UBS Group AG measured at amortized cost	67.3	3.3	0.0	64.4	0.0	67.7	56.1	2.0	0.0	53.7	0.0	55.7
Debt issued measured at amortized cost	69.8	18.1	0.0	51.7	0.0	69.8	59.5	13.4	0.0	45.5	0.0	58.9
Other financial liabilities measured at amortized cost[2]	9.8	9.8	0.0	0.0	0.0	9.8	7.2	7.2	0.0	0.0	0.0	7.2

1 Includes certain financial instruments where the carrying amount is a reasonable approximation of the fair value due to the instruments' short-term nature (instruments that are receivable or payable on demand or with a remaining maturity (excluding the effects of callable features) of three months or less). 2 Excludes lease liabilities.

The fair values included in the table above have been calculated for disclosure purposes only. The valuation techniques and assumptions described below relate only to the fair value of UBS AG's financial instruments not measured at fair value. Other institutions may use different methods and assumptions for their fair value estimations, and therefore such fair value disclosures cannot necessarily be compared from one financial institution to another. The following principles were applied when determining fair value estimates for financial instruments not measured at fair value.

- For financial instruments with remaining maturities greater than three months, the fair value was determined from quoted market prices, if available.
- Where quoted market prices were not available, the fair values were estimated by discounting contractual cash flows using current market interest rates or appropriate yield curves for instruments with similar credit risk and maturity. These estimates generally include adjustments for counterparty credit risk or UBS AG's own credit.
- For short-term financial instruments with remaining maturities of three months or less, the carrying amount, which is net of credit loss allowances, is generally considered a reasonable estimate of fair value.

Note 21 Offsetting financial assets and financial liabilities

UBS AG enters into netting agreements with counterparties to manage the credit risks associated primarily with repurchase and reverse repurchase transactions, securities borrowing and lending, over-the-counter derivatives, and exchange-traded derivatives. These netting agreements and similar arrangements generally enable the counterparties to set off liabilities against available assets received in the ordinary course of business and / or in the event that the counterparties to the transaction are unable to fulfill their contractual obligations.

The tables below provide a summary of financial assets and financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements, as well as financial collateral received or pledged to mitigate credit exposures for these financial instruments.

UBS AG engages in a variety of counterparty credit risk mitigation strategies in addition to netting and collateral arrangements. Therefore, the net amounts presented in the tables below do not purport to represent their actual credit risk exposure.

Financial assets subject to offsetting, enforceable master netting arrangements and similar agreements

	Assets subject to netting arrangements						Assets not subject to netting arrangements[4]	Total assets	
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet[3]					
As of 31.12.23, USD bn	Gross assets before netting	Netting with gross liabilities[2]	Net assets recognized on the balance sheet	Financial liabilities	Collateral received	Assets after consideration of netting potential	Assets recognized on the balance sheet	Total assets after consideration of netting potential	Total assets recognized on the balance sheet
Receivables from securities financing transactions measured at amortized cost	69.2	(12.2)	56.9	(1.5)	(55.2)	0.3	17.2	17.5	74.1
Derivative financial instruments	128.8	(2.5)	126.3	(99.3)	(23.4)	3.7	5.4	9.1	131.7
Cash collateral receivables on derivative instruments[1]	31.5	0.0	31.5	(20.4)	(2.5)	8.7	0.8	9.5	32.3
Financial assets at fair value not held for trading	96.3	(89.6)	6.7	(1.8)	(4.9)	0.0	57.1	57.1	63.8
of which: reverse repurchase agreements	*95.1*	*(89.6)*	*5.5*	*(1.8)*	*(3.7)*	*0.0*	*0.0*	*0.0*	*5.5*
Total assets	325.7	(104.3)	221.4	(122.9)	(85.9)	12.6	80.5	93.1	301.9
As of 31.12.22, USD bn									
Receivables from securities financing transactions measured at amortized cost	60.8	(11.1)	49.6	(3.0)	(46.4)	0.3	18.2	18.5	67.8
Derivative financial instruments	147.4	(2.5)	144.9	(110.9)	(28.5)	5.5	5.2	10.7	150.1
Cash collateral receivables on derivative instruments[1]	33.5	0.0	33.5	(20.9)	(1.9)	10.6	1.5	12.1	35.0
Financial assets at fair value not held for trading	85.6	(76.8)	8.7	(1.5)	(7.3)	0.0	50.7	50.7	59.4
of which: reverse repurchase agreements	*84.4*	*(76.8)*	*7.6*	*(1.5)*	*(6.1)*	*0.0*	*0.1*	*0.1*	*7.7*
Total assets	327.2	(90.4)	236.8	(136.3)	(84.1)	16.4	75.6	92.0	312.4

1 The net amount of Cash collateral receivables on derivative instruments recognized on the balance sheet includes certain OTC derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. 2 The logic of the table results in amounts presented in the "Netting with gross liabilities" column corresponding directly to the amounts presented in the "Netting with gross assets" column in the liabilities table presented below. Netting in this column for reverse repurchase agreements presented within the lines "Receivables from securities financing transactions measured at amortized cost" and "Financial assets at fair value not held for trading" taken together corresponds to the amounts presented for repurchase agreements in the "Payables from securities financing transactions measured at amortized cost" and "Other financial liabilities designated at fair value" lines in the liabilities table presented below. 3 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped so as not to exceed the net amount of financial assets presented on the balance sheet; i.e., over-collateralization, where it exists, is not reflected in the table. 4 Includes assets not subject to enforceable netting arrangements and other out-of-scope items.

Financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements

	Liabilities subject to netting arrangements						Liabilities not subject to netting arrangements[4]	Total liabilities	
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet[3]					
As of 31.12.23, USD bn	Gross liabilities before netting	Netting with gross assets[2]	Net liabilities recognized on the balance sheet	Financial assets	Collateral pledged	Liabilities after consideration of netting potential	Liabilities recognized on the balance sheet	Total liabilities after consideration of netting potential	Total liabilities recognized on the balance sheet
Payables from securities financing transactions measured at amortized cost	16.1	(12.1)	4.0	(0.8)	(3.2)	0.0	1.8	1.8	5.8
Derivative financial instruments	135.9	(2.5)	133.5	(99.3)	(24.5)	9.7	7.2	16.9	140.7
Cash collateral payables on derivative instruments[1]	33.5	0.0	33.5	(17.2)	(3.4)	12.9	1.4	14.3	34.9
Other financial liabilities designated at fair value	97.1	(89.8)	7.3	(2.5)	(4.8)	0.0	20.1	20.1	27.4
of which: repurchase agreements	*96.7*	*(89.8)*	*6.9*	*(2.5)*	*(4.4)*	*0.0*	*0.0*	*0.0*	*6.9*
Total liabilities	**282.6**	**(104.3)**	**178.3**	**(119.7)**	**(36.0)**	**22.5**	**30.4**	**53.0**	**208.7**
As of 31.12.22, USD bn									
Payables from securities financing transactions measured at amortized cost	14.1	(11.1)	3.0	(1.3)	(1.8)	0.0	1.2	1.2	4.2
Derivative financial instruments	150.3	(2.5)	147.8	(110.9)	(26.2)	10.7	7.1	17.8	154.9
Cash collateral payables on derivative instruments[1]	34.9	0.0	34.9	(20.0)	(1.9)	13.0	1.6	14.5	36.4
Other financial liabilities designated at fair value	92.5	(76.9)	15.6	(3.2)	(12.4)	0.0	16.4	16.4	32.0
of which: repurchase agreements	*92.1*	*(76.9)*	*15.3*	*(3.2)*	*(12.1)*	*0.0*	*0.1*	*0.1*	*15.3*
Total liabilities	**291.7**	**(90.4)**	**201.3**	**(135.3)**	**(42.3)**	**23.7**	**26.3**	**49.9**	**227.6**

1 The net amount of Cash collateral payables on derivative instruments recognized on the balance sheet includes certain OTC derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. 2 The logic of the table results in amounts presented in the "Netting with gross assets" column corresponding to the amounts presented in the "Netting with gross liabilities" column in the assets table presented above. Netting in this column for repurchase agreements presented within the lines "Payables from securities financing transactions measured at amortized cost" and "Other financial liabilities designated at fair value" taken together corresponds to the amounts presented for reverse repurchase agreements in the "Receivables from securities financing transactions measured at amortized cost" and "Financial assets at fair value not held for trading" lines in the assets table presented above. 3 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped so as not to exceed the net amount of financial liabilities presented on the balance sheet; i.e., over-collateralization, where it exists, is not reflected in the table. 4 Includes liabilities not subject to enforceable netting arrangements and other out-of-scope items.

Note 22 Restricted and transferred financial assets

This Note provides information about restricted financial assets (Note 22a), transfers of financial assets (Note 22b and 22c) and financial assets that are received as collateral with the right to resell or repledge these assets (Note 22d).

a) Restricted financial assets

Restricted financial assets consist of assets pledged as collateral against an existing liability or contingent liability and other assets that are otherwise explicitly restricted such that they cannot be used to secure funding.

Financial assets are mainly pledged as collateral in securities lending transactions, in repurchase transactions and in relation to mortgage loans, which serve as collateral against loans from Swiss mortgage institutions and US Federal Home Loan Banks and in connection with the issuance of covered bonds. Of these pledged mortgage loans, approximately USD 2.0bn as of 31 December 2023 could be withdrawn or used for future liabilities or covered bond issuances without breaching existing collateral requirements (31 December 2022: approximately USD 3.1bn). Existing liabilities against Swiss central mortgage institutions and US Federal Home Loan Banks and for existing covered bond issuances were USD 15.4bn as of 31 December 2023 (31 December 2022: USD 9.0bn).

Repurchase and securities lending arrangements are generally entered into under standard market agreements. For securities lending, the cash received as collateral may be more or less than the fair value of the securities loaned, depending on the nature of the transaction. For repurchase agreements, the fair value of the collateral sold under an agreement to repurchase is generally in excess of the cash borrowed.

Other restricted financial assets include assets protected under client asset segregation rules, assets held under unit-linked investment contracts to back related liabilities to the policy holders and assets held in certain jurisdictions to comply with explicit minimum local asset maintenance requirements. The carrying amount of the liabilities associated with these other restricted financial assets is generally equal to the carrying amount of the assets, with the exception of assets held to comply with local asset maintenance requirements, for which the associated liabilities are greater.

Restricted financial assets

USD m	31.12.23		31.12.22	
	Restricted financial assets	*of which: assets pledged as collateral that may be sold or repledged by counterparties*	Restricted financial assets	*of which: assets pledged as collateral that may be sold or repledged by counterparties*
Financial assets pledged as collateral				
Cash and balances at central banks[1]	709			
Financial assets at fair value held for trading	76,579	*44,524*	57,435	*36,742*
Loans and advances to customers	28,105		15,195	
Financial assets at fair value not held for trading	3,099	*2,110*	1,509	*1,220*
Debt securities classified as Other financial assets measured at amortized cost	7,043	*6,299*	3,432	*2,685*
Total financial assets pledged as collateral	115,535		77,571	
Other restricted financial assets				
Amounts due from banks	2,543		3,689	
Financial assets at fair value held for trading	169		162	
Cash collateral receivables on derivative instruments	4,685		5,155	
Loans and advances to customers	28		1,127	
Other financial assets measured at amortized cost	3,334[2]		815	
Financial assets at fair value not held for trading	17,844		14,090	
Financial assets measured at fair value through other comprehensive income	1,846		1,842	
Other	249		44	
Total other restricted financial assets	30,698		26,924	
Total financial assets pledged and other restricted financial assets[3]	146,233		104,495	

1 Assets pledged to the depositor protection system in Switzerland following new requirements that became effective in 2023. 2 Predominantly includes cash collateral provided to exchanges and clearing houses to secure securities trading activity through those counterparties. 3 Does not include assets placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes (31 December 2023: USD 9.7bn; 31 December 2022: USD 5.9bn).

In addition to the table above, USD 4.7bn were placed at central banks to meet local statutory minimum reserve requirements as of 31 December 2023 (31 December 2022: USD 4.4bn).

Note 22 Restricted and transferred financial assets (continued)

In addition to restrictions on financial assets, UBS AG and its subsidiaries are, in certain cases, subject to regulatory requirements that affect the transfer of dividends and capital within UBS AG, as well as intercompany lending. Supervisory authorities also may require entities to measure capital and leverage ratios on a stressed basis, such as the Federal Reserve Board's Comprehensive Capital Analysis and Review (CCAR) process, which may limit the relevant subsidiaries' ability to make distributions of capital based on the results of those tests.

Supervisory authorities generally have discretion to impose higher requirements or to otherwise limit the activities of subsidiaries.

Non-regulated subsidiaries are generally not subject to such requirements and transfer restrictions. However, restrictions can also be the result of different legal, regulatory, contractual, entity- or country-specific arrangements and / or requirements.

b) Transferred financial assets that are not derecognized in their entirety

The table below presents information for financial assets that have been transferred but are subject to continued recognition in full, as well as recognized liabilities associated with those transferred assets.

Transferred financial assets subject to continued recognition in full

USD m	31.12.23		31.12.22	
	Carrying amount of transferred assets	Carrying amount of associated liabilities recognized on balance sheet	Carrying amount of transferred assets	Carrying amount of associated liabilities recognized on balance sheet
Financial assets at fair value held for trading that may be sold or repledged by counterparties	44,524	23,374	36,742	16,470
Financial assets at fair value not held for trading that may be sold or repledged by counterparties	2,110	1,976	1,220	1,050
Debt securities classified as Other financial assets measured at amortized cost that may be sold or repledged by counterparties	6,299	5,928	2,685	2,302
Total financial assets transferred	52,933	31,278	40,647	19,822

Transactions in which financial assets are transferred but continue to be recognized in their entirety on UBS AG's balance sheet include securities lending and repurchase agreements, as well as other financial asset transfers. Repurchase and securities lending arrangements are, for the most part, conducted under standard market agreements and are undertaken with counterparties subject to UBS AG's normal credit risk control processes.

› **Refer to Note 1a item 2e for more information about repurchase and securities lending agreements**

Financial assets at fair value held for trading that may be sold or repledged by counterparties include securities lending and repurchase agreements in exchange for cash received, securities lending agreements in exchange for securities received and other financial asset transfers.

For securities lending and repurchase agreements, a haircut of between 0% and 15% is generally applied to the transferred assets, which results in associated liabilities having a carrying amount below the carrying amount of the transferred assets. The counterparties to the associated liabilities included in the table above have full recourse to UBS AG.

In securities lending arrangements entered into in exchange for the receipt of other securities as collateral, neither the securities received nor the obligation to return them are recognized on UBS AG's balance sheet, as the risks and rewards of ownership are not transferred to UBS AG. In cases where such financial assets received are subsequently sold or repledged in another transaction, this is not considered to be a transfer of financial assets.

Other financial asset transfers primarily include securities transferred to collateralize derivative transactions, for which the carrying amount of associated liabilities is not included in the table above, because those replacement values are managed on a portfolio basis across counterparties and product types, and therefore there is no direct relationship between the specific collateral pledged and the associated liability.

Transferred financial assets that are not subject to derecognition in full but remain on the balance sheet to the extent of UBS AG's continuing involvement were not material as of 31 December 2023 and as of 31 December 2022.

Note 22 Restricted and transferred financial assets (continued)

c) Transferred financial assets that are derecognized in their entirety with continuing involvement

Continuing involvement in a transferred and fully derecognized financial asset may result from contractual provisions in the particular transfer agreement or from a separate agreement, with the counterparty or a third party, entered into in connection with the transfer.

The fair value and carrying amount of UBS AG's continuing involvement from transferred positions as of 31 December 2023 and 31 December 2022 was not material. Life-to-date losses reported in prior periods primarily relate to legacy positions in securitization vehicles that have been fully marked down, with no remaining exposure to loss.

d) Off-balance sheet assets received

The table below presents assets received from third parties that can be sold or repledged and that are not recognized on the balance sheet but that are held as collateral, including amounts that have been sold or repledged.

Off-balance sheet assets received

USD m	31.12.23	31.12.22
Fair value of assets received that can be sold or repledged [1]	489,476	434,023
of which: sold or repledged [2]	*357,020*	*331,805*

1 Includes securities received as initial margin from its clients that UBS AG is required to remit to central counterparties, brokers and deposit banks through its exchange-traded derivative clearing and execution services. 2 Does not include off-balance sheet securities (31 December 2023: USD 16.0bn; 31 December 2022: USD 9.9bn) placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes for which there are no associated liabilities or contingent liabilities.

Note 23 Maturity analysis of assets and liabilities

a) Maturity analysis of carrying amounts of assets and liabilities

The table below provides an analysis of carrying amounts of balance sheet assets and liabilities, as well as off-balance sheet exposures by residual contractual maturity as of the reporting date. The residual contractual maturity of assets includes the effect of callable features. The residual contractual maturity of liabilities and off-balance sheet exposures is based on the earliest date on which a third party could require UBS AG to pay.

Derivative financial instruments and financial assets and liabilities at fair value held for trading are presented in the *Due within 1 month* column; however, the respective contractual maturities may extend over significantly longer periods.

Assets held to hedge unit-linked investment contracts (presented within *Financial assets at fair value not held for trading*) are presented in the *Due within 1 month* column, consistent with the maturity assigned to the related amounts due under unit-linked investment contracts (presented within *Other financial liabilities designated at fair value*).

Other financial assets and liabilities with no contractual maturity, such as equity securities, are presented in the *Perpetual / Not applicable* column. Undated or perpetual instruments are classified based on the contractual notice period that the counterparty of the instrument is entitled to give. Where there is no contractual notice period, undated or perpetual contracts are presented in the *Perpetual / Not applicable* column.

Non-financial assets and liabilities with no contractual maturity are generally included in the *Perpetual / Not applicable* column.

Note 23 Maturity analysis of assets and liabilities (continued)

	31.12.23							
USD bn	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 2 years	Due between 2 and 5 years	Due over 5 years	Perpetual / Not applicable	Total
Assets								
Total financial assets measured at amortized cost	416.2	25.6	47.6	105.2	77.8	94.0		766.4
Amounts due from banks	*12.0*	*0.5*	*5.4*	*10.0*	*0.2*	*0.1*		*28.2*
Loans and advances to customers	*135.5*	*12.1*	*33.3*	*89.4*	*61.4*	*74.0*		*405.6*
Other financial assets measured at amortized cost	*7.4*	*1.6*	*4.2*	*5.1*	*16.1*	*19.9*		*54.3*
Total financial assets measured at fair value through profit or loss	312.5	6.7	7.8	7.4	11.8	3.4	1.9	351.5
Financial assets at fair value not held for trading	*24.8*	*6.7*	*7.8*	*7.4*	*11.8*	*3.4*	*1.9*	*63.8*
Financial assets measured at fair value through other comprehensive income	0.1	1.1	1.0	0.1	0.0	0.0		2.2
Total non-financial assets	6.6		0.2		1.2	0.4	27.5	35.9
Total assets	**735.4**	**33.4**	**56.5**	**112.7**	**90.8**	**97.8**	**29.5**	**1,156.0**
Liabilities								
Total financial liabilities measured at amortized cost	497.1	65.1	81.1	30.3	49.6	27.1	12.5	762.8
Customer deposits	*433.2*	*48.9*	*49.6*	*15.3*	*8.4*	*0.3*		*555.7*
Funding from UBS Group AG measured at amortized cost	*2.5*	*0.8*		*8.2*	*24.3*	*19.0*	*12.5*	*67.3*
Debt issued measured at amortized cost	*6.4*	*11.7*	*26.8*	*6.3*	*11.8*	*6.8*		*69.8*
of which: non-subordinated	*6.4*	*11.7*	*24.3*	*6.0*	*11.6*	*6.8*		*66.8*
of which: subordinated			*2.5*	*0.3*	*0.2*			*3.0*
Total financial liabilities measured at fair value through profit or loss[1]	250.1	11.4	22.6	23.3	8.3	12.7		328.4
Debt issued designated at fair value	*13.1*	*11.3*	*21.8*	*23.0*	*8.0*	*9.1*		*86.3*
Total non-financial liabilities	5.2	2.8	0.0	0.1	0.4	0.1	0.5	9.2
Total liabilities	**752.5**	**79.3**	**103.8**	**53.7**	**58.3**	**39.9**	**13.0**	**1,100.4**
Guarantees, loan commitments and forward starting transactions[2]								
Irrevocable loan commitments	43.0	0.5	0.4	0.0	0.0			44.0
Guarantees	33.4							33.4
Forward starting reverse repurchase and securities borrowing agreements	10.4							10.4
Irrevocable committed prolongation of existing loans	2.0	0.8	1.3	0.0	0.0			4.2
Total	**88.8**	**1.4**	**1.8**	**0.0**	**0.0**			**91.9**

	31.12.22							
USD bn	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 2 years	Due between 2 and 5 years	Due over 5 years	Perpetual / Not applicable	Total
Assets								
Total financial assets measured at amortized cost	425.2	28.7	34.5	78.8	70.5	92.8		730.4
Amounts due from banks	*13.3*	*0.6*	*0.6*	*0.0*	*0.0*	*0.1*		*14.7*
Loans and advances to customers	*141.9*	*16.3*	*28.3*	*74.9*	*55.6*	*73.0*		*390.0*
Other financial assets measured at amortized cost	*8.8*	*4.2*	*2.8*	*3.0*	*14.8*	*19.7*		*53.4*
Total financial assets measured at fair value through profit or loss	300.4	10.0	7.8	3.6	9.9	2.0	1.5	335.1
Financial assets at fair value not held for trading	*24.6*	*10.0*	*7.8*	*3.6*	*9.9*	*2.0*	*1.5*	*59.4*
Financial assets measured at fair value through other comprehensive income	0.3	0.9	0.9	0.1	0.0	0.0		2.2
Total non-financial assets	7.1		0.2		2.0	0.4	28.0	37.7
Total assets	**732.9**	**39.5**	**43.4**	**82.4**	**82.4**	**95.1**	**29.6**	**1,105.4**
Liabilities								
Total financial liabilities measured at amortized cost	524.3	40.2	49.6	20.7	35.2	23.5	11.8	705.4
Customer deposits	*464.5*	*28.5*	*23.8*	*7.7*	*2.3*	*0.3*		*527.2*
Funding from UBS Group AG measured at amortized cost	*2.0*			*4.8*	*21.2*	*16.3*	*11.8*	*56.1*
Debt issued measured at amortized cost	*4.6*	*8.8*	*23.3*	*7.2*	*10.0*	*5.7*		*59.5*
of which: non-subordinated	*4.6*	*8.8*	*23.3*	*4.8*	*9.5*	*5.7*		*56.5*
of which: subordinated				*2.4*	*0.5*			*3.0*
Total financial liabilities measured at fair value through profit or loss[1]	265.9	13.8	16.3	19.6	7.3	10.5		333.4
Debt issued designated at fair value	*9.3*	*12.3*	*15.9*	*19.3*	*6.9*	*8.2*		*71.8*
Total non-financial liabilities	6.7	2.6					0.5	9.7
Total liabilities	**796.9**	**56.5**	**65.9**	**40.4**	**42.5**	**34.0**	**12.3**	**1,048.5**
Guarantees, loan commitments and forward starting transactions[2]								
Irrevocable loan commitments	39.3	0.3	0.4	0.0				40.0
Guarantees	22.4							22.4
Forward starting reverse repurchase and securities borrowing agreements	3.8							3.8
Irrevocable committed prolongation of existing loans	4.7							4.7
Total	**70.1**	**0.3**	**0.4**	**0.0**				**70.9**

1 As of 31 December 2023 and 31 December 2022, the contractual redemption amount at maturity of debt issued designated at fair value through profit or loss and other financial liabilities measured at fair value through profit or loss was not materially different from the carrying amount. 2 The notional amounts associated with derivative loan commitments, as well as forward starting repurchase and reverse repurchase agreements, measured at fair value through profit or loss are presented together with notional amounts related to derivative instruments and have been excluded from the table above. Refer to Note 10 for more information.

Note 23 Maturity analysis of assets and liabilities (continued)

b) Maturity analysis of financial liabilities on an undiscounted basis

The table below provides an analysis of financial liabilities on an undiscounted basis, including all cash flows relating to principal and future interest payments. The residual contractual maturities for non-derivative and non-trading financial liabilities are based on the earliest date on which UBS AG could be contractually required to pay. Derivative positions and trading liabilities, predominantly made up of short sale transactions, are presented in the *Due within 1 month* column, as this provides a conservative reflection of the nature of these trading activities. The residual contractual maturities may extend over significantly longer periods.

	31.12.23							
USD bn	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 2 years	Due between 2 and 5 years	Due over 5 years	Perpetual / Not applicable	Total
Financial liabilities recognized on balance sheet[1]								
Amounts due to banks	6.2	2.6	3.9	0.3	4.4	0.0		17.4
Payables from securities financing transactions	4.0	1.1	0.7					5.8
Cash collateral payables on derivative instruments	34.9							34.9
Customer deposits	433.5	49.7	51.6	16.9	9.8	0.3		561.8
Funding from UBS Group AG measured at amortized cost[2]	2.8	1.7	1.7	11.0	31.9	24.1	12.9	86.1
Debt issued measured at amortized cost	6.4	11.9	27.4	7.0	12.8	8.1		73.6
Other financial liabilities measured at amortized cost	6.2	0.1	0.4	0.5	1.1	1.1		9.4
of which: lease liabilities	*0.0*	*0.1*	*0.4*	*0.5*	*1.1*	*1.1*		*3.3*
Total financial liabilities measured at amortized cost	494.1	67.0	85.7	35.6	60.1	33.6	12.9	789.1
Financial liabilities at fair value held for trading[3,4]	31.7							31.7
Derivative financial instruments[3,5]	140.7							140.7
Brokerage payables designated at fair value	42.3							42.3
Debt issued designated at fair value[6]	13.1	11.8	22.5	25.7	8.1	11.8		93.0
Other financial liabilities designated at fair value	22.1	0.1	0.8	0.3	0.3	7.2		30.8
Total financial liabilities measured at fair value through profit or loss	**249.9**	**11.9**	**23.3**	**26.0**	**8.4**	**19.0**		**338.4**
Total	**744.0**	**78.9**	**109.0**	**61.6**	**68.5**	**52.6**	**12.9**	**1,127.5**
Guarantees, loan commitments and forward starting transactions								
Irrevocable loan commitments[7]	43.0	0.5	0.4	0.0	0.0			44.0
Guarantees	33.4							33.4
Forward starting reverse repurchase and securities borrowing agreements[7]	10.4							10.4
Irrevocable committed prolongation of existing loans	2.0	0.8	1.3	0.0	0.0			4.2
Total	**88.8**	**1.4**	**1.8**	**0.0**	**0.0**			**91.9**

	31.12.22							
USD bn	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 2 years	Due between 2 and 5 years	Due over 5 years	Perpetual / Not applicable	Total
Financial liabilities recognized on balance sheet[1]								
Amounts due to banks	6.3	2.6	1.9	0.3	0.6	0.0		11.7
Payables from securities financing transactions	3.3	0.3	0.4	0.3		0.0		4.4
Cash collateral payables on derivative instruments	36.4							36.4
Customer deposits	464.6	28.8	24.5	8.2	2.6	0.3		529.0
Funding from UBS Group AG measured at amortized cost[2]	2.2	0.6	1.2	6.8	27.6	21.2	12.7	72.3
Debt issued measured at amortized cost	4.6	8.9	23.7	7.8	10.8	6.9		62.8
Other financial liabilities measured at amortized cost	5.6	0.1	0.4	0.5	1.2	1.3		9.2
of which: lease liabilities	*0.1*	*0.1*	*0.4*	*0.5*	*1.2*	*1.3*		*3.7*
Total financial liabilities measured at amortized cost	523.1	41.2	52.2	24.0	42.8	29.8	12.7	725.8
Financial liabilities at fair value held for trading[3,4]	29.5							29.5
Derivative financial instruments[3,5]	154.9							154.9
Brokerage payables designated at fair value	45.1							45.1
Debt issued designated at fair value[6]	9.4	12.4	16.0	19.7	7.1	12.3		76.8
Other financial liabilities designated at fair value	27.1	1.4	0.4	0.4	0.5	5.0		34.8
Total financial liabilities measured at fair value through profit or loss	266.0	13.8	16.4	20.0	7.5	17.3		341.1
Total	**789.2**	**55.0**	**68.6**	**44.0**	**50.3**	**47.1**	**12.7**	**1,066.9**
Guarantees, loan commitments and forward starting transactions								
Irrevocable loan commitments[7]	39.3	0.3	0.4	0.0				40.0
Guarantees	22.4							22.4
Forward starting reverse repurchase and securities borrowing agreements[7]	3.8							3.8
Irrevocable committed prolongation of existing loans	4.7							4.7
Total	**70.1**	**0.3**	**0.4**	**0.0**				**70.9**

1 Except for financial liabilities at fair value held for trading and derivative financial instruments (see footnote 3), the amounts presented generally represent undiscounted cash flows of future interest and principal payments. 2 The time-bucket Perpetual / Not applicable includes perpetual loss-absorbing additional tier 1 capital instruments. 3 Carrying amount is fair value. Management believes that this best represents the cash flows that would have to be paid if these positions had to be settled or closed out. 4 Contractual maturities of financial liabilities at fair value held for trading are: USD 29.9bn due within 1 month (31 December 2022: USD 27.8bn), USD 1.8bn due between 1 month and 1 year (31 December 2022: USD 1.7bn) and USD 0bn due between 1 and 5 years (31 December 2022: USD 0bn). 5 Includes USD 52m (31 December 2022: USD 46m) related to fair values of derivative loan commitments and forward starting reverse repurchase agreements classified as derivatives, presented within "Due within 1 month". The full contractual committed amount of USD 65.2bn (31 December 2022: USD 34.4bn) is presented in Note 10 under notional amounts. 6 Future interest payments on variable-rate liabilities are determined by reference to the applicable interest rate prevailing as of the reporting date. Future principal payments that are variable are determined by reference to the conditions existing at the relevant reporting date. 7 Excludes derivative loan commitments and forward starting reverse repurchase agreements measured at fair value (see footnote 5).

Note 24 Interest rate benchmark reform

During 2023, UBS AG largely completed the transition of the 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, was substantially completed, 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 also been transitioned to alternative 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. As of 31 December 2023, the transition of these USD LIBOR-linked derivatives had been materially accomplished.

The table below sets out the contracts that remained as of 31 December 2022. No contracts are included as of 31 December 2023 given transition has largely completed as noted above.

		31.12.22[1]
	Measure	USD LIBOR benchmark rates
Carrying value of non-derivative financial instruments		
Total non-derivative financial assets	USD m	14,269[2]
Total non-derivative financial liabilities	USD m	1,138[3]
Trade count of derivative financial instruments		
Total derivative financial instruments	Trade count	32,006[4]
Off-balance sheet exposures		
Total irrevocable loan commitments	USD m	4,606[5]

1 As of 31 December 2022, non-USD balances and trade counts were minimal. 2 Includes USD 1bn of loans related to revolving multi-currency credit lines, where IBOR transition efforts are complete, except for USD LIBOR. The remaining balances as of 31 December 2022 primarily related to US mortgages and corporate lending. 3 Relates to floating-rate notes that per their contractual terms can reset to rates linked to LIBOR, with transition dependent upon the actions of respective issuers. 4 Includes approximately 2,000 contracts having a contractual maturity after 30 June 2023, with the last USD LIBOR fixing occurring before 30 June 2023. No further contractual fixing is required for these contracts. 5 Includes approximately USD 3bn of loan commitments that can be drawn in different currencies; however, only USD LIBOR transition efforts remained open as of 31 December 2022.

In addition, as of 31 December 2023 UBS AG had approximately USD 2bn equivalent of 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. Furthermore, 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 25 Hedge accounting

Derivatives designated in hedge accounting relationships

UBS AG applies hedge accounting to interest rate risk and foreign exchange risk, including structural foreign exchange risk related to net investments in foreign operations.

› **Refer to "Market risk" in the "Risk management and control" section of this report for more information about how risks arise and how they are managed by UBS AG**

Hedging instruments and hedged risk

Interest rate swaps are designated in fair value hedges or cash flow hedges of interest rate risk arising solely from changes in benchmark interest rates. Fair value changes arising from such risk are usually the largest component of the overall change in the fair value of the hedged position in transaction currency.

Cross-currency swaps are designated as fair value hedges of foreign exchange risk. Foreign exchange forwards and foreign exchange swaps are mainly designated as hedges of structural foreign exchange risk related to net investments in foreign operations. In both cases the hedged risk arises solely from changes in the spot foreign exchange rate.

The notional of the designated hedging instruments matches the notional of the hedged items, except when the interest rate swaps are designated in cash flow hedges after the trade date, in which case the hedge ratio designated is determined based on the swap sensitivity.

Note 25 Hedge accounting (continued)

Hedged items and hedge designation

Fair value hedges of interest rate risk related to debt instruments and loan assets

Fair value hedges of interest rate risk related to debt instruments and loan assets involve swapping fixed cash flows associated with the loans to customers (including long-term fixed-rate mortgage loans in Swiss francs), debt securities held, customer deposits, funding from UBS Group AG, debt issued to floating cash flows by entering into interest rate swaps that either pay fixed and receive floating cash flows or that receive fixed and pay floating cash flows. The floating future cash flows are based on the following benchmark rates: Secured Overnight Financing Rate (SOFR), Effective Federal Funds Rate (EFFR), Swiss Average Rate Overnight (SARON), Euro Interbank Offered Rate (EURIBOR), Euro Short-Term Rate (ESTR), Sterling Overnight Index Average (SONIA), AUD London Interbank Offered Rate (AUD LIBOR), Tokyo Overnight Average Rate (TONA) and Singapore Overnight Rate Average (SORA).

Cash flow hedges of forecast transactions

UBS AG hedges forecast cash flows on non-trading financial assets and liabilities that bear interest at variable rates or are expected to be refinanced or reinvested in the future, due to movements in future market rates. The amounts and timing of future cash flows, representing both principal and interest flows, are projected on the basis of contractual terms and other relevant factors, including estimates of prepayments and defaults. The aggregate principal balances and interest cash flows across all portfolios over time form the basis for identifying the non-trading interest rate risk of UBS AG, which is hedged with interest rate swaps, the maximum maturity of which is 15 years. Cash flow forecasts and risk exposures are monitored and adjusted on an ongoing basis, and consequently additional hedging instruments are traded and designated, or are terminated resulting in a hedge discontinuance.

Fair value hedges of foreign exchange risk related to issued debt instruments

Debt instruments denominated in currencies other than the US dollar are designated in fair value hedges of spot foreign exchange risk, in addition to and separate from the fair value hedges of interest rate risk. Cross-currency swaps economically convert debt instruments denominated in currencies other than the US dollar to US dollars. The hedge designations also involve intragroup debt instruments which are eliminated upon consolidation but FX gains and losses impact consolidated profit or loss.

Hedges of net investments in foreign operations

UBS AG applies hedge accounting for certain net investments in foreign operations, which include subsidiaries, branches and associates. Upon maturity of hedging instruments, typically one to three months, the hedge relationship is terminated and new designations are made to reflect any changes in the net investments in foreign operations.

Economic relationship between hedged item and hedging instrument

The economic relationship between the hedged item and the hedging instrument is determined based on a qualitative analysis of their critical terms. In cases where hedge designation takes place after the trade date of the hedging instrument, a quantitative analysis of the possible behavior of the hedging derivative and the hedged item during their respective terms is also performed.

Sources of hedge ineffectiveness

In hedges of interest rate risk, hedge ineffectiveness can arise from mismatches of critical terms and / or the use of different curves to discount the hedged item and instrument, or from entering into a hedge relationship after the trade date of the hedging derivative.

In hedges of foreign exchange risk related to debt issued, hedge ineffectiveness can arise due to the discounting of the hedging instruments and undesignated risk components and lack of such discounting and risk components in the hedged items.

In hedges of net investments in foreign operations, ineffectiveness is unlikely unless the hedged net assets fall below the designated hedged amount. The exceptions are hedges where the hedging currency is not the same as the currency of the foreign operation, where the currency basis may cause ineffectiveness.

Hedge ineffectiveness from financial instruments measured at fair value through profit or loss is recognized in *Other net income from financial instruments measured at fair value through profit or loss.*

Derivatives not designated in hedge accounting relationships

Non-hedge-accounted derivatives are mandatorily held for trading with all fair value movements taken to *Other net income from financial instruments measured at fair value through profit or loss*, even when held as an economic hedge or to facilitate client clearing. The one exception relates to forward points on certain short- and long-duration foreign exchange contracts acting as economic hedges, which are reported in *Net interest income.*

Note 25 Hedge accounting (continued)

All hedges: designated hedging instruments and hedge ineffectiveness

	As of or for the year ended					
	31.12.23					
		Carrying amount				
USD m	Notional amount	Derivative financial assets	Derivative financial liabilities	Changes in fair value of hedging instruments[1]	Changes in fair value of hedged items[1]	Hedge ineffectiveness recognized in the income statement
Interest rate risk						
Fair value hedges	114,618	0	0	2,203	(2,195)	8
Cash flow hedges	83,333	3	0	(35)	57	22
Foreign exchange risk						
Fair value hedges[2]	33,877	468	291	132	(151)	(19)
Hedges of net investments in foreign operations	13,260	3	455	(910)	912	3

	As of or for the year ended					
	31.12.22					
		Carrying amount				
USD m	Notional amount	Derivative financial assets	Derivative financial liabilities	Changes in fair value of hedging instruments[1]	Changes in fair value of hedged items[1]	Hedge ineffectiveness recognized in the income statement
Interest rate risk						
Fair value hedges	92,415	0	0	(5,195)	5,169	(27)
Cash flow hedges	75,304	2	5	(5,813)	5,760	(53)
Foreign exchange risk						
Fair value hedges[2]	20,566	845	3	(1,088)	1,105	18
Hedges of net investments in foreign operations	13,844	7	528	318	(319)	(1)

1 Amounts used as the basis for recognizing hedge ineffectiveness for the period. 2 The foreign currency basis spread of cross-currency swaps designated as hedging derivatives is excluded from the hedge accounting designation and accounted for as a cost of hedging with amounts deferred in Other comprehensive income within Equity.

Fair value hedges: designated hedged items recognized on balance sheet[1]

USD m	31.12.23		31.12.22	
	Interest rate risk	FX risk	Interest rate risk	FX risk
Loans and advances to customers				
Carrying amount of designated loans	15,296		14,270	
of which: accumulated amount of fair value hedge adjustment	*(508)*		*(1,249)*	
of which: accumulated amount of fair value hedge adjustment subject to amortization attributable to the portion of the portfolio that ceased to be part of hedge accounting	*(179)*		*(51)*	
Other financial assets measured at amortized cost – debt securities				
Carrying amount of designated debt securities	6,333		4,577	
of which: accumulated amount of fair value hedge adjustment	*(109)*		*(180)*	
Customer deposits				
Carrying amount of Customer deposits	8,972			
of which: accumulated amount of fair value hedge adjustment	*50*			
Funding from UBS Group AG				
Carrying amount of designated debt instruments	63,760	17,693	57,250	14,828
of which: accumulated amount of fair value hedge adjustment	*(3,174)*		*(5,055)*	
Debt issued measured at amortized cost				
Carrying amount of designated debt issued	15,243	4,636	11,279	5,737
of which: accumulated amount of fair value hedge adjustment	*(412)*		*(1,002)*	

1 In addition, as of 31 December 2023 UBS AG designated in fair value hedges of FX risk USD 12bn of intragroup debt instruments which are not recognized on consolidated balance sheet but FX gains and losses on these instruments impact consolidated profit or loss. No such designations were in place as of 31 December 2022.

Note 25 Hedge accounting (continued)

Fair value hedges: profile of the timing of the nominal amount of the hedging instrument

	31.12.23					
USD bn	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Interest rate swaps	1	6	12	62	35	115
Cross-currency swaps	1	2	2	22	7	34

	31.12.22					
USD bn	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Interest rate swaps	0	4	10	53	26	92
Cross-currency swaps	0	1	2	12	5	21

Cash flow hedge reserve on a pre-tax basis

USD m	31.12.23	31.12.22
Amounts related to hedge relationships for which hedge accounting continues to be applied	(2,349)	(4,692)
Amounts related to hedge relationships for which hedge accounting is no longer applied	(1,331)	(540)
Total other comprehensive income recognized directly in equity related to cash flow hedges, on a pre-tax basis	(3,680)	(5,232)

Foreign currency translation reserve on a pre-tax basis

USD m	31.12.23	31.12.22
Amounts related to hedge relationships for which hedge accounting continues to be applied	(690)	250
Amounts related to hedge relationships for which hedge accounting is no longer applied	266	266
Total other comprehensive income recognized directly in equity related to hedging instruments designated as net investment hedges, on a pre-tax basis	(424)	515

Interest rate benchmark reform

In 2023, UBS AG applied the relief provided by *Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39 and IFRS 7)*, published by the International Accounting Standards Board in September 2019, to its hedges in US dollars and Singapore dollars until they transitioned to alternative reference rate (ARR) designations in May 2023 and June 2023, respectively. The transition of fair value hedges took place following the IBOR transition for swaps with LCH (formerly the London Clearing House), with hedge relationships continuing in accordance with *Interest Rate Benchmark Reform – Phase 2 (Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16)*. Cash flow hedge relationships were discontinued and replaced with new ARR designations in May 2023.

As of 31 December 2023, there were no hedge relationships where the designated risk is LIBOR and maturing after the cessation date of the applicable interest rate benchmarks. The following table provides details on the hedging instruments in such hedge relationships as of 31 December 2022.

Hedges of net investments in foreign operations are not affected by the amendments.

- **Refer to Note 1a item 2j for more information about the relief provided by the amendments to IFRS 9 and IFRS 7 related to interest rate benchmark reform**
- **Refer to Note 24 for more information about the transition progress**

Hedging instruments referencing LIBOR

	31.12.22		
		Carrying amount	
USD m	Notional amount	Derivative financial assets	Derivative financial liabilities
Interest rate risk			
Fair value hedges	20,383	0	0
Cash flow hedges	2,179	0	0

Note 26 Post-employment benefit plans

a) Defined benefit plans

UBS AG has established defined benefit plans for its employees in various jurisdictions in accordance with local regulations and practices. The major plans are located in Switzerland, the UK, the US and Germany. The level of benefits depends on the specific plan rules. UBS AG has not been involved in the major Credit Suisse defined benefit plans.

Swiss pension plan

In 2017, a significant number of employees were transferred from UBS AG to UBS Business Solutions AG, which is a directly held subsidiary of UBS Group AG. There continues to be one pooled UBS Swiss pension plan in Switzerland covering the employees of UBS AG and those transferred to UBS Business Solutions AG. UBS AG and UBS Business Solutions AG both are legal sponsors of the UBS Swiss pension plan. Since the date of the employee transfer, UBS AG and UBS Business Solutions AG apply proportionate defined benefit accounting, i.e., the net pension cost and the net pension asset / liability of the UBS Swiss pension plan are allocated proportionally between UBS AG and UBS Business Solutions AG based on the aggregated net pension cost and defined benefit obligations related to their employees. The UBS Swiss pension plan offers retirement, disability and survivor benefits and is governed by a Pension Foundation Board. The responsibilities of this board are defined by Swiss pension law and the plan rules. The UBS Swiss pension plan exceeds the minimum benefit requirements under Swiss pension law.

Savings contributions to the UBS Swiss pension plan are paid by both the employer and the employee. Depending on the age of the employee, UBS AG pays a savings contribution that ranges between 6.5% and 27.5% of the contributory base salary and between 2.8% and 9% of the contributory variable compensation. Employees can choose the level of savings contributions paid by them, which vary between 2.5% and 13.5% of the contributory base salary and between 0% and 9% of the contributory variable compensation, depending on age and choice of savings contribution category. UBS AG also pays risk contributions that are used to fund disability and survivor benefits.

The plan offers to members at the normal retirement age of 65 a choice between a lifetime pension and a partial or full lump sum payment. Participants can choose to draw early retirement benefits starting from the age of 58, but they can also continue employment and remain active members of the plan until the age of 70. Employees can make additional purchases of benefits to fund early retirement benefits.

The pension amount payable to a participant is calculated by applying a conversion rate to the accumulated balance of the participant's retirement savings account at the retirement date. The balance is based on credited vested benefits transferred from previous employers, purchases of benefits, employee and employer contributions made to the participant's retirement savings account, and interest accrued. The annual interest rate credited to participants is determined by the Pension Foundation Board at the end of each year.

Although the UBS Swiss pension plan is based on a defined contribution promise under Swiss pension law, it is accounted for as a defined benefit plan under IFRS Accounting Standards, primarily because of the obligation to accrue interest on the participants' retirement savings accounts and the payment of lifetime pension benefits.

An actuarial valuation in accordance with Swiss pension law is performed regularly. Should an underfunded situation on this basis occur, the Pension Foundation Board is required to take the necessary measures to ensure that full funding can be expected to be restored within a maximum period of 10 years. If a Swiss plan were to become significantly underfunded on a Swiss pension law basis, additional employer and employee contributions could be required. In this situation, the risk is shared between employer and employees, and the employer is not legally obliged to cover more than 50% of the additional contributions required. As of 31 December 2023, the UBS Swiss pension plan had a technical funding ratio in accordance with Swiss pension law of 119.2% (31 December 2022: 119.0%).

The investment strategy of the UBS Swiss pension plan complies with Swiss pension law, including the rules and regulations relating to diversification of plan assets, and is derived from the risk budget defined by the Pension Foundation Board based on regularly performed asset and liability management analyses. The Pension Foundation Board strives for a medium- and long-term balance between assets and liabilities.

As of 31 December 2023, the UBS Swiss pension plan was in a surplus situation on an IFRS Accounting Standards measurement basis, as the fair value of the plan's assets exceeded the defined benefit obligation (DBO) by USD 3,585m (31 December 2022: USD 4,418m). However, a surplus is only recognized on the balance sheet to the extent that it does not exceed the estimated future economic benefit, which equals the difference between the present value of the estimated future net service cost and the present value of the estimated future employer contributions. As of both 31 December 2023 and 31 December 2022, the estimated future economic benefit was zero and hence no net defined benefit asset was recognized on the balance sheet.

The regular employer contributions to the UBS Swiss pension plan in 2024 are estimated at USD 315m.

UK pension plan

The UBS UK pension plan is a career-average revalued earnings scheme, and benefits increase automatically based on UK price inflation, subject to defined caps. The normal retirement age for most participants is 60 or 65. The plan provides guaranteed lifetime pension benefits to participants upon retirement. The UK plan has been closed to new entrants for more than 20 years and participants are no longer accruing benefits for current or future service. Instead, employees participate in the UBS UK defined contribution plan.

The governance responsibility for the UBS UK plan lies jointly with the UBS UK Pension Trustee Board and UBS AG. The plan assets are invested in a diversified portfolio of financial assets, which include longevity swaps to hedge the risk between expected and actual longevity.

In 2019, UBS AG and the UBS UK Pension Trustee Board entered an arrangement whereby a collateral pool was established to provide security for the UBS UK pension fund. The value of the collateral pool as of 31 December 2023 was USD 260m (31 December 2022: USD 292m) and includes corporate bonds, government-related debt instruments and other financial assets. The arrangement provides the Pension Trustee Board dedicated access to a pool of assets in the event of UBS AG's insolvency or not paying a required funding contribution.

In 2023, UBS AG made funding contributions of USD 19m to the UBS UK pension plan (2022: USD 5m). The employer contributions to the UBS UK pension plan in 2024 are estimated at USD 19m, subject to regular funding reviews during the year.

US defined benefit plans

There are two main UBS US pension plans, with a normal retirement age of 65. Both plans were closed to new entrants more than 20 years ago. Since they closed, new employees have participated in a UBS defined contribution plan.

One of the UBS defined benefit plans is a contribution-based plan in which each participant accrues a percentage of salary in a retirement savings account. The retirement savings account is credited annually with interest based on a rate that is linked to the average yield on one-year US government bonds. For the other UBS defined benefit plan, retirement benefits accrue based on the career-average earnings of each individual plan participant. Former employees with vested benefits can take a lump sum payment or a lifetime annuity.

As required under applicable pension laws, both plans have fiduciaries who, together with UBS AG, are responsible for the governance of the plans.

Each plan's fiduciaries are responsible for the investment decisions with respect to the plan assets. The plan assets of both plans are invested in diversified portfolios of financial assets.

The employer contributions to the UBS US defined benefit plans in 2024 are estimated at USD 12m.

German pension plans

There are two major unfunded UBS defined benefit plans in Germany. The normal retirement age is 65 and benefits are paid directly by UBS AG. In the larger of the two plans each participant accrues a percentage of salary in a retirement savings account. The accumulated account balance of the participant is credited on an annual basis with guaranteed interest at a rate of 5%. The plan has been closed to new entrants, and all participants younger than the age of 55 as of June 2021 no longer accrue benefits. In the other plan, amounts are accrued annually based on employee elections related to variable compensation. For this plan, the accumulated account balance is credited on an annual basis with a guaranteed interest rate of 6% for amounts accrued before 2010, of 4% for amounts accrued from 2010 to 2017 and of 0.9% for amounts accrued after 2017. Both plans are subject to German pension law, whereby the responsibility to pay pension benefits when they are due resides entirely with UBS AG. A portion of the pension payments is directly increased in line with price inflation.

Note 26 Post-employment benefit plans (continued)

In June 2021, UBS AG implemented a new funded UBS pension plan with interest credited to participants equal to actual investment returns with a guaranteed minimum of 0%. The plan was implemented retrospectively for new hires since June 2018 and for all eligible active participants younger than 55 from July 2021. Each participant accrues a percentage of salary in a retirement savings account.

The employer contributions to the UBS German defined benefit plans in 2024 are estimated at USD 14m.

Financial information by plan

The tables below provide an analysis of the movement in the net asset / liability recognized on the balance sheet for defined benefit plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

Defined benefit plans

USD m	Swiss plan		UK plan		US and German plans		Total	
	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22
Defined benefit obligation at the beginning of the year	12,539	15,480	2,166	4,105	1,375	1,740	16,080	21,324
Current service cost	236	240	0	0	5	5	241	244
Interest expense	287	195	109	67	61	35	457	297
Plan participant contributions	163	154	0	0	0	0	163	154
Remeasurements	1,901	(2,424)	96	(1,474)	33	(267)	2,031	(4,165)
of which: actuarial (gains) / losses due to changes in demographic assumptions	*45*	*2*	*(75)*	*(6)*	*(2)*	*1*	*(31)*	*(3)*
of which: actuarial (gains) / losses due to changes in financial assumptions	*1,168*	*(2,653)*	*36*	*(1,575)*	*37*	*(279)*	*1,241*	*(4,506)*
of which: experience (gains) / losses [1]	*688*	*226*	*135*	*107*	*(3)*	*11*	*820*	*344*
Past service cost related to plan amendments	0	0	0	0	0	0	0	0
Curtailments	(3)	(13)	0	0	0	0	(3)	(13)
Benefit payments	(662)	(796)	(107)	(123)	(110)	(111)	(880)	(1,030)
Other movements	0	(5)	0	0	0	0	0	(5)
Foreign currency translation	1,288	(291)	114	(408)	9	(28)	1,411	(727)
Defined benefit obligation at the end of the year	15,748	12,539	2,379	2,166	1,373	1,375	19,500	16,080
of which: amounts owed to active members	*9,336*	*7,103*	*73*	*65*	*209*	*169*	*9,618*	*7,336*
of which: amounts owed to deferred members	*0*	*0*	*950*	*656*	*527*	*528*	*1,478*	*1,184*
of which: amounts owed to retirees	*6,412*	*5,436*	*1,356*	*1,445*	*636*	*678*	*8,404*	*7,560*
of which: funded plans	*15,748*	*12,539*	*2,379*	*2,166*	*979*	*1,011*	*19,106*	*15,717*
of which: unfunded plans	*0*	*0*	*0*	*0*	*394*	*363*	*394*	*363*
Fair value of plan assets at the beginning of the year	16,957	19,196	2,488	4,297	1,039	1,329	20,484	24,821
Return on plan assets excluding interest income	513	(1,942)	65	(1,312)	26	(223)	603	(3,476)
Interest income	393	274	126	70	48	31	568	376
Employer contributions	290	401	19	5	17	16	327	422
Plan participant contributions	163	154	0	0	0	0	163	154
Benefit payments	(662)	(796)	(107)	(123)	(110)	(111)	(880)	(1,030)
Administration expenses, taxes and premiums paid	(8)	(7)	0	0	(4)	(3)	(12)	(11)
Other movements	2	(1)	0	0	0	0	2	(1)
Foreign currency translation	1,685	(322)	130	(450)	0	0	1,815	(772)
Fair value of plan assets at the end of the year	19,333	16,957	2,720	2,488	1,017	1,039	23,070	20,484
Surplus / (deficit)	3,585	4,418	341	321	(356)	(335)	3,570	4,404
Asset ceiling effect at the beginning of the year	4,418	3,716	0	0	0	0	4,418	3,716
Interest expense on asset ceiling effect	102	77	0	0	0	0	102	77
Asset ceiling effect excluding interest expense and foreign currency translation on asset ceiling effect	(1,332)	656	0	0	0	0	(1,332)	656
Foreign currency translation	397	(31)	0	0	0	0	397	(31)
Asset ceiling effect at the end of the year	3,585	4,418	0	0	0	0	3,585	4,418
Net defined benefit asset / (liability) of major plans	0	0	341	321	(356)	(335)	(15)	(14)
Net defined benefit asset / (liability) of remaining plans							(90)	(80)
Total net defined benefit asset / (liability)							(105)	(94)
of which: Net defined benefit asset							*383*	*355*
of which: Net defined benefit liability [2]							*(487)*	*(449)*

1 Experience (gains) / losses are a component of actuarial remeasurements of the defined benefit obligation and reflect the effects of differences between the previous actuarial assumptions and what has actually occurred. 2 Refer to Note 18c.

Note 26 Post-employment benefit plans (continued)

Income statement – expenses related to defined benefit plans[1]

USD m	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22
Current service cost	236	240	0	0	5	5	241	244
Interest expense related to defined benefit obligation	287	195	109	67	61	35	457	297
Interest income related to plan assets	(393)	(274)	(126)	(70)	(48)	(31)	(568)	(376)
Interest expense on asset ceiling effect	102	77	0	0	0	0	102	77
Administration expenses, taxes and premiums paid	8	7	0	0	4	3	12	11
Past service cost related to plan amendments	0	0	0	0	0	0	0	0
Curtailments	(3)	(13)	0	0	0	0	(3)	(13)
Net periodic expenses recognized in net profit for major plans	236	230	(17)	(3)	22	12	241	239
Net periodic expenses recognized in net profit for remaining plans[2]							19	17
Total net periodic expenses recognized in net profit							259	256

1 Refer to Note 6. 2 Includes differences between actual and estimated performance award accruals.

Other comprehensive income – gains / (losses) on defined benefit plans

USD m	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22
Remeasurement of defined benefit obligation	(1,901)	2,424	(96)	1,474	(33)	267	(2,031)	4,165
of which: change in discount rate assumption	*(1,332)*	*3,078*	*(69)*	*1,451*	*(33)*	*317*	*(1,434)*	*4,846*
of which: change in rate of pension increase assumption	*0*	*0*	*34*	*123*	*1*	*(5)*	*34*	*118*
of which: change in rate of interest credit on retirement savings assumption	*207*	*(408)*	*0*	*0*	*(9)*	*(82)*	*198*	*(490)*
of which: change in life expectancy	*0*	*0*	*75*	*5*	*0*	*(1)*	*75*	*4*
of which: change in other actuarial assumptions	*(88)*	*(19)*	*0*	*1*	*5*	*48*	*(83)*	*30*
of which: experience gains / (losses)[1]	*(688)*	*(226)*	*(135)*	*(107)*	*3*	*(11)*	*(820)*	*(344)*
Return on plan assets excluding interest income	513	(1,942)	65	(1,312)	26	(223)	603	(3,476)
Asset ceiling effect excluding interest expense and foreign currency translation	1,332	(656)	0	0	0	0	1,332	(656)
Total gains / (losses) recognized in other comprehensive income for major plans	(56)	(173)	(31)	162	(8)	43	(95)	32
Total gains / (losses) recognized in other comprehensive income for remaining plans							(8)	8
Total gains / (losses) recognized in other comprehensive income[2]							(103)	40

1 Experience (gains) / losses are a component of actuarial remeasurements of the defined benefit obligation and reflect the effects of differences between the previous actuarial assumptions and what has actually occurred. 2 Refer to the "Statement of comprehensive income".

The table below provides information about the duration of the DBO and the timing for expected benefit payments.

	Swiss plan		UK plan		US and German plans[1]	
	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22
Duration of the defined benefit obligation (in years)	14.1	13.4	14.5	13.7	7.8	7.9
Maturity analysis of benefits expected to be paid						
USD m						
Benefits expected to be paid within 12 months	811	702	137	107	133	123
Benefits expected to be paid between 1 and 3 years	1,627	1,445	256	234	235	232
Benefits expected to be paid between 3 and 6 years	2,552	2,183	415	384	336	335
Benefits expected to be paid between 6 and 11 years	4,233	3,751	721	667	502	502
Benefits expected to be paid between 11 and 16 years	3,878	3,519	723	667	376	388
Benefits expected to be paid in more than 16 years	13,751	13,243	2,703	2,570	417	516

1 The duration of the defined benefit obligation represents a weighted average across US and German plans.

Note 26 Post-employment benefit plans (continued)

Actuarial assumptions

The actuarial assumptions used for the defined benefit plans are based on the economic conditions prevailing in the jurisdiction in which they are offered. Changes in the defined benefit obligation are most sensitive to changes in the discount rate. The discount rate is based on the yield of high-quality corporate bonds quoted in an active market in the currency of the respective plan. A decrease in the discount curve increases the DBO. UBS AG regularly reviews the actuarial assumptions used in calculating the DBO to determine their continuing relevance.

› **Refer to Note 1a item 5 for a description of the accounting policy for defined benefit plans**

The tables below show the significant actuarial assumptions used in calculating the DBO at the end of the year.

Significant actuarial assumptions of defined benefit plans

	Swiss plan		UK plan		US plans		German plans	
In %	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22
Discount rate	1.48	2.34	4.79	5.02	4.72[1]	4.92[1]	3.28	3.81
Rate of pension increase	0.00	0.00	3.00	3.08	0.00	0.00	2.10	2.20
Rate of interest credit on retirement savings	2.48	3.39	0.00	0.00	6.28[2]	5.73[2]	0.00	0.00

1 Represents weighted average across US pension plans. 2 Only applicable to one of the UBS US pension plans

Mortality tables and life expectancies for major plans

		Life expectancy at age 65 for a male member currently			
		aged 65		aged 45	
Country	Mortality table	31.12.23	31.12.22	31.12.23	31.12.22
Switzerland	BVG 2020 G with CMI 2022 projections[1]	21.8	21.7	23.5	23.4
UK	S3PA with CMI 2022 projections[2]	22.2	23.5	23.4	24.6
USA	Pri-2012 with MP-2021 projection scale	22.0	22.0	23.4	23.3
Germany	Dr. K. Heubeck 2018 G	20.8	20.6	23.5	23.4

		Life expectancy at age 65 for a female member currently			
		aged 65		aged 45	
Country	Mortality table	31.12.23	31.12.22	31.12.23	31.12.22
Switzerland	BVG 2020 G with CMI 2022 projections[1]	23.5	23.5	25.1	25.1
UK	S3PA with CMI 2022 projections[2]	24.0	25.0	25.7	26.4
USA	Pri-2012 with MP-2021 projection scale	23.5	23.4	24.8	24.8
Germany	Dr. K. Heubeck 2018 G	24.2	24.0	26.4	26.3

1 In 2022, BVG 2020 G with CMI 2021 projections was used. 2 In 2022, S3PA with CMI 2021 projections was used.

Sensitivity analysis of significant actuarial assumptions

The table below presents a sensitivity analysis for each significant actuarial assumption, showing how the DBO would have been affected by changes in the relevant actuarial assumption that were reasonably possible at the balance sheet date. Unforeseen circumstances may arise, which could result in variations that are outside the range of alternatives deemed reasonably possible. Caution should be used in extrapolating the sensitivities below on the DBO, as the sensitivities may not be linear.

Sensitivity analysis of significant actuarial assumptions[1]

Increase / (decrease) in defined benefit obligation	Swiss plan		UK plan		US and German plans	
USD m	31.12.23	31.12.22	31.12.23	31.12.22	31.12.23	31.12.22
Discount rate						
Increase by 50 basis points	(857)	(641)	(164)	(141)	(50)	(51)
Decrease by 50 basis points	973	723	183	157	54	55
Rate of pension increase						
Increase by 50 basis points	639	487	137	127	4	4
Decrease by 50 basis points	—[2]	—[2]	(129)	(118)	(4)	(3)
Rate of interest credit on retirement savings						
Increase by 50 basis points	144	106	—[3]	—[3]	9	9
Decrease by 50 basis points	(144)	(106)	—[3]	—[3]	(8)	(8)
Life expectancy						
Increase in longevity by one additional year	416	304	78	65	39	39

1 The sensitivity analyses are based on a change in one assumption while holding all other assumptions constant, so that interdependencies between the assumptions are excluded. 2 As the assumed rate of pension increase was 0% as of 31 December 2023 and as of 31 December 2022, a downward change in assumption is not applicable. 3 As the UK plan does not provide interest credits on retirement savings, a change in assumption is not applicable.

Note 26 Post-employment benefit plans (continued)

Fair value of plan assets

The tables below provide information about the composition and fair value of plan assets of the major defined benefit plans.

Composition and fair value of plan assets

Swiss defined benefit plan

	31.12.23				31.12.22			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD m	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	62	0	62	0	183	0	183	1
Real estate / property								
Domestic	0	2,426	2,426	13	0	2,130	2,130	13
Foreign	0	576	576	3	0	517	517	3
Investment funds								
Equity								
Domestic	489	0	489	3	418	0	418	2
Foreign	3,283	1,244	4,526	23	2,794	1,222	4,017	24
Bonds[1]								
Domestic, AAA to BBB–	2,605	0	2,605	13	2,117	0	2,117	12
Foreign, AAA to BBB–	4,073	0	4,073	21	3,395	0	3,395	20
Foreign, below BBB–	668	0	668	3	598	0	598	4
Real estate								
Foreign	0	45	45	0	0	0	0	0
Other	1,094	1,910	3,004	16	867	1,997	2,864	17
Other investments	378	481	859	4	351	367	718	4
Total fair value of plan assets	12,652	6,681	19,333	100	10,724	6,233	16,957	100

	31.12.23	31.12.22
Total fair value of plan assets	19,333	16,957
of which:[2]		
Bank accounts at UBS Group AG	*69*	*189*
UBS Group AG debt instruments	*116*	*28*
UBS Group AG shares	*26*	*15*
Securities lent to UBS Group AG[3]	*467*	*489*
Property occupied by UBS Group AG	*61*	*51*
Derivative financial instruments, counterparty UBS Group AG[3]	*302*	*43*

1 The bond credit ratings are primarily based on S&P's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in S&P's rating classification. 2 Bank accounts at UBS AG encompass accounts in the name of the Swiss pension fund. The other positions disclosed in the table encompass both direct investments in UBS AG instruments and UBS Group AG shares and indirect investments, i.e., those made through funds that the pension fund invests in. 3 Securities lent to UBS AG and derivative financial instruments are presented gross of any collateral. Securities lent to UBS AG were fully covered by collateral as of 31 December 2023 and 31 December 2022. Net of collateral, derivative financial instruments amounted to negative USD 19m as of 31 December 2023 (31 December 2022: negative USD 5m).

Note 26 Post-employment benefit plans (continued)

Composition and fair value of plan assets (continued)

UK defined benefit plan

	31.12.23				31.12.22			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD m	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	(27)	0	(27)	(1)	104	0	104	4
Bonds[1]								
Domestic, AAA to BBB–	2,375	0	2,375	87	1,729	0	1,729	69
Foreign, AAA to BBB–	357	0	357	13	297	0	297	12
Foreign, below BBB–	0	0	0	0	7	0	7	0
Investment funds								
Equity								
Domestic	9	3	12	0	19	3	22	1
Foreign	234	0	234	9	366	0	366	15
Bonds[1]								
Domestic, AAA to BBB–	310	38	348	13	367	90	457	18
Domestic, below BBB–	6	0	6	0	1	0	1	0
Foreign, AAA to BBB–	97	0	97	4	90	0	90	4
Foreign, below BBB–	93	0	93	3	114	0	114	5
Real estate								
Domestic	61	0	61	2	64	0	64	3
Foreign	4	12	16	1	6	31	36	1
Other	64	0	64	2	(280)	0	(280)	(11)
Repurchase agreements	(947)	0	(947)	(35)	(612)	0	(612)	(25)
Other investments	15	16	31	1	66	27	94	4
Total fair value of plan assets	2,652	69	2,720	100	2,336	151	2,488	100

1 The bond credit ratings are primarily based on S&P's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in S&P's rating classification.

US and German defined benefit plans

	31.12.23				31.12.22			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD m	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	4	0	4	0	7	0	7	1
Equity								
Domestic	54	0	54	5	55	0	55	5
Foreign	23	0	23	2	24	0	24	2
Bonds[1]								
Domestic, AAA to BBB–	308	0	308	30	359	0	359	35
Domestic, below BBB–	3	0	3	0	4	0	4	0
Foreign, AAA to BBB–	51	0	51	5	74	0	74	7
Foreign, below BBB–	2	0	2	0	3	0	3	0
Investment funds								
Equity								
Domestic	25	0	25	2	27	0	27	3
Foreign	43	0	43	4	33	0	33	3
Bonds[1]								
Domestic, AAA to BBB–	271	0	271	27	266	0	266	26
Domestic, below BBB–	172	0	172	17	109	0	109	10
Foreign, AAA to BBB–	4	0	4	0	2	0	2	0
Foreign, below BBB–	6	0	6	1	5	0	5	0
Real estate								
Domestic	0	9	9	1	0	11	11	1
Other	49	0	49	5	54	0	54	5
Other investments	(8)	1	(7)	(1)	5	1	6	1
Total fair value of plan assets	1,007	10	1,017	100	1,027	12	1,039	100

1 The bond credit ratings are primarily based on S&P's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in S&P's rating classification.

Note 26 Post-employment benefit plans (continued)

b) Defined contribution plans

UBS AG sponsors several defined contribution plans, with the most significant plans in the US and the UK. UBS AG's obligation is limited to its contributions made in accordance with each plan, which may include direct contributions and matching contributions. Employer contributions to defined contribution plans are recognized as an expense and were USD 320m in 2023 and USD 299m in 2022.

› **Refer to Note 6 for more information**

c) Related-party disclosure

UBS AG is the principal provider of banking services for the pension fund of UBS AG in Switzerland. In this capacity, UBS AG is engaged to execute most of the pension fund's banking activities. These activities can include, but are not limited to, trading, securities lending and borrowing and derivative transactions. The non-Swiss UBS AG pension funds do not have a similar banking relationship with UBS AG. During 2023, UBS AG received USD 20m in fees for banking services from the major post-employment benefit plans (2022: USD 20m). As of 31 December 2023, the major post-employment benefit plans held USD 396m in UBS Group AG shares (31 December 2022: USD 253m).

› **Refer to the "Composition and fair value of plan assets" table in Note 26a for more information about fair value of investments in UBS AG and UBS Group AG instruments held by the Swiss pension fund**

Note 27 Employee benefits: variable compensation

a) Plans offered

UBS has several share-based and other deferred compensation plans that align the interests of Group Executive Board (GEB) members and other employees with the interests of investors.

Share-based awards are granted in the form of notional shares and, where permitted, carry a dividend equivalent that may be paid in notional shares or cash. Awards are settled by delivering UBS shares at vesting, except in jurisdictions where this is not permitted for legal or tax reasons.

Deferred compensation awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS. These compensation plans are also designed to meet regulatory requirements and include special provisions for regulated employees. For the majority of variable compensation awards granted under such plans to employees of UBS AG, the grantor entity is UBS Group AG. Expenses associated with these awards are charged by UBS Group AG to UBS AG. For the purpose of this Note, references to shares refer to UBS Group AG shares.

The most significant deferred compensation plans are described below.

› **Refer to Note 1a item 4 for a description of the accounting policy related to share-based and other deferred compensation plans**

Mandatory deferred compensation plans

Long-Term Incentive Plan

The Long-Term Incentive Plan (LTIP) is a mandatory deferred share-based compensation plan for senior leaders of the Group (i.e., GEB members and selected senior management).

The number of notional shares delivered at vesting depends on two equally weighted performance metrics over a three-year performance period: return on common equity tier 1 (CET1) capital and relative total shareholder return, which compares the total shareholder return (TSR) of UBS with the TSR of an index consisting of listed Global Systemically Important Banks as determined by the Financial Stability Board (excluding UBS). The final number of shares vest over three years following the performance period for GEB members, and cliff-vest in the year following the performance period for selected senior management.

Equity Ownership Plan / Fund Ownership Plan

The Equity Ownership Plan (EOP) is the deferred share-based compensation plan for employees outside of the GEB that are subject to deferral requirements. EOP awards generally vest over three years.

Certain Asset Management employees receive some or all of their EOP in the form of notional funds (Fund Ownership Plan or FOP, previously named AM EOP). This plan is generally delivered in cash and vests over three years. The amount delivered depends on the value of the underlying investment funds at the time of vesting.

Deferred Contingent Capital Plan

The Deferred Contingent Capital Plan (DCCP) is a deferred compensation plan for all employees who are subject to deferral requirements. Such employees are awarded notional additional tier 1 (AT1) capital instruments, which, at the discretion of UBS, can be settled in cash or a perpetual, marketable AT1 capital instrument. DCCP awards generally bear notional interest paid annually (except for certain regulated employees) and vest in full after five years. Awards are forfeited if a viability event occurs (i.e., if FINMA notifies the firm that the DCCP awards must be written down to mitigate the risk of insolvency, bankruptcy or failure of UBS) or if the firm receives a commitment of extraordinary support from the public sector that is necessary to prevent such an event. DCCP awards are also written down if the Group's CET1 capital ratio falls below a defined threshold. In addition, GEB members forfeit 20% of DCCP awards for each loss-making year during the vesting period.

Financial advisor variable compensation

In line with market practice for US wealth management businesses, the compensation for US financial advisors in Global Wealth Management consists of cash compensation and deferred compensation awards, determined using a formulaic approach based on production.

Cash compensation reflects a percentage of the compensable production that each financial advisor generates. Compensable production is generally based on transaction revenue and investment advisory fees and may reflect further adjustments. The percentage rate generally varies based on the level of the production and firm tenure.

Financial advisors may also be granted annual deferred compensation. These amounts generally vest over a six-year period. The annual deferred compensation amount reflects the overall percentage rate and production.

Cash compensation and deferred compensation awards may be reduced for, among other things, errors, negligence or carelessness, or failure to comply with the firm's rules, standards, practices and / or policies, and / or applicable laws and regulations.

Financial advisors may also participate in additional programs to support promoting and developing their business or supporting the transition of client relationships where appropriate. Financial advisor compensation also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements.

b) Effect on the income statement

Effect on the income statement for the financial year and future periods

The table below provides information about compensation expenses related to total variable compensation that were recognized in the financial year ended 31 December 2023, as well as expenses that were deferred and will be recognized in the income statement for 2024 and later. The majority of expenses deferred to 2024 and later that are related to the 2023 performance year pertain to awards granted in February 2024. The total unamortized compensation expense for unvested share-based awards granted up to 31 December 2023 will be recognized in future periods over a weighted average period of 2.6 years.

Variable compensation

	Expenses recognized in 2023			Expenses deferred to 2024 and later[1]		
USD m	Related to the 2023 performance year	Related to prior performance years	Total	Related to the 2023 performance year	Related to prior performance years	Total
Non-deferred cash	1,884	(36)	1,848	0	0	0
Deferred compensation awards	356	637	993	537	731	1,268
of which: Equity Ownership Plan	*95*	*319*	*415*	*180*	*235*	*416*
of which: Deferred Contingent Capital Plan	*124*	*233*	*357*	*216*	*436*	*652*
of which: Long-Term Incentive Plan	*121*	*39*	*160*	*112*	*33*	*145*
of which: Fund Ownership Plan	*15*	*45*	*61*	*28*	*27*	*55*
Variable compensation – performance awards	2,240	601	2,841	537	731	1,268
Variable compensation – financial advisors[2]	3,761	788	4,549	1,236	3,300	4,536
of which: non-deferred cash	*3,440*	*(4)*	*3,436*	*0*	*0*	*0*
of which: deferred share-based awards	*110*	*87*	*197*	*113*	*209*	*321*
of which: deferred cash-based awards	*169*	*245*	*414*	*301*	*1,029*	*1,331*
of which: compensation commitments with recruited financial advisors	*42*	*459*	*501*	*822*	*2,062*	*2,884*
Variable compensation – other[3]	168	111	279	224	214	438
Total variable compensation	6,169	1,500	7,669[4]	1,997	4,245	6,242

1 Estimate as of 31 December 2023. Actual amounts to be expensed in future periods may vary; e.g., due to forfeiture of awards. 2 Financial advisor compensation 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. 3 Consists of replacement payments, forfeiture credits, severance payments, retention plan payments and interest expense related to the Deferred Contingent Capital Plan. 4 Includes USD 818m in expenses related to share-based compensation (performance awards: USD 575m; other variable compensation: USD 46m; financial advisor compensation: USD 197m). A further USD 135m in expenses related to share-based compensation was recognized within other expense categories included in Note 6 (salaries: USD 4m related to role-based allowances; social security: USD 109m; other personnel expenses: USD 22m related to the Equity Plus Plan).

Note 27 Employee benefits: variable compensation (continued)

Variable compensation (continued)

	Expenses recognized in 2022			Expenses deferred to 2023 and later[1]		
USD m	Related to the 2022 performance year	Related to prior performance years	Total	Related to the 2022 performance year	Related to prior performance years	Total
Non-deferred cash	2,012	(9)	2,003	0	0	0
Deferred compensation awards	346	561	907	582	730	1,312
of which: Equity Ownership Plan	*191*	*225*	*416*	*294*	*240*	*534*
of which: Deferred Contingent Capital Plan	*123*	*211*	*334*	*238*	*395*	*634*
of which: Long-Term Incentive Plan	*11*	*30*	*41*	*30*	*40*	*70*
of which: Fund Ownership Plan	*21*	*95*	*116*	*20*	*54*	*74*
Variable compensation – performance awards	**2,358**	**552**	**2,910**	**582**	**730**	**1,312**
Variable compensation – financial advisors[2]	**3,799**	**709**	**4,508**	**1,290**	**2,652**	**3,942**
of which: non-deferred cash	*3,481*	*0*	*3,481*	*0*	*0*	*0*
of which: deferred share-based awards	*104*	*62*	*166*	*122*	*180*	*302*
of which: deferred cash-based awards	*185*	*215*	*400*	*588*	*636*	*1,224*
of which: compensation commitments with recruited financial advisors	*29*	*432*	*461*	*580*	*1,836*	*2,416*
Variable compensation – other[3]	**146**	**72**	**217**	**230**	**189**	**419**
Total variable compensation	**6,304**	**1,332**	**7,636[4]**	**2,101**	**3,571**	**5,672**

1 Estimate as of 31 December 2022. Actual amounts to be expensed in future periods may vary; e.g., due to forfeiture of awards. 2 Financial advisor compensation 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. 3 Consists of replacement payments, forfeiture credits, severance payments, retention plan payments and interest expense related to the Deferred Contingent Capital Plan. 4 Includes USD 680m in expenses related to share-based compensation (performance awards: USD 457m; other variable compensation: USD 56m; financial advisor compensation: USD 166m). A further USD 80m in expenses related to share-based compensation was recognized within other expense categories included in Note 6 (salaries: USD 4m related to role-based allowances; social security: USD 57m; other personnel expenses: USD 19m related to the Equity Plus Plan).

Variable compensation (continued)

	Expenses recognized in 2021			Expenses deferred to 2022 and later[1]		
USD m	Related to the 2021 performance year	Related to prior performance years	Total	Related to the 2021 performance year	Related to prior performance years	Total
Non-deferred cash	2,136	(8)	2,128	0	0	0
Deferred compensation awards	389	399	788	767	606	1,373
of which: Equity Ownership Plan	*175*	*174*	*350*	*374*	*180*	*553*
of which: Deferred Contingent Capital Plan	*134*	*151*	*285*	*290*	*318*	*608*
of which: Long-Term Incentive Plan	*51*	*17*	*69*	*48*	*32*	*79*
of which: Fund Ownership Plan	*29*	*55*	*84*	*56*	*77*	*133*
Variable compensation – performance awards	**2,525**	**391**	**2,916**	**767**	**606**	**1,373**
Variable compensation – financial advisors[2]	**4,175**	**685**	**4,860**	**1,097**	**2,323**	**3,419**
of which: non-deferred cash	*3,858*	*(6)*	*3,853*	*0*	*0*	*0*
of which: deferred share-based awards	*106*	*51*	*157*	*123*	*146*	*269*
of which: deferred cash-based awards	*170*	*202*	*372*	*311*	*495*	*806*
of which: compensation commitments with recruited financial advisors	41	438	479	662	1,682	2,344
Variable compensation – other[3]	**163**	**33**	**196**	**210**	**178**	**388**
Total variable compensation	**6,863**	**1,109**	**7,973[4]**	**2,074**	**3,107**	**5,181**

1 Estimate as of 31 December 2021. Actual amounts expensed may vary; e.g., due to forfeiture of awards. 2 Financial advisor compensation 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. 3 Consists of replacement payments, forfeiture credits, severance payments, retention plan payments and interest expense related to the Deferred Contingent Capital Plan. 4 Includes USD 631m in expenses related to share-based compensation (performance awards: USD 419m; other variable compensation: USD 56m; financial advisor compensation: USD 157m). A further USD 77m in expenses related to share-based compensation was recognized within other expense categories included in Note 6 (salaries: USD 5m related to role-based allowances; social security: USD 59m; other personnel expenses: USD 13m related to the Equity Plus Plan).

Note 27 Employee benefits: variable compensation (continued)

c) Outstanding share-based compensation awards

Share and performance share awards

Movements in outstanding share-based awards granted by UBS AG and its subsidiaries to employees during 2023 and 2022 are provided in the table below.

Movements in outstanding share-based compensation awards

	Number of shares 2023	Weighted average grant date fair value (USD)	Number of shares 2022	Weighted average grant date fair value (USD)
Outstanding, at the beginning of the year	614,428	17	295,921	15
Awarded during the year	279,310	20	358,424	19
Distributed during the year	(132,770)	15	(37,994)	14
Forfeited during the year	(4,043)	19	(1,923)	15
Outstanding, at the end of the year	756,925	19	614,428	17
of which: shares vested for accounting purposes	*217,420*		*174,329*	

The total carrying amount of the liability related to cash-settled share-based awards as of 31 December 2023 and 31 December 2022 was USD 14m and USD 7m, respectively.

d) Valuation

UBS share awards

UBS measures compensation expense based on the average market price of UBS shares on the grant date as quoted on the SIX Swiss Exchange, taking into consideration post-vesting sale and hedge restrictions, non-vesting conditions and market conditions, where applicable. The fair value of the share awards subject to post-vesting sale and hedge restrictions is discounted on the basis of the duration of the post-vesting restriction and is referenced to the cost of purchasing an at-the-money European put option for the term of the transfer restriction. The grant date fair value of notional shares without dividend entitlements also includes a deduction for the present value of future expected dividends to be paid between the grant date and distribution.

Note 28 Interests in subsidiaries and other entities

a) Interests in subsidiaries

UBS AG defines its significant subsidiaries as those entities that, either individually or in aggregate, contribute significantly to UBS AG's financial position or results of operations, based on a number of criteria, including the subsidiaries' equity and contribution to UBS AG's total assets and profit or loss before tax, in accordance with the requirements set by IFRS 12, Swiss regulations and the rules of the US Securities and Exchange Commission (the SEC).

Individually significant subsidiaries

The table below lists UBS AG's individually significant subsidiaries as of 31 December 2023. Unless otherwise stated, the subsidiaries listed below have share capital consisting solely of ordinary shares held entirely by UBS AG and the proportion of ownership interest held is equal to the voting rights held by UBS AG.

The country where the respective registered office is located is also the principal place of business. UBS AG operates through a global branch network and a significant proportion of its business activity is conducted outside Switzerland, including in the UK, the US, Singapore, the Hong Kong SAR and other countries. UBS Europe SE has branches and offices in a number of EU Member States, including Germany, Italy, Luxembourg, France and Spain. Share capital is provided in the currency of the legally registered office.

Note 28 Interests in subsidiaries and other entities (continued)

Individually significant subsidiaries of UBS AG as of 31 December 2023[1]

Company	Registered office	Primary business	Share capital in million		Equity interest accumulated in %
UBS Americas Holding LLC	Wilmington, Delaware, USA	Group Items	USD	2,900.0[2]	100.0
UBS Americas Inc.	Wilmington, Delaware, USA	Group Items	USD	0.0	100.0
UBS Asset Management AG	Zurich, Switzerland	Asset Management	CHF	43.2	100.0
UBS Bank USA	Salt Lake City, Utah, USA	Global Wealth Management	USD	0.0	100.0
UBS Europe SE	Frankfurt, Germany	Global Wealth Management	EUR	446.0	100.0
UBS Financial Services Inc.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS Securities LLC	Wilmington, Delaware, USA	Investment Bank	USD	1,283.1[3]	100.0
UBS Switzerland AG	Zurich, Switzerland	Personal & Corporate Banking	CHF	10.0	100.0

1 Includes direct and indirect subsidiaries of UBS AG. 2 Consists of common share capital of USD 1,000 and non-voting preferred share capital of USD 2,900,000,000. 3 Consists of common share capital of USD 100,000 and non-voting preferred share capital of USD 1,283,000,000.

Other subsidiaries

The table below lists other direct and indirect subsidiaries of UBS AG that are not individually significant but contribute to UBS AG's total assets and aggregated profit before tax thresholds and are thus disclosed in accordance with requirements set by the SEC.

Other subsidiaries of UBS AG as of 31 December 2023

Company	Registered office	Primary business	Share capital in million		Equity interest accumulated in %
UBS Asset Management (Americas) Inc.	Wilmington, Delaware, USA	Asset Management	USD	0.0	100.0
UBS Asset Management (Hong Kong) Limited	Hong Kong SAR, China	Asset Management	HKD	153.8	100.0
UBS Asset Management Life Ltd	London, United Kingdom	Asset Management	GBP	15.0	100.0
UBS Asset Management Switzerland AG	Zurich, Switzerland	Asset Management	CHF	0.5	100.0
UBS Business Solutions US LLC	Wilmington, Delaware, USA	Group Items	USD	0.0	100.0
UBS Credit Corp.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS Fund Management (Luxembourg) S.A.	Luxembourg, Luxembourg	Asset Management	EUR	13.7	100.0
UBS Fund Management (Switzerland) AG	Basel, Switzerland	Asset Management	CHF	1.0	100.0
UBS (Monaco) S.A.	Monte Carlo, Monaco	Global Wealth Management	EUR	49.2	100.0
UBS O'Connor LLC	Wilmington, Delaware, USA	Asset Management	USD	1.0	100.0
UBS Realty Investors LLC	Boston, Massachusetts, USA	Asset Management	USD	9.0	100.0
UBS Securities Australia Ltd	Sydney, Australia	Investment Bank	AUD	0.3[1]	100.0
UBS Securities Hong Kong Limited	Hong Kong SAR, China	Investment Bank	HKD	2,841.6	100.0
UBS Securities Japan Co., Ltd.	Tokyo, Japan	Investment Bank	JPY	34,708.7	100.0
UBS SuMi TRUST Wealth Management Co., Ltd.	Tokyo, Japan	Global Wealth Management	JPY	5,165.0	51.0

1 Includes a nominal amount relating to redeemable preference shares.

Consolidated structured entities

Consolidated structured entities (SEs) include certain investment funds, securitization vehicles and client investment vehicles. UBS AG has no individually significant subsidiaries that are SEs.

In 2023 and 2022, UBS AG did not enter into any contractual obligation that could require UBS AG to provide financial support to consolidated SEs. In addition, UBS AG did not provide support, financial or otherwise, to a consolidated SE when UBS AG was not contractually obligated to do so, nor does UBS AG currently have any intention to do so in the future. Furthermore, UBS AG did not provide support, financial or otherwise, to a previously unconsolidated SE that resulted in UBS AG controlling the SE during the reporting period.

b) Interests in associates and joint ventures

As of 31 December 2023 and 31 December 2022, no associate or joint venture was individually material to UBS AG. Also, there were no significant restrictions on the ability of associates or joint ventures to transfer funds to UBS AG or its subsidiaries as cash dividends or to repay loans or advances made. There were no quoted market prices for any associates or joint ventures of UBS AG.

Investments in associates and joint ventures

USD m	2023	2022
Carrying amount at the beginning of the year	1,101	1,243
Additions	1	3
Reclassifications	0	(44)
Share of comprehensive income	(180)	(41)
of which: share of net profit / (loss) [1]	*(163)*	*32*
of which: share of other comprehensive income [2]	*(17)*	*(73)*
Share of changes in retained earnings	(1)	0
Dividends received	(35)	(31)
Foreign currency translation	97	(30)
Carrying amount at the end of the year	983	1,101
of which: associates	*980*	*1,098*
of which: SIX Group AG, Zurich [3]	*826*	*954*
of which: other associates	*154*	*144*
of which: joint ventures	*3*	*3*

1 For 2023, consists of negative USD 163m from associates (for 2022, consists of USD 27m from associates and USD 5m from joint ventures). 2 For 2023, consists of negative USD 17m from associates (for 2022, consists of negative USD 73m from associates). 3 In 2023, UBS AG's legal equity interest amounted to 17%. UBS AG is represented on the Board of Directors.

c) Unconsolidated structured entities

UBS AG is considered to sponsor another entity if, in addition to ongoing involvement with that entity, it had a key role in establishing that entity or in bringing together relevant counterparties for a transaction facilitated by that entity. During 2023, UBS AG sponsored the creation of various SEs and interacted with a number of non-sponsored SEs, including securitization vehicles, client vehicles and certain investment funds, that UBS AG did not consolidate as of 31 December 2023 because it did not control them.

Interests in unconsolidated structured entities

The table below presents UBS AG's interests in and maximum exposure to loss from unconsolidated SEs, as well as the total assets held by the SEs in which UBS had an interest as of year-end, except for investment funds sponsored by third parties, for which the carrying amount of UBS's interest as of year-end has been disclosed.

As a consequence of the acquisition of the Credit Suisse Group and the resulting increase in interests in structured entities, interests in client vehicles sponsored by UBS are presented separately to other vehicles sponsored by third parties, to clearly distinguish the different types of entities that UBS is involved with. Further, bonds issued by US government-sponsored entities included within Group Treasury's HQLA portfolio have been excluded given UBS does not absorb significant risk and third-party funding vehicles of large multi-nationals have been excluded as they are no longer considered structured entities. Prior periods have been restated to reflect these changes. As a consequence of these changes, UBS AG does not disclose any interest in other vehicles sponsored by third parties.

Sponsored unconsolidated structured entities in which UBS did not have an interest at year-end

During 2023 and 2022, UBS AG did not earn material income from sponsored unconsolidated SEs in which UBS did not have an interest at year-end.

During 2023 and 2022, UBS AG and third parties did not transfer any assets into sponsored securitization vehicles created in the year. UBS AG and third parties transferred assets, alongside deposits and debt issuances (which are assets from the perspective of the vehicle), of USD 0.5bn and USD 0.5bn, respectively, into sponsored client vehicles created in 2023 (2022: USD 1bn and USD 3bn, respectively). For sponsored investment funds, transfers arose during the period as investors invested and redeemed positions, thereby changing the overall size of the funds, which, when combined with market movements, resulted in a total closing net asset value of USD 44bn (31 December 2022: USD 38bn).

Note 28 Interests in subsidiaries and other entities (continued)

	31.12.23				
USD m, except where indicated	Securitization vehicles[1]	Client Vehicles sponsored by UBS[2]	Investment funds	Total	Maximum exposure to loss[3]
Financial assets at fair value held for trading	88	37	7,413	7,538	7,538
Derivative financial instruments	2	147	66	215	215
Loans and advances to customers	0	0	200	200	200
Financial assets at fair value not held for trading	0	0	143	143	143
Financial assets measured at fair value through other comprehensive income	0	0	0	0	0
Other financial assets measured at amortized cost	188	0	0	188	438
Total assets	278	185	7,821	8,285	8,534
Derivative financial instruments	1	8	590	598	2
Total liabilities	1	8	590	598	2
Assets held by the unconsolidated structured entities in which UBS AG had an interest (USD bn)	17[4]	2[5]	118[6]		

	31.12.22				
USD m, except where indicated	Securitization vehicles[1,2]	Client Vehicles sponsored by UBS[2]	Investment funds	Total	Maximum exposure to loss[3]
Financial assets at fair value held for trading	263	2	5,884	6,149	6,149
Derivative financial instruments	3	160	115	278	278
Loans and advances to customers	0	0	119	119	119
Financial assets at fair value not held for trading	0	0	108	108	108
Financial assets measured at fair value through other comprehensive income	0	0	0	0	0
Other financial assets measured at amortized cost	0	0	2	3	252
Total assets	266	162	6,228	6,657	6,907
Derivative financial instruments	1	35	763	798	2
Total liabilities	1	35	763	798	2
Assets held by the unconsolidated structured entities in which UBS AG had an interest (USD bn)	39[4]	2[5]	95[6]		

1 Includes securities issued by securitization structured entities sponsored by both UBS and third parties. 2 Client vehicles sponsored by UBS are structured entities that do not qualify as a securitization in line with regulatory requirements and are not considered an investment fund. Effective from 31 December 2023, bonds issued by US government-sponsored entities included in Group Treasury's HQLA and interests in third-party funding vehicles of large multi-nationals have been excluded, with prior periods restated. The restatement resulted in a decrease in interests in securitization vehicles of USD 852m and a decrease in interests in client vehicles of USD 5,057m as of 31 December 2022. There was a corresponding decrease in assets held by securitization vehicles in which UBS has an interest of USD 11bn and a decrease in assets held by client vehicles in which UBS has an interest of USD 105bn as of 31 December 2022. 3 For the purpose of this disclosure, maximum exposure to loss amounts do not consider the risk-reducing effects of collateral or other credit enhancements. 4 Represents the principal amount outstanding. 5 Represents the market value of total assets. 6 Represents the net asset value of the investment funds sponsored by UBS and the carrying amount of UBS's interests in the investment funds not sponsored by UBS.

UBS AG retains or purchases interests in unconsolidated SEs in the form of direct investments, financing, guarantees, letters of credit and derivatives, as well as through management contracts. UBS AG's maximum exposure to loss is generally equal to the carrying amount of UBS AG's interest in the given SE, with this subject to change over time with market movements. Guarantees, letters of credit and credit derivatives are an exception, with the given contract's notional amount, adjusted for losses already incurred, representing the maximum loss that UBS AG is exposed to.

The maximum exposure to loss disclosed in the table above does not reflect UBS AG's risk management activities, including effects from financial instruments that may be used to economically hedge risks inherent in the given unconsolidated SE or risk-reducing effects of collateral or other credit enhancements.

In 2023 and 2022, UBS AG did not provide support, financial or otherwise, to any unconsolidated SE when not contractually obligated to do so, nor does UBS AG currently have any intention to do so in the future.

In 2023 and 2022, income and expenses from interests in unconsolidated SEs primarily resulted from mark-to-market movements recognized in *Other net income from financial instruments measured at fair value through profit or loss*, which were generally hedged with other financial instruments, as well as fee and commission income received from UBS-sponsored funds.

Interests in securitization vehicles

As of 31 December 2023 and 31 December 2022, UBS AG held interests, both retained and acquired, in various securitization vehicles that relate to financing, underwriting, secondary market and derivative trading activities.

Note 28 Interests in subsidiaries and other entities (continued)

The numbers outlined in the table above may differ from the securitization positions presented in the 31 December 2023 Pillar 3 Report, available under "Pillar 3 disclosures" at *ubs.com/investors,* for the following reasons: (i) exclusion of synthetic securitizations transacted with entities that are not SEs and transactions in which UBS AG did not have an interest because it did not absorb any risk; (ii) a different measurement basis in certain cases (e.g., IFRS Accounting Standards carrying amount within the table above compared with net exposure amount at default for Pillar 3 disclosures); and (iii) different classification of vehicles viewed as sponsored by UBS AG versus sponsored by third parties.

› **Refer to the 31 December 2023 Pillar 3 Report, available under "Pillar 3 disclosures" at *ubs.com/investors,* for more information**

Interests in client vehicles sponsored by UBS

UBS-sponsored client vehicles are established predominantly for clients to gain exposure to specific assets or risk exposures. Such vehicles may enter into derivative agreements, with UBS or a third party, to align the cash flows of the entity with the investor's intended investment objective, or to introduce other desired risk exposures.

As of 31 December 2023 and 31 December 2022, UBS AG retained interests in client vehicles sponsored by UBS that relate to financing, secondary market and derivative trading activities, and to hedge structured product offerings.

Interests in investment funds

Investment funds have a collective investment objective, and are either passively managed, so that any decision-making does not have a substantive effect on variability, or are actively managed and investors or their governing bodies do not have substantive voting or similar rights.

UBS AG holds interests in a number of investment funds, primarily resulting from seed investments or in order to hedge structured product offerings. In addition to the interests disclosed in the table above, UBS AG manages the assets of various pooled investment funds and receives fees based, in whole or in part, on the net asset value of the fund and / or the performance of the fund. The specific fee structure is determined based on various market factors and considers the fund's nature and the jurisdiction of incorporation, as well as fee schedules negotiated with clients. These fee contracts represent an interest in the fund, as they align UBS AG's exposure with investors, providing a variable return based on the performance of the entity. Depending on the structure of the fund, these fees may be collected directly from the fund's assets and / or from the investors. Any amounts due are collected on a regular basis and are generally backed by the fund's assets. Therefore, interest in such funds is not represented by the on-balance sheet fee receivable but rather by the future exposure to variable fees. The total assets of such funds were USD 356bn and USD 336bn as of 31 December 2023 and 31 December 2022, respectively, and have been excluded from the table above. UBS AG did not have any material exposure to loss from these interests as of 31 December 2023 or as of 31 December 2022.

Note 29 Changes in organization and acquisitions and disposals of subsidiaries and businesses

Disposals of subsidiaries and businesses

Sale of UBS Hana Asset Management Co., Ltd.

In the fourth quarter of 2023, UBS AG completed the sale of its 51% stake in UBS Hana Asset Management Co., Ltd. to Hana Securities. Upon completion of the sale, UBS AG recorded a pre-tax gain of USD 23m (net of a foreign currency translation loss) in Asset Management which was recognized in *Other income*.

Changes in organization

Legal structure integration

In December 2023, the Board of Directors of UBS Group AG approved the merger of UBS AG and Credit Suisse AG, and both entities entered into a definitive merger agreement. The completion of the merger is subject to regulatory approvals and is expected to occur by the end of the second quarter of 2024.

UBS also expects to complete the transition to a single US intermediate holding company in the second quarter of 2024 and the planned merger of UBS Switzerland AG and Credit Suisse (Schweiz) AG in the third quarter of 2024.

Note 30 Related parties

Related parties of UBS AG are:
- entities within UBS Group, i.e., the parent entity, UBS Group AG, and fellow subsidiaries consolidated within UBS Group (including Credit Suisse subsidiaries from the date of the acquisition of the Credit Suisse Group);
- associates (entities that are under the significant influence of UBS AG or other group entities consolidated within UBS Group);
- joint ventures (entities in which UBS AG or other group entity consolidated within UBS Group shares control with another party);
- post-employment benefit plans for the benefit of UBS AG's employees or employees of entities related to UBS AG;
- key management personnel and close family members of key management personnel; and
- entities over which key management personnel or their close family members have solely or jointly a direct or indirect significant influence.

Key management personnel are those persons having authority and responsibility for planning, directing, and controlling the activities of the Group, directly or indirectly. UBS AG considers the members of the Board of Directors (the BoD) and the Executive Board (the EB) of UBS AG and the members of the Board of Directors (the BoD) and the Group Executive Board (the GEB) of UBS Group AG to constitute key management personnel.

a) Remuneration of key management personnel

The Vice Chairman of the BoD has a specific management employment contract and receives pension benefits upon retirement. Total remuneration of the Chairman and the Vice Chairman of the BoD and all EB members is included in the table below.

Remuneration of key management personnel

USD m, except where indicated	31.12.23	31.12.22	31.12.21
Base salaries and other cash payments[1]	35	26	30
Incentive awards – cash[2]	24	16	17
Annual incentive award under DCCP	36	23	26
Employer's contributions to retirement benefit plans	3	2	2
Benefits in kind, fringe benefits (at market value)	1	1	1
Share-based compensation[3]	63	42	45
Total	162	110	122
Total (CHF m)[4]	147	106	112

1 May include role-based allowances in line with market practice and regulatory requirements. 2 The cash portion may also include blocked shares in line with regulatory requirements. 3 Compensation expense is based on the share price on grant date taking into account performance conditions. Refer to Note 27 for more information. For EB members, share-based compensation for 2023, 2022 and 2021 was entirely composed of LTIP awards. For the Chairman of the BoD, the share-based compensation for 2023, 2022 and 2021 was entirely composed of UBS shares. 4 Swiss franc amounts disclosed represent the respective US dollar amounts translated at the applicable performance award currency exchange rates (2023: USD / CHF 0.91; 2022: USD / CHF 0.96; 2021: USD / CHF 0.92).

The independent members of the BoD, including the Chairman, do not have employment or service contracts with UBS AG, and thus are not entitled to benefits upon termination of their service on the BoD. Payments to these individuals for their services as independent members of the BoD amounted to USD 11.7m (CHF 10.6m) in 2023, USD 11.1m (CHF 10.7m) in 2022 and USD 7.5m (CHF 6.9m) in 2021.

b) Equity holdings of key management personnel

Equity holdings of key management personnel[1]

	31.12.23	31.12.22
Number of UBS Group AG shares held by members of the BoD, EB and parties closely linked to them[2]	5,121,564	2,443,580

1 No options were held in 2023 and 2022 by non-independent members of the BoD and any EB member or any of its related parties. 2 Excludes shares granted under variable compensation plans with forfeiture provisions.

Of the share totals above, no shares were held by close family members of key management personnel on 31 December 2023 and 31 December 2022. No shares were held by entities that are directly or indirectly controlled or jointly controlled by key management personnel or their close family members on 31 December 2023 and 31 December 2022. As of 31 December 2023, no member of the BoD or EB was the beneficial owner of more than 1% of the shares in UBS Group AG.

Note 30 Related parties (continued)

c) Loans, advances, mortgages and deposit balances with key management personnel

The non-independent members of the BoD and EB members are granted loans, fixed advances and mortgages in the ordinary course of business on substantially the same terms and conditions that are available to other employees, including interest rates and collateral, and neither involve more than the normal risk of collectability nor contain any other unfavorable features for the firm. Independent BoD members are granted loans and mortgages in the ordinary course of business at general market conditions.

Outstanding balances with key management personnel were as follows.

Loans, advances and mortgages to key management personnel[1]

USD m, except where indicated	2023	2022
Balance at the beginning of the year	28	28
Balance at the end of the year[2]	55	28
Balance at the end of the year (CHF m)[2, 3]	46	26

1 All loans are secured loans. 2 There were USD 14m (CHF 12m) unused uncommitted credit facilities as of 31 December 2023 and no unused uncommitted credit facilities as of 31 December 2022. 3 Swiss franc amounts disclosed represent the respective US dollar amounts translated at the relevant year-end closing exchange rate.

In addition, there were USD 21m (CHF 18m) outstanding deposit balances with key management personnel as of 31 December 2023.

d) Other related-party transactions with entities controlled by key management personnel

In 2023 and 2022, UBS AG did not enter into transactions with entities, over whom key management personnel or their close family members have solely or jointly a direct or indirect significant influence and as of 31 December 2023, 31 December 2022 and 31 December 2021, there were no outstanding balances related to such transactions. Furthermore, in 2023 and 2022, such entities did not sell any goods or provide any services to UBS AG, and therefore did not receive any fees from UBS AG. UBS AG also did not provide services to such entities in 2023 and 2022, and therefore also received no fees.

e) Transactions with associates and joint ventures

Loans to and outstanding receivables from associates and joint ventures

USD m	2023	2022
Carrying amount at the beginning of the year	217	251
Additions	664	402
Reductions	(716)	(438)
Foreign currency translation	18	1
Carrying amount at the end of the year	183	217
of which: unsecured loans and receivables	*174*	*209*

Other transactions with associates and joint ventures

	As of or for the year ended	
USD m	31.12.23	31.12.22
Payments to associates and joint ventures for goods and services received	155	138
Fees received for services provided to associates and joint ventures	10	4
Liabilities to associates and joint ventures	103	90
Commitments and contingent liabilities to associates and joint ventures	8	7

› **Refer to Note 28 for an overview of investments in associates and joint ventures**

Note 30 Related parties (continued)

f) Receivables and payables from / to UBS Group AG and other subsidiaries of UBS Group AG

USD m	31.12.23	31.12.22
Receivables		
Amounts due from banks[1]	14,752	0
Cash collateral receivables on derivative instruments	312	1
Loans and advances to customers	4,889	2,807
Other financial assets measured at amortized cost	232	147
Financial assets at fair value held for trading	325	146
Derivative financial instruments	3,031	1
Payables		
Amounts due to banks	364	0
Cash collateral payables on derivative instruments	1,447	0
Customer deposits	3,069	2,119
Funding from UBS Group AG measured at amortized cost	67,282	56,147
Other financial liabilities measured at amortized cost	2,574	1,985
Derivative financial instruments	2,032	0
Other financial liabilities designated at fair value[2]	2,995	1,796

1 Reflects funding provided to Credit Suisse. 2 Mainly represents funding recognized from UBS Group AG that is designated at fair value. Refer to Note 18b for more information.

Note 31 Invested assets and net new money

The following disclosures provide a breakdown of UBS AG's invested assets and a presentation of their development, including net new money, as required by the Swiss Financial Market Supervisory Authority (FINMA).

Invested assets

Invested assets consist of all client assets managed by or deposited with UBS AG for investment purposes. Invested assets include managed fund assets, managed institutional assets, discretionary and advisory wealth management portfolios, fiduciary deposits, time deposits, savings accounts, and wealth management securities or brokerage accounts. All assets held for purely transactional purposes and custody-only assets, including corporate client assets held for cash management and transactional purposes, are excluded from invested assets, as UBS AG only administers the assets and does not offer advice on how they should be invested. Also excluded are non-bankable assets (e.g., art collections) and deposits from third-party banks for funding or trading purposes.

Discretionary assets are defined as client assets that UBS AG decides how to invest. Other invested assets are those where the client ultimately decides how the assets are invested. When a single product is created in one business division and sold in another, it is counted in both the business division managing the investment and the one distributing it. This results in double counting within UBS AG's total invested assets and net new money, as both business divisions are independently providing a service to their respective clients, and both add value and generate revenue.

Net new money

Net new money in a reporting period is the amount of invested assets entrusted to UBS AG by new and existing clients, less those withdrawn by existing clients and clients who terminated relationships with UBS AG.

Net new money is calculated using the direct method, under which inflows and outflows to / from invested assets are determined at the client level, based on transactions. Interest and dividend income from invested assets are not counted as net new money inflows. Market and currency movements, as well as fees, commissions and interest on loans charged, are excluded from net new money, as are effects resulting from any acquisition or divestment of a UBS subsidiary or business. Reclassifications between invested assets and custody-only assets as a result of a change in service level delivered are generally treated as net new money flows. However, where the change in service level directly results from an externally imposed regulation or a strategic decision by UBS AG to exit a market or specific service offering, the one-time net effect is reported as *Other effects*.

The Investment Bank does not track invested assets and net new money. However, when a client is transferred from the Investment Bank to another business division, this may produce net new money even though the client's assets were already with UBS AG.

In 2023 UBS AG has changed its accounting policy for net new money and invested assets to include its share of net new money and invested assets from associates, to better reflect the business strategy and aligned with the equity method accounting applied to these entities. Comparative figures in the tables below have been restated to reflect this change, resulting in an increase to invested assets as of 31 December 2022 of USD 24bn and an increase to net new money for 2022 of USD 8bn, all relating to Asset Management.

Note 31 Invested assets and net new money (continued)

Invested assets and net new money

	As of or for the year ended	
USD bn	31.12.23	31.12.22[1]
Fund assets managed by UBS	429	390
Discretionary assets	1,674	1,464
Other invested assets	2,402	2,127
Total invested assets[2]	4,505	3,981
of which: double counts	*411*	*340*
Net new money[2]	112	76

1 Comparative figures have been restated to include net new money and invested assets from associates. 2 Includes double counts.

Development of invested assets

USD bn	31.12.23	31.12.22[1]
Total invested assets at the beginning of the year[2]	3,981	4,614
Net new money	112	76
Market movements[3]	379	(596)
Foreign currency translation	69	(74)
Other effects	(37)	(40)
of which: acquisitions / (divestments)	*(25)*	*(19)*
Total invested assets at the end of the year[2]	4,505	3,981

1 Comparative figures have been restated to include net new money and invested assets from associates. 2 Includes double counts. 3 Includes interest and dividend income.

Note 32 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 year ended		
	31.12.23	31.12.22	31.12.23	31.12.22	31.12.21
1 CHF	1.19	1.08	1.11	1.05	1.09
1 EUR	1.10	1.07	1.08	1.05	1.18
1 GBP	1.28	1.21	1.25	1.23	1.37
100 JPY	0.71	0.76	0.71	0.76	0.91

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 year represent an average of twelve 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 33 Main differences between IFRS Accounting Standards and Swiss GAAP

The consolidated financial statements of UBS AG are prepared in accordance with IFRS Accounting Standards. The Swiss Financial Market Supervisory Authority (FINMA) requires financial groups presenting financial statements under IFRS Accounting Standards to provide a narrative explanation of the main differences between IFRS Accounting Standards and Swiss generally accepted accounting principles (GAAP) (the FINMA Accounting Ordinance, FINMA Circular 2020/1 "Accounting – banks" and the Banking Ordinance (the BO)). Included in this Note are the significant differences in the recognition and measurement between IFRS Accounting Standards and the provisions of the BO and the guidelines of FINMA governing true and fair view financial statement reporting pursuant to Art. 25 to Art. 42 of the BO.

1. Consolidation

Under IFRS Accounting Standards, all entities that are controlled by the holding entity are consolidated. Under Swiss GAAP controlled entities deemed immaterial to a group or those held only temporarily are exempt from consolidation, but instead are recorded as participations accounted for under the equity method of accounting or as financial investments measured at the lower of cost or market value.

2. Classification and measurement of financial assets

Under IFRS Accounting Standards, debt instruments are measured at amortized cost, fair value through other comprehensive income (FVOCI) or fair value through profit or loss (FVTPL), depending on the nature of the business model within which the particular asset is held and the characteristics of the contractual cash flows of the asset. Equity instruments are accounted for at FVTPL by UBS. Under Swiss GAAP, trading assets and derivatives are measured at FVTPL, in line with IFRS Accounting Standards. However, non-trading debt instruments are generally measured at amortized cost, even when the assets are managed on a fair value basis. In addition, the measurement of financial assets in the form of securities depends on the nature of the asset: debt instruments not held to maturity, i.e., instruments available for sale, and equity instruments with no permanent holding intent, are classified as *Financial investments* and measured at the lower of (amortized) cost or market value. Market value adjustments up to the original cost amount and realized gains or losses upon disposal of the investment are recorded in the income statement as *Other income from ordinary activities.* Equity instruments with a permanent holding intent are classified as participations in *Non-consolidated investments in subsidiaries and other participations* and are measured at cost less impairment. Impairment losses are recorded in the income statement as *Impairment of investments in non-consolidated subsidiaries and other participations.* Reversals of impairments up to the original cost amount and realized gains or losses upon disposal of the investment are recorded as *Extraordinary income / Extraordinary expenses*.

3. Fair value option applied to financial liabilities

Under IFRS Accounting Standards, UBS applies the fair value option to certain financial liabilities not held for trading. Instruments for which the fair value option is applied are accounted for at FVTPL. The amount of change in the fair value attributable to changes in UBS's own credit is presented in *Other comprehensive income* directly within *Retained earnings*. The fair value option is applied primarily to issued structured debt instruments, certain non-structured debt instruments, certain payables under repurchase agreements and cash collateral on securities lending agreements, amounts due under unit-linked investment contracts, and brokerage payables.

Under Swiss GAAP, the fair value option can only be applied to structured debt instruments consisting of a debt host contract and one or more embedded derivatives that do not relate to own equity. Furthermore, unrealized changes in fair value attributable to changes in UBS's own credit are not recognized, whereas realized own credit is recognized in *Net trading income*.

4. Allowances and provisions for credit losses

Swiss GAAP permit use of IFRS Accounting Standards for accounting for allowances and provisions for credit losses based on an expected credit loss (ECL) model. UBS has chosen to apply the IFRS 9 ECL approach to those exposures that are in the ECL scope of both frameworks, IFRS Accounting Standards and Swiss GAAP.

For the small residual exposures within the scope of Swiss GAAP ECL requirements, which are not subject to ECL under IFRS Accounting Standards due to classification differences, UBS applies alternative approaches.

- For exposures for which Pillar 1 internal ratings-based models are applied to measure credit risk, ECL is determined by the regulatory expected loss (EL), with an add-on for scaling up to the residual maturity of exposures maturing beyond the next 12 months, as appropriate. For detailed information on regulatory EL, refer to the "Risk management and control" section of this report.
- For exposures for which the Pillar 1 standardized approach is used to measure credit risk, ECL is determined using a portfolio approach that derives a conservative probability of default (PD) and a conservative loss given default (LGD) for the entire portfolio.

5. Hedge accounting

Under IFRS Accounting Standards, when cash flow hedge accounting is applied, the fair value gain or loss on the effective portion of a derivative designated as a cash flow hedge is recognized initially in equity and reclassified to the income statement when certain conditions are met. When fair value hedge accounting is applied, the fair value change of the hedged item attributable to the hedged risk is reflected in the measurement of the hedged item and is recognized in the income statement along with the change in the fair value of the hedging derivative. Under Swiss GAAP, the effective portion of the fair value change of a derivative instrument designated as a cash flow or as a fair value hedge is deferred on the balance sheet as *Other assets* or *Other liabilities*. The carrying amount of the hedged item designated in fair value hedges is not adjusted for fair value changes attributable to the hedged risk.

6. Goodwill and intangible assets

Under IFRS Accounting Standards, goodwill acquired in a business combination is not amortized but tested annually for impairment. Intangible assets with an indefinite useful life are also not amortized but tested annually for impairment. Under Swiss GAAP, goodwill and intangible assets with indefinite useful lives are amortized over a period not exceeding five years, unless a longer useful life, which may not exceed 10 years, can be justified. In addition, these assets are tested annually for impairment.

7. Post-employment benefit plans

Swiss GAAP permit the use of IFRS Accounting Standards or Swiss accounting standards for post-employment benefit plans, with the election made on a plan-by-plan basis.

UBS has elected to apply IAS 19 for the non-Swiss defined benefit plans in the UBS AG standalone financial statements and Swiss GAAP (FER 16) for the Swiss pension plan in the UBS AG and the UBS Switzerland AG standalone financial statements. The requirements of Swiss GAAP are better aligned with the specific nature of Swiss pension plans, which are hybrid in that they combine elements of defined contribution and defined benefit plans, but are treated as defined benefit plans under IFRS Accounting Standards. Key differences between Swiss GAAP and IFRS Accounting Standards include the treatment of dynamic elements, such as future salary increases and future interest credits on retirement savings, which are not considered under the static method used in accordance with Swiss GAAP. Also, the discount rate used to determine the defined benefit obligation in accordance with IFRS Accounting Standards is based on the yield of high-quality corporate bonds of the market in the respective pension plan country. The discount rate used in accordance with Swiss GAAP (i.e., the technical interest rate) is determined by the Pension Foundation Board based on the expected returns of the Board's investment strategy.

For defined benefit plans, IFRS Accounting Standards require the full defined benefit obligation net of the plan assets to be recorded on the balance sheet subject to the asset ceiling rules, with changes resulting from remeasurements recognized directly in equity. However, for non-Swiss defined benefit plans for which IFRS Accounting Standards are elected, changes due to remeasurements are recognized in the income statement of UBS AG standalone under Swiss GAAP.

Swiss GAAP require employer contributions to the pension fund to be recognized as personnel expenses in the income statement. Swiss GAAP also require an assessment of whether, based on the pension fund's financial statements prepared in accordance with Swiss accounting standards (FER 26), an economic benefit to, or obligation of, the employer arises from the pension fund that is recognized in the balance sheet when conditions are met. Conditions for recording a pension asset or liability would be met if, for example, an employer contribution reserve is available or the employer is required to contribute to the reduction of a pension deficit (on an FER 26 basis).

8. Leasing

Under IFRS Accounting Standards, a single lease accounting model applies that requires UBS to record a right-of-use (RoU) asset and a corresponding lease liability on the balance sheet when UBS is a lessee in a lease arrangement. The RoU asset and the lease liability are recognized when UBS acquires control of the physical use of the asset. The lease liability is measured based on the present value of the lease payments over the lease term, discounted using UBS's unsecured borrowing rate. The RoU asset is recorded at an amount equal to the lease liability but is adjusted for rent prepayments, initial direct costs, any costs to refurbish the leased asset and / or lease incentives received. The RoU asset is depreciated over the shorter of the lease term or the useful life of the underlying asset.

Under Swiss GAAP, leases that transfer substantially all the risks and rewards, but not necessarily legal title in the underlying assets, are classified as finance leases. All other leases are classified as operating leases. Whereas finance leases are recognized on the balance sheet and measured in line with IFRS Accounting Standards, operating leases are not recognized on the balance sheet, with payments recognized as *General and administrative expenses* on a straight-line basis over the lease term, which commences with control of the physical use of the asset. Lease incentives are treated as a reduction of rental expense and recognized on a consistent basis over the lease term.

9. Netting of derivative assets and liabilities

Under IFRS Accounting Standards, derivative assets, derivative liabilities and related cash collateral not settled to market are reported on a gross basis unless the restrictive netting requirements under IFRS Accounting Standards are met: (i) existence of master netting agreements and related collateral arrangements that are unconditional and legally enforceable, in both the normal course of business and the event of default, bankruptcy or insolvency of UBS and its counterparties; and (ii) UBS's intention to either settle on a net basis or to realize the asset and settle the liability simultaneously. Under Swiss GAAP, derivative assets, derivative liabilities and related cash collateral not settled to market are generally reported on a net basis, provided the master netting and the related collateral agreements are legally enforceable in the event of default, bankruptcy or insolvency of UBS's counterparties.

Note 33 Main differences between IFRS Accounting Standards and Swiss GAAP (continued)

10. Negative interest

Under IFRS Accounting Standards, negative interest income arising on a financial asset does not meet the definition of interest income and, therefore, negative interest on financial assets and negative interest on financial liabilities are presented within interest expense and interest income, respectively. Under Swiss GAAP, negative interest on financial assets is presented within interest income and negative interest on financial liabilities is presented within interest expense.

11. Extraordinary income and expense

Certain non-recurring and non-operating income and expense items, such as realized gains or losses from the disposal of participations, fixed and intangible assets, and reversals of impairments of participations and fixed assets, are classified as extraordinary items under Swiss GAAP. This distinction is not available under IFRS Accounting Standards. ▲

Note 34 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 2023 by USD 1.0bn to USD 3.3bn as of 31 December 2023. The decrease substantially relates to a combination of contractual maturities, early extinguishments, fair value movements and foreign currency effects.

Supplemental guarantor consolidated income statement

USD m For the year ended 31 December 2023	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	11,181	7,229	9,057	(5,022)	22,444
Interest expense from financial instruments measured at amortized cost	(14,797)	(3,055)	(7,699)	5,907	(19,643)
Net interest income from financial instruments measured at fair value through profit or loss and other	891	785	952	(864)	1,765
Net interest income	(2,725)	4,959	2,310	22	4,566
Other net income from financial instruments measured at fair value through profit or loss	7,879	1,031	1,105	(81)	9,934
Fee and commission income	2,581	5,067	13,350	(598)	20,399
Fee and commission expense	(705)	(456)	(1,214)	585	(1,790)
Net fee and commission income	1,876	4,611	12,136	(13)	18,610
Other income	2,994	228	1,542	(4,198)	566
Total revenues	10,023	10,829	17,092	(4,269)	33,675
Credit loss expense / (release)	18	57	31	37	143
Personnel expenses	3,356	2,201	10,097	0	15,655
General and administrative expenses	3,951	3,840	6,155	(2,828)	11,118
Depreciation, amortization and impairment of non-financial assets	888	411	1,048	(109)	2,238
Operating expenses	8,195	6,452	17,301	(2,937)	29,011
Operating profit / (loss) before tax	1,810	4,320	(240)	(1,370)	4,521
Tax expense / (benefit)	251	779	224	(48)	1,206
Net profit / (loss)	1,559	3,540	(463)	(1,321)	3,315
Net profit / (loss) attributable to non-controlling interests	0	0	25	0	25
Net profit / (loss) attributable to shareholders	1,559	3,540	(488)	(1,321)	3,290

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 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

USD m For the year ended 31 December 2023	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders					
Net profit / (loss)	1,559	3,540	(488)	(1,321)	3,290
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	79	1,523	222	(975)	849
Financial assets measured at fair value through other comprehensive income, net of tax[3]	4		1	0	5
Cash flow hedges, net of tax	707	679	23	(9)	1,400
Cost of hedging, net of tax	(19)		0		(19)
Total other comprehensive income that may be reclassified to the income statement, net of tax	771	2,202	245	(984)	2,235
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	(82)	(36)	(19)	0	(136)
Own credit on financial liabilities designated at fair value, net of tax	(790)				(790)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(872)	(36)	(19)	0	(927)
Total other comprehensive income	(101)	2,167	226	(984)	1,308
Total comprehensive income attributable to shareholders	1,458	5,707	(262)	(2,305)	4,598
Total comprehensive income attributable to non-controlling interests			27		27
Total comprehensive income	1,458	5,707	(235)	(2,305)	4,625

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. 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 13a for more information.

Note 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

USD m As of 31 December 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	49,620	87,044	35,142		171,806
Amounts due from banks	61,579	6,241	16,696	(56,311)	28,206
Receivables from securities financing transactions measured at amortized cost	61,116	63	37,022	(24,073)	74,128
Cash collateral receivables on derivative instruments	34,048	1,640	9,124	(12,512)	32,300
Loans and advances to customers	91,940	255,205	93,581	(35,093)	405,633
Other financial assets measured at amortized cost	24,403	9,149	23,429	(2,647)	54,334
Total financial assets measured at amortized cost	322,705	359,343	214,995	(130,636)	766,407
Financial assets at fair value held for trading	121,947	101	14,463	(1,412)	135,098
of which: assets pledged as collateral that may be sold or repledged by counterparties	*51,325*	*0*	*5,930*	*(12,731)*	*44,524*
Derivative financial instruments	126,916	5,845	40,190	(41,223)	131,728
Brokerage receivables	12,924		7,959	0	20,883
Financial assets at fair value not held for trading	46,658	10,022	29,688	(22,613)	63,754
Total financial assets measured at fair value through profit or loss	308,444	15,968	92,300	(65,249)	351,463
Financial assets measured at fair value through other comprehensive income	1,957		276		2,233
Investments in subsidiaries and associates	52,134	37	2	(51,190)	983
Property, equipment and software	5,842	1,798	3,687	(284)	11,044
Goodwill and intangible assets	212		5,974	79	6,265
Deferred tax assets	1,488	147	7,633	(24)	9,244
Other non-financial assets	5,366	1,748	1,256	7	8,377
Total assets	698,149	379,042	326,124	(247,298)	1,156,016
Liabilities					
Amounts due to banks	55,680	44,170	58,769	(141,898)	16,720
Payables from securities financing transactions measured at amortized cost	14,329	336	15,288	(24,171)	5,782
Cash collateral payables on derivative instruments	35,148	1,076	11,091	(12,430)	34,886
Customer deposits	108,279	293,133	118,168	36,094	555,673
Funding from UBS Group AG measured at amortized cost	67,282				67,282
Debt issued measured at amortized cost	58,729	11,042	12	0	69,784
Other financial liabilities measured at amortized cost	6,589	2,974	6,147	(2,997)	12,713
Total financial liabilities measured at amortized cost	346,036	352,731	209,475	(145,402)	762,840
Financial liabilities at fair value held for trading	27,280	248	5,508	(1,325)	31,712
Derivative financial instruments	135,272	6,223	40,436	(41,225)	140,707
Brokerage payables designated at fair value	30,724		11,552	0	42,275
Debt issued designated at fair value	85,424		986	(69)	86,341
Other financial liabilities designated at fair value	14,392		21,081	(8,107)	27,366
Total financial liabilities measured at fair value through profit or loss	293,092	6,471	79,564	(50,726)	328,401
Provisions	1,903	208	413	(1)	2,524
Other non-financial liabilities	1,572	1,377	3,688	46	6,682
Total liabilities	642,602	360,788	293,140	(196,083)	1,100,448
Equity attributable to shareholders	55,546	18,254	32,649	(51,215)	55,234
Equity attributable to non-controlling interests			335	0	335
Total equity	55,546	18,254	32,984	(51,215)	55,569
Total liabilities and equity	698,149	379,042	326,124	(247,298)	1,156,016

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 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

USD m For the year ended 31 December 2023	UBS AG[1]	UBS Switzerland AG[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(23,275)	(3,041)	(1,886)	(28,202)
Cash flow from / (used in) investing activities				
Purchase of subsidiaries, associates and intangible assets		(1)	(3)	(4)
Disposal of subsidiaries, associates and intangible assets[2]	109			109
Purchase of property, equipment and software	(427)	(287)	(569)	(1,283)
Disposal of property, equipment and software	33			33
Net (purchase) / redemption of financial assets measured at fair value through other comprehensive income	15		15	30
Purchase of debt securities measured at amortized cost	(9,561)	(1,431)	(3,251)	(14,244)
Disposal and redemption of debt securities measured at amortized cost	4,890	1,625	3,920	10,435
Net cash flow from / (used in) investing activities	(4,942)	(94)	112	(4,924)
Cash flow from / (used in) financing activities				
Net short-term debt issued / (repaid)	7,138	(1)	44	7,181
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]	101,956	2,007	588	104,551
Repayment of debt designated at fair value and long-term debt measured at amortized cost[3]	(84,366)	(1,017)	(159)	(85,541)
Net cash flows from other financing activities	(249)		(251)	(501)
Net activity related to group internal capital transactions and dividends	3,698	(2,944)	(754)	0
Net cash flow from / (used in) financing activities	22,177	(1,954)	(532)	19,690
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	(6,040)	(5,089)	(2,306)	(13,435)
Effects of exchange rate differences on cash and cash equivalents	591	7,860	253	8,704
Cash and cash equivalents at the end of the year[4]	58,159	89,003	43,307	190,469
of which: cash and balances at central banks[4]	*49,537*	*87,044*	*35,142*	*171,723*
of which: amounts due from banks[4]	*2,763*	*1,448*	*7,866*	*12,078*
of which: money market paper[4,5]	*5,858*	*511*	*299*	*6,668*

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 Balances with an original maturity of three months or less. USD 4,553m of cash and cash equivalents were restricted. 5 Money market paper is included in the balance sheet under Financial assets at fair value not held for trading, Other financial assets measured at amortized cost and Financial assets at fair value held for trading.

Note 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

USD m For the year ended 31 December 2022	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	4,824	3,894	4,661	(1,575)	11,803
Interest expense from financial instruments measured at amortized cost	(5,449)	(736)	(2,604)	2,093	(6,696)
Net interest income from financial instruments measured at fair value through profit or loss and other	881	546	431	(449)	1,410
Net interest income	257	3,704	2,488	68	6,517
Other net income from financial instruments measured at fair value through profit or loss	5,541	900	940	112	7,493
Fee and commission income	2,875	4,865	13,766	(660)	20,846
Fee and commission expense	(684)	(464)	(1,327)	652	(1,823)
Net fee and commission income	2,191	4,401	12,439	(8)	19,023
Other income	6,732	203	3,329	(8,382)	1,882
Total revenues	14,721	9,208	19,197	(8,210)	34,915
Credit loss expense / (release)	(17)	50	(3)	(1)	29
Personnel expenses	3,251	1,995	9,835	0	15,080
General and administrative expenses	3,374	3,258	5,029	(2,660)	9,001
Depreciation, amortization and impairment of non-financial assets	871	340	744	(109)	1,845
Operating expenses	7,496	5,592	15,607	(2,769)	25,927
Operating profit / (loss) before tax	7,242	3,566	3,592	(5,440)	8,960
Tax expense / (benefit)	(28)	638	1,083	151	1,844
Net profit / (loss)	7,270	2,928	2,509	(5,592)	7,116
Net profit / (loss) attributable to non-controlling interests	0	0	32	0	32
Net profit / (loss) attributable to shareholders	7,270	2,928	2,477	(5,592)	7,084

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.

Supplemental guarantor consolidated statement of comprehensive income

USD m For the year ended 31 December 2022	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders					
Net profit / (loss)	7,270	2,928	2,477	(5,592)	7,084
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	(114)	(197)	(506)	298	(519)
Financial assets measured at fair value through other comprehensive income, net of tax[3]	(3)	0	9	0	6
Cash flow hedges, net of tax	(2,791)	(1,359)	(631)	(12)	(4,793)
Cost of hedging, net of tax	45				45
Total other comprehensive income that may be reclassified to the income statement, net of tax	(2,863)	(1,555)	(1,128)	286	(5,260)
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	170	(112)	23	0	81
Own credit on financial liabilities designated at fair value, net of tax	796				796
Total other comprehensive income that will not be reclassified to the income statement, net of tax	966	(112)	23	0	877
Total other comprehensive income	(1,897)	(1,667)	(1,104)	286	(4,383)
Total comprehensive income attributable to shareholders	5,373	1,261	1,373	(5,306)	2,701
Total comprehensive income attributable to non-controlling interests			18		18
Total comprehensive income	5,373	1,261	1,391	(5,306)	2,719

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. 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 13a for more information.

Note 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

USD m As of 31 December 2022	UBS AG (standalone)[1]	UBS 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
of which: assets pledged as collateral that may be sold or repledged by counterparties	*41,056*	*0*	*5,578*	*(9,892)*	*36,742*
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	1,953	0	286	0	2,239
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	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	60,075	15,513	34,313	(53,303)	56,598
Equity attributable to non-controlling interests			342	0	342
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 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

USD m For the year ended 31 December 2022	UBS AG[1]	UBS Switzerland AG[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	17,286	(1,165)	(5,491)	10,630
Cash flow from / (used in) investing activities				
Purchase of subsidiaries, associates and intangible assets		(3)		(3)
Disposal of subsidiaries, associates and intangible assets[2]	157	453	1,120	1,729
Purchase of property, equipment and software	(562)	(292)	(624)	(1,478)
Disposal of property, equipment and software	161			161
Net (purchase) / redemption of financial assets measured at fair value through other comprehensive income	(943)		244	(699)
Purchase of debt securities measured at amortized cost	(22,602)	(2,690)	(5,500)	(30,792)
Disposal and redemption of debt securities measured at amortized cost	14,442	870	3,487	18,799
Net cash flow from / (used in) investing activities	(9,346)	(1,663)	(1,274)	(12,283)
Cash flow from / (used in) financing activities				
Net short-term debt issued / (repaid)	(12,215)	(3)	(31)	(12,249)
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]	78,866	550	41	79,457
Repayment of debt designated at fair value and long-term debt measured at amortized cost[3]	(66,526)	(860)	(284)	(67,670)
Net cash flows from other financing activities	(258)		(337)	(595)
Net activity related to group internal capital transactions and dividends	5,217	(2,088)	(3,128)	0
Net cash flow from / (used in) financing activities	884	(2,401)	(3,740)	(5,257)

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	8,824	(5,229)	(10,505)	(6,911)
Effects of exchange rate differences on cash and cash equivalents	(3,111)	(1,338)	(1,196)	(5,645)
Cash and cash equivalents at the end of the year[4]	63,608	86,232	45,359	195,200
of which: cash and balances at central banks[4]	*48,607*	*84,465*	*36,291*	*169,363*
of which: amounts due from banks[4]	*2,957*	*1,550*	*8,821*	*13,329*
of which: money market paper[4,5]	*12,044*	*216*	*248*	*12,508*

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 sales of: UBS AG's shareholding in Mitsubishi Corp.-UBS Realty Inc.; UBS AG's wholly owned subsidiary UBS Swiss Financial Advisers AG (including a loan portfolio in UBS Switzerland AG); UBS AG's US alternative investments administration business; and UBS AG's domestic wealth management business in Spain. Also includes dividends received from associates. 3 Includes funding from UBS Group AG to UBS AG. 4 Balances with an original maturity of three months or less. USD 4,253m of cash and cash equivalents were restricted. 5 Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

Note 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

USD m For the year ended 31 December 2021	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3,130	3,652	2,456	(703)	8,534
Interest expense from financial instruments measured at amortized cost	(2,847)	(520)	(1,024)	1,025	(3,366)
Net interest income from financial instruments measured at fair value through profit or loss and other	1,229	254	228	(274)	1,437
Net interest income	1,512	3,386	1,660	48	6,605
Other net income from financial instruments measured at fair value through profit or loss	3,751	807	1,369	(83)	5,844
Fee and commission income	3,837	5,204	16,151	(770)	24,422
Fee and commission expense	(810)	(481)	(1,450)	755	(1,985)
Net fee and commission income	3,027	4,723	14,702	(14)	22,438
Other income	7,555	221	1,560	(8,396)	941
Total revenues	15,845	9,137	19,291	(8,445)	35,828
Credit loss expense / (release)	(65)	(98)	(10)	24	(148)
Personnel expenses	3,401	2,098	10,161	1	15,661
General and administrative expenses	4,255	3,442	4,474	(2,696)	9,476
Depreciation, amortization and impairment of non-financial assets	949	285	755	(114)	1,875
Operating expenses	8,605	5,825	15,390	(2,809)	27,012
Operating profit / (loss) before tax	7,305	3,409	3,910	(5,660)	8,964
Tax expense / (benefit)	203	622	1,090	(11)	1,903
Net profit / (loss)	7,102	2,788	2,820	(5,649)	7,061
Net profit / (loss) attributable to non-controlling interests	0	0	29	0	29
Net profit / (loss) attributable to shareholders	7,102	2,788	2,792	(5,649)	7,032

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.

Supplemental guarantor consolidated statement of comprehensive income

USD m For the year ended 31 December 2021	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders					
Net profit / (loss)	7,102	2,788	2,792	(5,649)	7,032
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	(1)	(419)	(607)	517	(510)
Financial assets measured at fair value through other comprehensive income, net of tax	0		(157)	0	(157)
Cash flow hedges, net of tax	(1,129)	(279)	(250)	(17)	(1,675)
Cost of hedging, net of tax	(26)				(26)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(1,155)	(699)	(1,014)	500	(2,368)
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	170	(135)	67	0	102
Own credit on financial liabilities designated at fair value, net of tax	46				46
Total other comprehensive income that will not be reclassified to the income statement, net of tax	217	(135)	67	0	148
Total other comprehensive income	(939)	(834)	(947)	500	(2,220)
Total comprehensive income attributable to shareholders	6,163	1,954	1,845	(5,149)	4,813
Total comprehensive income attributable to non-controlling interests			13		13
Total comprehensive income	6,163	1,954	1,858	(5,149)	4,826

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 34 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

USD m For the year ended 31 December 2021	UBS AG[1]	UBS Switzerland AG[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	5,714	2,131	22,718	30,563
Cash flow from / (used in) investing activities				
Purchase of subsidiaries, associates and intangible assets		(1)		(1)
Disposal of subsidiaries, associates and intangible assets[2]	16	0	577	593
Purchase of property, equipment and software	(656)	(276)	(650)	(1,581)
Disposal of property, equipment and software	294		1	295
Net (purchase) / redemption of financial assets measured at fair value through other comprehensive income	(817)		67	(750)
Purchase of debt securities measured at amortized cost	(1,840)	(45)	(3,038)	(4,922)
Disposal and redemption of debt securities measured at amortized cost	1,033	817	2,658	4,507
Net cash flow from / (used in) investing activities	(1,970)	495	(385)	(1,860)
Cash flow from / (used in) financing activities				
Net short-term debt issued / (repaid)	(3,073)	(21)	0	(3,093)
Distributions paid on UBS AG shares	(4,539)			(4,539)
Issuance of debt designated at fair value and long-term debt measured at amortized cost[3]	97,250	1,177	193	98,619
Repayment of debt designated at fair value and long-term debt measured at amortized cost[3]	(78,385)	(1,093)	(320)	(79,799)
Net cash flows from other financing activities	(280)		20	(261)
Net activity related to group internal capital transactions and dividends	5,240	(537)	(4,702)	0
Net cash flow from / (used in) financing activities	16,212	(475)	(4,811)	10,927
Total cash flow				
Cash and cash equivalents at the beginning of the year	39,400	93,342	40,689	173,430
Net cash flow from / (used in) operating, investing and financing activities	19,957	2,151	17,523	39,630
Effects of exchange rate differences on cash and cash equivalents	(1,462)	(2,693)	(1,151)	(5,306)
Cash and cash equivalents at the end of the year[4]	57,895	92,799	57,061	207,755
of which: cash and balances at central banks[4]	*53,729*	*91,031*	*47,946*	*192,706*
of which: amounts due from banks[4]	*3,258*	*1,588*	*8,975*	*13,822*
of which: money market paper[4,5]	*908*	*179*	*139*	*1,227*

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 the minority stake in Clearstream Fund Centre AG and dividends received from associates. 3 Includes funding from UBS Group AG to UBS AG. 4 Balances with an original maturity of three months or less. USD 3,408m of cash and cash equivalents were restricted. 5 Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

APPENDIX 4 — RISK MANAGEMENT AND CONTROL

The information in this Appendix describes the risk management and control process of UBS AG and references herein to "**UBS**" or the "**Group**" are to UBS Group AG and its subsidiaries (including UBS AG).

The information in this Appendix has been extracted from the Annual Report 2023 as at and for the year ended 31 December 2023. References to page numbers in this Appendix are to pages of such document. The page numbers of such document appear on the bottom left or right hand side of the pages in this Appendix.

Risk management and control

Overview of risks arising from our business activities

Key risks by business division and Group Items

Business divisions and Group Items	Key financial risks arising from business activities
Global Wealth Management	**Credit risk** from collateralized lending primarily against securities, private equity and hedge fund interest, investors' uncalled capital commitments, and residential and commercial real estate, as well as from derivatives trading. **Market risk** from municipal securities and taxable fixed-income securities. Interest rate risk in the banking book related to Global Wealth Management is transferred to and managed by Group Treasury.
Personal & Corporate Banking	**Credit risk** from mortgages (owner-occupied and income-producing), secured and unsecured corporate lending, commodity trade finance, trade and export finance, and lending to banks and other regulated clients, as well as a small amount of derivatives trading activity. Minimal contribution to **market risk**. Interest rate risk in the banking book related to Personal & Corporate Banking is transferred to and managed by Group Treasury.
Asset Management	**Credit risk** and **market risk** on client assets invested in Asset Management funds can impact management and performance fees and cause heightened fund outflows, liquidity risk and losses on our seed capital and co-investments. Small amounts of credit and market risk for on-balance sheet items.
Investment Bank	**Credit risk** from lending (take-and-hold, as well as temporary loan underwriting activities), derivatives trading and securities financing. **Market risk** from primary underwriting activities and secondary trading.
Non-core and Legacy	**Credit risk** and **market risk** arise from exposures in auction rate preferred securities, public finance loans and derivatives, as well as residual exposures to securitized products.
Group Items	**Credit** and **market risk** arising from management of UBS AG's balance sheet, capital, profit or loss and liquidity portfolios. Structural risk arising from asset and liability management and liquidity and funding risk (managed by Group Treasury).
Non-financial risks consist of compliance risks (including employment and conduct risks), financial crime, operational risk (including model risks and cyber- and information-security risks), legal risks and reputational risks. These are an inevitable consequence of being in business and can arise as a result of our past and current business activities across all business divisions and Group Items.	

› **Refer to "Risk categories" in this section for more information about other financial and non-financial risks relevant to UBS AG**

Key risk developments

Upon legal close of the acquisition of the Credit Suisse Group by UBS Group, UBS has applied prudent risk management practices to the material risks of the combined organization, and continued to apply these practices at the UBS AG entity level. UBS AG's risk management and control practices and frameworks remained in line with those of the UBS Group. UBS AG's risk governance continued to operate along our three lines of defense.

2023 was a challenging year for the global economy and most markets, stage 3 net expenses of USD 120m were recognized in a number of defaulted positions across our business divisions and a USD 0.5bn increase in credit-impaired exposure to USD 3.0bn was observed. Overall, we saw a USD 48bn increase in banking product exposure driven by Group Items and Personal & Corporate Banking while exposure in Global Wealth Management decreased. Traded product exposures saw an increase of USD 1.4bn across our business divisions. Market risk remained at low levels, as a result of our continued focus on managing tail risks.

Risk categories

UBS AG categorizes the risk exposures of the business divisions and Group Items in line with the UBS Group as outlined in the table below. The risk appetite framework is designed to capture all risk categories.

› **Refer to "Risk appetite framework" in this section for more information**

	Risk managed by	Independent oversight by
Financial risks		
Audited I **Credit risk:** the risk of loss resulting from the failure of a client or counterparty to meet its contractual obligations toward UBS AG. This includes settlement risk, loan underwriting risk and step-in risk. ***Settlement risk:*** the risk of loss resulting from transactions that involve exchange of value (e.g., security versus cash) where we must deliver without first being able to determine with certainty that we will receive the consideration. ***Loan underwriting risk:*** the risk of loss arising during the holding period of financing transactions that are intended for further distribution. ***Step-in risk:*** the risk that UBS AG may decide to provide financial support to an unconsolidated entity that is facing stress in the absence of, or in excess of, any contractual obligations to provide such support. ▲	Business divisions	Risk Control
Audited I **Market risk** (traded and non-traded): the risk of loss resulting from adverse movements in market variables. Market variables include observable variables, such as interest rates, foreign exchange rates, equity prices, credit spreads and commodity (including precious metal) prices, as well as variables that may be unobservable or only indirectly observable, such as volatilities and correlations. Market risk includes issuer risk and investment risk. ***Issuer risk:*** the risk of loss that would occur if an issuer to which we are exposed through tradable securities or derivatives referencing the issuer was subject to a credit-related event. ***Investment risk:*** issuer risk associated with positions held as financial investments. ▲	Business divisions and Group Treasury	Risk Control
Country risk: the risk of loss resulting from country-specific events. This includes the risk of sovereign default and also transfer risk, which involves a country's authorities preventing or restricting the payment of an obligation, as well as systemic risk events arising from country-specific political or macroeconomic developments.	Business divisions	Risk Control
Sustainability and climate risk: the risk that UBS AG negatively impacts, or is impacted by, climate change, natural capital, human rights, and other environmental, social and governance matters. Climate risks can arise from either changing climate conditions (physical risks) or from efforts to mitigate climate change (transition risks). Sustainability and climate risks may manifest as credit, market, liquidity, business and non-financial risks for UBS AG, resulting in potential adverse financial, liability and reputational impacts. These risks extend to the value of investments and may also affect the value of collateral (e.g., real estate).	Business divisions	Risk Control
Treasury risk: the risks associated with asset and liability management and our liquidity and funding positions, as well as structural exposures including pension risks. Audited I ***Liquidity risk:*** the risk that the firm will not be able to efficiently meet both expected and unexpected current and forecast cash flows and collateral needs without affecting either daily operations or the financial condition of the firm. ▲ Audited I ***Funding risk:*** the risk that the firm will be unable, on an ongoing basis, to borrow funds in the market on an unsecured (or even secured) basis at an acceptable price to fund actual or proposed commitments, i.e., the risk that UBS AG's funding capacity is not sufficient to support the firm's current business and desired strategy. ▲ ***Interest rate risk in the banking book:*** the risk to the firm's capital and earnings arising from the adverse effects of interest rate movements on the firm's banking book positions. The risk is transferred from the originating business divisions, i.e., Global Wealth Management and Personal & Corporate Banking, to Group Treasury to risk manage this centrally and benefit from firm-wide netting while leaving the business units with margin management. ***Structural foreign exchange risk:*** the risk of decreases in our capital due to changes in foreign exchange rates with an adverse translation effect on capital held in currencies other than the US dollar.	Group Treasury	Risk Control
Pension risk: the risk of a negative impact on our capital as a result of deteriorating funded status from decreases in the fair value of assets held in defined benefit pension funds and / or changes in the value of defined benefit pension obligations due to changes in actuarial assumptions (e.g., discount rate, life expectancy, rate of pension increase) and / or changes to plan designs.	Group Treasury and Human Resources	Risk Control and Finance
Business risk: the potential negative impact on earnings from lower-than-expected business volumes and / or margins, to the extent they are not offset by a decrease in expenses. For example, changes in the competitive landscape, client behavior or market conditions can potentially have a negative impact.	Business divisions	Risk Control and Finance

	Risk managed by	Independent oversight by
Non-financial risks		
Compliance risk: the risk of failure to comply with laws, rules and regulations, internal policies and procedures, and the firm's Code of Conduct and Ethics.	Business divisions	Group Compliance, Regulatory & Governance (GCRG)
Employment risk: the risks arising from acts inconsistent with laws, rules, regulations or the firm's human resources policies governing employment practices, discrimination, compensation and employee-related taxes and benefits.		Human Resources
Conduct risk: the risk that the conduct of the firm or its individuals unfairly impacts clients or counterparties, undermines the integrity of the financial system or impairs effective competition to the detriment of consumers.		GCRG
Financial crime risk: the risk of failure to prevent financial crime (including money laundering, terrorist financing, sanctions or embargo violations, internal and external fraud, bribery, and corruption).	Business divisions and Financial Crime Prevention	GCRG
Operational risk: the risk resulting from inadequate or failed internal processes, people or systems, or from external causes (deliberate, accidental or natural).	Business divisions	GCRG
Cybersecurity and information security risk: the risk of a malicious internal or external act, or a failure of IT hardware or software, or human error, leading to a material impact on confidentiality, integrity or availability of UBS AG's data or information systems.	Business divisions and the Group Operations and Technology Office	GCRG
Model risk: the risk of adverse consequences (e.g., financial loss, due to legal matters, operational loss, biased business decisions, or reputational damage) resulting from decisions based on incorrect / inadequate or misused model outputs and reports.	Model owner	Risk Control
Legal risk: the risk of: (i) being held liable for a breach of applicable laws, rules or regulations; (ii) being held liable for a breach of contractual or other legal obligations; (iii) an inability or failure to enforce or protect contractual rights or non-contractual rights sufficiently to protect UBS AG's interests; and (iv) being party to a claim or investigated by an external regulator or authority in respect of any of the above (and the risk of loss of attorney–client privilege in the context of any such claim).	Business divisions	Legal
Reputational risk: the risk of an unfavorable perception of UBS AG or a decline in the firm's reputation from the point of view of clients, shareholders, regulators, employees or the general public, which may lead to potential financial loss and / or loss of market share.	All businesses and functions	All control functions

Top and emerging risks

The top and emerging risks disclosed below reflect those that we currently think have the potential to materialize within one year and which could significantly affect UBS AG. Investors should also carefully review all information set out in the "Risk factors" section of this report, where we discuss these and other material risks that we consider could have an effect on our ability to execute our strategy and may affect our business activities, financial condition, results of operations and business prospects.

- UBS AG remains watchful of a range of geopolitical developments and political changes in a number of countries, as well as international tensions arising from the Russia–Ukraine war, conflicts in the Middle East and US–China trade relations. Geopolitical tensions will continue to create uncertainty and complicate the energy price outlook. UBS AG is closely watching elections in several key markets in 2024.
- Inflation has abated to some extent in major Western economies, though there are still concerns regarding future developments, and central banks' monetary policy is in the spotlight. The potential for "higher-for-longer" interest rates raises the prospect of a global recession, particularly as the growth of China's economy has been muted. This combination of factors translates into a more uncertain and volatile environment, which increases the risk of financial market disruption.
- UBS AG is exposed to a number of macroeconomic issues, as well as general market conditions. As noted in "Market, credit and macroeconomic risks" in the "Risk factors" section of this report, these external pressures may have a significant adverse effect on our business activities and related financial results, primarily through reduced margins and revenues, asset impairments and other valuation adjustments. Accordingly, these macroeconomic factors are considered in the development of stress-testing scenarios for our ongoing risk management activities.
- UBS AG is monitoring the downturn in the commercial real estate sector. Adverse effects on valuations from higher interest rates and structural decline in demand for office and retail space may trigger broader impacts given bank and non-bank lenders' material balance sheet exposure to the sector.
- We are exposed to substantial changes in the regulation of our businesses that could have a material adverse effect on our business, as discussed in the "Regulatory and legal developments" section of this report and in "Regulatory and legal risks" in the "Risk factors" section of this report.

– As a global financial services firm, we are subject to many different legal, tax and regulatory regimes and extensive regulatory oversight. We are exposed to significant liability risk, and we are subject to various claims, disputes, legal proceedings and government investigations, as noted in "Regulatory and legal risks" in the "Risk factors" section of this report. Information about litigation, regulatory and similar matters we consider significant is disclosed in "Note 17 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report.
– Global geopolitical trends increase the likelihood of external state-driven cyber activity. Alongside a general trend toward more sophisticated forms of ransomware and other cyber threats, there is a risk of business disruption or the corruption or loss of data. Additionally, as a result of the dynamic and material nature of recent geopolitical and environmental events and the operational complexity of all our businesses, we are continually exposed to operational resilience scenarios such as process error, failed execution, system failures and fraud.
– Conduct risks are inherent in our businesses. Achieving fair outcomes for our clients, upholding market integrity and cultivating the highest standards of employee conduct are of critical importance to us. Management of conduct risks is an integral part of our risk management framework.
– Financial crime (including money laundering, terrorist financing, sanctions violations, fraud, bribery and corruption) presents significant risk. Heightened regulatory expectations and attention require investment in people and systems, while emerging technologies and changing geopolitical risks further increase the complexity of identifying and preventing financial crime.
  › **Refer to "Non-financial risk" in this section and "Strategy, management and operational risks" in the "Risk factors" section of this report for more information**

– Sustainability and climate risks continue to be in the focus of regulators and stakeholders, with further emphasis put on measurement of nature-related risk and management of greenwashing risks in 2023. To address these emerging risks, UBS has enhanced its nature-related risk methodology and established guidelines for sustainable lending, bonds and greenhouse gas emissions trading to address potential greenwashing risks.
  › **Refer to "Sustainability and climate risk" in the "Risk management and control" section of the UBS Group Annual Report 2023, available under "Annual reporting" at *ubs.com/investors*, for more information**
  › **Refer to the UBS Group Sustainability Report 2023, available under "Annual reporting" at *ubs.com/investors*, for a full description of our sustainability and climate risk policy framework**

– In addition, industry guidelines and regulations are emerging simultaneously in various jurisdictions, leading to an increased risk of divergence, which in turn increases the risk that UBS may not comply with all relevant regulations.
  › **Refer to the "Non-financial risk" section of this report and "Sustainability and climate risk" in the "Risk management and control" section of the UBS Group Annual Report 2023, available under "Annual reporting" at *ubs.com/investors***

– New risks continue to emerge. For example, client demand for distributed ledger technology, blockchain-based assets and virtual currencies creates new risks, to which we currently have limited exposure and for which relevant control frameworks are continuously enhanced and implemented.

Risk governance

The risk governance of UBS AG is modeled on that of UBS Group AG, with the same three lines of defense and equal governance structure in terms of key roles and responsibility for risk management.
› **Refer to "Risk governance" in the "Risk management and control" section of the UBS Group Annual Report 2023, available under "Annual reporting" at *ubs.com/investors,* for more information about our risk governance and the three lines of defense**

Risk appetite framework

UBS AG manages its risk appetite in line with the UBS Group framework, covering financial and non-financial risk types, via a complementary set of qualitative and quantitative risk appetite statements. The UBS Group framework is reviewed and recalibrated annually and presented to the Board of Directors (the BoD) for approval.

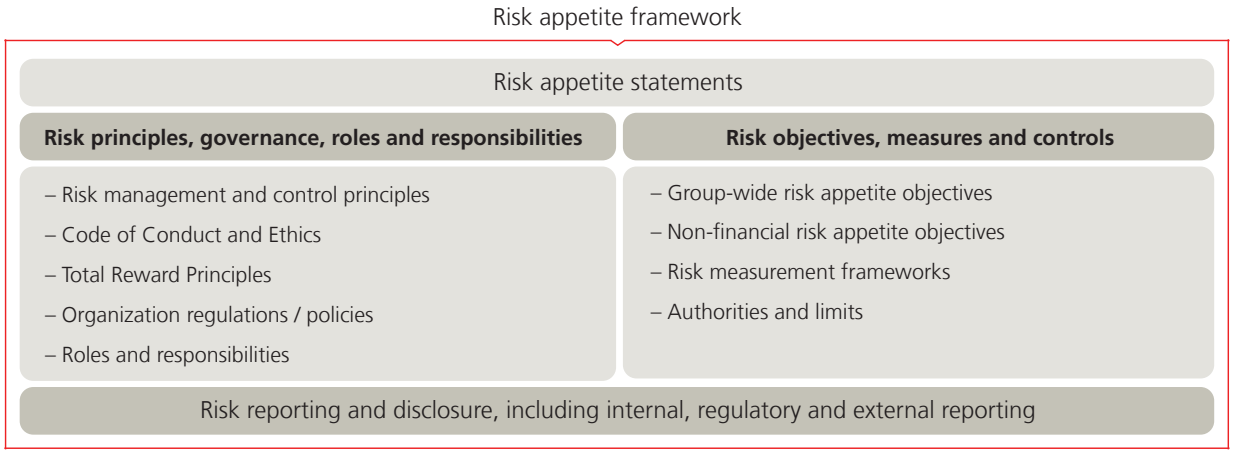
Our risk appetite is defined at the aggregate Group level and reflects the risk that we are willing to accept or wish to avoid. It is set via complementary qualitative and quantitative risk appetite statements defined at a firm-wide level and is embedded throughout our business divisions and legal entities by Group, business division and legal entity policies, limits and authorities. Our risk appetite is reviewed and recalibrated annually, with the aim of ensuring that risk-taking at every level of the organization is in line with our strategic priorities, our capital and liquidity plans, our *Pillars, Principles and Behaviors*, and minimum regulatory requirements. The "Risk appetite framework" chart below shows the key elements of the framework, which is described in detail in this section.

Qualitative risk appetite statements aim to ensure we maintain the desired risk culture. Quantitative risk appetite objectives are designed to enhance the Group's, including UBS AG's, resilience against the effects of potential severe adverse economic or geopolitical events. These risk appetite objectives cover minimum capital and leverage ratios, solvency, earnings, liquidity and funding, and are subject to periodic review, including the yearly business planning process. These objectives are complemented by a standardized set of quantitative firm-wide non-financial risk appetite objectives. Non-financial risk events exceeding predetermined risk tolerances, expressed as percentages of UBS AG's total operating income, must be escalated as per the firm-wide escalation framework.

The quantitative risk appetite objectives are supported by a comprehensive suite of risk limits set at a portfolio level to monitor specific portfolios and to identify potential risk concentrations.

Our risk appetite framework is governed by a single overarching policy and conforms to the Financial Stability Board's Principles for an Effective Risk Appetite Framework.

Risk appetite framework



Risk principles and risk culture

Maintaining a strong risk culture is a prerequisite for success in today's highly complex operating environment and a source of sustainable competitive advantage.

Our risk appetite framework combines all the important elements of our risk culture, expressed in our *Pillars, Principles and Behaviors*, our risk management and control principles, our Code of Conduct and Ethics, and our Total Reward Principles. They help to create a solid foundation for promoting risk awareness, leading to appropriate risk-taking and the establishing of robust risk management and control processes. These principles are supported by a range of initiatives covering employees at all levels, for example the *UBS House View on Leadership*, which is a set of explicit expectations that establishes consistent leadership standards across UBS, and our Principles of Good Supervision, which establish clear expectations of managers and employees regarding supervisory responsibilities, specifically: to take responsibility; to know and organize their business; to know their employees and what they do; to create a good risk culture; and to respond to and resolve issues.

- **Refer to "Employees" in the "How we create value for our stakeholders" section in the UBS Group Annual Report 2023 for more information about our Pillars, Principles and Behaviors**
- **Refer to the Code of Conduct and Ethics of UBS at *ubs.com/code* for more information**

Risk management and control principles

Protection of financial strength	Protecting UBS AG's financial strength by controlling our risk exposure and avoiding potential risk concentrations at individual exposure levels, at specific portfolio levels and at an aggregate firm-wide level across all risk types.
Protection of reputation	Protecting our reputation through a sound risk culture characterized by a holistic and integrated view of risk, performance and reward, and through full compliance with our standards and principles, particularly our Code of Conduct and Ethics.
Business management accountability	Maintaining management accountability, whereby business management owns all risks assumed throughout UBS AG and is responsible for the continuous and active management of all risk exposures to provide for balanced risk and return.
Independent controls	Independent control functions that monitor the effectiveness of the businesses' risk management and oversee risk-taking activities.
Risk disclosure	Disclosure of risks to senior management, the BoD, investors, regulators, credit rating agencies and other stakeholders with an appropriate level of comprehensiveness and transparency.

Whistleblowing policies and procedures exist to encourage an environment where staff are comfortable raising concerns. There are multiple channels via which individuals may, either openly or anonymously, escalate suspected breaches of laws, regulations, rules and other legal requirements, our Code of Conduct and Ethics, policies or relevant professional standards. We are committed to ensuring there is appropriate training and communication to staff and legal entity representatives, including information about new regulatory requirements.

Mandatory training programs cover various compliance-related and risk-related topics, including operational risk and anti-money laundering. Additional specialized training is provided depending on employees' specific roles and responsibilities, e.g., credit risk and market risk training for those working in trading areas.

Quantitative risk appetite objectives

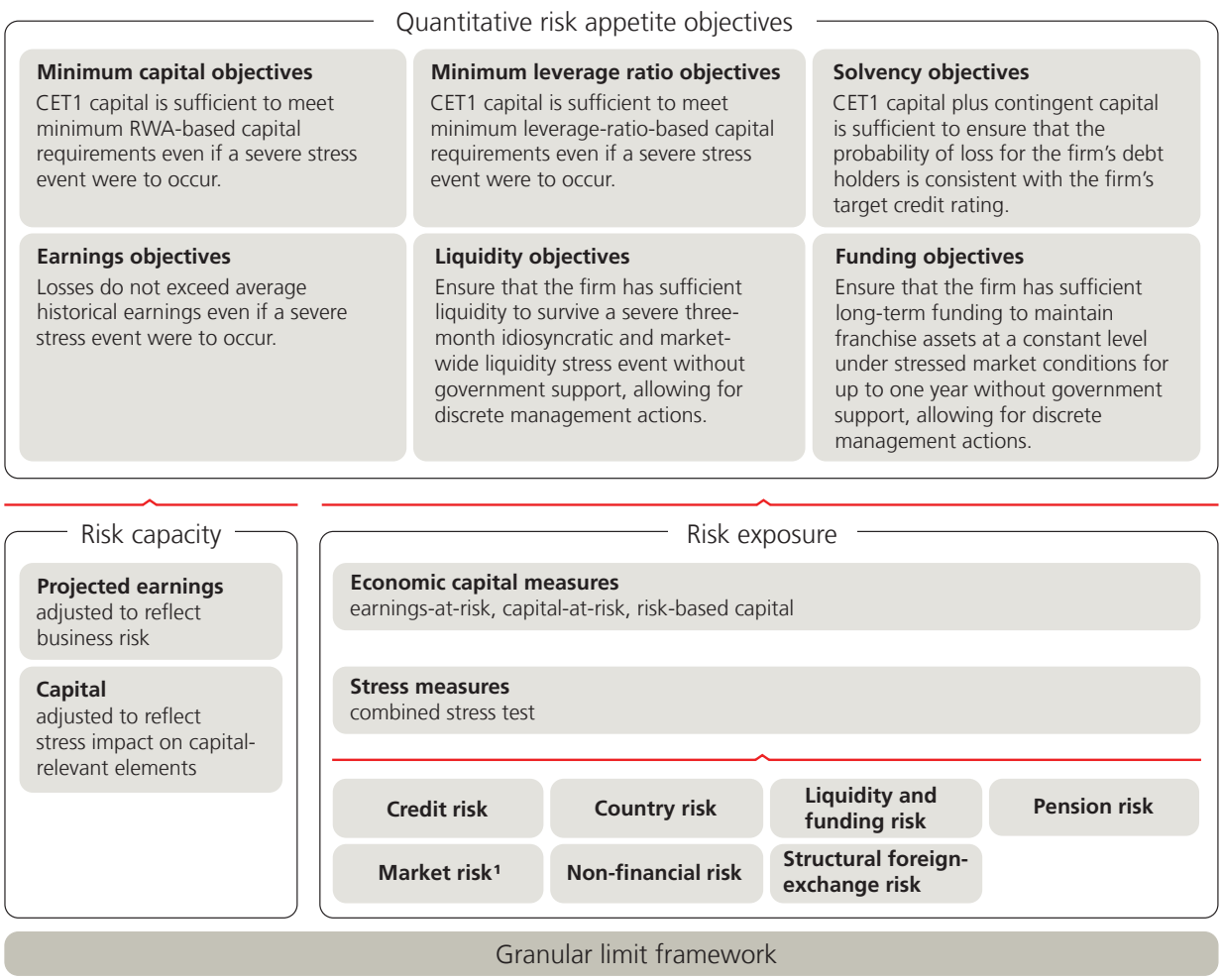
Our quantitative risk appetite objectives aim to ensure that our aggregate risk exposure remains within desired risk capacity, based on capital and business plans. The specific definition of risk capacity for each objective is aimed at ensuring we have sufficient capital, earnings, funding and liquidity to protect our businesses and exceed minimum regulatory requirements under a severe stress event. The risk appetite objectives are evaluated during the annual business planning process and approved by the BoD. The comparison of risk exposure with risk capacity is a key consideration in decisions on potential adjustments to the business strategy, risk profile, and the level of capital returns to shareholders.

In the annual business planning process, UBS's business strategy, including that of UBS AG, is reviewed, the risk profile that our operations and activities result in is assessed, and that risk profile is stressed. We use both scenario-based stress tests and economic capital risk measurement techniques to assess the effects of severe stress events at a firm-wide level. These complementary frameworks capture exposures to material risks across our business divisions and Group Items.

For 2023, the following risk appetite objectives were applied to UBS AG.

› **Refer to "Risk measurement" in this section for more information about our stress-testing and economic capital measures**

Quantitative risk appetite objectives



1 Includes interest rate risk. Refer to "Risk categories" in this section for more information.

Our risk capacity is underpinned by performance targets and capital guidance as per our business plan. When determining our risk capacity in case of a severe stress event, we estimate projected earnings under stress, factoring in lower expected income and expenses. We also consider capital impacts under stress from deferred tax assets, pension plan assets and liabilities, and accruals for capital returns to shareholders.

Risk appetite objectives define the aggregate risk exposure acceptable at the firm-wide level, given our risk capacity. The maximum acceptable risk exposure is supported by a full set of risk limits, which are cascaded to businesses and portfolios. These limits aim to ensure that our risks remain in line with risk appetite.

Risk appetite statements at the business division level are derived from the firm-wide risk appetite. They may also include division-specific strategic goals related to that division's activities and risks. Risk appetite statements are also set for certain legal entities, which must be consistent with the firm-wide risk appetite framework and approved in accordance with Group and legal entity regulations. Differences may exist that reflect the specific nature, size, complexity and regulations applicable to the relevant legal entity.

Internal risk reporting

Comprehensive and transparent reporting of risks is central to our risk governance framework's control and oversight responsibilities and required by our risk management and control principles. Accordingly, risks are reported at a frequency and level of detail commensurate with the extent and variability of the risk and the needs of the various governance bodies, regulators and risk authority holders.

The UBS AG Risk Report (formerly the Group Risk Report) provides a detailed qualitative and quantitative monthly overview of developments in financial and non-financial risks at the firm-wide level. The UBS AG Risk Report is distributed internally to the BoD and the Executive Board (EB), and senior members of Risk Control and Group Internal Audit (GIA). Risk reports are also produced for significant UBS AG entities (entities subject to enhanced standards of corporate governance) and significant branches.

Granular divisional risk reports are provided to the respective business division CROs and business division Presidents. This monthly reporting is supplemented with daily or weekly reports, at various levels of granularity, covering market and credit risks for the business divisions to enable risk officers and senior management to monitor and control the Group's risk profile, including that of UBS AG.

Our internal risk reporting covers financial and non-financial risks and is supported by risk data and measurement systems that are also used for external disclosure and regulatory reporting. Dedicated units within Risk Control assume responsibility for measurement, analysis and reporting of risk and for overseeing the quality and integrity of risk-related data. Our risk data and measurement systems are subject to periodic review by GIA, following a risk-based audit approach.

Model risk management

Introduction

We rely on models to inform risk management and control decisions, to measure risks or exposures, value instruments or positions, conduct stress testing, assess adequacy of capital, and manage clients' assets and our own assets. Models may also be used to measure and monitor compliance with rules and regulations, for surveillance activities, or to meet financial or regulatory reporting requirements.

Model risk is defined as the risk of adverse consequences (e.g., financial losses or reputational damage) resulting from incorrect or misused models.

Model governance framework

Our model governance framework establishes requirements for identifying, measuring, monitoring, reporting, controlling and mitigating model risk. All the models that we use are subject to governance and controls throughout their life cycles, with rigor, depth and frequency determined by the model's materiality and complexity. This is designed to ensure that risks arising from model use are identified, understood, managed, monitored, controlled and reported on both a model-specific and an aggregated level. Before they can be granted approval for use, all our models are independently validated.

Once validated and approved for use, a model is subject to ongoing model monitoring and regular model confirmation, ensuring that the model is only used if it continues to be found fit for purpose. All models are subject to periodic model re-validation.

Our model risk governance framework follows our overarching risk governance framework, with the three lines of defense (LoD) assigned as follows.
– First LoD: individuals responsible for development, maintenance and appropriate use of the models, within business units and Group functions.
– Second LoD: individuals responsible for independent review of and effective challenge to the models, the Model Risk Management & Control function headed by the Chief Model Risk Officer.
– Third LoD: Group Internal Audit

An important difference as compared with how LoD are usually defined in financial and non-financial risk is that some models are owned by traditionally second LoD functions, such as Risk Control, Finance or Compliance.

Model risk appetite framework and statement

The model risk appetite framework sets out the model risk appetite statement, defines the relevant metrics and lays out how appropriate adherence is assessed.

Model oversight

Model oversight committees and forums ensure that model risk is overseen at different levels of the organization, appropriate model risk management and control actions are taken and, where necessary, escalated to the next level.

The Group Model Governance Committee is our most senior oversight and escalation body for all models in scope of our model governance framework. It is co-chaired by the Group CRO and the Group CFO and is responsible for: (i) reviewing and approving changes to the framework; (ii) approving the model risk appetite statement; (iii) overseeing adherence to the UBS model risk governance framework; and (iv) monitoring model risk at a firm-wide level.

Risk measurement

Audited I We apply a variety of methodologies and measurements to quantify the risks of our portfolios and potential risk concentrations. Risks that are not fully reflected within standard measures are subject to additional controls, which may include preapproval of specific transactions and the application of specific restrictions. Models to quantify risk are generally developed by dedicated units within control functions and are subject to independent validation. ▲

› **Refer to "Credit risk," "Market risk" and "Non-financial risk" in this section for more information about model confirmation procedures**

The text below describes the scenario-based stress testing and economic capital measures of UBS AG on a consolidated basis during 2023.

Stress testing

We perform stress testing to estimate losses that could result from extreme yet plausible macroeconomic and geopolitical stress events to identify, better understand and manage our potential vulnerabilities and risk concentrations. Stress testing has a key role in our limits framework at the firm-wide, business division, legal entity and portfolio levels. Stress-test results are regularly reported to the BoD and the EB. As described in "Risk appetite framework," stress testing, along with economic capital measures, has a central role in our risk appetite and business planning processes.

Our stress-testing framework has three pillars: (i) combined stress tests; (ii) an extensive set of portfolio- and risk-type-specific stress tests; and (iii) reverse stress testing.

The *combined stress-testing (CST)* framework is scenario-based and aims to quantify overall firm-wide losses that could result from various potential global systemic events. The framework captures all material risks, as covered in "Risk categories." Scenarios are forward-looking and encompass macroeconomic and geopolitical stress events calibrated to different levels of severity. We implement each scenario through the expected evolution of market indicators and economic variables under that scenario and then estimate the overall loss and capital implications were the scenario to occur. Following the existing UBS AG scenario governance, at least once a year, the Risk Committee approves the most relevant scenario, known as the binding scenario, for use as the main scenario for regular CST reporting and for monitoring risk exposure against our minimum capital, earnings and leverage ratio objectives in our risk appetite framework.

We provide detailed stress loss analyses to the Swiss Financial Market Supervisory Authority (FINMA) and regulators of our legal entities in accordance with their requirements.

The Enterprise-wide Stress Forum (the ESF) aims to ensure the consistency and adequacy of the assumptions and scenarios used for firm-wide stress measures. As part of its responsibilities, the ESF, with input from the Think Tank, a panel of senior representatives from the business divisions, Risk Control and Economic Research, seeks to ensure that the set of stress scenarios adequately reflects current and potential developments in the macroeconomic and geopolitical environment, current and planned business activities, and actual or potential risk concentrations and vulnerabilities in our portfolios.

Each scenario captures a wide range of macroeconomic variables, including GDP, equity prices, interest rates, foreign exchange rates, commodity prices, property prices and unemployment. We use assumed changes in these macroeconomic and market variables in each scenario to stress the key risk drivers of our portfolios. We also capture the business risk resulting from lower fee, interest and trading income net of lower expenses. These effects are measured for all businesses and material risk types to calculate the aggregate estimated effect of the scenario on profit or loss, other comprehensive income, risk-weighted assets, the leverage ratio denominator and, ultimately, capital and leverage ratios. The assumed changes in macroeconomic variables are updated periodically to account for changes in the current and possible future market environment.

In 2023, the binding scenario for CST was the internal stagflationary geopolitical crisis scenario. This scenario assumes that a geopolitical event leads to economic regionalization and fears of prolonged stagflation. Central banks signal a firm commitment to price stability and continue to tighten monetary policy, triggering a broad rise in interest rates and impacting economic activity and asset values.

As part of the CST framework, we routinely monitored three additional stress scenarios throughout 2023:
- The *global crisis* scenario assumes a fall in global trade, which particularly hits China and leads to a hard landing. Combined with political, solvency and liquidity concerns, this results in a sharp sell-off of emerging markets sovereign debt and some emerging markets default. The macroeconomic and market impacts amplify concerns about peripheral European sovereign debt, causing Greece and Cyprus to default.
- The *global depression* scenario explores a global risk-off market with a combination of political, solvency and liquidity concerns around emerging markets sovereign debt, causing several large emerging markets to default. Several European economies also default, and some leave the Eurozone. A negative feedback loop between collapsing demand, declining asset values and commodity prices, and disruption in the banking system leads to a deep and prolonged recession across the globe.
- The *US monetary crisis* scenario explores a loss of confidence in the US, which leads to a sell-off of US dollar-denominated assets, sparking an abrupt and substantial depreciation of the US dollar. The US economy is hit hard, financial markets enter a period of high volatility and other industrialized countries replicate the cyclical pattern of the US. Regional inflation trends diverge as the US experiences significant inflationary pressures while other developed markets experience deflation.

Portfolio-specific stress tests are measures tailored to the risks of specific portfolios. Our portfolio stress loss measures are derived from data on past events, but also include forward-looking elements (e.g., we derive the expected market movements in our liquidity-adjusted stress metric using a combination of historical market behavior, based on an analysis of historical events, and forward-looking analysis, including consideration of defined scenarios that have never occurred). Results of portfolio-specific stress tests may be subject to limits to explicitly control risk-taking or may be monitored without limits to identify vulnerabilities.

Reverse stress testing starts from a defined stress outcome (e.g., a specified loss amount, reputational damage, a liquidity shortfall or a breach of minimum capital ratios) and works backward to identify macroeconomic scenarios and / or idiosyncratic events that could result in such an outcome. As such, reverse stress testing is intended to complement scenario-based stress tests by assuming "what if" outcomes that could extend beyond the range normally considered, and thereby potentially challenge assumptions regarding severity and plausibility.

We also routinely analyze the effect of increases or decreases in interest rates and changes in the structure of yield curves.

Within Group Treasury, we also perform stress testing to determine the optimal asset and liability structure, enabling us to maintain an appropriately balanced liquidity and funding position under various scenarios. These scenarios differ from those outlined above, because they focus on specific situations that could generate liquidity and funding stress, as opposed to the scenarios used in the CST framework, which focus on the effect on profit or loss and capital.

- **Refer to "Credit risk" and "Market risk" in this section for more information about stress loss measures**
- **Refer to the "Capital, liquidity and funding, and balance sheet" section of this report for more information about stress testing**
- **Refer to "Note 19 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information about scenarios used for expected credit loss measurement**

Economic capital measures

We complement the scenario-based CST measures with economic capital stress measures to calculate and aggregate risks using statistical techniques to derive stress events at chosen confidence levels.

This framework is used to derive a loss distribution, considering effects on both income and expenses, based on the simulation of historically observed financial and economic risk factors in combination with the firm's actual earnings and relevant risk exposures. From that, we determine earnings-at-risk (EaR), measuring the potential shortfall in earnings (i.e., the deviation from forecast earnings) at a 95% confidence level and evaluated over a one-year horizon. EaR is used for the assessment of the earnings objectives in our risk appetite framework.

We extend the EaR measure, incorporating the effects of gains and losses recognized through other comprehensive income, to derive a distribution of potential effects of stress events on common equity tier 1 capital. From this distribution, we derive our capital-at-risk (CaR) buffer measure at a 95% confidence level to assess our capital and leverage ratio risk appetite objectives, and derive our CaR solvency measure at a 99.9% confidence level to assess our solvency risk appetite objective.

We use the CaR solvency measure as a basis for deriving the contributions of the business divisions to risk-based capital (RBC). RBC measures the potential capital impairment from an extreme stress event at a 99.9% confidence level.

Portfolio and position limits

UBS maintains a comprehensive set of risk limits across its major risk portfolios. These portfolio limits are set based on our risk appetite and periodically reviewed and adjusted as part of the business planning process.

Firm-wide stress and statistical metrics are complemented by more granular portfolio and position limits, triggers and targets. Combining these measures provides a comprehensive framework for control of the key risks of our business divisions, as well as significant legal entities.

UBS AG applies limits to a variety of exposures at the portfolio level, using statistical and stress-based measures, such as value-at-risk, liquidity-adjusted stress, loan underwriting limits, economic value sensitivity and portfolio default simulations for loan books. These are complemented with a set of controls for net interest income sensitivity, mark-to-market losses on available-for-sale portfolios, and the effect of foreign exchange movements on capital and capital ratios.

Portfolio measures are supplemented with counterparty- and position-level controls. Risk measures for position controls are based on market risk sensitivities and counterparty-level credit risk exposures. Market risk sensitivities include sensitivities to changes in general market risk factors (e.g., equity indices, foreign exchange rates and interest rates) and sensitivities to issuer-specific factors (e.g., changes in an issuer's credit spread or default risk). We monitor numerous market and treasury risk controls on a daily basis. Counterparty measures capture the current and potential future exposure to an individual counterparty, considering collateral and legally enforceable netting agreements.

- **Refer to "Credit risk" in this section for more information about counterparty limits**
- **Refer to "Risk appetite framework" in this section for more information about the risk appetite framework**

Risk concentrations

Audited | Risk concentrations may exist where one or several positions within or across different risk categories could result in significant losses relative to UBS AG's financial strength. Identifying such risk concentrations and assessing their potential impact is a critical component of our risk management and control process.

For financial risks, we consider a number of elements, such as shared characteristics of positions, the size of the portfolio and the sensitivity of positions to changes in the underlying risk factors. Also important in our assessment is the liquidity of the markets where the positions are traded, as well as the availability and effectiveness of hedges or other potential risk-mitigating factors. This includes an assessment of, for example, the provider of the hedge and market liquidity where the hedge might be traded. Particular attention is given to identification of wrong-way risk and risk on risk. Wrong-way risk is defined as a positive correlation between the size of the exposure and the likelihood of a loss. Risk on risk is when a position and its risk mitigation can be impacted by the same event.

For non-financial risks, risk concentrations may result from, for example, a single operational risk issue that is large on its own (i.e., it has the potential to produce a single high-impact loss or a number of losses that together are high impact) or related risk issues that may link together to create a high impact.

Risk concentrations are subject to increased oversight by Group Risk Control and Group Compliance, Regulatory & Governance, and assessed to determine whether they should be reduced or mitigated, depending on the available means to do so. It is possible that material losses could occur on financial or non-financial risks, particularly if the correlations that emerge in a stressed environment differ markedly from those envisaged by risk models. ▲

- **Refer to "Credit risk" and "Market risk" in this section for more information about the composition of our portfolios**
- **Refer to the "Risk factors" section of this report for more information**

Credit risk

Audited I **Main sources of credit risk**

- Global Wealth Management credit risk arises from collateralized lending primarily against securities, private equity and hedge fund interest, investors' uncalled capital commitments, and residential and commercial real estate, as well as from derivatives trading.
- A substantial portion of lending exposure arises from Personal & Corporate Banking, which offers mortgage loans, secured mainly by owner-occupied properties and income-producing real estate, as well as corporate loans, and therefore depends on the performance of the Swiss economy and real estate market.
- The Investment Bank's credit exposure arises mainly from lending, derivatives trading and securities financing. Derivatives trading and securities financing are mainly investment grade. Loan underwriting activity can be lower rated and give rise to temporary concentrated exposure.
- Credit risk within Non-core and Legacy relates to exposures in auction rate preferred securities, public finance loans and derivatives, and residual exposures to securitized products. ▲

Credit loss expense / release

Total net credit loss expenses were USD 143m in 2023, reflecting net credit loss expenses of USD 23m related to stage 1 and 2 positions and net credit loss expenses of USD 120m related to credit-impaired (stage 3) positions.

Stage 3 net expenses of USD 120m were recognized across a number of defaulted positions, with net expenses of USD 56m in the Investment Bank, USD 37m in Personal & Corporate Banking and USD 27m in Global Wealth Management.

› **Refer to "Note 1 Summary of material accounting policies," "Note 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement" and "Note 19 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information about IFRS 9 and expected credit losses**

Credit loss expense / (release)

	Performing positions	Credit-impaired positions	
USD m	Stages 1 and 2	Stage 3	Total
For the year ended 31.12.23			
Global Wealth Management	(2)	27	25
Personal & Corporate Banking	13	37	50
Asset Management	0	(1)	(1)
Investment Bank	11	56	67
Non-core and Legacy	0	1	1
Group Items[1]	1	0	1
Total	23	120	143
For the year ended 31.12.22			
Global Wealth Management	(5)	5	0
Personal & Corporate Banking	27	12	39
Asset Management	0	0	0
Investment Bank	6	(18)	(12)
Non-core and Legacy	0	2	2
Group Items[1]	0	0	0
Total	29	0	29
For the year ended 31.12.21			
Global Wealth Management	(28)	(1)	(29)
Personal & Corporate Banking	(62)	(24)	(86)
Asset Management	0	1	1
Investment Bank	(34)	0	(34)
Non-core and Legacy	0	0	0
Group Items[1]	0	0	0
Total	(123)	(25)	(148)

1 Starting with the third quarter of 2023, Non-core and Legacy became a separate reportable segment and Group Functions has been renamed Group Items. Prior periods have been restated to reflect these changes.

Audited I **Overview of measurement, monitoring and management techniques**

- Credit risk from transactions with individual counterparties is based on our estimates of probability of default (PD), exposure at default (EAD) and loss given default (LGD). Limits are established for individual counterparties and groups of related counterparties covering banking and traded products, and for settlement amounts. Risk authorities are approved by the Board of Directors and are delegated to the Group CEO, the Group Chief Risk Officer (the CRO) and divisional CROs, based on risk exposure amounts, internal credit rating and potential for losses.
- Limits apply not only to the current outstanding amount but also to contingent commitments and the potential future exposure of traded products.

– The Investment Bank monitoring, measurement and limit framework distinguishes between exposures intended to be held to maturity (take-and-hold exposures) and those intended for distribution or risk transfer (temporary exposures).
– We use models to derive portfolio credit risk measures of expected loss, statistical loss and stress loss at firm-wide and business division levels, and to establish portfolio limits.
– Credit risk concentrations can arise if clients are engaged in similar activities, located in the same geographical region or have comparable economic characteristics, e.g., if their ability to meet contractual obligations would be similarly affected by changes in economic, political or other conditions. To avoid credit risk concentrations, we establish limits / operational controls that constrain risk concentrations at portfolio, sub-portfolio or counterparty levels for sector exposure, country risk and specific product exposures. ▲

Credit risk profile of UBS AG

The exposures detailed in this section are based on management's view of credit risk, which differs in certain respects from the ECL measurement requirements of IFRS Accounting Standards.

Internally, credit risk exposures are put into two broad categories: banking products and traded products. Banking products include drawn loans, guarantees and loan commitments, amounts due from banks, balances at central banks, and other financial assets at amortized cost. Traded products include over-the-counter (OTC) derivatives, exchange-traded derivatives (ETDs) and securities financing transactions (SFTs), consisting of securities borrowing and lending, and repurchase and reverse repurchase agreements.

Banking and traded products exposure in our business divisions and Group Items

	31.12.23						
USD m	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Non-core and Legacy	Group Items	Total
Banking products[1,2]							
Gross exposure	314,747	254,646	1,331	69,505	3,621	93,730	737,579
of which: loans and advances to customers (on-balance sheet)	*213,377*	*174,425*	*0*	*13,657*	*168*	*4,941*	*406,568*
of which: guarantees and loan commitments (off-balance sheet)	*12,323*	*28,385*	*0*	*15,744*	*1,728*	*19,049*	*77,229*
Traded products[2,3]							
Gross exposure	8,789	952	0		34,712		44,454
of which: over-the-counter derivatives	*6,668*	*938*	*0*		*8,124*		*15,730*
of which: securities financing transactions	*0*	*0*	*0*		*16,792*		*16,792*
of which: exchange-traded derivatives	*2,122*	*14*	*0*		*9,796*		*11,932*
Other credit lines, gross[4]	13,438	27,574	0	4,714	0	1,694	47,421
Total credit-impaired exposure, gross (stage 3)[1]	925	1,698	0	331	12	1	2,966
Total allowances and provisions for expected credit losses	224	783	0	225	6	6	1,244
of which: stage 1	*74*	*171*	*0*	*57*	*0*	*6*	*308*
of which: stage 2	*52*	*165*	*0*	*56*	*0*	*0*	*272*
of which: stage 3	*97*	*448*	*0*	*112*	*6*	*0*	*664*

	31.12.22						
USD m	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Non-core and Legacy	Group Items	Total
Banking products[1,2]							
Gross exposure	334,715	236,613	1,453	76,593	804	39,786	689,963
of which: loans and advances to customers (on-balance sheet)	*219,385*	*154,748*	*(1)*	*12,754*	*0*	*3,924*	*390,810*
of which: guarantees and loan commitments (off-balance sheet)	*13,147*	*28,610*	*0*	*12,920*	*0*	*7,486*	*62,163*
Traded products[2,3]							
Gross exposure	8,328	320	0		34,370		43,018
of which: over-the-counter derivatives	*6,416*	*304*	*0*		*11,218*		*17,938*
of which: securities financing transactions	*0*	*0*	*0*		*17,055*		*17,055*
of which: exchange-traded derivatives	*1,912*	*15*	*0*		*6,097*		*8,024*
Other credit lines, gross[4]	12,084	23,092	0	6,105	0	2,397	43,677
Total credit-impaired exposure, gross (stage 3)[1]	757	1,380	0	312	0	6	2,455
Total allowances and provisions for expected credit losses	215	701	0	168	0	7	1,091
of which: stage 1	*68*	*138*	*0*	*48*	*0*	*5*	*260*
of which: stage 2	*57*	*156*	*0*	*54*	*0*	*0*	*267*
of which: stage 3	*90*	*406*	*0*	*64*	*0*	*3*	*564*

1 IFRS 9 gross exposure for banking products includes the following financial assets in scope of expected credit loss measurement: balances at central banks, amounts due from banks, loans and advances to customers, other financial assets at amortized cost, guarantees and irrevocable loan commitments. 2 Internal management view of credit risk, which differs in certain respects from IFRS Accounting Standards. 3 As counterparty risk for traded products is managed at counterparty level, no further split between exposures in the Investment Bank, Non-core and Legacy, and Group Items is provided. 4 Unconditionally revocable committed credit lines.

Banking products

- **Refer to "Note 1 Summary of material accounting policies" in the "Consolidated financial statements" section of this report for more information about our accounting policy for allowances and provisions for ECL**
- **Refer to "Note 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement" and "Note 19 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information about ECL measurement requirements under IFRS Accounting Standards**
- **Refer to "Note 13 Other assets" in the "Consolidated financial statements" section of this report for more details**

Global Wealth Management

Gross banking products exposure within Global Wealth Management decreased by USD 20bn to USD 315bn.

Our Global Wealth Management loan portfolio is mainly secured by securities (Lombard loans) and by residential real estate. Most of our USD 139bn of Lombard loans, including traded products collateralized by securities, were of high quality, with 91% rated as investment grade based on our internal ratings. Moreover, Lombard loans are typically uncommitted, short-term in nature and can be canceled immediately if the collateral quality deteriorates and margin calls are not met. Lending values in the Lombard book are derived by applying discounts to the pledged collateral's market value in line with a possible adverse change in market value over a given close-out period and confidence level. Less liquid or more volatile collateral will typically have larger haircuts. In 2023, the Lombard book, including traded products, decreased approximately 10%, mainly driven by the US, from a larger amount of clients paying down as a result of the repricing of loans at current rates, and Asia Pacific, where deleveraging already started in the second half of 2021 and had slowed by the end of 2023. The share of non-standard Lombard loans, for example those with less liquid or concentrated collateral, slightly increased to 7% from 5% of the total Lombard book.

The mortgage book (residential and commercial real estate) increased by approximately 9%, mainly driven by higher volumes of mortgage loans within the Swiss and the US residential and commercial real estate portfolios.

Other financings represent approximately 8% of the total banking products exposures and are consolidated in a corporate and other portfolio that increased 17% in 2023, mainly through the private equity subscription facilities portfolio in the US.

- **Refer to "Lending secured by real estate" and "Lombard lending" in this section for further information on these types of lending**

Collateralization of Loans and advances to customers[1]

	Global Wealth Management		Personal & Corporate Banking	
USD m, except where indicated	**31.12.23**	31.12.22	**31.12.23**	31.12.22
Secured by collateral	**210,243**	216,993	**157,278**	138,854
Residential real estate	***67,910***	*62,200*	***126,199***	*110,500*
Commercial / industrial real estate	***5,045***	*4,955*	***22,632***	*19,795*
Cash	***24,797***	*30,514*	***2,750***	*3,039*
Equity and debt instruments	***96,371***	*107,253*	***2,626***	*2,228*
Other collateral[2]	***16,121***	*12,071*	***3,071***	*3,293*
Subject to guarantees	**92**	144	**2,706**	2,758
Uncollateralized and not subject to guarantees	**3,042**	2,247	**14,441**	13,136
Total loans and advances to customers, gross	**213,377**	219,385	**174,425**	154,748
Allowances	**(147)**	(138)	**(634)**	(559)
Total loans and advances to customers, net of allowances	**213,230**	219,247	**173,791**	154,189
Collateralized loans and advances to customers in % of total loans and advances to customers, gross (%)	**98.5**	98.9	**90.2**	89.7

1 Collateral arrangements generally incorporate a range of collateral, including cash, securities, real estate and other collateral. For the purpose of this disclosure, UBS applies a risk-based approach that generally prioritizes collateral according to its liquidity profile. 2 Includes but is not limited to life insurance contracts, rights in respect of subscription or capital commitments from fund partners, inventory, gold and other commodities.

Personal & Corporate Banking

Gross banking products exposure within Personal & Corporate Banking increased to USD 255bn, compared with USD 237bn in 2022. Net banking products exposure (excluding exposure reallocated from Group Treasury) increased to USD 205bn (CHF 173bn), of which approximately 65% was classified as investment grade, broadly unchanged from 2022. Around 48% of the exposure is categorized in the lowest LGD bucket, i.e., 0–25%, unchanged compared with 2022.

Personal & Corporate Banking's gross loan portfolio was USD 174bn (CHF 147bn) compared with USD 155bn (CHF 143bn) in 2022. This portfolio is predominantly denominated in Swiss francs and the increase in US dollar terms was largely due to the effect of the Swiss franc appreciating. As of 31 December 2023, 90% of this portfolio was secured by collateral, mainly residential and commercial property. Of the total unsecured amount, 86% related to cash flow-based lending to corporate counterparties and 3% related to lending to public authorities. Based on our internal ratings, 57% of the unsecured loan portfolio was rated as investment grade, compared with 53% in 2022.

Our Swiss corporate banking products take-and-hold portfolio, which was USD 38bn (CHF 32bn) and increased by USD 2bn compared with 2022, consists of loans, guarantees and loan commitments to multi-national and domestic counterparties. The small and medium-sized entity (SME) portfolio, in particular, is well diversified across industries. However, such companies are reliant on the domestic economy and the economies to which they export, in particular the EU and the US.

Our commodity trade finance portfolio focuses on energy and base-metal trading companies, where the related commodity price risk is hedged to a large extent by the commodity trader. The majority of limits in this business are uncommitted, transactional and short-term in nature. Our portfolio size was USD 6bn (CHF 5bn) as of 31 December 2023, compared with USD 7bn (CHF 7bn) in 2022, with a considerable part of the exposure correlating with commodity prices.

Our exposure to banks consists primarily of contingent claims and was USD 4bn (CHF 3bn), compared with USD 5bn (CHF 5bn) in 2022.

Despite volatile energy prices, raised higher interest rates, a strong Swiss franc, and the effect of the sanctions imposed on Russia and Russian entities, and conflicts in the Middle East, stage 3 credit losses in 2023 were only slightly higher compared with 2022. The delinquency ratio was 0.1% for the corporate portfolio, compared with 0.2% at the end of 2022.

› **Refer to "Credit risk models" in this section for more information about loss given default, rating grades and rating agency mappings**

Swiss mortgage loan portfolio

UBS AG's Swiss mortgage loan portfolio secured by residential and commercial real estate in Switzerland continues to be its largest loan portfolio. These mortgage loans (excluding loans on self-used commercial real estate), totaling USD 193bn (CHF 162bn), mainly originate from Personal & Corporate Banking, but also from Global Wealth Management Region Switzerland. Of these mortgage loans, USD 174bn (CHF 146bn) related to residential properties that the borrower was either occupying or renting out, with full recourse to the borrower. Of this USD 174bn (CHF 146bn), USD 125bn (CHF 105bn) is related to properties occupied by the borrower, with an average LTV ratio of 50%, compared with 51% as of 31 December 2022. The average LTV for newly originated loans for this portfolio was 64%, compared with 63% in 2022. The remaining USD 49bn (CHF 41bn) of the Swiss residential mortgage loan portfolio related to properties rented out by the borrower and the average LTV of that portfolio was 50%, compared with 51% as of 31 December 2022. The average LTV for newly originated Swiss residential mortgage loans for properties rented out by the borrower was 50%, compared with 54% in 2022.

As illustrated in the "Swiss mortgages: distribution of exposure across exposure segments and loan-to-value (LTV) buckets" table below, 99.9% of the aggregate amount of Swiss residential mortgage loans would continue to be covered by the real estate collateral even if the value assigned to that collateral were to decrease 20%, and more than 99% would remain covered by the real estate collateral even if the value assigned to that collateral were to decrease 30%.

Personal & Corporate Banking: distribution of banking products exposure across internal UBS ratings and loss given default (LGD) buckets[1]

USD m, except where indicated	31.12.23						31.12.22	
		LGD buckets				Weighted average		Weighted average
Internal UBS rating[2]	Exposure	0–25%	26–50%	51–75%	76–100%	LGD (%)	Exposure	LGD (%)
Investment grade	134,095	72,290	47,689	9,707	4,408	28	123,358	28
Sub-investment grade	70,081	26,759	28,328	11,360	3,634	34	62,219	35
of which: 6–9	*63,357*	*24,467*	*25,390*	*10,285*	*3,215*	*34*	*56,774*	*35*
of which: 10–13	*6,724*	*2,293*	*2,938*	*1,074*	*419*	*36*	*5,445*	*36*
Defaulted / Credit-impaired	1,698	17	1,389	276	15	42	1,380	42
Total exposure before deduction of allowances and provisions	205,873	99,067	77,406	21,343	8,058	30	186,957	30
Less: allowances and provisions	(742)						(664)	
Net banking products exposure[1]	205,131						186,293	

1 Excluding balances at central banks and Group Treasury reallocations. 2 The ratings of the major credit rating agencies, and their mapping to our internal rating scale, are shown in the "Internal UBS rating scale and mapping of external ratings" table in this section.

Personal & Corporate Banking: loans uncollateralized and not subject to guarantees, by industry sector

	31.12.23		31.12.22	
	USD m	%	USD m	%
Construction	153	1.1	172	1.3
Financial institutions	3,842	26.6	3,980	30.3
Hotels and restaurants	148	1.0	135	1.0
Manufacturing	2,029	14.0	1,715	13.1
Private households	1,641	11.4	1,473	11.2
Public authorities	382	2.6	416	3.2
Real estate and rentals	1,013	7.0	547	4.2
Retail and wholesale	1,801	12.5	2,230	17.0
Services	3,129	21.7	2,242	17.1
Other	303	2.1	226	1.7
Exposure, gross	14,441	100.0	13,136	100.0

Swiss mortgages: distribution of exposure across exposure segments and loan-to-value (LTV) buckets[1]

USD bn, except where indicated		31.12.23								31.12.22[2]
		LTV buckets								
Exposure segment		≤30%	31–50%	51–60%	61–70%	71–80%	81–100%	>100%	Total	Total
Residential mortgages	Exposure	103.9	42.7	10.3	4.2	1.1	0.2	0.1	162.4	144.0
	as a % of row total	64	26	6	3	1	0	0	100	100
Income-producing real estate	Exposure	17.0	6.5	1.3	0.5	0.1	0.0	0.0	25.5	21.9
	as a % of row total	67	26	5	2	0	0	0	100	100
Corporates	Exposure	7.9	2.9	0.7	0.4	0.2	0.1	0.0	12.2	10.6
	as a % of row total	65	24	6	3	1	1	0	100	100
Other segments	Exposure	0.8	0.3	0.1	0.0	0.0	0.0	0.0	1.1	1.0
	as a % of row total	67	23	6	2	1	1	0	100	100
Mortgage-covered exposure	Exposure	129.5	52.4	12.4	5.1	1.4	0.3	0.1	201.1	177.5
	as a % of total	64	26	6	3	1	0	0	100	100
Mortgage-covered exposure 31.12.22[2]	Exposure	113.2	46.7	11.4	4.7	1.2	0.3	0.1	177.5	
	as a % of total	64	26	6	3	1	0	0	100	

1 The amount of each mortgage loan is allocated across the LTV buckets to indicate the portion at risk at the various value levels shown; for example, a loan of 75 with an LTV ratio of 75% (i.e., a collateral value of 100) would result in allocations of 30 in the less-than-or-equal-to-30% LTV bucket, 20 in the 31–50% bucket, 10 in the 51–60% bucket, 10 in the 61–70% bucket and 5 in the 71–80% bucket. 2 Comparative period has been restated to reflect a change in the measure used to disclose Swiss mortgages exposures.

Investment Bank

The Investment Bank's lending activities are largely associated with corporate and non-bank financial institutions. The business is broadly diversified across industry sectors, but concentrated in North America.

Gross banking products exposure decreased to USD 70bn as of 31 December 2023, compared with USD 77bn as of 31 December 2022, mostly driven by balances at central banks allocated to the business division. Excluding balances at central banks and Group Treasury reallocations, gross banking products exposure increased to USD 37bn from USD 32bn in 2022, mostly driven by an increase in irrevocable loan commitments. Based on our internal ratings, 49% of this gross banking products exposure was classified as investment grade. The vast majority of the gross banking products exposure had an estimated LGD below 50%.

In the Investment Bank, mandated temporary loan underwriting exposure as of the end of 2023 was USD 2.1bn, compared with USD 2.6bn at the end of the prior year. USD 50m of commitments had not yet been distributed as originally planned as of 31 December 2023. Loan underwriting exposures are classified as held for trading, with fair values reflecting market conditions at the end of 2023.

› **Refer to "Credit risk models" in this section for more information about LGD, rating grades and rating agency mappings**

Investment Bank: distribution of banking products exposure across internal UBS ratings and loss given default (LGD) buckets[1]

USD m, except where indicated	31.12.23						31.12.22	
		LGD buckets						
Internal UBS rating[2]	Exposure	0–25%	26–50%	51–75%	76–100%	Weighted average LGD (%)	Exposure	Weighted average LGD (%)
Investment grade	17,954	4,448	8,652	2,424	2,430	39	15,878	37
Sub-investment grade	18,306	4,838	7,215	6,023	229	22	15,529	23
of which: 6–9	*11,644*	*2,689*	*2,883*	*5,874*	*198*	*15*	*9,181*	*17*
of which: 10–13	*6,662*	*2,149*	*4,332*	*149*	*31*	*33*	*6,348*	*32*
Defaulted / Credit-impaired	331	286	28	14	4	24	312	21
Banking products exposure[1]	36,591	9,572	15,895	8,461	2,663	30	31,719	30

1 Excluding balances at central banks and Group Treasury reallocations. 2 The ratings of the major credit rating agencies, and their mapping to our internal rating scale, are shown in the "Internal UBS rating scale and mapping of external ratings" table in this section.

Investment Bank: banking products exposure, by geographical region[1]

	31.12.23		31.12.22	
	USD m	%	USD m	%
Asia Pacific	4,618	12.6	4,766	15.0
Latin America	745	2.0	1,209	3.8
Middle East and Africa	249	0.7	183	0.6
North America	19,901	54.4	15,409	48.6
Switzerland	135	0.4	461	1.5
Rest of Europe	10,943	29.9	9,692	30.6
Exposure[1]	36,591	100.0	31,719	100.0

1 Excluding balances at central banks and Group Treasury reallocations.

Investment Bank: banking products exposure, by industry sector[1]

	31.12.23		31.12.22	
	USD m	%	USD m	%
Banks	5,092	13.9	4,409	13.9
Chemicals	587	1.6	583	1.8
Electricity, gas, water supply	359	1.0	363	1.1
Financial institutions, excluding banks	15,562	42.5	14,595	46.0
Manufacturing	1,889	5.2	1,361	4.3
Mining	894	2.4	878	2.8
Public authorities	258	0.7	259	0.8
Real estate and construction	1,718	4.7	1,685	5.3
Retail and wholesale	2,945	8.0	1,654	5.2
Technology and communications	2,033	5.6	2,324	7.3
Transport and storage	341	0.9	499	1.6
Other	4,913	13.4	3,109	9.8
Exposure[1]	36,591	100.0	31,719	100.0

1 Excluding balances at central banks and Group Treasury reallocations.

Non-core and Legacy

Gross banking products exposure increased by USD 3bn to USD 4bn in 2023 due to smaller amounts of assets of UBS AG business divisions that were assessed as not strategic in light of the acquisition of the Credit Suisse Group.

- **Refer to "Balance sheet assets" in the "Capital, liquidity and funding, and balance sheet" section of this report for more information**
- **Refer to the "Our Business" in the "Our strategy, business model and environment" section of this report for more information**
- **Refer to the "Non-core and Legacy" in the "Financial and operating performance" section of this report for more information about Non-core and Legacy scope differences between the UBS Group AG and UBS AG**

Group Items

Gross banking products exposure within Group Items, which arises primarily in connection with treasury activities, increased by USD 54bn to USD 94bn, mainly from Group Treasury reflecting higher levels of high-quality liquid assets (HQLA) held, funding provided to Credit Suisse and an increase in sponsored repo clearing.

- **Refer to "Balance sheet assets" in the "Capital, liquidity and funding, and balance sheet" section of this report for more information**
- **Refer to the "Group items" section of this report for more information**

Traded products

Audited | Counterparty credit risk (CCR) arising from traded products, which include OTC derivatives, ETD exposures and SFTs, originating in the Investment Bank, Non-core and Legacy, and Group Treasury, is generally managed on a close-out basis. This takes into account possible effects of market movements on the exposure and any associated collateral over the time it would take to close out our positions. Limits are applied to the potential future exposure per counterparty, with the size of the limit dependent on the counterparty's creditworthiness (as determined by Risk Control). Limit frameworks are also used to control overall exposure to specific sectors. Such portfolio limits are monitored and reported to senior management.

Trading in OTC derivatives is conducted through central counterparties where practicable. Where central counterparties are not used, we have clearly defined policies and processes for trading on a bilateral basis. Trading is typically conducted under bilateral International Swaps and Derivatives Association or similar master netting agreements, which generally allow for close-out and netting of transactions in case of default, subject to applicable law. For certain counterparties, initial margin is taken to cover some or all of the calculated close-out exposure. This is in addition to the variation margin taken to settle changes in market value of transactions. For most major market participant counterparties, two-way collateral agreements under which either party can be required to provide collateral in the form of cash or marketable securities are used when the exposure exceeds specified levels. Non-cash collateral typically consists of well-rated government debt or other collateral acceptable to Risk Control and permitted by applicable regulations. Regulations on margining uncleared OTC derivatives have generally expanded the scope of bilateral derivatives activity subject to initial margining and increased the amounts of initial margin received from, and posted to, certain bilateral trading counterparties, resulting in lower close-out risk over time. ▲

In the tables below, OTC derivatives exposures are generally presented as net positive replacement values after the application of legally enforceable netting agreements and the deduction of cash and marketable securities held as collateral. SFT exposures are reported taking into account collateral received, and ETD exposures take into account collateral margin calls.

- **Refer to "Note 10 Derivative instruments" in the "Consolidated financial statements" section of this report for more information about OTC derivatives settled through central counterparties**
- **Refer to "Note 21 Offsetting financial assets and financial liabilities" in the "Consolidated financial statements" section of this report for more information about the effect of netting and collateral arrangements on derivative exposures**

Investment Bank, Non-core and Legacy, and Group Treasury: traded products exposure

USD m	OTC derivatives	SFTs	ETDs	Total	Total
		31.12.23			31.12.22
Total exposure, before deduction of credit valuation adjustments and hedges	8,124	16,792	9,796	34,712	34,370
Less: credit valuation adjustments and allowances	(24)	(1)	0	(24)	(35)
Less: credit protection bought (credit default swaps, notional)	(83)	0	0	(83)	(109)
Net exposure after credit valuation adjustments, allowances and hedges	8,017	16,792	9,796	34,605	34,226

Investment Bank, Non-core and Legacy, and Group Treasury: distribution of net OTC derivatives and SFT exposure across internal UBS ratings and loss given default (LGD) buckets

USD m, except where indicated	31.12.23						31.12.22	
		LGD buckets				Weighted average		Weighted average
Internal UBS rating[1]	Exposure	0–25%	26–50%	51–75%	76–100%	LGD (%)	Exposure	LGD (%)
Net OTC derivatives exposure								
Investment grade	7,307	152	5,681	285	1,189	48	10,757	48
Sub-investment grade	711	43	203	15	450	77	318	72
of which: 6–9	*701*	*39*	*203*	*12*	*448*	*77*	*285*	*76*
of which: 10–12	*3*	*2*	*0*	*0*	*1*	*53*	*28*	*41*
of which: 13 and defaulted	*6*	*3*	*0*	*3*	*0*	*31*	*5*	*23*
Total net OTC derivatives exposure, after credit valuation adjustments and hedges	8,017	195	5,884	299	1,639	51	11,075	49
Net SFT exposure								
Investment grade	16,631	200	15,245	597	590	41	16,682	40
Sub-investment grade	162	0	43	28	91	80	373	71
Total net SFT exposure	16,792	200	15,288	624	680	42	17,055	41

1 The ratings of the major credit rating agencies, and their mapping to our internal rating scale, are shown in the "Internal UBS rating scale and mapping of external ratings" table in this section.

Investment Bank, Non-core and Legacy, and Group Treasury: net OTC derivatives and SFT exposure, by geographical region

	Net OTC derivatives exposure				Net SFT exposure			
	31.12.23		31.12.22		31.12.23		31.12.22	
	USD m	%	USD m	%	USD m	%	USD m	%
Asia Pacific	970	12.1	1,249	11.3	2,510	14.9	4,906	28.8
Latin America	93	1.2	117	1.1	0	0.0	34	0.2
Middle East and Africa	232	2.9	615	5.6	414	2.5	483	2.8
North America	3,118	38.9	2,200	19.9	3,044	18.1	3,177	18.6
Switzerland	900	11.2	1,055	9.5	499	3.0	466	2.7
Rest of Europe	2,704	33.7	5,839	52.7	10,324	61.5	7,988	46.8
Exposure	8,017	100.0	11,075	100.0	16,792	100.0	17,055	100.0

Investment Bank, Non-core and Legacy, and Group Treasury: net OTC derivatives and SFT exposure, by industry sector

	Net OTC derivatives exposure				Net SFT exposure			
	31.12.23		31.12.22		31.12.23		31.12.22	
	USD m	%	USD m	%	USD m	%	USD m	%
Banks	1,544	19.3	1,288	11.6	1,200	7.1	869	5.1
Chemicals	17	0.2	71	0.6	0	0.0	0	0.0
Electricity, gas, water supply	111	1.4	118	1.1	0	0.0	0	0.0
Financial institutions, excluding banks	5,721	71.4	8,614	77.8	15,093	89.9	14,865	87.2
Manufacturing	29	0.4	97	0.9	0	0.0	0	0.0
Mining	0	0.0	20	0.2	0	0.0	0	0.0
Public authorities	441	5.5	655	5.9	496	3.0	1,320	7.7
Retail and wholesale	18	0.2	29	0.3	0	0.0	0	0.0
Transport, storage and communication	74	0.9	115	1.0	3	0.0	0	0.0
Other	63	0.8	69	0.6	0	0.0	0	0.0
Exposure	8,017	100.0	11,075	100.0	16,792	100.0	17,055	100.0

Credit risk mitigation

Audited I UBS AG actively manages credit risk in its portfolios by taking collateral against exposures and by utilizing credit hedging. ▲

Lending secured by real estate

Audited I UBS AG uses a scoring model as part of a standardized front-to-back process for credit decisions on originating or modifying Swiss mortgage loans. The model's two key factors are the LTV ratio and an affordability calculation. ▲

The calculation of affordability takes into account interest payments, minimum amortization requirements and potential property maintenance costs in relation to gross income or rental income for rental properties. The interest rate is set at 5% per annum in the context of the current environment.

For residential properties occupied by the borrower, the maximum LTV for the standard approval process is 80%. For IPRE, the maximum LTV allowed within the standard approval process ranges from 30% to 75%, depending on the type and age of the property, and the amount of renovation work needed.

Audited I The value assigned to each property is based on the lowest value determined from model-derived valuations, the purchase price, an asset value for income-producing real estate (IPRE), and, in some cases, an additional external valuation. ▲

Separate models provided by a market-leading external vendor are used to derive property valuations for owner-occupied residential properties (ORPs) and IPRE. We estimate the current value of an ORP using a regression model (a hedonic model) based on statistical comparison against current transaction data. The value of a property is derived from the characteristics of the real estate itself, as well as those of its location. In addition to the initial valuation, values for ORPs are updated regularly over the lifetime of the loan using region-specific real estate price indices or hedonic valuation. The price indices are sourced from an external vendor and subject to internal validation and benchmarking. UBS AG uses these valuations regularly to compute indexed LTV for all ORPs. A portfolio-specific monitoring system considers these along with other risk measures (e.g., rating and behavioral information) to identify higher-risk loans.

For IPRE, the capitalization rate model is used to determine the property valuation by discounting estimated sustainable future income using a capitalization rate based on various attributes. These attributes consider regional and specific property characteristics, such as market and location data (e.g., vacancy rates), benchmarks (e.g., for running costs), and certain other standardized input parameters (e.g., property condition). Updated information regarding rental income from IPRE is requested from the client at least once every three years. Our portfolio-specific monitoring system alerts us to changes in rental income and other risk measures (e.g., LTV, rating, behavioral information).

To take market developments into account for these models, the external vendor regularly updates the parameters and / or refines the architecture for each model. Model changes and parameter updates are subject to the same validation procedures as our internally developed models.

Audited I UBS AG similarly applies underwriting guidelines for our Global Wealth Management Region Americas mortgage loan portfolio, taking into account loan affordability and collateral sufficiency. LTV standards are defined for the various mortgage types, such as residential mortgages or investment properties, based on associated risk factors, such as property type, loan size, and purpose. The maximum LTV allowed within the standard approval process ranges from 45 to 80%. In addition to LTV, other credit risk metrics, such as debt-to-income ratios, credit scores and required client reserves, are also part of our underwriting guidelines.

A risk limit framework is applied to the Global Wealth Management Region Americas mortgage loan portfolio. Limits are set to govern exposures within LTV categories, geographic concentrations, portfolio growth and high-risk mortgage segments, such as interest-only loans. These limits are monitored by a specialized credit risk monitoring team and reported to senior management. Supplementing this limit framework is a real estate lending policy and procedures framework, set up to govern real estate lending activities. Quality assurance and quality control programs monitor compliance with mortgage underwriting and documentation requirements.

For UBS AG's mortgage loan portfolio in the Global Wealth Management regions of EMEA and Asia Pacific, global underwriting guidelines with regional variations are applied to allow for regulatory and market differentials. As in other regions, the underwriting guidelines take into account affordability and collateral sufficiency. Affordability is assessed at a stressed interest rate using, for residential real estate, the borrowers' sustainable income and declared liabilities, and for commercial real estate the quality and sustainability of rental income. For interest-only loans, a declared and evidenced repayment strategy must be in place. The applicable LTV for each mortgage is based on the quality and liquidity of the property and assessed against valuations from bank-appointed third-party valuers. Maximum LTV varies from 30% to 70%, depending on the type and location of the property, as well as other factors. Collateral sufficiency is often further supported by personal guarantees from related third parties. The overall portfolio is centrally assessed against a number of stress scenarios to ensure that exposures remain within predefined stress limits. ▲

› **Refer to "Swiss mortgage loan portfolio" in this section for more information about LTV in our Swiss mortgage portfolio**

Lombard lending

Audited I Lombard loans are secured by pledges of marketable securities, guarantees and other forms of collateral. Eligible financial securities are primarily liquid and actively traded transferable securities (such as bonds and equities), and other transferable securities, such as approved structured products for which regular prices are available and the issuer of the security provides a market. To a lesser degree, less liquid collateral is also used.

Lending values are derived by applying discounts (haircuts) to the pledged collateral's market value. Haircuts for marketable securities are calculated to cover a possible adverse change in market value over a given close-out period and confidence level. Less liquid or more volatile collateral will typically have larger haircuts.

Concentration and correlation risks across collateral posted are assessed at a counterparty level, and at a divisional level across counterparties. Targeted firm-wide reviews of concentration are performed. Concentration of collateral in single securities, issuers or issuer groups, industry sectors, countries, regions or currencies may result in higher risk and reduced liquidity. In such cases, the lending value of the collateral, margin call and close-out levels are adjusted accordingly. ▲

Exposures and collateral market values are monitored daily, with the aim of ensuring that the credit exposure is always within the established risk tolerance. A shortfall occurs when the lending value drops below the exposure; if it exceeds a defined trigger level, a margin call is initiated, requiring the client to provide additional collateral, reduce the exposure or take other action to bring exposure in line with the agreed lending value of the collateral. If a shortfall is not corrected within the required period, a close-out is initiated, through which collateral is liquidated, open derivative positions are closed and guarantees are called.

Stress testing of collateralized exposures to simulate market events that reduce market collateral value, increase exposure of traded products, or do both, is conducted. For certain classes of counterparties, limits on such calculated stress exposures are applied and controlled at a counterparty level. Also, portfolio limits are applied across certain businesses or collateral types.

› **Refer to "Stress loss" in this section for more information about our stress testing**

Credit hedging

Audited I UBS AG uses single-name credit default swaps (CDSs), credit-index CDSs, bespoke protection and other instruments to actively manage credit risk. The aim is to reduce concentrations of risk from specific counterparties, sectors or portfolios and, for CCR, the profit or loss effect arising from changes in credit valuation adjustments.

We have strict guidelines with regard to taking credit hedges into account for credit risk mitigation purposes. For example, when monitoring exposures against counterparty limits, we do not usually apply certain credit risk mitigants, such as proxy hedges (credit protection on a correlated but different name) or credit-index CDSs, to reduce counterparty exposures. Buying credit protection also creates credit exposure with regard to the protection provider. We monitor and limit exposures to credit protection providers, and also monitor the effectiveness of credit hedges as part of our overall credit exposures to the relevant counterparties, which are typically collateralized. For credit protection purchased to hedge the lending portfolio, this includes monitoring mismatches between the maturity of credit protection purchased and the maturity of the associated loan. Such mismatches result in basis risk and may reduce the effectiveness of the credit protection. Mismatches are routinely reported to credit officers and mitigating actions are taken when necessary. ▲

› **Refer to "Note 10 Derivative instruments" in the "Consolidated financial statements" section of this report for more information**

Mitigation of settlement risk

To mitigate settlement risk, actual settlement volumes are reduced by using multi-lateral and bi-lateral agreements with counterparties, including payment netting. In relation to the exchange of cash or securities, transactions can be settled on a delivery-versus-payment basis.

Foreign exchange transactions are our most significant source of settlement risk. We are a member of Continuous Linked Settlement (CLS), an industry utility that provides a multi-lateral framework to settle transactions on a payment-versus-payment basis, thus reducing foreign-exchange-related settlement risk relative to the volume of business. However, mitigation of settlement risk through CLS and other means does not fully eliminate credit risk in foreign exchange transactions resulting from changes in exchange rates prior to settlement, which is managed as part of our overall credit risk management of OTC derivatives.

Credit risk models

Basel III – A-IRB credit risk models

Audited I UBS AG has developed tools and models to estimate future credit losses that may be implicit in our current portfolio.

Exposures to individual counterparties are measured using three generally accepted parameters: PD, EAD and LGD. For a given credit facility, the product of these three parameters results in the expected loss (the EL). These parameters are the basis for the majority of our internal measures of credit risk, and key inputs for regulatory capital calculation under the advanced internal ratings-based (A-IRB) approach of the Basel III framework. We also use models to derive the portfolio credit risk measures of EL, statistical loss and stress loss. ▲

› **Refer to the 31 December 2023 Pillar 3 Report, available under "Pillar 3 disclosures" at *ubs.com/investors,* for more information about the regulatory capital calculation under the advanced internal ratings-based approach**

Key features of UBS AG's main credit risk models

	Portfolio in scope	Major asset classes	Model approach	Number of main models	Main drivers	Number of years of loss data
Probability of default	Sovereigns and central banks	Central governments and central banks	Scorecard	1	Political, institutional and economic indicators including qualitative factors	>15
	Banks and other financial institutions	Banks & Securities dealer, Corporates: other lending	Scorecard	3	Financial data including balance sheet ratios, profit and loss data and qualitative factors	>15
	Funds	Corporates: other lending	Scorecard	3	Financial data and ratios constructed from it (such as net asset value, volatility of returns), qualitative factors	>15
	Large corporates and internationals	Corporates: other lending	Scorecard, market data	2	Financial data including balance sheet ratios and profit and loss, market data and qualitative factors	>15
	Enterprises in Switzerland	Corporates: other lending	Scorecard	1	Financial data including balance sheet ratios and profit and loss, and behavioral data	>25
	Commodity traders	Corporates: specialized lending	Scorecard	1	Financial data including balance sheet ratios and profit and loss, as well as non-financial criteria	>20
	Owner-occupied mortgages & other wealth-management financing	Retail: residential mortgages, Corporates: other lending	Scorecard	3	Behavioral data, affordability relative to income, property type, loan-to-value, assets and qualitative factors	>10
	Income producing real estate mortgages	Retail: residential mortgages, Corporates: specialized lending	Scorecard	1	Loan-to-value, debt-service-coverage, financial data (for large corporates only), behavioral data and qualitative factors	>25
	Lombard lending and concentrated equity based lending (CEL)	Retail: other retail, Corporates: other lending (CEL)	Simulation approach based on historical returns	2	Lending value ratio, collateral asset class, historical asset returns, counterparty factors	>10
	Credit cards in Switzerland	Retail: qualifying revolving retail and other retail, Corporates: other lending	Scorecard	1	Client type and characteristics and behavioral data	>15
	Other portfolios	Corporates: other lending, Public sector entities and Multilateral development banks, Corporates: specialized lending	Scorecard, pooled rating approach, rating template	6	Financial data including balance sheet ratios and profit and loss, market data and qualitative factors. Separate models for Commercial Real Estate loans, Debt REITs, Mortgage originators, Public sector entities and Multilateral development banks/Supranationals	>15
Loss given default	Investment Bank – all counterparties	Across the asset classes	Statistical model	3	Counterparty and facility specific, including industry segment, region, collateral, seniority, legal environment, bankruptcy procedures and macro-economic factors	>20
	Swiss corporate and mortgage lending portfolios	Retail: residential mortgages, Corporates: other lending, Corporates: specialized lending	Statistical model	2	Collateral type and client segment, Loan-to-value, time since last valuation, location indicator	>10
	International residential mortgages & other wealth-management financing	Retail: residential mortgages, Corporates: other lending	Statistical model	2	Loan-to-value, market value shock	>10
	Lombard lending and concentrated equity based lending (CEL)	Retail: other retail, Corporates: other lending (CEL)	Simulation approach based on historical returns	2	Loan-to-value, collateral asset class and liquidity, historical asset returns, counterparty factors	>10
	Credit cards in Switzerland	Retail: qualifying revolving retail and other retail, Corporates: other lending	Statistical model	1	Collateral, accrued interests, client characteristics	>15
Exposure at default	Banking products	Across the asset classes	Statistical model	4	Facility type and product type, commitment type, headroom, and client characteristics	>10
	Traded products	Across the asset classes	Statistical model	2	Product specific market drivers, e.g. interest rates. Separate models for OTC/ETD and SFT that generate the simulation of risk factors used for the credit exposure measure	n/a

Audited I

Internal UBS rating scale and mapping of external ratings

Internal UBS rating	*1-year PD range in %*	*Description*	*Moody's Investors Service mapping*	*S&P mapping*	*Fitch mapping*
0 and 1	*0.00–0.02*	*Investment grade*	Aaa	AAA	AAA
2	*0.02–0.05*		Aa1 to Aa3	AA+ to AA–	AA+ to AA–
3	*0.05–0.12*		A1 to A3	A+ to A–	A+ to A–
4	*0.12–0.25*		Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB
5	*0.25–0.50*		Baa3	BBB–	BBB–
6	*0.50–0.80*	*Sub-investment grade*	Ba1	BB+	BB+
7	*0.80–1.30*		Ba2	BB	BB
8	*1.30–2.10*		Ba3	BB–	BB–
9	*2.10–3.50*		B1	B+	B+
10	*3.50–6.00*		B2	B	B
11	*6.00–10.00*		B3	B–	B–
12	*10.00–17.00*		Caa1 to Caa2	CCC+ to CCC	CCC+ to CCC
13	*>17*		Caa3 to C	CCC- to C	CCC- to C
Counterparty is in default	*Default*	*Defaulted*		D	D

Probability of default

PD estimates the likelihood of a counterparty defaulting on its contractual obligations over the next 12 months, and is assessed using rating tools tailored to the various categories of counterparties. The "Key features of UBS AG's main credit risk models" table above gives an overview of the approaches used for our main asset classes and presents the main drivers of the PD.

The ratings of major credit rating agencies, and their mapping to the UBS masterscale and internal PD bands, are shown in the "Internal UBS rating scale and mapping of external ratings" table above. For Moody's and S&P, the mapping is based on the long-term average of one-year default rates available from these rating agencies, with Fitch ratings being mapped to the equivalent S&P ratings. For each external rating category, the average default rate is compared with our internal PD bands to derive a periodically reviewed mapping to our internal rating scale.

Exposure at default

EAD is the amount we expect to be owed by a counterparty at the time of possible default. We derive EAD from current exposure to the counterparty and possible future exposure development.

The EAD of an on-balance sheet loan is its notional amount, while for off-balance sheet commitments that are not drawn, credit conversion factors (CCFs) are used in order to obtain an expected on-balance sheet amount.

For traded products, we derive EAD by modeling the range of possible exposure outcomes at various points in time using a simulation based on a scenario-consistent technique. UBS AG assesses the net amount that may be owed to it or that it may owe to others, taking into account the effect of market movements over the potential time it would take to close out positions.

Exposures where there is a material correlation between the factors driving the credit quality of the counterparty and those driving the potential future value of UBS AG's traded products exposure (wrong-way risk) are assessed, and specific controls to mitigate such risks have been established.

Loss given default

LGD is the magnitude of the likely loss if there is a default. Our LGD estimates, which consider downturn conditions, include loss of principal, interest and other amounts less recovered amounts. UBS AG determines LGD based on the likely recovery rate of claims against defaulted counterparties, which depends on the type of counterparty and any credit mitigation due to collateral or guarantees. UBS AG's estimates are supported by internal loss data and external information, where available. If collateral is held, such as marketable securities or a mortgage on a property, LTV ratios are typically a key parameter in determining LGD. For risk-weighted asset (RWA) calculation, floors are applied to LGD in line with regulation.

Expected loss

UBS AG uses the concept of expected loss to quantify future credit losses that may be implicit in our current portfolio. The expected loss for a given credit facility is a product of the three components described above, i.e., PD, EAD and LGD. We aggregate the expected loss for individual counterparties to derive expected portfolio credit losses.

IFRS 9 – ECL credit risk models

Expected credit loss

Expected credit loss (ECL) is defined as the difference between contractual cash flows and those UBS AG expects to receive, discounted at the effective interest rate (EIR). For loan commitments and other credit facilities in scope of ECL requirements, expected cash shortfalls are determined by considering expected future drawdowns. Rather than focusing on an average through-the-cycle (TTC) expected annual loss, the purpose of ECL is to estimate the amount of losses inherent in a portfolio based on current conditions and future outlook (a point-in-time (PIT) measure), whereby such a forecast has to include all information available without undue cost and effort, and address multiple scenarios where there is perceived non-linearity between changes in economic conditions and their effect on credit losses. From a credit risk modeling perspective, ECL parameters are generally derivations of the factors assessed for regulatory Basel III EL.

Comparison of Basel III EL and IFRS 9 ECL credit risk models

The IFRS 9 ECL concept has a number of key differences from our Basel III credit risk models, both in the loss estimation process and the result thereof. Most notably, regulatory Basel III EL parameters are TTC / downturn estimates, which might include a margin of conservatism, while IFRS 9 ECL parameters are typically PIT, reflecting current economic conditions and future outlook. The table below summarizes the main differences. Stage 1 and 2 ECL expenses in 2023 were USD 23m and respective allowances and provisions as of 31 December 2023 were USD 580m. This included ECL allowances and provisions of USD 522m related to positions under the Basel III advanced internal ratings-based (A-IRB) approach. Basel III EL for non-defaulted positions increased by USD 96m to USD 1,052m.

› **Refer to "Note 1 Summary of material accounting policies" in the "Consolidated financial statements" section of this report for more information about our accounting policy for allowances and provisions for ECL including key definitions relevant for the ECL calculation under IFRS 9**

The table below shows the main differences between the two expected loss measures.

	Basel III EL (advanced internal ratings-based approach)	IFRS 9 ECL
Scope	The Basel III A-IRB approach applies to most credit risk exposures. It includes transactions measured at amortized cost, at fair value through profit or loss and at fair value through OCI, including loan commitments and financial guarantees.	The IFRS 9 ECL calculation mainly applies to financial assets measured at amortized cost and debt instruments measured at fair value through OCI, as well as loan commitments and financial guarantees not at fair value through profit or loss.
12-month versus lifetime expected loss	The Basel III A-IRB approach takes into account expected losses resulting from expected default events occurring within the next 12 months.	In the absence of a significant increase in credit risk (an SICR), a maximum 12-month ECL is recognized to reflect lifetime cash shortfalls that will result if a default event occurs in the 12 months after the reporting date (or a shorter period if the expected lifetime is less). Once an SICR event has occurred, a lifetime ECL is recognized considering expected default events over the life of the transaction.
Exposure at default (EAD)	EAD is the amount we expect a counterparty to owe us at the time of a possible default. For banking products, EAD equals the book value as of the reporting date; for traded products, the vast majority of EAD is modeled. For lending, EAD is expected to remain constant over a 12-month period. For loan commitments, a credit conversion factor is applied to model expected future drawdowns over the 12-month period, irrespective of the actual maturity of a particular transaction. The credit conversion factor includes downturn adjustments.	EAD is generally calculated on the basis of the cash flows that are expected to be outstanding at the individual points in time during the life of the transaction. For loan commitments, a credit conversion factor is applied to model expected future drawdowns over the life of the transaction without including downturn assumptions. In both cases, the time period is capped at 12 months, unless an SICR has occurred.
Probability of default (PD)	PD estimates are determined on a through-the-cycle (TTC) basis. They represent historical average PDs, taking into account observed losses over a prolonged historical period, and therefore are less sensitive to movements in the underlying economy.	PD estimates will be determined on a point-in-time (PIT) basis, based on current conditions and incorporating forecasts for future economic conditions at the reporting date.
Loss given default (LGD)	LGD includes prudential adjustments, such as downturn LGD assumptions and floors. Similar to PD, LGD is determined on a TTC basis.	LGD should reflect the losses that are reasonably expected and prudential adjustments should therefore not be applied. Similar to PD, LGD is determined on the basis of a PIT approach.
Use of scenarios	n / a	Multiple forward-looking scenarios have to be taken into account to determine a probability-weighted ECL.

Further key aspects of credit risk models

Stress loss

We complement our statistical modeling approach with scenario-based stress loss measures. Stress tests are run regularly to monitor potential effects of extreme, but nevertheless plausible, events on our portfolios, under which key credit risk parameters are assumed to deteriorate substantially. Where we consider it appropriate, we apply limits on this basis.

Stress scenarios and methodologies are tailored to portfolios' natures, ranging from regionally focused to global systemic events, and varying in time horizon.

› **Refer to "Stress testing" in this section for more information about our stress testing framework**

Credit risk model confirmation

UBS AG's approach to model confirmation involves both quantitative methods, such as monitoring compositional changes in portfolios and results of backtesting, and qualitative assessments, such as feedback from users on model output as a practical indicator of a model's performance and reliability. In addition, changes in market, regulatory and business practices are assessed.

Material changes in portfolio composition may invalidate the conceptual soundness of a model. We therefore perform regular analyses of the evolution of portfolios to identify such changes in the structure and credit quality of portfolios.

› **Refer to "Model risk management" in this section for more information**

Backtesting

UBS AG monitors the performance of models by backtesting and benchmarking them, with model outcomes compared with actual results, based on our internal experience and externally observed results. To assess the predictive power of credit exposure models for traded products, such as OTC derivatives and ETD products, we statistically compare predicted future exposure distributions at different forecast horizons with realized values.

For PD, we derive a predicted distribution of the number of defaults. The observed number of defaults is compared with the upper tail of the predicted distribution. If the observed number of defaults is higher than a given upper tail quantile, we conclude there is evidence that the model may underpredict the number of defaults. Based on historical long-run average default rates and, if required, additional margin of conservatism, we also derive PD calibration targets and a lower boundary. As a general rule, follow-up actions, such as a recalibration of the rating tool, are defined if the portfolio average PD lies below the derived lower boundary.

For LGD, backtesting statistically tests whether the mean difference between the observed and predicted LGD is zero. If the test fails, there is evidence that our predicted LGD is too low. In such cases, and where these differences are outside expectations, follow-up actions, such as a recalibration of the models, are taken.

CCFs, used for the calculation of EAD for undrawn facilities, are dependent on several credit facility contractual dimensions. We compare the predicted amount drawn with observed historical use of such facilities by defaulted counterparties. If any statistically significant deviation is observed, follow-up actions, such as an update of the relevant CCFs, are performed.

Changes to models and model parameters during the period

As part of our continuous efforts to enhance models to reflect market developments and newly available data, we updated several models in 2023.

In Personal & Corporate Banking and Global Wealth Management models, we recalibrated the risk parameters for the income-producing real estate mortgages in Switzerland and implemented a model update for the Swiss corporate PD model. In addition, we recalibrated the PD and LGD models for the commodity trade finance business within Personal & Corporate Banking and updated the LGD model for corporate clients and financial institutions. In Global Wealth Management, we also implemented a model update for the standard Lombard model.

In the Investment Bank, new PD models, corporations, insurance companies and managed funds went live. In addition, certain RWA multipliers were recalibrated as a result of improvements to models.

Where required, changes to models and model parameters were approved by FINMA before being made.

› **Refer to "Risk-weighted assets" in the "Capital, liquidity and funding, and balance sheet" section of this report for more information about the effect of the changes to models and model parameters on credit risk RWA**

Future credit risk-related regulatory capital developments

In December 2017, the Basel Committee on Banking Supervision (the BCBS) announced the finalization of the Basel III framework. In November 2023, the Swiss Federal Council published the national implementation of the final Basel III standards, which is expected to enter into force by January 2025. The updated framework makes a number of revisions to the internal ratings-based (IRB) approaches, namely: (i) removing the option of using the A-IRB approach for certain asset classes (including large and medium-sized corporate clients, and banks and other financial institutions); (ii) placing floors on certain model inputs under the IRB approach, e.g., PD and LGD; and (iii) introducing various requirements to reduce RWA variability (e.g., for LGD). In addition, revisions to the credit valuation adjustment (CVA) framework were published in November 2023, including the removal of the advanced CVA approach. UBS has a close dialogue with FINMA to discuss in detail the implementation objectives and prepare for a smooth transition of the capital regime for credit risk.

- **Refer to "Capital management objectives, planning and activities" in the "Capital, liquidity and funding, and balance sheet" section of this report for more information about the development of RWA**
- **Refer to "Risk measurement" in this section for more information about our approach to model confirmation procedures**
- **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Credit policies for distressed assets

Non-performing

Audited | In line with the regulatory definition, we report a claim as non-performing when: (i) it is more than 90 days past due; (ii) it is subject to restructuring proceedings, where preferential conditions concerning interest rates, subordination, tenor, etc. have been granted in order to avoid default of the counterparty (forbearance); (iii) the counterparty is subject to bankruptcy / enforced liquidation proceedings in any form, even if there is sufficient collateral to cover the due payment; or (iv) there is other evidence that payment obligations will not be fully met without recourse to collateral.

Default and credit-impaired

UBS AG uses a single definition of default for classifying assets and determining the PD of its obligors for risk modeling purposes. The definition of default is based on quantitative and qualitative criteria. A counterparty is classified as defaulted when material payments of interest, principal or fees are overdue for more than 90 days, or more than 180 days for certain exposures in relation to loans to private and commercial clients in Personal & Corporate Banking and to private clients of Global Wealth Management Region Switzerland. UBS AG does not consider the general 90-day presumption for default recognition appropriate for those portfolios, given the cure rates, which show that strict application of the 90-day criterion would not accurately reflect the inherent credit risk. Counterparties are also classified as defaulted when: bankruptcy, insolvency proceedings or enforced liquidation have commenced; obligations have been restructured on preferential terms (forbearance); or there is other evidence that payment obligations will not be fully met without recourse to collateral. The latter may be the case even if, to date, all contractual payments have been made when due. If one claim against a counterparty is defaulted on, generally all claims against the counterparty are treated as defaulted.

An instrument is classified as credit impaired if the counterparty is classified as defaulted and / or the instrument is identified as purchased credit impaired (PCI). An instrument is PCI if it has been purchased at a deep discount to its carrying amount following a risk event of the issuer or originated with a defaulted counterparty. Once a financial asset is classified as defaulted / credit impaired (except PCI), it is reported as a stage 3 instrument and remains as such unless all past due amounts have been rectified, additional payments have been made on time, the position is not classified as credit-restructured, and there is general evidence of credit recovery. A three-month probation period is applied before a transfer back to stages 1 or 2 can be triggered. However, most instruments remain in stage 3 for a longer period. ▲

Forbearance (credit restructuring)

Audited | If payment default is imminent or default has already occurred, we may grant concessions to borrowers in financial difficulties that we would otherwise not consider in the normal course of business, such as offering preferential interest rates, extending maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc. When a forbearance measure takes place, each case is considered individually and the exposure is generally classified as defaulted. Forbearance classification remains until the loan is repaid or written off, non-preferential conditions are granted that supersede the preferential conditions, or the counterparty has recovered and the preferential conditions no longer exceed our risk tolerance.

Contractual adjustments when there is no evidence of imminent payment default, or where changes to terms and conditions are within our usual risk tolerance, are not considered to be forborne. ▲

Loss history statistics

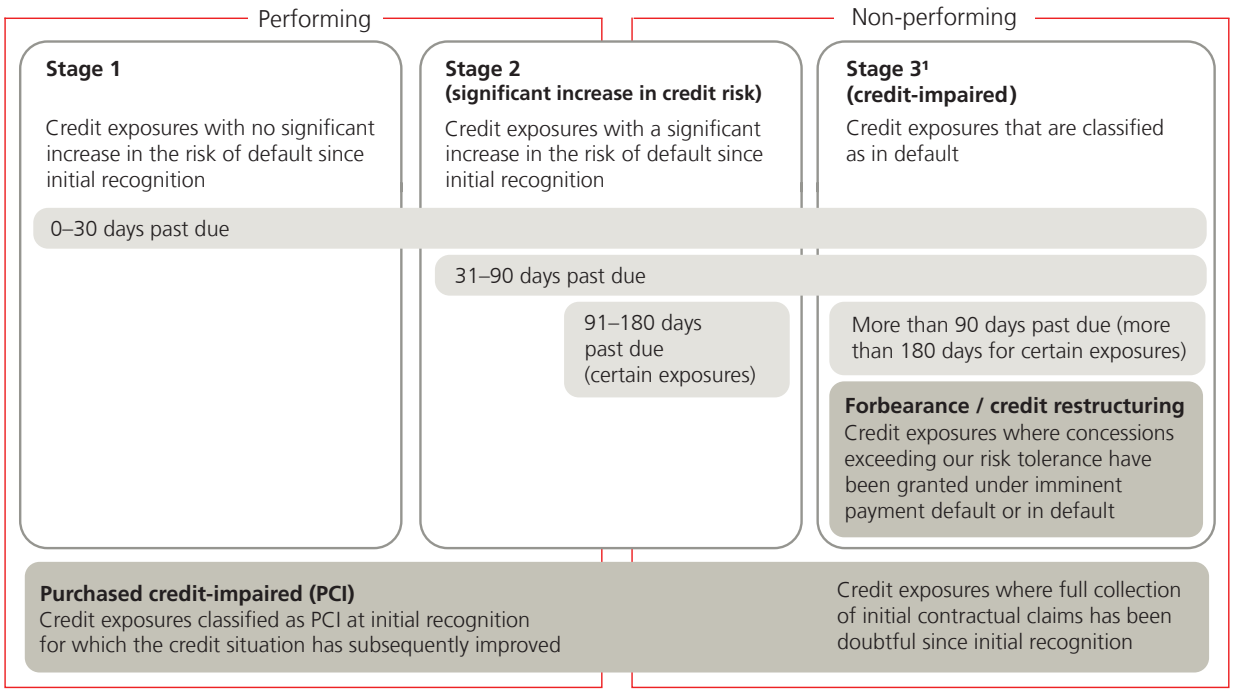
An instrument is classified as credit impaired if the counterparty has defaulted. This also includes credit-impaired exposures for which no loss has occurred or for which no allowance has been recognized (e.g., we expect to fully recover the exposures via collateral held).

Coverage ratios are calculated by taking ECL allowances and provisions divided by the gross carrying amount of the exposures. Core loan exposure is defined as the sum of Loans and advances to customers and Loans to financial advisors.

The total combined on- and off-balance sheet coverage ratio was at 22 basis points as of 31 December 2023, 1 basis point lower than on 31 December 2022. The combined stage 1 and 2 ratio of 10 basis points was unchanged compared with 31 December 2022; the stage 3 ratio was 22%, materially unchanged compared with 31 December 2022.

- **The majority of the credit-impaired exposure relates to loans and advances in our Swiss domestic business. Refer to "Note 9 Financial assets at amortized cost and other positions in scope of expected credit loss measurement" and "Note 19 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information about ECL measurement and the calculation of the coverage ratio**
- **Refer to "Note 13 Other assets" in the "Consolidated financial statements" section of this report for more details**

Exposure categorization



1 Excluding purchased credit-impaired instruments.

Loss history statistics

USD m, except where indicated	31.12.23	31.12.22[1]	31.12.21[1]	31.12.20[1]	31.12.19[1]
Banking products, core exposure and off-balance sheet, gross[2]	562,095	509,024[3]	517,866[3]	497,313[3]	423,771[3]
of which: amounts due from banks and loans and advances to customers (gross)	*434,780*	*402,801*	*414,099*	*396,049*	*340,003*
Credit-impaired exposure, gross (stage 3)	2,966	2,455	2,610	3,778	3,113
of which: credit-impaired amounts due from banks and loans and advances to customers (stage 3)	*2,586*	*2,012*	*2,150*	*2,945*	*2,309*
Non-performing amounts due from banks and loans and advances to customers	2,793	2,333	2,387	3,176	2,466
ECL allowances and provisions for credit losses[4]	1,244	1,091	1,165	1,468	1,029
of which: core loan exposure (all stages)	*1,172*	*1,043*	*1,132*	*1,426*	*987*
of which: amounts due from banks and loans and advances to customers (all stages)	*942*	*789*	*857*	*1,076*	*770*
of which: amounts due from banks and loans and advances to customers (stage 3)	*377*	*474*	*572*	*703*	*559*
Write-offs (stage 3)	77	95	137	356	142
of which: write-offs for amounts due from banks and loans and advances to customers	*62*	*74*	*118*	*348*	*122*
Credit loss expense / (release)[5]	143	29	(148)	694	78
Ratios					
Credit-impaired amounts due from banks and loans and advances to customers as a percentage of amounts due from banks and loans and advances to customers (gross)	0.6	0.5	0.5	0.7	0.7
Non-performing amounts due from banks and loans and advances to customers as a percentage of amounts due from banks and loans and advances to customer (gross)	0.6	0.6	0.6	0.8	0.7
ECL allowances for amounts due from banks and loans and advances to customers as a percentage of amounts due from banks and loans and advances to customer (gross)	0.2	0.2	0.2	0.3	0.2
Write-offs as a percentage of average amounts due from banks and loans and advances to customers (gross) outstanding during the period	0.0	0.0	0.0	0.1	0.0

1 Prior-period numbers are based on pre-acquisition UBS values. 2 Includes amounts due from banks, core loan exposure (Loans and advances to customers and Loans to financial advisors) and off balance sheet items defined as guarantees and loan commitments. 3 Comparatives have been restated to include amounts due from banks. 4 Includes provisions for ECL of guarantees and loan commitments and allowances for securities financing transactions. 5 Includes credit loss expense / (release) for other financial assets at amortized cost, guarantees, loan commitments, and securities financing transactions.

Market risk

Audited I Main sources of market risk

Market risks arise from both trading and non-trading business activities.

- Trading market risks are mainly connected with primary debt and equity underwriting and securities and derivatives trading for market-making and client facilitation in our Investment Bank, as well as the remaining positions in Non-core and Legacy and our municipal securities trading business in Global Wealth Management.
- Non-trading market risks arise predominantly in the form of interest rate and foreign exchange risks connected with personal banking and lending in our wealth management businesses, the Swiss business of our Personal & Corporate Banking business division, the Investment Bank's lending business, and treasury activities.
- Group Treasury assumes market risks in the process of managing interest rate risk, structural foreign exchange risk and the Group's liquidity and funding profile, including high-quality liquid assets (HQLA).
- Equity and debt investments can also give rise to market risks, as can some aspects of employee benefits, such as defined benefit pension schemes. ▲

Audited I Overview of measurement, monitoring and management techniques

- Market risk limits are set for the Group, the business divisions and Group Treasury at granular levels in the various business lines, reflecting the nature and magnitude of the market risks.
- Management value-at-risk (VaR) measures exposures under the market risk framework, including trading market risks and some non-trading market risks. Non-trading market risks not included in VaR are also covered in the risks controlled by Market and Treasury Risk Control functions.
- Our primary portfolio measures of market risk are liquidity-adjusted stress loss and VaR. Both are subject to limits that are approved by the Board of Directors (the BoD).
- These measures are complemented by concentration and granular limits for general and specific market risk factors. Our trading businesses are subject to multiple market risk limits, which take into account the extent of market liquidity and volatility, available operational capacity, valuation uncertainty, and, for our single-name exposures, issuer credit quality.
- Trading market risks are managed at portfolio level. As risk factor sensitivities change due to new transactions, transaction expiries or changes in market levels, risk factors are dynamically rehedged to remain within limits. We do not generally seek to distinguish in the trading portfolio between specific positions and associated hedges.

– Issuer risk is controlled by limits applied at the business division level based on jump-to-zero measures, which estimate maximum default exposure (the default event loss assuming zero recovery).
– Non-trading foreign exchange risks are managed under market risk limits, with the exception of Group Treasury management of consolidated capital activity.

Our CRO Treasury function applies a holistic risk framework, setting the appetite for treasury-related risk-taking activities across UBS AG. Key elements of the framework include an overarching economic value sensitivity limit, set by the BoD, and the sensitivity of net interest income to changes in interest rates targets, set by the CEO. Limits are also set by the BoD to balance the effect of foreign exchange movements on our common equity tier 1 (CET1) capital and CET1 capital ratio. Non-trading interest rate and foreign exchange risks are included in firm-wide statistical and stress-testing metrics, which flow into our risk appetite framework.

Equity and debt investments are subject to a range of risk controls, including preapproval of new investments by business management and Risk Control and regular monitoring and reporting. They are also included in firm-wide statistical and stress-testing metrics. ▲

› **Refer to "Currency management" in the "Capital, liquidity and funding, and balance sheet" section of this report for more information about Group Treasury's management of foreign exchange risks**
› **Refer to the "Capital, liquidity and funding, and balance sheet" section of this report for more information about the sensitivity of our CET1 capital and CET1 capital ratio to currency movements**

Market risk stress loss

The measurement and management of market risks include an extensive set of stress tests and scenario analyses, continuously evaluated to ensure that losses resulting from an extreme yet plausible event do not exceed our risk appetite.

Liquidity-adjusted stress

Liquidity-adjusted stress is UBS AG's primary stress loss measure for firm-wide market risk. The framework captures the economic losses that could arise under specified stress scenarios. Shocks are applied to positions based on expected market movements in the liquidity-adjusted holding periods resulting from the specified scenario.

The holding periods used for liquidity-adjusted stress are calibrated to reflect the time needed to reduce or hedge the risk of positions in each major risk factor in a stressed environment. UBS AG applies minimum holding periods, regardless of observed liquidity levels, as identification of and reaction to a crisis may not always be immediate.

The expected market movements are derived using historical market behavior (based on analysis of historical events) and forward-looking analysis including consideration of defined scenarios that have not occurred in the past.

Stress-based limits apply at several levels of the organizational hierarchy. Liquidity-adjusted stress is also the core market risk component of our combined stress test framework and therefore integral to our overall risk appetite framework.

› **Refer to "Risk appetite framework" in this section for more information**
› **Refer to "Stress testing" in this section for more information about our stress testing framework**

Value-at-risk

VaR definition

Audited | VaR is a statistical measure of market risk, quantifying the potential market risk losses over a set time horizon (holding period) at an established level of confidence. VaR assumes no change in UBS AG's trading positions over the set time horizon.

UBS AG calculates VaR daily. The profit or loss distribution from which VaR is estimated is derived from our internally developed VaR model, which simulates returns over the holding period for risk factors our trading positions are sensitive to, and subsequently quantifies the profit / loss effect of these risk factor returns on our trading positions. Systematic commodity, credit, equity, foreign exchange rate and interest rate risk factor returns are based on a pure historical simulation approach. UBS AG uses an unweighted five-year look-back window. Modeling idiosyncratic and specific risks for equity and credit risk factors using historical simulation is challenging, due to the limited availability of continuous good-quality historical data. UBS AG relies upon factor models to distinguish systematic and idiosyncratic returns. UBS AG simulates idiosyncratic returns through a Monte Carlo simulation, aggregating the sum of systematic and residual returns in such a way that systematic and residual risk are consistently captured. When modeling risk factor returns, we consider the stationarity properties of the historical time series of risk factor changes. Depending on the stationarity properties of the risk factors within a given factor class, the factor returns are modeled using absolute returns, proportional or logarithmic returns. Risk factor return distributions are updated fortnightly.

Risk factor returns are converted into profit or loss values via sensitivities and full revaluation grids sourced from front-office systems, enabling us to capture material non-linear effects.

UBS AG uses a single VaR model for internal management purposes and for determining market risk risk-weighted assets (RWA), although the two cases consider different confidence levels and time horizons. For internal management purposes, risk limits are established and exposures measured using VaR at a 95% confidence level with a 1-day holding period, aligned to the way we consider the risks associated with our trading activities. The regulatory measure of market risk used to underpin the market risk capital requirement under Basel III involves a measure equivalent to a 99% confidence level using a 10-day holding period. To calculate a 10-day holding period VaR, we use 10-day risk factor returns.

Additionally, the portfolio populations for management and regulatory VaR are slightly different. The one for regulatory VaR meets regulatory requirements for inclusion in regulatory VaR. Management VaR includes a broader range of positions. For example, regulatory VaR excludes credit spread risks from the securitization portfolio, which are treated instead under the securitization approach for regulatory purposes.

We also use stressed VaR (SVaR) for the calculation of market risk RWA. SVaR uses broadly the same methodology as regulatory VaR and is calculated using the same population, holding period (10-day) and confidence level (99%). For SVaR, UBS AG identifies the most significant one-year period of financial stress from a historical dataset covering the period from 1 January 2007 to the present. SVaR is computed weekly at a minimum. ▲

› **Refer to the 31 December 2023 Pillar 3 Report, available under "Pillar 3 disclosures" at *ubs.com/investors,* for more information about the regulatory capital calculation under the advanced internal ratings-based approach**

Management VaR for the period

UBS AG continued to maintain management VaR at low levels, with average VaR increasing to USD 15m from USD 11m in 2023, mainly driven by the Investment Bank's Global Markets business.

Audited I

Management value-at-risk (1-day, 95% confidence, 5 years of historical data) of UBS AG business divisions and Group Items by general market risk type[1]

	For the year ended 31.12.23								
USD m					Equity	Interest rates	Credit spreads	Foreign exchange	Commodities
	Min.				3	9	3	1	1
		Max.			19	21	19	10	10
			Average		9	12	6	2	3
				31.12.23	11	18	7	2	3
Total management VaR	7	25	15	19	*Average (per business division and risk type)*				
Global Wealth Management	1	2	1	2	*0*	*1*	*2*	*0*	*0*
Personal & Corporate Banking	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Asset Management	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Investment Bank	5	23	14	18	*9*	*12*	*5*	*2*	*3*
Non-core and Legacy	1	2	1	1	*0*	*1*	*1*	*0*	*0*
Group Items	3	6	4	4	*1*	*3*	*3*	*1*	*0*
Diversification effect[2,3]			(6)	(6)	*(1)*	*(4)*	*(4)*	*(1)*	*0*

	For the year ended 31.12.22[4]								
USD m					Equity	Interest rates	Credit spreads	Foreign exchange	Commodities
	Min.				2	8	4	2	2
		Max.			17	18	9	11	7
			Average		6	10	5	3	3
				31.12.22	6	10	4	3	3
Total management VaR	6	18	11	9	*Average (per business division and risk type)*				
Global Wealth Management	1	2	1	1	*0*	*1*	*1*	*0*	*0*
Personal & Corporate Banking	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Asset Management	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Investment Bank	6	17	10	8	*6*	*9*	*5*	*3*	*3*
Group Functions (including Non-core and Legacy Portfolio)	3	5	4	5	*1*	*4*	*3*	*1*	*0*
Diversification effect[2,3]			(5)	(5)	*(1)*	*(3)*	*(4)*	*(1)*	*0*

1 Statistics at individual levels may not be summed to deduce the corresponding aggregate figures. The minima and maxima for each level may occur on different days, and, likewise, the value-at-risk (VaR) for each business line or risk type, being driven by the extreme loss tail of the corresponding distribution of simulated profits and losses for that business line or risk type, may well be driven by different days in the historical time series, rendering invalid the simple summation of figures to arrive at the aggregate total. 2 The difference between the sum of the standalone VaR for the business divisions and Group Items and the total VaR. 3 As the minima and maxima for different business divisions and Group Items occur on different days, it is not meaningful to calculate a portfolio diversification effect. 4 Prior-period numbers are based on pre-acquisition UBS values as the risk profile compared with UBS AG does not materially differ.

▲

VaR limitations

Audited I Actual realized market risk losses may differ from those implied by VaR for a variety of reasons.

- VaR is calibrated to a specified level of confidence and may not indicate potential losses beyond this confidence level.
- The 1-day time horizon used for VaR for internal management purposes (10-day for regulatory VaR) may not fully capture market risk of positions that cannot be closed out or hedged within the specified period.
- In some cases, VaR calculations approximate the effect of changes in risk factors on the values of positions and portfolios.
- Effects of extreme market movements are subject to estimation errors, which may result from non-linear risk sensitivities, and the potential for actual volatility and correlation levels to differ from assumptions implicit in VaR calculations.
- The choice of a longer historical window means sudden increases in market volatility will tend not to increase VaR as quickly as the use of shorter historical observation periods, but such increases will affect VaR for a longer period of time. Similarly, after periods of increased volatility, as markets stabilize, VaR predictions will remain more conservative for a period of time influenced by the length of the historical observation period.

SVaR is subject to the limitations noted for VaR above, but the use of one-year datasets avoids the smoothing effect of longer datasets used for VaR. In addition, the ability to select a one-year period outside of recent market history allows for a wider variety of potential loss events. Therefore, although the significant period of stress during the 2007–2009 financial crisis is no longer contained in the look-back window used for management and regulatory VaR, SVaR continues to use that data. This approach aims to reduce the procyclicality of the regulatory capital requirements for market risks.

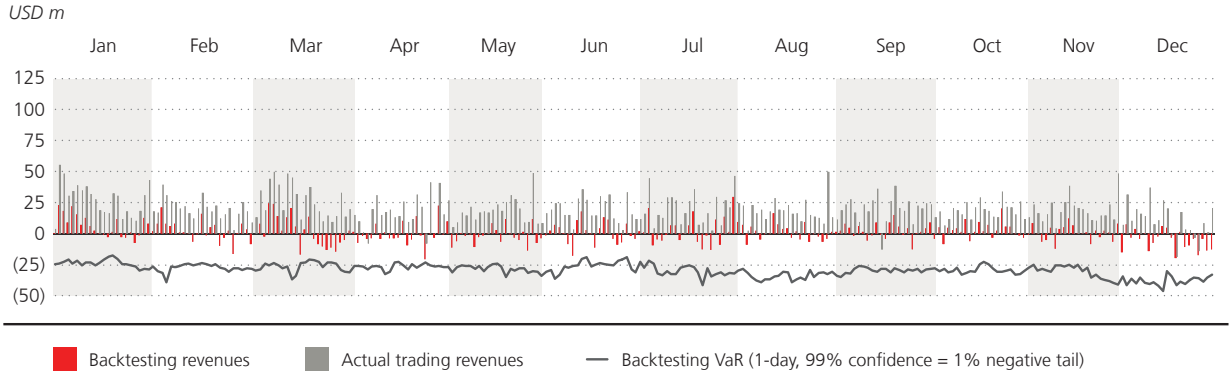
UBS AG recognizes that no single measure can encompass all risks associated with a position or portfolio. We use a set of metrics with both overlapping and complementary characteristics to create a holistic framework that aims to ensure material completeness of risk identification and measurement. As a statistical aggregate risk measure, VaR supplements our comprehensive stress testing framework.

We also have a framework to identify and quantify potential risks not fully captured by our VaR model and refer to such risks as risks not in VaR. The framework underpins these potential risks with additional regulatory capital. ▲

Backtesting of VaR

VaR backtesting is a performance measurement process in which a 1-day VaR prediction is compared with the realized 1-day profit or loss (P&L). We compute backtesting VaR using a 99% confidence level and 1-day holding period for the regulatory VaR population. Since 99% VaR is defined as a risk measure that operates on the lower tail of the P&L distribution, 99% backtesting VaR is a negative number. Backtesting revenues exclude non-trading revenues, such as valuation reserves, fees and commissions, and revenues from intraday trading, so as to provide a like-for-like comparison. A backtesting exception occurs when backtesting revenues are lower than the previous day's backtesting VaR.

UBS Group excluding Credit Suisse:[1] development of regulatory backtesting revenues[2] and actual trading revenues[3] against backtesting VaR[4] (1-day, 99% confidence)



1 The chart is based on UBS Group excluding Credit Suisse as the risk profile compared with UBS AG does not materially differ. 2 Excludes non-trading revenues, such as valuation reserves, commissions and fees, and revenues from intraday trading. 3 Includes backtesting revenues and revenues from intraday trading. 4 Based on Basel III regulatory VaR, excludes CVA positions and their eligible hedges, which are subject to the standalone CVA charge.

Statistically, given the 99% confidence level, two or three backtesting exceptions a year can be expected. More than four exceptions could indicate that the VaR model is not performing appropriately, as could too few exceptions over a long period. However, as noted for VaR limitations above, a sudden increase (or decrease) in market volatility relative to the volatility observed in the look-back window could lead to a higher (or lower) number of exceptions. Therefore, backtesting exceptions are investigated, as are exceptional positive backtesting revenues, with the results reported to senior business management and regulators.

The number of negative backtesting exceptions within a 250-business-day window decreased to zero from one by the end of 2023. The Swiss Financial Market Supervisory Authority (FINMA) VaR multiplier derived from backtesting exceptions for market risk RWA was unchanged compared with the prior year, at 3.0.

VaR model confirmation

In addition to the for-regulatory-purposes backtesting described above, we conduct extended backtesting for internal model confirmation purposes. This includes observing model performance across the entire P&L distribution (not just the tails) and at multiple levels within the business division hierarchies.

› **Refer to "Risk measurement" in this section for more information about our approach to model confirmation procedures**

VaR model developments in 2023

Audited | No material changes were made to the UBS AG VaR model in 2023. ▲

Future market risk-related regulatory capital developments

In January 2019, the Basel Committee on Banking Supervision (the BCBS) published the final standards on the minimum capital requirements for market risk (the Fundamental Review of the Trading Book). In December 2022, the Swiss State Secretariat for International Finance changed the expected date on which the final Basel III guidelines are to enter into force, from 1 July 2024 to 1 January 2025. As a result, the Swiss implementation timeline would be aligned to the currently expected implementation timeline in the EU. In November 2023, the Swiss Federal Council adopted amendments to the Capital Adequacy Ordinance (the CAO) for banks to incorporate the final Basel III standards adopted by the BCBS in Swiss law. The Federal Department of Finance (FDF) will inform the Federal Council again about the status of international implementation by the end of July 2024.

Key elements of the revised market risk framework include: (i) changes to the internal model-based approach, including changes to the model approval and performance measurement process; (ii) changes to the standardized approach with the aim of it being a credible fallback method for an internal model-based approach; and (iii) a revised boundary between the trading book and the banking book. UBS maintains a close dialogue with FINMA to discuss the implementation objectives in more detail and to provide a smooth transition of the capital regime for market risk.

In September 2021, FINMA mandated UBS to hold an RWA add-on for the omission of time decay in regulatory VaR and SVaR. The add-on reflects the outcome of discussions with FINMA regarding our regulatory VaR model, which started in late 2019. The integration of time decay into the regulatory VaR model went live in January 2024.

› **Refer to "Risk-weighted assets" in the "Capital, liquidity and funding, and balance sheet" section of this report for more information about the development of RWA including the regulatory add-on**
› **Refer to "Risk measurement" in this section for more information about our approach to model confirmation procedures**
› **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Interest rate risk in the banking book

Sources of interest rate risk in the banking book

Audited | IRRBB arises from balance sheet positions such as amounts due from banks, Loans and advances to customers, Financial assets at fair value not held for trading, Financial assets measured at amortized cost, Customer deposits, Debt issued measured at amortized cost, and derivatives, including those subject to hedge accounting. Fair value changes to these positions may affect other comprehensive income (OCI) or the income statement, depending on their accounting treatment.

UBS AG's largest banking book interest rate exposures arise from customer deposits and lending products in Global Wealth Management and Personal & Corporate Banking, as well as from debt issuance, liquidity buffers and interest rate hedges in Group Treasury. The inherent interest rate risks stemming from Global Wealth Management and Personal & Corporate Banking are generally transferred to Group Treasury, to manage them centrally together with our modeled interest rate duration assigned to equity, goodwill and real estate. This makes the netting of interest rate risks across different sources possible, while leaving the originating businesses with commercial margin and volume management. The residual interest rate risk is mainly hedged with interest rate swaps, to the vast majority of which we apply hedge accounting. Short-term exposures and HQLA classified as Financial assets at fair value not held for trading are hedged with derivatives accounted for on a mark-to-market basis. Long-term fixed-rate debt issued and HQLA hedged with external interest rate swaps are designated in fair value hedge accounting relationships.

Risk management and governance

IRRBB is measured using several metrics, the most relevant of which are the following.

- EVE sensitivity to yield curve moves is calculated as changes in the present value of future cash flows irrespective of accounting treatment. These yield curve moves are also the key risk factors for statistical and stress-based measures, e.g., VaR and stress scenarios, as well as the regulatory interest rate scenarios. These are measured and reported daily. The regulatory IRRBB EVE exposure is the most adverse regulatory interest rate scenario that is netted across currencies. It excludes the sensitivity from additional tier 1 (AT1) capital instruments (as per specific FINMA requirements) and the modeled interest rate duration assigned to equity, goodwill and real estate. UBS AG also applies granular internal interest rate shock scenarios to its banking book positions to monitor its specific risk profile.
- Net interest income (NII) sensitivities to yield curve moves are calculated as changes of baseline NII over a set time horizon, which we internally compute by assuming interest rates in all currencies develop according to their market-implied forward rates and assuming constant business volumes and product mix and no specific management actions. The sensitivities are measured and reported monthly.

UBS AG actively manages IRRBB, with the aim of reducing the volatility of NII subject to limits and triggers for EVE and NII exposure at consolidated and significant legal entity levels.

The Group Asset and Liability Committee (the ALCO) and, where relevant, ALCOs at a legal entity level perform independent oversight over the management of IRRBB, which is also subject to Group Internal Audit and model governance.

› **Refer to "Risk measurement" in this section for more information**

Key modeling assumptions

The cash flows from customer deposits and lending products used in calculation of EVE sensitivity exclude commercial margins and other spread components, are aggregated by daily time buckets and are discounted using risk-free rates. Our external issuances are discounted using UBS's senior debt curve, and capital instruments are modeled to the first call date. NII sensitivity, which includes commercial margins, is calculated over a one-year time horizon, assuming constant balance sheet structure and volumes, and considers embedded interest rate options.

The average repricing maturity of non-maturing deposits and loans is determined via target replication portfolios designed to protect product margins. Optimal replicating portfolios are determined at granular currency- and product-specific levels by simulating and applying a real-world market rate model to historically calibrated client rate and volume models.

UBS AG uses an econometric prepayment model to forecast prepayment rates on US mortgage loans in UBS Bank USA and agency mortgage-backed securities (MBSs) held in various liquidity portfolios of UBS Americas Holding LLC consolidated. These prepayment rates are used to forecast both mortgage loan and MBS balances under various macroeconomic scenarios. The prepayment model is used for a variety of purposes, including risk management and regulatory stress testing. Swiss mortgages and fixed-term deposits generally do not carry similar optionality, due to prepayment and early redemption penalties. ▲

Effect of interest rate changes on shareholders' equity and CET1 capital

The "Accounting and capital effect of changes in interest rates" table below shows the effects on shareholders' equity and CET1 capital of gains and losses from changes in interest rates in the main banking book positions. We use derivatives to hedge interest rate risks in the banking book and these reflect changes in interest rates as an immediate fair value gain or loss, recognized either in the income statement or through OCI. Where hedged items are accrual accounted, we aim to minimize accounting asymmetries by applying hedge accounting to reflect the economic hedge relationship.

In a rising rate scenario, we would have an initial decrease in shareholders' equity as a result of fair value losses on our derivatives recognized in OCI while we would expect higher NII over time as rates increase. The effect on CET1 capital would be much lower as gains and losses on interest rate swaps designated as cash flow hedges are not recognized for regulatory capital purposes.

Accounting and capital effect of changes in interest rates[1]

	Recognition		Shareholders' equity		CET1 capital	
	Timing	Income statement / OCI	Gains	Losses	Gains	Losses
Loans and deposits at amortized cost[2,3]	Gradual	Income statement	●	●	●	●
Other financial assets and liabilities measured at amortized cost[2]	Gradual	Income statement	●	●	●	●
Debt issued measured at amortized cost[2,3]	Gradual	Income statement	●	●	●	●
Receivables and payables from securities financing transactions[2]	Gradual	Income statement	●	●	●	●
Financial assets at fair value not held for trading	Immediate	Income statement	●	●	●	●
Financial assets at fair value through other comprehensive income	Immediate	OCI	●	●		●
Derivatives designated as cash flow hedges	Immediate	OCI[4]	●	●		
Derivatives designated as fair value hedges[5]	Immediate	Income statement	●	●	●	●
Derivatives transacted as economic hedges	Immediate	Income statement	●	●	●	●

1 Refer to the "Reconciliation of equity under IFRS Accounting Standards to Swiss SRB common equity tier 1 capital" table in the "Capital, liquidity and funding, and balance sheet" section of this report for more information about the differences between shareholders' equity and CET1 capital. 2 For fixed-rate financial instruments, changes in interest rates affect the income statement when these instruments roll over and reprice. 3 For hedge-accounted items, a fair value adjustment is applied in line with the treatment of the hedging derivatives. 4 Excluding hedge ineffectiveness that is recognized in the income statement in accordance with IFRS Accounting Standards. 5 The fair value of the derivatives is offset by the fair value adjustment of the hedged items. Under the fair value hedge program applied to cross-currency swaps and foreign currency debt, the foreign currency basis spread is excluded from the hedge designation and accounted for through OCI, which is included in CET1.

Economic value of equity sensitivity

Audited | The EVE sensitivity in the banking book to a +1-basis-point parallel shift in yield curves was negative USD 28.1m as of 31 December 2023, compared with negative USD 25.0m as of 31 December 2022. This excludes the sensitivity of USD 4.8m from AT1 capital instruments (as per specific FINMA requirements) in contrast to general BCBS guidance.

The majority of our interest rate risk in the banking book is a reflection of the net asset duration that we run to offset our modeled sensitivity of net USD 22.4m (31 December 2022: USD 19.6m) assigned to our equity, goodwill and real estate, with the aim of generating a stable NII contribution. Of this, USD 15.8m and USD 5.6m are attributable to the US dollar and the Swiss franc portfolios, respectively (31 December 2022: USD 14.0m and USD 4.8m, respectively).

In addition to the sensitivity mentioned above, we calculate the six interest rate shock scenarios prescribed by FINMA. The "Parallel up" scenario, assuming all positions were fair valued, was the most severe and would have resulted in a change in EVE of negative USD 5.3bn, or 9.3%, of our tier 1 capital (31 December 2022: negative USD 4.6bn, or 8.4%), which is well below the 15% threshold as per the BCBS supervisory outlier test for high levels of interest rate risk in the banking book.

The immediate effect on UBS AG's tier 1 capital in the "Parallel up" scenario as of 31 December 2023 would have been a decrease of USD 0.5bn, or 0.9% (31 December 2022: USD 0.4bn, or 0.7%), reflecting the fact that the vast majority of our banking book is accrual accounted or subject to hedge accounting. The "Parallel up" scenario would subsequently have a positive effect on NII, assuming a constant balance sheet.

UBS AG also applies granular internal interest rate shock scenarios to its banking book positions to monitor the banking book's specific risk profile.

Net interest income sensitivity

The main NII sensitivity in the banking book resides in Global Wealth Management and Personal & Corporate Banking. We assign a target duration to our investment of equity portfolio, and Group Treasury actively manages the residual IRRBB. This sensitivity is assessed using a number of scenarios assuming parallel and non-parallel shifts in yield curves, with various degrees of severity, and we have set and monitor thresholds for the NII sensitivity to immediate parallel shocks of –200 and +200 basis points under the assumption of constant balance sheet volume and structure. ▲

› **Refer to the "UBS AG consolidated performance" section for more information about sensitivity to interest rate movements**

Audited I

Interest rate risk – banking book

	31.12.23							
USD m	Effect on EVE[1] – FINMA						Effect on EVE[1] – BCBS	
Scenarios	CHF	EUR	GBP	USD	Other	Total	Additional tier 1 (AT1) capital instruments	Total
+1 bp	(4.3)	(0.7)	0.0	(23.1)	0.1	(28.1)	4.8	(23.3)
Parallel up[2]	(608.9)	(142.9)	2.2	(4,522.3)	(15.0)	(5,287.0)	888.3	(4,398.7)
Parallel down[2]	686.1	150.0	(11.8)	4,593.2	17.1	5,434.5	(1,028.0)	4,406.6
Steepener[3]	(335.2)	(16.0)	(13.1)	(973.6)	(23.0)	(1,361.0)	95.9	(1,265.1)
Flattener[4]	214.1	(6.8)	12.3	(94.1)	17.5	142.9	104.7	247.6
Short-term up[5]	(38.5)	(48.4)	13.4	(1,909.8)	7.1	(1,976.3)	477.4	(1,498.9)
Short-term down[6]	42.9	49.8	(14.3)	2,036.8	(10.0)	2,105.3	(498.9)	1,606.4

	31.12.22							
USD m	Effect on EVE[1] – FINMA						Effect on EVE[1] – BCBS	
Scenarios	CHF	EUR	GBP	USD	Other	Total	Additional tier 1 (AT1) capital instruments	Total
+1 bp	(4.1)	(0.6)	0.1	(20.4)	(0.1)	(25.0)	3.4	(21.5)
Parallel up[2]	(576.5)	(111.6)	33.4	(3,936.5)	(26.3)	(4,617.2)	652.5	(3,964.7)
Parallel down[2]	644.2	142.2	(45.7)	4,066.1	21.9	4,828.5	(702.8)	4,125.7
Steepener[3]	(256.7)	(93.2)	(28.2)	(1,026.7)	(3.3)	(1,408.2)	(47.3)	(1,455.5)
Flattener[4]	144.7	75.4	32.7	95.4	(2.6)	345.8	191.1	536.9
Short-term up[5]	(84.1)	37.1	42.4	(1,514.7)	(13.9)	(1,532.9)	440.8	(1,092.2)
Short-term down[6]	88.1	(36.1)	(42.6)	1,654.0	13.4	1,676.6	(457.8)	1,218.8

1 Economic value of equity. 2 Rates across all tenors move by ±150 bps for Swiss franc, ±200 bps for euro and US dollar, and ±250 bps for pound sterling. 3 Short-term rates decrease and long-term rates increase. 4 Short-term rates increase and long-term rates decrease. 5 Short-term rates increase more than long-term rates. 6 Short-term rates decrease more than long-term rates.

Other market risk exposures

Own credit

We are exposed to changes in UBS AG's own credit reflected in the valuation of financial liabilities designated at fair value when our own credit risk would be considered by market participants, except for fully collateralized liabilities or other obligations for which it is established market practice to not include an own-credit component.

› **Refer to "Note 20 Fair value measurement" in the "Consolidated financial statements" section of this report for more information about own credit**

Structural foreign exchange risk

Upon consolidation, assets and liabilities held in foreign operations are translated into US dollars at the closing foreign exchange rate on the balance sheet date. Value changes (in US dollars) of non-US dollar assets or liabilities due to foreign exchange movements are recognized in OCI and therefore affect shareholders' equity and CET1 capital.

Group Treasury uses strategies to manage this foreign currency exposure, including matched funding of assets and liabilities and net investment hedging.

› **Refer to the "Capital, liquidity and funding, and balance sheet" section of this report for more information about our exposure to and management of structural foreign exchange risk**

› **Refer to "Note 10 Derivative instruments" in the "Consolidated financial statements" section of this report for more information about our hedges of net investments in foreign operations**

Equity investments and investment fund units

Audited I UBS AG makes direct investments in a variety of entities and buys equity holdings in both listed and unlisted companies, with the aim of supporting our business activities and delivering strategic value to UBS. This includes investments in exchange and clearing house memberships, as well as minority investments in early-stage fintechs and technology companies via UBS Next. We may also make investments in funds that we manage in order to fund or seed them at inception or to demonstrate that our interests align with those of investors. We also buy, and are sometimes required by agreement to buy, securities and units from funds that we have sold to clients.

The fair value of equity investments tends to be influenced by factors specific to the individual investments. Equity investments are generally intended to be held for the medium or long term and may be subject to lock-up agreements. For these reasons, we generally do not control these exposures by using market risk measures applied to trading activities. However, such equity investments are subject to a different range of controls, including preapproval of new investments by business management and Risk Control, portfolio and concentration limits, and regular monitoring and reporting to senior management. They are also included in our firm-wide statistical and stress-testing metrics, which flow into our risk appetite framework.

As of 31 December 2023, we held equity investments and investment fund units totaling USD 2.9bn, of which USD 1.9bn was classified as Financial assets at fair value not held for trading and USD 1.0bn as Investments in associates. ▲

- **Refer to "Note 20 Fair value measurement" and "Note 28 Interests in subsidiaries and other entities" in the "Consolidated financial statements" section of this report for more information**
- **Refer to "Note 1 Summary of material accounting policies" in the "Consolidated financial statements" section of this report for more information about the classification of financial instruments**

Debt investments

Audited | Debt investments classified as Financial assets measured at fair value through other comprehensive income as of 31 December 2023 were measured at fair value with changes in fair value recorded through Equity, and can broadly be categorized as money market instruments and debt securities primarily held for statutory, regulatory or liquidity reasons.

The risk control framework applied to debt instruments classified as Financial assets measured at fair value through other comprehensive income depends on the nature of the instruments and the purpose for which we hold them. Our exposures may be included in market risk limits or be subject to specific monitoring and interest rate sensitivity analysis. They are also included in our firm-wide statistical and stress-testing metrics, which flow into our risk appetite framework.

Debt instruments classified as Financial assets measured at fair value through other comprehensive income had a fair value of USD 2.2bn as of 31 December 2023, compared with USD 2.2bn as of 31 December 2022.▲

- **Refer to "Note 20 Fair value measurement" in the "Consolidated financial statements" section of this report for more information**
- **Refer to "Economic value of equity sensitivity" in this section for more information**
- **Refer to "Note 1 Summary of material accounting policies" in the "Consolidated financial statements" section of this report for more information about the classification of financial instruments**

Pension risk

We provide a number of pension plans for past and current employees, some classified as defined benefit pension plans under IFRS Accounting Standards, which can have a material effect on our equity under IFRS Accounting Standards and CET1 capital.

Pension risk is the risk that defined benefit plans' funded status might decrease, negatively affecting our capital. This can result from falls in the value of a plan's assets or in the investment returns, increases in defined benefit obligations, or combinations of the above.

Important risk factors affecting the fair value of pension plans' assets include equity market returns, interest rates, bond yields, and real estate prices. Important risk factors affecting the present value of expected future benefit payments include high-grade bond yields, interest rates, inflation rates, and life expectancy.

Pension risk is included in our firm-wide statistical and stress-testing metrics, which flow into our risk appetite framework. The potential effects are thus captured in the post-stress capital ratio calculations.

- **Refer to "Note 1 Summary of material accounting policies" and "Note 26 Post-employment benefit plans" in the "Consolidated financial statements" section of this report for more information about defined benefit plans**

Country risk

Country risk framework

Country risk includes all country-specific events occurring in a sovereign jurisdiction that may lead to impairment of UBS AG's exposures. It may take the form of: (i) sovereign risk, which is the ability and willingness of a government to honor its financial commitments; (ii) transfer risk, which arises if a counterparty or issuer cannot acquire foreign currencies following a moratorium by a central bank on foreign exchange transfers; or (iii) "other" country risk. "Other" country risk may manifest itself through, on the one hand, increased and multiple counterparty and issuer default risk (systemic risk) and, on the other hand, events that may affect a country's standing, such as adverse shocks affecting political stability or institutional and / or legal frameworks. UBS AG has a well-established risk control framework to assess the risk profiles of all countries where we have exposure.

We assign a country rating to each country, which reflects our view of its creditworthiness and of the probability of a country risk event occurring. Country ratings are mapped to statistically derived default probabilities, described under "Probability of default" in this section. We use this internal analysis to set the credit ratings of governments and central banks, estimate the probability of a transfer event occurring, and establish rules on how aspects of country risk should be incorporated in counterparty ratings of non-sovereign entities domiciled in the respective country.

Country ratings are also used to define UBS AG's risk appetite regarding foreign countries. A country risk limit (i.e., maximum aggregate exposure) applies to exposures to counterparties or issuers of securities and financial investments in the given foreign country. UBS AG may limit the extension of credit, transactions in traded products or positions in securities based on a country risk ceiling even if its exposure to a counterparty is otherwise acceptable.

For internal measurement and control of country risk, UBS AG also considers the financial effect of market disruptions arising prior to, during and after a country crisis. These may take the form of a severe deterioration in a country's debt, equity or other asset markets, or a sharp depreciation of its currency. We use stress testing to assess potential financial effects of severe country or sovereign crises. This involves the developing of plausible stress scenarios for combined stress testing and the identification of countries that may potentially be subject to a crisis event, determining potential losses and making assumptions about recovery rates depending on the types of credit transactions involved and their economic importance to the affected countries.

Country risk exposure

Country risk exposure measure

The presentation of country risk follows our internal risk view, where the basis for measuring exposures depends on the product category in which we classify the exposures. In addition to the classification of exposures into banking products and traded products, covered in "Credit risk profile of UBS AG" in this section, in the trading inventory UBS AG classifies issuer risk on securities such as bonds and equities, as well as risk relating to underlying reference assets for derivative positions.

The trading inventory is managed on a net basis, and the value of long positions is netted against that of short positions with the same underlying issuer. Net exposures are, however, floored at zero per issuer in the figures presented in the following tables. As a result, potentially offsetting benefits of certain hedges and short positions across issuers are not recognized.

We do not recognize any expected recovery values when reporting country exposures as exposure before hedges, except for risk-reducing effects of master netting agreements and collateral held in either cash or portfolios of diversified marketable securities, which we deduct from the potential exposure values. Within banking products and traded products, risk-reducing effects of credit protection are generally taken into account on a notional basis when determining the net of hedge exposures.

Country risk exposure allocation

In general, exposures are shown against the country of domicile of the contractual counterparty or the issuer of the security. For some counterparties whose economic substance in terms of assets or source of revenues is primarily located in a different country, the exposure is allocated to the risk domicile of those assets or revenues.

We apply a specific approach for banking products exposures to branches of banks that are located in a country other than the legal entity's domicile. In such cases, exposures are recorded in full against the country of domicile of the counterparty and additionally in full against the country where the branch is located.

In the case of derivatives, we show the counterparty's risk potential exposure against the counterparty's country of risk (presented within traded products). In addition, risk associated with an instantaneous fall in value of underlying reference assets to zero (assuming no recovery) is shown against the country of risk of the issuer of the reference asset (presented within trading inventory). This approach allows us to capture both counterparty and, where applicable, issuer elements of risk arising from derivatives and applies comprehensively for all derivatives, including single-name credit default swaps (CDSs) and other credit derivatives.

CDSs are primarily bought and sold in relation to our trading businesses, and, to a much lesser degree, used to hedge credit valuation adjustments. Holding CDSs for credit default protection does not necessarily protect the buyer of protection against losses, as contracts only pay out under certain scenarios. The effectiveness of our CDS protection as a hedge of default risk is influenced by several factors, including the contractual terms under which a given CDS was written. Generally, only the occurrence of credit events as defined by the CDS contract's terms (which may include, among other events, failure to pay, restructuring or bankruptcy) results in payments under the purchased credit protection contracts. For CDS contracts on sovereign obligations, repudiation can also be deemed as a default event. The determination as to whether a credit event has occurred is made by the relevant International Swaps and Derivatives Association (ISDA) determination committees (composed of various ISDA member firms) based on the terms of the CDS and the facts and circumstances surrounding the event.

Top 20 country risk exposures

The table below shows UBS AG's 20 largest country exposures by product type, excluding our home country, as of 31 December 2023 compared with 31 December 2022.

Compared with the prior year, UBS AG's net exposure to the US increased by USD 26.7bn, driven by central bank exposures due to treasury activities, as well as loans to corporates. Net exposure to the UK increased by USD 8.7bn, driven by central bank exposures due to treasury activities.

Based on the sovereign rating categories, as of 31 December 2023, 88% of UBS AG's emerging market country exposure was rated investment grade, compared with 87% as of 31 December 2022.

Israel

As of 31 December 2023, UBS AG's direct country risk exposure to Israel was USD 289m, mainly from lending and collateralized OTC derivatives exposure within the Investment Bank. UBS AG's direct exposure to Gulf Cooperation Council countries was USD 2.5bn. The direct exposure to Egypt, Jordan and Lebanon is limited, and UBS AG has no direct exposure to Iran, Iraq or Syria.

Russia

UBS AG's direct country risk exposure to Russia contributed USD 66m to our total emerging market exposure of USD 22.0bn as of 31 December 2023, compared with a contribution of USD 98m as of 31 December 2022. This includes nostro accounts balances, and issuer risk on trading inventory within the Investment Bank.

UBS AG had no material direct country risk exposures to Belarus or to Ukraine as of 31 December 2023 and no material reliance on Russian, Belarusian or Ukrainian collateral.

Top 20 country risk net exposures, by product type

USD m	Total		Banking products (loans, guarantees, loan commitments)		Traded products (counterparty risk from derivatives and securities financing) after master netting agreements and net of collateral		Trading inventory (securities and potential benefits / remaining exposure from derivatives)	
	Net of hedges[1]		Net of hedges[1]		Net of hedges		Net long per issuer	
	31.12.23	31.12.22[2]	31.12.23	31.12.22[2]	31.12.23	31.12.22[2]	31.12.23	31.12.22[2]
United States	165,639	138,924	104,845	81,875	27,463	27,550	33,331	29,499
United Kingdom	40,836	32,104	22,248	10,828	16,922	19,786	1,666	1,490
Germany	20,864	20,115	7,212	8,255	7,533	6,959	6,118	4,901
Japan	18,328	22,221	13,300	13,251	4,457	8,559	571	410
Singapore	10,310	12,137	2,122	3,038	3,362	3,767	4,827	5,332
France	9,125	10,641	1,466	2,056	3,206	3,980	4,453	4,605
Canada	8,722	7,832	550	274	2,741	3,730	5,431	3,827
Australia	8,446	8,895	1,964	1,365	4,443	5,834	2,038	1,696
China	4,993	4,709	1,015	1,347	835	1,379	3,144	1,983
South Korea	4,312	3,896	437	388	647	1,042	3,228	2,466
Luxembourg	3,947	3,423	3,212	2,717	566	280	169	427
Netherlands	3,804	5,964	812	1,074	2,051	3,767	941	1,123
Sweden	3,259	2,283	225	158	1,545	1,322	1,490	803
Hong Kong SAR	2,776	3,666	884	938	885	1,843	1,007	885
Norway	2,114	2,417	58	80	530	1,137	1,526	1,200
Italy	1,459	1,492	751	628	470	703	238	161
Austria	1,323	1,526	137	285	572	450	615	792
Spain	1,316	1,032	669	630	321	201	325	200
Monaco	1,204	1,021	1,191	1,001	13	20	0	0
Finland	1,185	1,185	44	62	341	432	800	691
Total top 20[3]	313,962	285,483	163,142	130,250	78,903	92,741	71,918	62,491

1 Before deduction of IFRS 9 ECL allowances and provisions. 2 Comparative period has been restated to reflect a change in the measure used to disclose country risk exposures. 3 Excluding Switzerland, supranationals and global funds.

Emerging markets[1] net exposure[2], by internal UBS country rating category

USD m	31.12.23	31.12.22[3]
Investment grade	19,328	21,900
Sub-investment grade	2,697	3,173
Total	22,025	25,073

1 UBS AG classifies countries as emerging markets based on per capita GDP, historical real GDP growth, alignment with international institutions (such as BIS, World Bank, IMF, MSCI) and other factors. 2 Net of credit hedges (for banking products and for traded products); net long per issuer (for trading inventory). Before deduction of IFRS 9 ECL allowances and provisions. 3 Comparative period has been restated to reflect a change in the measure used to disclose country risk exposures.

Sustainability and climate risk

Our climate strategy and governance are determined and overseen at the UBS Group level. Similarly, we identify and manage climate risks, including climate-related financial risks, in our own operations, balance sheet, client assets and supply chain on the UBS Group level.

Climate-related metrics for UBS AG are presented in the UBS Group Annual Report 2023.

- **Refer to "Sustainability and climate risk" in the "Risk management and control" section of the UBS Group Annual Report 2023, available under "Annual reporting" at *ubs.com/investors*, for more information**
- **Refer to the "Our sustainability and impact strategy" section of the UBS Group Sustainability Report 2023, available under "Annual reporting" at *ubs.com/investors*, for more information**

Non-financial risk

Non-financial risk is the risk of undue monetary loss and / or non-monetary adverse consequences resulting from inadequate or failed internal processes, people and / or systems, failure to comply with laws and regulations and internal policies and procedures, or external events (deliberate, accidental or natural) that have an impact on UBS, its clients or its markets.

Key developments

We have identified nine non-financial risk themes as being currently key to us. These are:
- governance and legal structure integration;
- financial and regulatory reporting;
- operational resilience, stability and cybersecurity;
- data life cycle;
- investor protection and market interaction;
- strategic growth initiatives and cross-divisional interaction;
- the evolving nature of anti-money laundering (AML), know your client (KYC), sanctions, anti-bribery and corruption (ABC), and fraud;
- employee conduct, capacity and culture; and
- environmental, social and governance (ESG) risks.

UBS continues to actively manage the non-financial risks emerging from the acquisition of the Credit Suisse Group, including the current operation of dual corporate structures, and the scale, pace and complexity of the required integration activities. These activities continue to be managed by the program run by our Group Integration Office. The integration of Credit Suisse requires data to be migrated into the UBS environment and we aim to ensure that we have robust controls to preserve data integrity, quality and availability to mitigate data migration risks and to meet regulatory expectations.

Through this period of change, we place an increased focus on maintaining and enhancing our control environment and continue to cooperate with regulators in relation to the submission and execution of implementation plans to meet regulatory expectations, including remediation requirements applicable to Credit Suisse AG. In addition, the Group is closely monitoring non-financial risk indicators to detect any potential for adverse impacts on the control environment.

There is an increased risk of cyber-related operational disruption to business activities at our locations and / or those of third-party suppliers due to operating an enlarged group of entities. This is combined with the increasingly dynamic threat environment, which is intensified by current geopolitical factors and evidenced by the increased volumes and sophistication of cyberattacks against financial institutions globally.

Cyberattacks on third-party vendors have affected our operations in the past and continue to be a source of residual risk to our business. We remain on heightened alert to respond to and mitigate elevated cyber- and information-security threats. During the first quarter of 2023, a third-party vendor, ION XTP, suffered a ransomware attack, which resulted in some disruption to our exchange-traded derivatives clearing activities, although we restored our services within 36 hours, using an available alternative solution. Following a post-incident review, we are improving our frameworks for managing third parties that support our important business services and are taking actions to enhance our cyber-risk assessments and controls over third-party vendors. We continue to invest in improving our technology infrastructure and information-security governance to improve our defense, detection and response capabilities against cyberattacks.

In addition, we are working to enhance our operational resilience to address these heightened risks and to meet regulatory deadlines through 2026. We are implementing a global framework designed to drive enhancements in operational resilience across all business divisions and relevant jurisdictions, as well as working with the third parties, including vendors, that are of critical importance to our operations to assess their operational resilience against our standards.

The increasing interest in data-driven advisory processes, and use of artificial intelligence (AI) and machine learning, is opening up new questions related to the fairness of AI algorithms, data life-cycle management, data ethics, data privacy and security, and records management. In addition, new risks continue to emerge, such as those that result from the demand from our clients for distributed ledger technology, blockchain-based assets and cryptocurrencies; however, we currently have limited exposure to such risks, and relevant control frameworks for them are implemented and reviewed on a regular basis as they evolve.

Competition to find new business opportunities, products and services across the financial services sector, both for firms and for customers, is increasing, particularly during periods of market volatility and economic uncertainty. Thus, suitability risk, product selection, cross-divisional service offerings, quality of advice and price transparency remain areas of heightened focus for UBS and for the industry as a whole.

Evolving ESG regulations and major legislation, such as the Consumer Duty regulation in the United Kingdom, the Swiss Financial Services Act (FIDLEG) in Switzerland, Regulation Best Interest (Reg BI) in the US and the Markets in Financial Instruments Directive II (MiFID II) in the EU, all significantly affect the industry and have required adjustments to control processes.

Cross-border risk (including unintended permanent establishment) remains an area of regulatory attention for global financial institutions, including a focus on market access, such as third-country market access into the European Economic Area, and taxation of US persons. We maintain a series of controls designed to address these risks, and we are increasing the number of controls that are automated.

Financial crime, including money laundering, terrorist financing, sanctions violations, fraud, bribery and corruption, continues to present a major risk, as technological innovation and geopolitical developments increase the complexity of doing business and heightened regulatory attention continues. An effective financial crime prevention program therefore remains essential, and we continue to focus on strategic enhancements to our global AML, KYC and sanctions programs. Money laundering and financial fraud techniques are becoming increasingly sophisticated, and geopolitical volatility makes the sanctions landscape more complex. The extensive and continuously evolving sanctions arising from the Russia–Ukraine war require constant attention to prevent circumvention risks, while the conflicts in the Middle East may increase terrorist-financing risks.

In the US, UBS AG entered into a Consent Order with the Office of the Comptroller of the Currency (the OCC) in May 2018 relating to our US branch AML and KYC programs. In response, we have introduced significant improvements to our framework for the purpose of ensuring sustainable remediation of US-relevant Bank Secrecy Act / AML issues across all our US legal entities.

Achieving fair outcomes for our clients, upholding market integrity and cultivating the highest standards of employee conduct are of critical importance to us. We maintain a conduct risk framework across our activities, which is designed to align our standards and conduct with these objectives and to retain momentum on fostering a strong culture.

In September 2022, the US Securities and Exchange Commission (the SEC) and the Commodity Futures Trading Commission (the CFTC) issued settlement orders relating to communications recordkeeping requirements in our US broker-dealers and our registered swap dealers. In response to shortcomings identified in that context, we continued work on a global remediation program started in 2022.

Non-financial risk framework

We follow a Group-wide non-financial risk framework that establishes requirements for identifying, managing, assessing and mitigating operational, compliance and financial crime risks to achieve an agreed balance between risk and return. It is built on the following pillars:

- classifying inherent risks through 19 non-financial risk taxonomies, which define the universe of material non-financial risks that can arise as a consequence of our business activities and external factors;
- performing control assurance activities, including self-assessing the design and operating effectiveness of controls, first- and second-line-of-defense control reviews and independent control testing;
- defining the non-financial risk appetite (including a financial risk appetite statement at the Group, UBS AG and business division levels for non-financial risk events) through quantitative metrics and thresholds and qualitative measures, and assessing risk exposure against appetite;
- assessing inherent and residual risk through risk assessment processes and determining whether additional remediation plans are required to address identified deficiencies; and
- proactively and sustainably remediating identified control deficiencies.

Divisional Presidents are accountable for the effectiveness of non-financial risk management and for the robustness of the front-to-back control environment within their business divisions, and legal-entity-responsible executives are in charge of non-financial risk management within their legal entities. Group function heads are accountable for supporting the divisional Presidents and legal-entity-responsible executives of our legal entities in the discharge of this responsibility, by confirming completeness and effectiveness of the control environment and non-financial risk management within their Group functions. Collectively, divisional Presidents, central Group function heads and legal-entity-responsible executives are in charge of implementing the non-financial risk framework.

Compliance & Operational Risk Control (C&ORC) is responsible for providing an independent and objective view of the adequacy of non-financial risk management across the Group, and ensuring that compliance risk, financial crime risk and operational risk are understood, owned and managed in accordance with our risk appetite. C&ORC business- or function-aligned teams sit within the Group Compliance, Regulatory & Governance function, reporting to the Group Chief Compliance and Governance Officer, who is a member of the Group Executive Board.

The non-financial risk framework forms the common basis for managing and assessing compliance risk, financial crime risk and operational risk, and there are additional C&ORC activities intended to ensure we are able to demonstrate compliance with applicable laws, rules and regulations.

In 2023, we successfully executed on the framework enhancements designed in 2022, with, for example, several cycles of risk appetite assessments performed on the basis of the Group-wide non-financial risk appetite statements across all taxonomies. We focused on improving effectiveness by simplifying and digitalizing the non-financial risk framework and respective processes.

All functions within UBS are required to periodically assess the design and operating effectiveness of key internal non-financial risk controls. The output of these reviews supports the assessment and testing scope of internal controls over financial reporting as required by the Sarbanes–Oxley Act, Section 404 (SOX 404).

Key control deficiencies identified during the internal control and risk assessment processes must be reported in the non-financial risk inventory, and sustainable remediation must be defined and executed. These control deficiencies are assigned to owners at senior management level and the remediation progress is reflected in the respective managers' annual performance measurement and objectives. To assist with prioritizing the most material control deficiencies and measuring aggregated risk exposure, irrespective of origin, a common rating methodology is applied across all three lines of defense, as well as by external audit.

Cybersecurity

Cybersecurity for UBS AG is integrated into the UBS Group risk control framework.

Risk management and strategy

Cyber- and information security risk is the risk that a malicious internal or external act, or a failure of IT hardware or software, or human error may have a material impact on confidentiality, integrity, or availability of UBS's data or information systems.

Cybersecurity is a key operational risk facing UBS and we devote considerable resources to establishing and maintaining processes for assessing, identifying and managing cybersecurity risk through our global workforce and cyber-operations centers around the world.

› **Refer to "Risk governance" in this section for information about our approach to risk management, including our risk governance framework**

Governance

In line with our overall non-financial risk management framework, we take a cross-functional approach to addressing cybersecurity risk, with the Group Operations and Technology Office (GOTO), business divisions, Group Compliance, Regulatory & Governance (GCRG), Group Risk Control, Group Legal, and Group Internal Audit all playing key roles. Our risk control framework follows the three-lines-of-defense model. GOTO establishes the policies and procedures designed to safeguard our information systems and the information those systems collect and process. The business divisions, together with GOTO, are then responsible for implementing those policies and procedures as part of the first line of defense. Group Compliance, Regulatory & Governance (GCRG) leads the second line of defense, by convening and consulting with additional control functions to provide independent oversight, and challenges the first line's cybersecurity framework and implementation. As the third line of defense, Group Internal Audit conducts independent reviews and validates the first-line and second-line processes and functions.

The Cyber- and Information Security Committee (the CIS-C) is the primary decision-making body with oversight of and accountability for the Group-wide cyber- and information security (CIS) program. The committee is jointly chaired by the Group Chief Operations and Technology Officer and the Group Chief Compliance and Governance Officer. The Head Group Internal Audit is a standing guest. The committee meets on a monthly basis and serves as a platform for interaction across all business divisions, Group functions and the three lines of defense for the identification and effective governance of CIS strategy, risks and regulatory obligations. The CIS-C governance structure is intended to streamline decision-making and, where necessary, escalation to the Board of Directors (the BoD) and Group Executive Board (GEB), who maintain overall responsibility for overseeing UBS.

Because Credit Suisse and UBS still have separate digital platforms, Credit Suisse maintained much of its pre-acquisition cyber- and information security governance during 2023, but was increasingly aligned to the UBS CIS risk governance framework. Credit Suisse's CIS program is led by the Credit Suisse Chief Information Security Officer, who reports to the Credit Suisse Chief Technology Officer and the UBS Group Chief Information Security Officer (the Group CISO). In addition, the Credit Suisse Chief Technology Officer and Credit Suisse Chief Operations Officer report to the Group Chief Operations and Technology Officer.

› **Refer to "Cybersecurity governance" in "Board of Directors" in the "Corporate governance" section of this report for more information**

Our cyber- and information security program

Our CIS program is led by the Group CISO, who reports both to the Group Chief Operations and Technology Officer and the Group Chief Compliance and Governance Officer. The CIS program is designed to identify, prevent, detect and respond to CIS events, with the goal of maintaining the integrity and availability of our technology infrastructure and the confidentiality and integrity of our information. Our Group CISO, senior management within GOTO, as well as management personnel overseeing the CIS program, all have substantial relevant expertise in the areas of cyber- and information security. Our CIS program includes the following elements:

- *Threat intelligence:* We systematically gather threat information and monitor threat alerts from external sources. Our cyber-threat intelligence team analyzes such information and uses it to enhance existing defense capabilities, to respond to identified threats and to adjust our cybersecurity strategy where needed.
- *Preventative and detection controls:* We use layered firm-wide controls to prevent and detect cyberattacks. Defenses include system hardening, firewalls, intrusion prevention and detection systems, and other controls. External network connections are identified and recorded in an inventory. Access rights are defined for information assets, and IT systems and applications enforce authentication. We maintain access controls and approval processes designed to prevent unauthorized access.
- *Cyber-defense and incident response capabilities*: The Cybersecurity Operations Center is responsible for providing 24/7/365 real-time monitoring, detection and response capabilities for cybersecurity threats and attacks. Incidents assessed as having the potential to adversely affect our critical operations are subject to mandatory management notification. If assessed as potentially significant, cybersecurity and data incidents are managed under our crisis management framework.
- *Education and training:* All UBS staff, including the external workforce, receive appropriate CIS awareness training, commensurate with their roles and responsibilities.
- *Third-party risk:* Vulnerabilities in the cyber-risk environment of third parties represent a particular threat to our CIS and our ability to maintain our business services. We follow a risk-based approach to assess and mitigate cybersecurity risks related to third parties. Third-party services and processes are monitored and checked on an ongoing basis, with appropriate supervision from the CIS-C. This is a key component of our third-party risk management program, notwithstanding the challenges we face in imposing the same levels of protection to the systems and data of third parties that we rely on ourselves.
- *Monitoring and testing:* Effective incident response and problem management processes are complemented by vulnerability assessments, penetration and testing engagements based on specific threat scenarios that simulate tactics, techniques and procedures that might be used against our systems, as mandated by our policy regulations. This includes testing by internal and external red teams. Actual security-related events are directly correlated with threat scenarios to monitor and detect potential threats, such as network-intrusion and malware-driven events. Our deployed security measures are designed with the objective to isolate and contain threats that are detected to allow for effective incident response and analysis.

Our cybersecurity assessment framework

Our cybersecurity assessment framework includes internal and external cybersecurity risk assessments for applications and bank processes alongside a structured risk assessment process of third-party service providers. These processes are designed, along with our security capabilities, to support business objectives and priorities.

We conduct assessments to evaluate and test our cybersecurity program, and provide guidance on operating and improving the CIS program, including the design and operational effectiveness of the security and resiliency of our information systems. Our assessments, along with our threat intelligence capabilities, are used to assess and prioritize programs to improve our security, our incident response capabilities and our operational resilience. As the cyber-threat landscape evolves at an increasing pace, we seek to enhance our cybersecurity controls to meet developing threats. We have ongoing programs that are intended to increase our cybersecurity maturity across various dimensions, including governance, identification, protection and detection, as well as cyberattack response and recovery, and risk from third-party service providers.

We recognize that we will never be able to completely eliminate the risk of a future cyberattack, but, by using a risk-based approach, we work toward reducing the likelihood of a successful attack and toward mitigation of the potential business impact of such an attack.

The BoD, its Risk Committee and the GEB receive regular presentations and reports throughout the year from our Group Chief Operations and Technology Officer and our Group CISO on internal and external cybersecurity developments, threats and risks. In addition, on a quarterly basis, the BoD receives reports on the performance of cybersecurity risk appetite metrics, including metrics on vulnerabilities and third-party cybersecurity risks and incidents, and is notified promptly if a Board-level cybersecurity risk limit is breached. The Risk Committee of the BoD and the GEB also receive regular updates on CIS strategy, risks and alignment with regulatory requirements.

Operational resilience and incident response

Our business continuity and resilience framework is designed to limit the disruption cybersecurity events cause to our business activities. In accordance with the firm's cyber-incident response framework, the CIS-C, including the incident response team, tracks, documents, responds to and analyzes cybersecurity threats and incidents, including those experienced by the firm's third-party service providers that may impact the firm. Additionally, we maintain established procedures for responding to, and escalating, cybersecurity and other system availability incidents. These are regularly practiced, including tabletop exercises up to and including the GEB and BoD levels.

Our cybersecurity and data confidentiality contingency plans include event playbooks and escalation procedures designed to support a structured assessment of potential incidents and timely escalation and reporting of incidents based on the assessed potential impact. Incidents assessed to have the potential to adversely affect our critical operations are subject to mandatory management notification. If assessed as potentially significant, cybersecurity and data incidents are managed under our crisis management framework, which provides pre-established cross-functional task forces to manage the incident, ensure appropriate and timely regulatory, market and client communications and robust oversight by management, with escalation frameworks to inform and ensure oversight by the GEB and the BoD.

› **Refer to "Crisis management framework" in the "Regulation and supervision" section of this report for more information about our crisis management framework**

Advanced measurement approach model

The non-financial risk framework outlined above underpins the calculation of regulatory capital for operational risk, which enables us to quantify operational risk and define effective risk-mitigating management incentives as part of the related operational risk capital allocation approach to the business divisions.

We measure Group operational risk exposure and calculate operational risk regulatory capital using the advanced measurement approach (AMA) in accordance with Swiss Financial Market Supervisory Authority (FINMA) and international requirements. In 2023, we introduced an aggregation of the AMAs for UBS AG and Credit Suisse AG to report on total operational-risk-related risk-weighted assets (RWA) for the UBS Group. The related diversification effect, agreed with FINMA, resulted in a USD 10bn reduction for reported RWA from the second quarter of 2023 onward, of which USD 4.9bn was recognized for UBS AG.

An entity-specific AMA model has been applied for UBS Switzerland AG, while for other regulated entities the basic indicators or standardized approaches are adopted for regulatory capital in agreement with local regulators. Also, the methodology of the UBS AMA is leveraged for entity-specific internal capital adequacy assessment processes.

Currently, the model includes 18 AMA units of measure (UoM), which are aligned with our non-financial risk taxonomy. Frequency and severity distributions are calibrated for each of the model's UoM. The modeled distribution functions for both frequency and severity are used to generate the annual loss distribution. The resulting 99.9% quantile of the overall annual operational risk loss distribution across all UoM determines the required regulatory capital. Currently, we do not reflect mitigation through insurance or any other risk transfer mechanism in our AMA model.

AMA model calibration and review

A key assumption when calibrating data-driven frequency and severity distributions is that historical losses form a reasonable proxy for future events. In line with regulatory expectations, the AMA methodology utilizes both historical internal losses and external losses suffered by the broader industry for model calibration purposes.

Initial model outputs driven by the loss history are reviewed and adjusted to reflect fast-changing external developments, such as new regulations, geopolitical change, volatile market and economic conditions, and internal factors (e.g., changes in business strategy and control framework enhancements). The resulting baseline data-driven frequency and severity distributions are reviewed by subject matter experts and where necessary adjusted based on a review of qualitative information about the business environment and internal control factors, as well as expert judgment, with the aim of forecasting losses.

Our model is reviewed regularly to maintain risk sensitivity and recalibrated at least annually. Any changes to regulatory capital as a result of a recalibration or methodology changes are presented to FINMA for approval prior to use for disclosure purposes.

The Group- and entity-specific AMA models are subject to an independent validation performed by Model Risk Management & Control in line with the Group's model risk management framework.

The AMA is expected to be replaced by the standardized approach for regulatory capital determination purposes in line with the relevant Basel Committee for Banking Supervision Basel III capital regulations. UBS is interacting closely with the relevant Swiss authorities to discuss the implementation details and related implementation timeline.

APPENDIX 5 — OPERATING ENVIRONMENT AND STRATEGY

The information in this Appendix describes the operating environment and strategy of UBS AG and references herein to "**UBS**" or the "**Group**" are to UBS Group AG and its subsidiaries (including UBS AG).

The information in this Appendix has been extracted from the Annual Report 2023 as at and for the year ended 31 December 2023. References to page numbers in this Appendix are to pages of such document. The page numbers of such document appear on the bottom left or right hand side of the pages in this Appendix.

Risk factors

Certain risks, including those described below, may affect our ability to execute our strategy or our business activities, financial condition, results of operations and prospects. We are inherently exposed to multiple risks, many of which may become apparent only with the benefit of hindsight. As a result, risks that we do not consider to be material, or of which we are not currently aware, could also adversely affect us. Within each category, the risks that we consider to be most material are presented first.

Strategy, management and operational risks

UBS's acquisition of Credit Suisse Group AG exposes us to heightened litigation risk and regulatory scrutiny and entails significant additional costs, liabilities and business integration risks that affect UBS AG

UBS acquired Credit Suisse Group AG under exceptional circumstances of volatile financial markets and the continued outflows and deteriorating overall financial position of Credit Suisse, in order to avert a failure of Credit Suisse and thus damage to the Swiss financial center and to global financial stability. The acquisition was effected through a merger of Credit Suisse Group AG with and into UBS Group AG, with UBS Group AG succeeding to all assets and all liabilities of Credit Suisse Group AG, becoming the direct or indirect shareholder of the former Credit Suisse Group AG's direct and indirect subsidiaries. Therefore, on a consolidated basis, all assets, risks and liabilities of the Credit Suisse Group became a part of UBS. This includes all ongoing and future litigation, regulatory and similar matters arising out of the business of the Credit Suisse Group, thereby materially increasing UBS's exposure to litigation and investigation risks, as described in further detail below.

We have incurred substantial transaction fees and costs in connection with the transaction and will continue to incur substantial integration and restructuring costs. In addition, we may not realize all of the expected cost reductions and other benefits of the transaction. We may not be able to successfully execute our strategic plans or to achieve the expected benefits of the acquisition of the Credit Suisse Group. The success of the transaction, including anticipated benefits and cost savings, will depend, in part, on the ability to successfully integrate the operations of both firms rapidly and effectively, while maintaining stability of operations and high levels of service to customers of the combined franchise.

Our ability to successfully integrate Credit Suisse will depend on a number of factors, some of which are outside of our control, including our ability to:
- combine the operations of the two firms in a manner that preserves client service, simplifies infrastructure and results in operating cost savings;
- reverse outflows of deposits and client invested assets at Credit Suisse, particularly in its Wealth Management and Switzerland and to attract additional deposits and other client assets to the combined firm;
- achieve cost reductions at the levels and in the timeframe we plan;
- enhance, integrate, and, where necessary, remediate risk management and financial control and other systems and frameworks, including to remediate the material weakness in Credit Suisse's internal controls over financial reporting;
- simplify the legal structure of the combined firm in an expedited manner, through the planned mergers of UBS AG and Credit Suisse AG and of UBS Switzerland AG and Credit Suisse (Schweiz) AG, as well as the creation of a single intermediate holding company (IHC) for the combined firm in the U.S., other entity mergers and consolidations and asset dispositions, including obtaining regulatory approvals and licenses required to implement such changes;
- retain staff and to reverse attrition of staff in certain of Credit Suisse's business areas;
- successfully execute the wind-down of the assets and liabilities in its Non-core and Legacy division and release capital and resources for other purposes; and
- resolve outstanding litigation, regulatory and similar matters, including matters relating to Credit Suisse, on terms that are not significantly adverse to the UBS Group, as well as to successfully remediate outstanding regulatory and supervisory matters and meet other regulatory commitments.

Further investigation and planning for integration is taking place, and risks that we do not currently consider to be material, or of which we are not currently aware, could also adversely affect us.

The level of success in the absorption of Credit Suisse, in the integration of the two groups and their businesses, particularly in the area of the Swiss domestic bank, as well as domestic and international wealth management business, and in the execution of the planned strategy regarding cost reduction and divestment of any non-core assets, and the level of resulting impairments and write-downs, may impact the operational results, share price and the credit rating of UBS entities. The past financial performance of each of UBS Group AG and Credit Suisse may not be indicative of their future financial performance. The combined group will be required to devote significant management attention and resources to integrating its business practices and support functions. The diversion of management's attention and any delays or difficulties encountered in connection with the transaction and the coordination of the two companies' operations could have an adverse effect on the business, financial results, financial condition or the share price of the combined group following the transaction. The coordination process may also result in additional and unforeseen expenses.

Our reputation is critical to our success

Our reputation is critical to the success of our strategic plans, business and prospects. Reputational damage is difficult to reverse, and improvements tend to be slow and difficult to measure. In the past, our reputation has been adversely affected by our losses during the financial crisis, investigations into our cross-border private banking services, criminal resolutions of LIBOR-related and foreign exchange matters, as well as other matters. We believe that reputational damage as a result of these events was an important factor in our loss of clients and client assets across our asset-gathering businesses. The Credit Suisse Group has more recently been subject to significant litigation and regulatory matters and to financial losses that adversely affected its reputation and the confidence of clients, which played a significant role in the failure of the Credit Suisse Group in March 2023. These events, or new events that cause reputational damage could have a material adverse effect on our results of operation and financial condition, as well as our ability to achieve our strategic goals and financial targets.

Operational risks affect our business

Our businesses depend on our ability to process a large number of transactions, many of which are complex, across multiple and diverse markets in different currencies, to comply with requirements of many different legal and regulatory regimes to which we are subject and to prevent, or promptly detect and stop, unauthorized, fictitious or fraudulent transactions. We also rely on access to, and on the functioning of, systems maintained by third parties, including clearing systems, exchanges, information processors and central counterparties. Any failure of our or third-party systems could have an adverse effect on us. These risks may be greater as we deploy newer technologies, such as blockchain, or processes, platforms or products that rely on these technologies. Our operational risk management and control systems and processes are designed to help ensure that the risks associated with our activities – including those arising from process error, failed execution, misconduct, unauthorized trading, fraud, system failures, financial crime, cyberattacks, breaches of information security, inadequate or ineffective access controls and failure of security and physical protection – are appropriately controlled. If our internal controls fail or prove ineffective in identifying and remedying these risks, we could suffer operational failures that might result in material losses, such as the substantial loss we incurred from the unauthorized trading incident announced in September 2011. The acquisition of the Credit Suisse Group may elevate these risks, particularly during the first phases of integration, as the firms have historically operated under different procedures, IT systems, risk policies and structures of governance.

As a significant proportion of our staff have been and will continue working from outside the office, we have faced, and will continue to face, new challenges and operational risks, including maintenance of supervisory and surveillance controls, as well as increased fraud and data security risks. While we have taken measures to manage these risks, these measures could prove not to be effective.

We use automation as part of our efforts to improve efficiency, reduce the risk of error and improve our client experience. We intend to expand the use of robotic processing, machine learning and artificial intelligence to further these goals. Use of these tools presents their own risks, including the need for effective design and testing; the quality of the data used for development and operation of machine learning and artificial intelligence tools may adversely affect their functioning and result in errors and other operational risks.

Financial services firms have increasingly been subject to breaches of security and to cyber- and other forms of attack, some of which are sophisticated and targeted attacks intended to gain access to confidential information or systems, disrupt service or steal or destroy data, which may result in business disruption or the corruption or loss of data at UBS's locations or those of third parties. Cyberattacks by hackers, terrorists, criminal organizations, nation states and extremists have also increased in frequency and sophistication. Current geopolitical tensions have also led to increased risk of cyberattack from foreign state actors. In particular, the Russia–Ukraine war and the imposition of significant sanctions on Russia by Switzerland, the US, the EU, the UK and others has resulted and may continue to result in an increase in the risk of cyberattacks. Such attacks may occur on our own systems or on the systems that are operated by external service providers, may be attempted through the introduction of ransomware, viruses or malware, phishing and other forms of social engineering, distributed denial of service attacks and other means. These attempts may occur directly, or using equipment or security passwords of our employees, third-party service providers or other users. Cybersecurity risks also have increased due to the widespread use of digital technologies, cloud computing and mobile devices to conduct financial business and transactions, as well as due to generative AI, which increases the capabilities of adversaries to mount sophisticated phishing attacks, for example, through the use of deepfake technologies, and presents new challenges to the protection of our systems and networks and the confidentiality and integrity of our data. During the first quarter of 2023, a third-party vendor, ION XTP, suffered a ransomware attack, which resulted in some disruption to our exchange-traded derivatives clearing activities, although we restored our services within 36 hours, using an available alternative solution. In addition to external attacks, we have experienced loss of client data from failure by employees and others to follow internal policies and procedures and from misappropriation of our data by employees and others.

We may not be able to anticipate, detect or recognize threats to our systems or data and our preventative measures may not be effective to prevent an attack or a security breach. In the event of a security breach, notwithstanding our preventative measures, we may not immediately detect a particular breach or attack. The acquisition of the Credit Suisse Group may elevate and intensify these risks as would-be attackers have a larger potential target in the combined bank and differences in systems, policies, and platforms could make threat detection more difficult. In addition, the implementation of the large-scale technological change program that is necessary to integrate the combined bank's systems at pace may also result in increased risks. Once a particular attack is detected, time may be required to investigate and assess the nature and extent of the attack, and to restore and test systems and data. If a successful attack occurs at a service provider, as we have recently experienced, we may be dependent on the service provider's ability to detect the attack, investigate and assess the attack and successfully restore the relevant systems and data. A successful breach or circumvention of security of our or a service provider's systems or data could have significant negative consequences for us, including disruption of our operations, misappropriation of confidential information concerning us or our clients, damage to our systems, financial losses for us or our clients, violations of data privacy and similar laws, litigation exposure and damage to our reputation. We may be subject to enforcement actions as regulatory focus on cybersecurity increases and regulators have announced new rules, guidance and initiatives on ransomware and other cybersecurity-related issues.

We are subject to complex and frequently changing laws and regulations governing the protection of client and personal data, such as the EU General Data Protection Regulation. Ensuring that we comply with applicable laws and regulations when we collect, use and transfer personal information requires substantial resources and may affect the ways in which we conduct our business. In the event that we fail to comply with applicable laws, we may be exposed to regulatory fines and penalties and other sanctions. We may also incur such penalties if our vendors or other service providers or clients or counterparties fail to comply with these laws or to maintain appropriate controls over protected data. In addition, any loss or exposure of client or other data may adversely damage our reputation and adversely affect our business.

A major focus of US and other countries' governmental policies relating to financial institutions in recent years has been on fighting money laundering and terrorist financing. We are required to maintain effective policies, procedures and controls to detect, prevent and report money laundering and terrorist financing, and to verify the identity of our clients under the laws of many of the countries in which we operate. We are also subject to laws and regulations related to corrupt and illegal payments to government officials by others, such as the US Foreign Corrupt Practices Act and the UK Bribery Act. We have implemented policies, procedures and internal controls that are designed to comply with such laws and regulations. Notwithstanding this, US regulators have found deficiencies in the design and operation of anti-money laundering programs in our US operations. We have undertaken a significant program to address these regulatory findings with the objective of fully meeting regulatory expectations for our programs. Failure to maintain and implement adequate programs to combat money laundering, terrorist financing or corruption, or any failure of our programs in these areas, could have serious consequences both from legal enforcement action and from damage to our reputation. Frequent changes in sanctions imposed and increasingly complex sanctions imposed on countries, entities and individuals, as exemplified by the breadth and scope of the sanctions imposed in relation to the war in Ukraine, increase our cost of monitoring and complying with sanctions requirements and increase the risk that we will not identify in a timely manner client activity that is subject to a sanction.

As a result of new and changed regulatory requirements and the changes we have made in our legal structure, the volume, frequency and complexity of our regulatory and other reporting has remained elevated. Regulators have also significantly increased expectations regarding our internal reporting and data aggregation, as well as management reporting. We have incurred, and continue to incur, significant costs to implement infrastructure to meet these requirements. Failure to meet external reporting requirements accurately and in a timely manner or failure to meet regulatory expectations of internal reporting, data aggregation and management reporting could result in enforcement action or other adverse consequences for us.

In addition, despite the contingency plans that we have in place, our ability to conduct business may be adversely affected by a disruption in the infrastructure that supports our businesses and the communities in which we operate. This may include a disruption due to natural disasters, pandemics, civil unrest, war or terrorism and involve electrical, communications, transportation or other services that we use or that are used by third parties with whom we conduct business.

We depend on our risk management and control processes to avoid or limit potential losses in our businesses

Controlled risk-taking is a major part of the business of a financial services firm. Some losses from risk-taking activities are inevitable, but to be successful over time, we must balance the risks we take against the returns generated. Therefore, we must diligently identify, assess, manage and control our risks, not only in normal market conditions but also as they might develop under more extreme, stressed conditions, when concentrations of exposures can lead to severe losses.

We have not always been able to prevent serious losses arising from risk management failures and extreme or sudden market events. We recorded substantial losses on fixed-income trading positions in the 2008 financial crisis, in the unauthorized trading incident in 2011 and, more recently, positions resulting from the default of a US prime brokerage client. In the recent past, the Credit Suisse Group has suffered very significant losses from the default of the US prime brokerage client, the losses in supply-chain finance funds managed by it, as well as other matters. As a result of these, Credit Suisse is subject to significant regulatory remediation obligations to address deficiencies in its risk management and controls systems, that continue following the merger.

We regularly revise and strengthen our risk management and control frameworks to seek to address identified shortcomings. Nonetheless, we could suffer further losses in the future if, for example:
- we do not fully identify the risks in our portfolio, in particular risk concentrations and correlated risks;
- our assessment of the risks identified, or our response to negative trends, proves to be untimely, inadequate, insufficient or incorrect;
- our risk models prove insufficient to predict the scale of financial risks the bank faces;
- markets move in ways that we do not expect – in terms of their speed, direction, severity or correlation – and our ability to manage risks in the resulting environment is, therefore, affected;
- third parties to whom we have credit exposure or whose securities we hold are severely affected by events and we suffer defaults and impairments beyond the level implied by our risk assessment; or
- collateral or other security provided by our counterparties and clients proves inadequate to cover their obligations at the time of default.

We also hold legacy risk positions, primarily in Non-core and Legacy, that, in many cases, are illiquid and may deteriorate in value. The acquisition of the Credit Suisse Group, and the planned integration of UBS AG with Credit Suisse AG, is increasing, materially, the portfolio of business that are outside of our risk appetite and subject to exit that will be managed in the Non-core and Legacy segment.

We also manage risk on behalf of our clients. The performance of assets we hold for our clients may be adversely affected by the same aforementioned factors. If clients suffer losses or the performance of their assets held with us is not in line with relevant benchmarks against which clients assess investment performance, we may suffer reduced fee income and a decline in assets under management, or withdrawal of mandates.

Investment positions, such as equity investments made as part of strategic initiatives and seed investments made at the inception of funds that we manage, may also be affected by market risk factors. These investments are often not liquid and generally are intended or required to be held beyond a normal trading horizon. Deteriorations in the fair value of these positions would have a negative effect on our earnings.

We may be unable to identify or capture revenue or competitive opportunities, or retain and attract qualified employees

The financial services industry is characterized by intense competition, continuous innovation, restrictive, detailed, and sometimes fragmented regulation and ongoing consolidation. We face competition at the level of local markets and individual business lines, and from global financial institutions that are comparable to us in their size and breadth, as well as competition from new technology-based market entrants, which may not be subject to the same level of regulation. Barriers to entry in individual markets and pricing levels are being eroded by new technology. We expect these trends to continue and competition to increase. Our competitive strength and market position could be eroded if we are unable to identify market trends and developments, do not respond to such trends and developments by devising and implementing adequate business strategies, do not adequately develop or update our technology, including our digital channels and tools, or are unable to attract or retain the qualified people needed.

The amount and structure of our employee compensation is affected not only by our business results, but also by competitive factors and regulatory considerations.

In response to the demands of various stakeholders, including regulatory authorities and shareholders, and in order to better align the interests of our staff with other stakeholders, we have increased average deferral periods for stock awards, expanded forfeiture provisions and, to a more limited extent, introduced clawback provisions for certain awards linked to business performance. We have also introduced individual caps on the proportion of fixed to variable pay for the Executive Board (EB) members, as well as certain other employees. We will also be required to introduce and enforce provisions requiring UBS to recover from EB members and certain other executives a portion of performance-based incentive compensation in the event that UBS Group or another entity with securities listed on a US national securities exchange, is required to restate its financial statements as a result of a material error.

Constraints on the amount or structure of employee compensation, higher levels of deferral, performance conditions and other circumstances triggering the forfeiture of unvested awards may adversely affect our ability to retain and attract key employees, particularly where we compete with companies that are not subject to these constraints. The loss of key staff and the inability to attract qualified replacements could seriously compromise our ability to execute our strategy and to successfully improve our operating and control environment, and could affect our business performance. This risk is intensified by elevated levels of attrition among Credit Suisse employees. Swiss law requires that shareholders approve the compensation of the UBS Group AG Board of Directors (the Group Board) and the UBS Group AG Group Executive Board (GEB) each year. If UBS Group AG's shareholders fail to approve the compensation for the GEB or the Group Board, this could have an adverse effect on our ability to retain experienced directors and our senior management.

Our operating results, financial condition and ability to pay our obligations in the future may be affected by funding, dividends and other distributions received directly or indirectly from its subsidiaries, which may be subject to restrictions

UBS AG's ability to pay its obligations in the future will depend on the level of funding, dividends and other distributions, if any, received from UBS Switzerland AG and other subsidiaries. The ability of such subsidiaries to make loans or distributions, directly or indirectly, to UBS AG may be restricted as a result of several factors, including restrictions in financing agreements and the requirements of applicable law and regulatory, fiscal or other restrictions. In particular, UBS AG's direct and indirect subsidiaries, including UBS Switzerland AG, UBS Americas Holding LLC and UBS Europe SE, are subject to laws and regulations require the entities to maintain minimum levels of capital and liquidity, that restrict dividend payments, authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to UBS AG, or could affect their ability to repay any loans made to, or other investments in, such subsidiary by UBS AG or another member of the Group. For example, in the early stages of the COVID-19 pandemic, the European Central Bank ordered all banks under its supervision to cease dividend distributions and the Board of Governors of the Federal Reserve System limited capital distributions by bank holding companies and intermediate holding companies. Restrictions and regulatory actions could impede access to funds that UBS AG may need to meet its obligations. In addition, UBS AG's right to participate in a distribution of assets upon a subsidiary's liquidation or reorganization is subject to all prior claims of the subsidiary's creditors.

Furthermore, UBS AG may guarantee some of the payment obligations of certain of the Group's subsidiaries from time to time. These guarantees may require UBS AG to provide substantial funds or assets to subsidiaries or their creditors or counterparties at a time when UBS AG is in need of liquidity to fund its own obligations.

Market, credit and macroeconomic risks

Performance in the financial services industry is affected by market conditions and the macroeconomic climate

Our businesses are materially affected by market and macroeconomic conditions. A market downturn and weak macroeconomic conditions can be precipitated by a number of factors, including geopolitical events, such as international armed conflicts, war, or acts of terrorism, the imposition of sanctions, global trade or global supply chain disruptions, including energy shortages and food insecurity, changes in monetary or fiscal policy, changes in trade policies or international trade disputes, significant inflationary or deflationary price changes, disruptions in one or more concentrated economic sectors, natural disasters, pandemics or local and regional civil unrest. Such developments can have unpredictable and destabilizing effects.

Adverse changes in interest rates, credit spreads, securities prices, market volatility and liquidity, foreign exchange rates, commodity prices, and other market fluctuations, as well as changes in investor sentiment, can affect our earnings and ultimately our financial and capital positions. As financial markets are global and highly interconnected, local and regional events can have widespread effects well beyond the countries in which they occur. Any of these developments may adversely affect our business or financial results.

As a result of significant volatility in the market, our businesses may experience a decrease in client activity levels and market volumes, which would adversely affect our ability to generate transaction fees, commissions and margins, particularly in Global Wealth Management and the Investment Bank. A market downturn would likely reduce the volume and valuation of assets that we manage on behalf of clients, which would reduce recurring fee income that is charged based on invested assets, primarily in Global Wealth Management and Asset Management, and performance-based fees in Asset Management. Such a downturn could also cause a decline in the value of assets that we own and account for as investments or trading positions. In addition, reduced market liquidity or volatility may limit trading opportunities and therefore may reduce transaction-based income and may also impede our ability to manage risks.

Health emergencies, including pandemics and measures taken by governmental authorities to manage them, may have effects such as labor market displacements, supply chain disruptions, and inflationary pressures, and adversely affect global and regional economic conditions, resulting in contraction in the global economy, substantial volatility in the financial markets, crises in markets for goods and services, disruptions in real estate markets, increased unemployment, increased credit and counterparty risk, and operational challenges, as we saw with the COVID-19 pandemic. Such economic or market disruptions, including inflationary pressures, may lead to reduced levels of client activity and demand for our products and services, increased utilization of lending commitments, significantly increased client defaults, continued and increasing credit and valuation losses in our loan portfolios, loan commitments and other assets, and impairments of other financial assets. A fall in equity markets and a consequent decline in invested assets would also reduce recurring fee income in our Global Wealth Management and Asset Management businesses, as UBS experienced in the second quarter of 2022. These factors and other consequences of a health emergency may negatively affect our financial condition, including possible constraints on capital and liquidity, as well as a higher cost of capital, and possible downgrades to our credit ratings.

Geopolitical events: Terrorist activity and escalating armed conflict in the Middle East, as well as the continuing Russia–Ukraine war, may have significant impacts on global markets, exacerbate global inflationary pressures, and slow global growth. In addition, the ongoing conflicts may continue to cause significant population displacement, and lead to shortages of vital commodities, including energy shortages and food insecurity outside the areas immediately involved in armed conflict. Governmental responses to the armed conflicts, including, with respect to the Russia/Ukraine war, coordinated successive sets of sanctions on Russia and Belarus, and Russian and Belarusian entities and nationals, and the uncertainty as to whether the ongoing conflicts will widen and intensify, may continue to have significant adverse effects on the market and macroeconomic conditions, including in ways that cannot be anticipated. If individual countries impose restrictions on cross-border payments or trade, or other exchange or capital controls, or change their currency (for example, if one or more countries should leave the Eurozone, as a result of the imposition of sanctions on individuals, entities or countries, or escalation of trade restrictions and other actions between the US, or other countries, and China), we could suffer adverse effects on our business, losses from enforced default by counterparties, be unable to access our own assets or be unable to effectively manage our risks.

We could be materially affected if a crisis develops, regionally or globally, as a result of disruptions in markets due to macroeconomic or political developments, trade restrictions, or the failure of a major market participant. Over time, our strategic plans have become more heavily dependent on our ability to generate growth and revenue in emerging markets, including China, causing us to be more exposed to the risks associated with such markets.

Global Wealth Management derives revenues from all the principal regions, but has a greater concentration in Asia than many peers and a substantial presence in the US, unlike many European peers. The Investment Bank's business is more heavily weighted to Europe and Asia than our peers, while its derivatives business is more heavily weighted to structured products for wealth management clients, in particular with European and Asian underlyings. Our performance may therefore be more affected by political, economic and market developments in these regions and businesses than some other financial service providers.

The extent to which ongoing conflicts, current inflationary pressures and related adverse economic conditions affect our businesses, results of operations and financial condition, as well as our regulatory capital and liquidity ratios, will depend on future developments, including the effects of the current conditions on our clients, counterparties, employees and third-party service providers.

Our credit risk exposure to clients, trading counterparties and other financial institutions would increase under adverse or other economic conditions

Credit risk is an integral part of many of our activities, including lending, underwriting and derivatives activities. Adverse economic or market conditions, or the imposition of sanctions or other restrictions on clients, counterparties or financial institutions, may lead to impairments and defaults on these credit exposures. Losses may be exacerbated by declines in the value of collateral securing loans and other exposures. In our prime brokerage, securities finance and Lombard lending businesses, we extend substantial amounts of credit against securities collateral, the value or liquidity of which may decline rapidly. Market closures and the imposition of exchange controls, sanctions or other measures may limit our ability to settle existing transactions or to realize on collateral, which may result in unexpected increases in exposures. Our Swiss mortgage and corporate lending portfolios are a large part of our overall lending. We are therefore exposed to the risk of adverse economic developments in Switzerland, including property valuations in the housing market, the strength of the Swiss franc and its effect on Swiss exports, return to negative interest rates applied by the Swiss National Bank, economic conditions within the Eurozone or the EU, and the evolution of agreements between Switzerland and the EU or EEA, which represent Switzerland's largest export market. We have exposures related to real estate in various countries, including a substantial Swiss mortgage portfolio. Although we believe this portfolio is prudently managed, we could nevertheless be exposed to losses if a substantial deterioration in the Swiss real estate market were to occur.

As we experienced in 2020, under the International Financial Reporting Standards (IFRS) 9 expected credit loss (ECL) regime, credit loss expenses may increase rapidly at the onset of an economic downturn as a result of higher levels of credit impairments (stage 3), as well as higher ECL from stages 1 and 2. Substantial increases in ECL could exceed expected loss for regulatory capital purposes and adversely affect our common equity tier 1 (CET1) capital and regulatory capital ratios.

Interest rate trends and changes could negatively affect our financial results

UBS's businesses are sensitive to changes in interest rate trends. A prolonged period of low or negative interest rates, particularly in Switzerland and the Eurozone, adversely affected the net interest income generated by UBS's Personal & Corporate Banking and Global Wealth Management businesses prior to 2022. Actions that UBS took to mitigate adverse effects on income, such as the introduction of selective deposit fees or minimum lending rates, contributed to outflows of customer deposits (a key source of funding for UBS), net new money outflows and a declining market share in its Swiss lending business.

During 2022, interest rates increased sharply in the US and most other markets, including a shift from negative to positive central bank policy rates in the Eurozone and Switzerland, as central banks responded to higher inflation. Higher interest rates generally benefit UBS's net interest income. However, as returns on alternatives to deposits increase with rising interest rates, such as returns on money market funds, UBS experienced outflows from customer deposits and shifts of deposits from lower-interest account types to accounts bearing higher interest rates, such as savings and certificates of deposit, starting with effects in the US, where rates had rapidly increased. In addition, higher for longer rates, such as those experienced in 2023, have led similar shifts in euro and Swiss Franc deposits. Sustained higher interest rates also may adversely affect our credit counterparties. Customer deposit outflows could require UBS to obtain alternative funding, which would likely be more costly than customer deposits.

Currency fluctuation may have an adverse effect on our profits, balance sheet and regulatory capital

We are subject to currency fluctuation risks as a substantial portion of our assets and liabilities are denominated in currencies other than our UBS AG presentation currency, the US dollar. In order to hedge our CET1 capital ratio, our CET1 capital must have foreign currency exposure, which leads to currency sensitivity. As a consequence, it is not possible to simultaneously fully hedge both CET1 capital and the CET1 capital ratio. Accordingly, changes in foreign exchange rates may adversely affect our profits, balance sheet, and capital, leverage and liquidity coverage ratios.

Regulatory and legal risks

Material legal and regulatory risks arise in the conduct of our business

As a global financial services firm operating in more than 50 countries, we are subject to many different legal, tax and regulatory regimes, including extensive regulatory oversight, and are exposed to significant liability risk. We are subject to a large number of claims, disputes, legal proceedings and government investigations, and we expect that our ongoing business activities will continue to give rise to such matters in the future. In addition, as noted above, UBS Group inherited claims against Credit Suisse entities as part of the acquisition, including matters that may be material to the operating results of the combined group such as the ongoing supply chain finance funds (SCFF) matter. This will affect UBS AG upon the planned merger with Credit Suisse AG. The extent of our financial exposure to these and other matters is material and could substantially exceed the level of provisions that we have established. We are not able to predict the financial and non-financial consequences these matters may have when resolved.

We may be subject to adverse preliminary determinations or court decisions that may negatively affect public perception and our reputation, result in prudential actions from regulators, and cause us to record additional provisions for such matters even when we believe we have substantial defenses and expect to ultimately achieve a more favorable outcome. This risk is illustrated by the award of aggregate penalties and damages of EUR 4.5bn by the court of first instance in France. This award was reduced to an aggregate of EUR 1.8bn by the Court of Appeal, and in a further appeal, the French Supreme Court referred the case back to the Paris Court of Appeal to reconsider the amount after a new trial.

Litigation, regulatory and similar matters may also result in non-monetary penalties and consequences. Among other things, a guilty plea to, or conviction of, a crime (including as a result of termination of the Deferred Prosecution Agreement Credit Suisse entered into with the United States Department of Justice in 2021 to resolve its Mozambique matter) could have material consequences for UBS.

Resolution of regulatory proceedings has required us 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 our participation in them. Failure to obtain such waivers, or any limitation, suspension or termination of licenses, authorizations or participations, could have material adverse consequences for us.

Our settlements with governmental authorities in connection with foreign exchange, London Interbank Offered Rates (LIBOR) and other benchmark interest rates starkly illustrate the significantly increased level of financial and reputational risk now associated with regulatory matters in major jurisdictions. In connection with investigations related to LIBOR and other benchmark rates and to foreign exchange and precious metals, very large fines and disgorgement amounts were assessed against us, and we were required to enter guilty pleas despite our full cooperation with the authorities in the investigations, and despite our receipt of conditional leniency or conditional immunity from anti-trust authorities in a number of jurisdictions, including the US and Switzerland.

For a number of years, we have been, and we continue to be, subject to a very high level of regulatory scrutiny and to certain regulatory measures that constrain our strategic flexibility. We believe we have remediated the deficiencies that led to significant losses in the past and made substantial changes in our controls and conduct risk frameworks to address the issues highlighted by the LIBOR-related, foreign exchange and precious metals regulatory resolutions. We have also undertaken extensive efforts to implement new regulatory requirements and meet heightened expectations.

Credit Suisse and UBS have become the target of lawsuits, and may become the target of further litigation, in connection with the merger transaction and/or the regulatory and other actions taken in connection with the merger transaction, all of which could result in substantial costs.

We continue to be in active dialogue with regulators concerning the actions we are taking to improve our operational risk management, risk control, anti-money laundering, data management and other frameworks, and otherwise seek to meet supervisory expectations, but there can be no assurance that our efforts will have the desired effects. As a result of this history, our level of risk with respect to regulatory enforcement may be greater than that of some of our peers.

Substantial changes in regulation may adversely affect our businesses and our ability to execute our strategic plans

Since the financial crisis of 2008, we have been subject to significant regulatory requirements, including recovery and resolution planning, changes in capital and prudential standards, changes in taxation regimes as a result of changes in governmental administrations, new and revised market standards and fiduciary duties, as well as new and developing environmental, social and governance (ESG) standards and requirements. Notwithstanding attempts by regulators to align their efforts, the measures adopted or proposed for banking regulation differ significantly across the major jurisdictions, making it increasingly difficult to manage a global institution. Regulatory reviews of the events leading to the failures of US banks and the acquisition of Credit Suisse by UBS Group in 2023, as well as regulatory measures to complete the implementation of the Basel 3 standards, may increase capital, liquidity and other requirements applicable to banks, including UBS AG. In addition, Swiss regulatory changes with regard to such matters as capital and liquidity have often proceeded more quickly than those in other major jurisdictions, and Switzerland's requirements for major international banks are among the strictest of the major financial centers. This could put Swiss banks, such as UBS AG, at a disadvantage when competing with peer financial institutions subject to more lenient regulation or with unregulated non-bank competitors.

Our implementation of additional regulatory requirements and changes in supervisory standards, as well as our compliance with existing laws and regulations, continue to receive heightened scrutiny from supervisors. If we do not meet supervisory expectations in relation to these or other matters, or if additional supervisory or regulatory issues arise, we would likely be subject to further regulatory scrutiny, as well as measures that may further constrain our strategic flexibility.

Resolvability and resolution and recovery planning: We have moved significant operations into subsidiaries to improve resolvability and meet other regulatory requirements, and this has resulted in substantial implementation costs, increased our capital and funding costs and reduced operational flexibility. For example, we have transferred all of our US subsidiaries under a US intermediate holding company to meet US regulatory requirements, and have transferred substantially all the operations of Personal & Corporate Banking and Global Wealth Management booked in Switzerland to UBS Switzerland AG to improve resolvability.

These changes create operational, capital, liquidity, funding and tax inefficiencies. Our operations in subsidiaries are subject to local capital, liquidity, stable funding, capital planning and stress testing requirements. These requirements have resulted in increased capital and liquidity requirements in affected subsidiaries, which limit our operational flexibility and negatively affect our ability to benefit from synergies between business units and to distribute earnings to the Group.

Under the Swiss too-big-to-fail (TBTF) framework, we are required to put in place viable emergency plans to preserve the operation of systemically important functions in the event of a failure. Moreover, under this framework and similar regulations in the US, the UK, the EU and other jurisdictions in which we operate, we are required to prepare credible recovery and resolution plans detailing the measures that would be taken to recover in a significant adverse event or in the event of winding down the Group or the operations in a host country through resolution or insolvency proceedings. If a recovery or resolution plan that we produce is determined by the relevant authority to be inadequate or not credible, relevant regulation may permit the authority to place limitations on the scope or size of our business in that jurisdiction, or oblige us to hold higher amounts of capital or liquidity or to change our legal structure or business in order to remove the relevant impediments to resolution.

The authorities in Switzerland and internationally are working on lessons learned from the Credit Suisse Group and the US regional bank failures, which might result in additional requirements regarding resolution planning and early intervention tools for authorities.

Capital and prudential standards: As an internationally active Swiss systemically relevant bank (an SRB), we are subject to capital and total loss-absorbing capacity (TLAC) requirements that are among the most stringent in the world. Moreover, many of our subsidiaries must comply with minimum capital, liquidity and similar requirements and, as a result, UBS Group AG and UBS AG have contributed a significant portion of their capital and provide substantial liquidity to these subsidiaries. These funds are available to meet funding and collateral needs in the relevant entities, but are generally not readily available for use by the Group as a whole.

We expect our risk-weighted assets (RWA) to further increase as the effective date for additional capital standards promulgated by the Basel Committee on Banking Supervision (the BCBS) draws nearer. In connection with the acquisition of the Credit Suisse Group, FINMA has permitted Credit Suisse entities to continue to apply certain prior interpretations and has provided supervisory rulings on the treatment of certain items for RWA or capital purposes. In general, these interpretations require that UBS phase out the treatment over the next several years. In addition, FINMA has agreed that additional capital requirement applicable to Swiss systemically relevant banks, which is based on market share in Switzerland and leverage ratio denominator (LRD), will not increase as a result of acquisition of the Credit Suisse Group before the end of 2025. The phase-out or end of these periods will likely increase our overall capital requirements upon the planned merger with Credit Suisse AG, which increase may be substantial.

Increases in capital and liquidity standards could significantly curtail our ability to pursue strategic opportunities.

Market regulation and fiduciary standards: Our wealth and asset management businesses operate in an environment of increasing regulatory scrutiny and changing standards with respect to fiduciary and other standards of care and the focus on mitigating or eliminating conflicts of interest between a manager or advisor and the client, which require effective implementation across the global systems and processes of investment managers and other industry participants. For example, we have made material changes to our business processes, policies and the terms on which we interact with these clients in order to comply with SEC Regulation Best Interest, which is intended to enhance and clarify the duties of brokers and investment advisers to retail customers, the Volcker Rule, which limits our ability to engage in proprietary trading, as well as changes in European and Swiss market conduct regulation. Future changes in the regulation of our duties to customers may require us to make further changes to our businesses, which would result in additional expense and may adversely affect our business. We may also become subject to other similar regulations substantively limiting the types of activities in which we may engage or the way we conduct our operations.

In many instances, we provide services on a cross-border basis, and we are therefore sensitive to barriers restricting market access for third-country firms. In particular, efforts in the EU to harmonize the regime for third-country firms to access the European market may have the effect of creating new barriers that adversely affect our ability to conduct business in these jurisdictions from Switzerland. In addition, a number of jurisdictions are increasingly regulating cross-border activities based on determinations of equivalence of home country regulation, substituted compliance or similar principles of comity. A negative determination with respect to Swiss equivalence could limit our access to the market in those jurisdictions and may negatively influence our ability to act as a global firm. For example, the EU declined to extend its equivalence determination for Swiss exchanges, which lapsed as of 30 June 2019.

UBS AG Group experienced cross-border outflows over a number of years as a result of heightened focus by fiscal authorities on cross-border investment and fiscal amnesty programs, in anticipation of the implementation in Switzerland of the global automatic exchange of tax information, and as a result of the measures UBS AG Group has implemented in response to these changes. Further changes in local tax laws or regulations and their enforcement, additional cross-border tax information exchange regimes, national tax amnesty or enforcement programs or similar actions may affect our clients' ability or willingness to do business with us and could result in additional cross-border outflows.

If we experience financial difficulties, FINMA has the power to open restructuring or liquidation proceedings or impose protective measures in relation to UBS Group AG, UBS AG or UBS Switzerland AG, and such proceedings or measures may have a material adverse effect on our shareholders and creditors

Under the Swiss Banking Act, FINMA is able to exercise broad statutory powers with respect to Swiss banks and Swiss parent companies of financial groups, such as UBS Group AG, UBS AG and UBS Switzerland AG, if there is justified concern that the entity is over-indebted, has serious liquidity problems or, after the expiration of any relevant deadline, no longer fulfills capital adequacy requirements. Such powers include ordering protective measures, instituting restructuring proceedings (and exercising any Swiss resolution powers in connection therewith), and instituting liquidation proceedings, all of which may have a material adverse effect on shareholders and creditors or may prevent UBS Group AG, UBS AG or UBS Switzerland AG from paying dividends or making payments on debt obligations.

UBS would have limited ability to challenge any such protective measures, and creditors and shareholders would also have limited ability under Swiss law or in Swiss courts to reject them, seek their suspension, or challenge their imposition, including measures that require or result in the deferment of payments.

If restructuring proceedings are opened with respect to UBS Group AG, UBS AG or UBS Switzerland AG, the resolution powers that FINMA may exercise include the power to: (i) transfer all or some of the assets, debt and other liabilities, and contracts of the entity subject to proceedings to another entity; (ii) stay for a maximum of two business days (a) the termination of, or the exercise of rights to terminate, netting rights, (b) rights to enforce or dispose of certain types of collateral or (c) rights to transfer claims, liabilities or certain collateral, under contracts to which the entity subject to proceedings is a party; and / or (iii) partially or fully write down the equity capital and regulatory capital instruments and, if such regulatory capital is fully written down, write down or convert into equity the other debt instruments of the entity subject to proceedings. Shareholders and creditors would have no right to reject, or to seek the suspension of, any restructuring plan pursuant to which such resolution powers are exercised. They would have only limited rights to challenge any decision to exercise resolution powers or to have that decision reviewed by a judicial or administrative process or otherwise.

Upon full or partial write-down of the equity and regulatory capital instruments of the entity subject to restructuring proceedings, the relevant shareholders and creditors would receive no payment in respect of the equity and debt that is written down, the write-down would be permanent, and the investors would likely not, at such time or at any time thereafter, receive any shares or other participation rights, or be entitled to any write-up or any other compensation in the event of a potential subsequent recovery of the debtor. If FINMA orders the conversion of debt of the entity subject to restructuring proceedings into equity, the securities received by the investors may be worth significantly less than the original debt and may have a significantly different risk profile. In addition, creditors receiving equity would be effectively subordinated to all creditors of the restructured entity in the event of a subsequent winding up, liquidation or dissolution of the restructured entity, which would increase the risk that investors would lose all or some of their investment.

FINMA has significant discretion in the exercise of its powers in connection with restructuring proceedings. Furthermore, certain categories of debt obligations, such as certain types of deposits, are subject to preferential treatment. As a result, holders of obligations of an entity subject to a Swiss restructuring proceeding may have their obligations written down or converted into equity even though obligations ranking on par with such obligations are not written down or converted.

Developments in sustainability, climate, environmental and social standards and regulations may affect our business and impact our ability to fully realize our goals

We have set ambitious goals for ESG matters. These goals include our ambitions for environmental sustainability in our operations, including carbon emissions, in the business we do with clients and in products that we offer. They also include goals or aspirations for diversity in our workforce and supply chain, and support for the United Nations Sustainable Development Goals. There is substantial uncertainty as to the scope of actions that may be required of us, governments and others to achieve the goals we have set, and many of our goals and objectives are only achievable with a combination of government and private action. National and international standards and expectations, industry and scientific practices, and regulatory taxonomies and disclosure obligations addressing these matters are relatively immature and are rapidly evolving. In addition, there are significant limitations in the data available to measure our climate and other goals. Although we have defined and disclosed our goals based on the standards existing at the time of disclosure, there can be no assurance (i) that the various ESG regulatory and disclosure regimes under which we operate will not come into conflict with one another, (ii) that the current standards will not be interpreted differently than our understanding or change in a manner that substantially increases the cost or effort for us to achieve such goals or (iii) that additional data or methods, whether voluntary or required by regulation, may substantially change our calculation of our goals and ambitions. It is possible that such goals may prove to be considerably more difficult or even impossible to achieve. The evolving standards may also require us to substantially change the stated goals and ambitions. If we are not able to achieve the goals we have set, or can only do so at significant expense to our business, we may fail to meet regulatory expectations, incur damage to our reputation or be exposed to an increased risk of litigation or other adverse action.

While ESG regulatory regimes and international standards are being developed, including to require consideration of ESG risks in investment decisions, some jurisdictions, notably in the US, have developed rules restricting the consideration of ESG factors in investment and business decisions. Under these anti-ESG rules, companies that are perceived as boycotting or discriminating against certain industries may be restricted from doing business with certain governmental entities. Our businesses may be adversely affected if UBS is considered as discriminating against companies based on ESG considerations, or if further anti-ESG rules are developed or broadened.

Material weakness of Credit Suisse controls over financial reporting

The Credit Suisse Group delayed its reporting for the year ending 2022 stating that it had identified material weaknesses in its internal controls over financial reporting as a result of which the Credit Suisse Group management had concluded that, as of 31 December 2022, its internal controls over financial reporting were not effective, and for the same reasons, it reached the same conclusion regarding 31 December 2021. A material weakness is a deficiency or a combination of deficiencies in internal controls over financial reporting such that there is a reasonable possibility that a material misstatement of a registrant's financial statements will not be prevented or detected on a timely basis. There is a risk that a material error may not be detected by UBS Group AG's internal control structure that could result in a material misstatement to Credit Suisse's reported financial results, which are consolidated with UBS Group AG's results. Since the acquisition, UBS Group AG has undertaken a review of the processes and systems giving rise to the material weaknesses and the remediation program undertaken. This review is ongoing, and UBS expects to adopt and implement further controls and procedures following the completion of such review and discussions with regulators. Based on this assessment, management believes that, as of 31 December 2023, UBS's internal control over financial reporting was effective. Management has excluded Credit Suisse, which UBS Group AG acquired in 2023, from the scope of its assessment of internal control over financial reporting, as permitted by SEC guidance for acquired businesses. This may affect the UBS AG Group upon the planned merger with Credit Suisse AG.

Our financial results may be negatively affected by changes to assumptions and valuations, as well as changes to accounting standards

We prepare our consolidated financial statements in accordance with IFRS. The application of these accounting standards requires the use of judgment based on estimates and assumptions that may involve significant uncertainty at the time they are made. This is the case, for example, with respect to the measurement of fair value of financial instruments, the recognition of deferred tax assets (DTAs), the assessment of the impairment of goodwill, expected credit losses and estimation of provisions for litigation, regulatory and similar matters. Such judgments, including the underlying estimates and assumptions, which encompass historical experience, expectations of the future and other factors, are regularly evaluated to determine their continuing relevance based on current conditions. Using different assumptions could cause the reported results to differ. Changes in assumptions, or failure to make the changes necessary to reflect evolving market conditions, may have a significant effect on the financial statements in the periods when changes occur. Estimates of provisions may be subject to a wide range of potential outcomes and significant uncertainty. For example, the broad range of potential outcomes in our legal proceedings in France and in a number of Credit Suisse's legal proceedings increase the uncertainty associated with assessing the appropriate provision. If the estimates and assumptions in future periods deviate from the current outlook, our financial results may also be negatively affected.

Changes to IFRS or interpretations thereof may cause future reported results and financial position to differ from current expectations, or historical results to differ from those previously reported due to the adoption of accounting standards on a retrospective basis. Such changes may also affect our regulatory capital and ratios. For example, the introduction of the ECL regime under IFRS 9 in 2018 fundamentally changed how credit risk arising from loans, loan commitments, guarantees and certain revocable facilities is accounted for. Under the ECL regime, credit loss expenses may increase rapidly at the onset of an economic downturn as a result of higher levels of credit impairments (stage 3), as well as higher ECL from stages 1 and 2, only gradually diminishing once the economic outlook improves. As we observed in 2020, this effect may be more pronounced in a deteriorating economic environment. Substantial increases in ECL could exceed expected loss for regulatory capital purposes and adversely affect our CET1 capital and regulatory capital ratios.

We may be unable to maintain our capital strength

Capital strength enables us to grow our businesses and absorb increases in regulatory and capital requirements. Our ability to maintain our capital ratios is subject to numerous risks, including the financial results of our businesses, the effect of changes to capital standards, methodologies and interpretations that may adversely affect the calculation of our capital ratios, the imposition of risk add-ons or capital buffers, and the application of additional capital, liquidity and similar requirements to subsidiaries. Our capital and leverage ratios are driven primarily by RWA, LRD and eligible capital, all of which may fluctuate based on a number of factors, some of which are outside of our control. The results of our businesses may be adversely affected by events arising from other risk factors described herein. In some cases, such as litigation and regulatory risk and operational risk events, losses may be sudden and large.

Our eligible capital may be reduced by losses recognized within net profit or other comprehensive income. Eligible capital may also be reduced for other reasons, including acquisitions that change the level of goodwill, changes in temporary differences related to DTAs included in capital, adverse currency movements affecting the value of equity, prudential adjustments that may be required due to the valuation uncertainty associated with certain types of positions, and changes in the value of certain pension fund assets and liabilities or in the interest rate and other assumptions used to calculate the changes in our net defined benefit obligation recognized in other comprehensive income.

RWA are driven by our business activities, by changes in the risk profile of our exposures, by changes in our foreign currency exposures and foreign exchange rates, and by regulation. For instance, substantial market volatility, a widening of credit spreads, adverse currency movements, increased counterparty risk, deterioration in the economic environment or increased operational risk could result in an increase in RWA. Changes in the calculation of RWA, the imposition of additional supplemental RWA charges or multipliers applied to certain exposures and other methodology changes, as well as the finalization of the Basel III framework and Fundamental Review of the Trading Book promulgated by the BCBS, which are expected to increase our RWA.

The leverage ratio is a balance sheet-driven measure and therefore limits balance sheet-intensive activities, such as lending, more than activities that are less balance sheet intensive, and it may constrain our business even if we satisfy other risk-based capital requirements. Our LRD is driven by, among other things, the level of client activity, including deposits and loans, foreign exchange rates, interest rates, other market factors and changes in required liquidity. Many of these factors are wholly or partly outside of our control.

The effect of taxes on our financial results is significantly influenced by tax law changes and reassessments of our deferred tax assets and, also, operating losses of certain entities with no associated tax benefit

Our effective tax rate is highly sensitive to our performance, our expectation of future profitability and any potential increases or decreases in statutory tax rates, such as any potential increase or decrease in the US federal corporate tax rate. Furthermore, based on prior years' tax losses and deductible temporary differences, we have recognized DTAs reflecting the probable recoverable level based on future taxable profit as informed by our business plans. If our performance is expected to produce diminished taxable profit in future years, particularly in the US, we may be required to write down all or a portion of the currently recognized DTAs through the income statement in excess of anticipated amortization. This would have the effect of increasing our effective tax rate in the year in which any write-downs are taken. Conversely, if we expect the performance of entities in which we have unrecognized tax losses to improve, particularly in the US or the UK, we could potentially recognize additional DTAs. The effect of doing so would be to reduce our effective tax rate in years in which additional DTAs are recognized and to increase our effective tax rate in future years. Our effective tax rate is also sensitive to any future reductions in statutory tax rates, particularly in the US, which would cause the expected future tax benefit from items such as tax loss carry-forwards in the affected locations to diminish in value. This, in turn, would cause a write-down of the associated DTAs. Conversely, an increase in US corporate tax rates would result in an increase in the Group's DTAs.

We generally revalue our DTAs in the fourth quarter of the financial year based on a reassessment of future profitability taking into account our updated business plans. We consider the performance of our businesses and the accuracy of historical forecasts, tax rates and other factors in evaluating the recoverability of our DTAs, including the remaining tax loss carry-forward period and our assessment of expected future taxable profits over the life of DTAs. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

Our results in past years have demonstrated that changes in the recognition of DTAs can have a very significant effect on our reported results. Any future change in the manner in which UBS AG remeasures DTAs could affect UBS AG's effective tax rate, particularly in the year in which the change is made.

Our full-year effective tax rate would be impacted if aggregate tax expenses in respect of profits from branches and subsidiaries without loss coverage differ from what is expected, or if certain branches and subsidiaries incur operating losses that we cannot benefit from through the income statement. In particular, operating losses at entities or branches that cannot offset for tax purposes taxable profits in other Group entities, and which do not result in additional DTA recognition, would increase our effective tax rate. In addition, tax laws or the tax authorities in countries where we have undertaken legal structure changes may cause entities to be subject to taxation as permanent establishments or may prevent the transfer of tax losses incurred in one legal entity to newly organized or reorganized subsidiaries or affiliates or may impose limitations on the utilization of tax losses that relate to businesses formerly conducted by the transferor. Were this to occur in situations where there were also limited planning opportunities to utilize the tax losses in the originating entity, the DTAs associated with such tax losses may be required to be written down through the income statement.

Changes in tax law may materially affect our effective tax rate, and, in some cases, may substantially affect the profitability of certain activities. In addition, statutory and regulatory changes, as well as changes to the way in which courts and tax authorities interpret tax laws, including assertions that we are required to pay taxes in a jurisdiction as a result of activities connected to that jurisdiction constituting a permanent establishment or similar theory, and changes in our assessment of uncertain tax positions, could cause the amount of taxes we ultimately pay to materially differ from the amount accrued.

We may incur material future tax liabilities in connection with the Credit Suisse Group's merger with the UBS Group

In the past, the Credit Suisse Group has made significant impairments of the tax value of its participations in subsidiaries below their tax acquisition costs. Following the acquisition of the Credit Suisse Group by UBS Group AG, tax acquisition costs of certain participations held by Credit Suisse Group AG and its subsidiaries will be transferred to the UBS AG Group as a result of further company mergers and restructurings. UBS AG and its subsidiaries may become subject to additional Swiss tax on future reversals of such impairments for Swiss tax purposes. Reversals of prior impairments may occur to the extent that the net asset value of the previously impaired subsidiary increases, e.g., as a result of an increase in retained earnings. Although it is difficult to quantify this additional future tax exposure, as various potential mitigants (e.g., transfers of assets and liabilities, business activities, subsidiary investments, as well as other restructuring measures within the combined Group in the course of the integration) exist, it may be material.

Liquidity and funding risk

Liquidity and funding management are critical to our ongoing performance

The viability of our business depends on the availability of funding sources, and our success depends on our ability to obtain funding at times, in amounts, for tenors and at rates that enable us to efficiently support our asset base in all market conditions. Our funding sources have generally been stable, but could change in the future because of, among other things, general market disruptions or widening credit spreads, which could also influence the cost of funding. A substantial part of our liquidity and funding requirements are met using short-term unsecured funding sources, including retail and wholesale deposits and the regular issuance of money market securities. A change in the availability of short-term funding could occur quickly.

The addition of loss-absorbing debt as a component of capital requirements, the regulatory requirements to maintain minimum TLAC at UBS's holding company and at certain of its subsidiaries, as well as the power of resolution authorities to bail in TLAC instruments and other debt obligations, and uncertainty as to how such powers will be exercised, caused and may still cause further increase of our cost of funding, and could potentially increase the total amount of funding required, in the absence of other changes in our business.

Reductions in our credit ratings may adversely affect the market value of the securities and other obligations and increase our funding costs, in particular with regard to funding from wholesale unsecured sources, and could affect the availability of certain kinds of funding. In addition, as experienced in connection with Moody's Investors Service Ltd. downgrade of UBS AG's long-term debt rating in June 2012, rating downgrades can require us to post additional collateral or make additional cash payments under trading agreements. Our credit ratings, together with our capital strength and reputation, also contribute to maintaining client and counterparty confidence, and it is possible that rating changes could influence the performance of some of our businesses. The acquisition of the Credit Suisse Group has elevated these risks and may cause these risks to intensify. Upon the close the acquisition in June 2023, Fitch Ratings Ireland Limited downgraded the Long-Term Issuer Default Ratings (IDRs) of UBS AG to "A+" from "AA-". Fitch Ratings Ltd also upgraded Credit Suisse AG's Long-Term IDR to "A+" from "BBB+".

The requirement to maintain a liquidity coverage ratio of high-quality liquid assets to estimated stressed short-term net cash outflows, and other similar liquidity and funding requirements, oblige us to maintain high levels of overall liquidity, limit our ability to optimize interest income and expense, make certain lines of business less attractive and reduce our overall ability to generate profits. The liquidity coverage ratio and net stable funding ratio requirements are intended to ensure that we are not overly reliant on short-term funding and that we have sufficient long-term funding for illiquid assets. The relevant calculations make assumptions about the relative likelihood and amount of outflows of funding and available sources of additional funding in market-wide and firm-specific stress situations. In an actual stress situation, however, our funding outflows could exceed the assumed amounts. Further, UBS AG is subject to increased liquidity requirements related to too-big-to-fail (TBTF) measures under the direction of FINMA, which became effective on 1 January 2024.

APPENDIX 6 — A BRIEF GUIDE TO CREDIT RATINGS

Information set out in this Appendix is based on, extracted or reproduced from the website of S&P at *https://www.spglobal.com/ratings/en/* and the website of Moody's at *https://www.moodys.com*, as of the day immediately preceding the date of this Base Listing Document. Information appearing on those websites does not form part of this Base Listing Document, and we accept no responsibility for the accuracy or completeness of the information appearing on those websites, except that we have accurately extracted and reproduced such information in this Appendix and take responsibility for such extraction and reproduction. We have not separately verified such information. There can be no assurance that such information will not be revised by the relevant rating agency in the future and we have no responsibility to notify you of such change. If you are unsure about any information provided in this Appendix and/or what a credit rating means, you should seek independent professional advice.

What is a credit rating?

A credit rating is a forward looking opinion by a credit rating agency of a company's overall ability to meet its financial obligations. The focus is on the company's capacity to pay its debts as they become due. The rating does not necessarily apply to any specific obligation.

What do the credit ratings mean?

Below are guidelines issued by S&P and Moody's on what each of their investment-grade ratings means, as of the day immediately preceding the date of this Base Listing Document.

S&P long-term issuer credit ratings

AAA

An obligor rated 'AAA' has extremely strong capacity to meet its financial commitments. 'AAA' is the highest issuer credit rating assigned by S&P.

AA

An obligor rated 'AA' has very strong capacity to meet its financial commitments. It differs from the highest-rated obligors only to a small degree.

A

An obligor rated 'A' has strong capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligors in higher-rated categories.

BBB

An obligor rated 'BBB' has adequate capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to weaken the obligor's capacity to meet its financial commitments.

Plus (+) or minus (-)

The above ratings (except for 'AAA') may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the rating categories.

Please refer to *https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352* (in English version only) for further details.

Moody's long-term ratings definitions

Aaa

Obligations rated Aaa are judged to be of the highest quality, with minimal risk.

Aa

Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.

A

Obligations rated A are considered upper medium-grade and are subject to low credit risk.

Baa

Obligations rated Baa are subject to moderate credit risk. They are considered medium-grade and as such may possess speculative characteristics.

Modifiers "1", "2" and "3"

Moody's appends numerical modifiers 1, 2 and 3 to each of the above generic rating classifications (except for Aaa). The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category.

Please refer to *https://ratings.moodys.io/ratings* for further details.

Rating Outlooks

A rating outlook is an opinion regarding the likely rating direction over the medium term. A rating outlook issued by S&P or Moody's will usually indicate whether the rating direction is likely to be "positive", "negative", "stable" or "developing". Please refer to the abovementioned websites of the relevant credit rating agencies for further details regarding rating outlooks published by the relevant credit rating agencies.

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