BASE LISTING DOCUMENT DATED 3 APRIL 2018

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

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

UBS

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 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 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 trustee or the manager of the underlying unit trust; 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 29 March 2018*
Moody's Deutschland GmbH ("**Moody's**")	A1 (stable outlook)
Standard & Poor's Credit Market Services 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.

A1 is among the top three major credit rating categories and is the fifth 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 2017.

Do you need to pay any trading fees and levies?

The Stock Exchange currently charges a trading fee of 0.005 per cent. and the Securities and Futures Commission currently charges a transaction levy of 0.0027 per cent. for each transaction effected on the Stock Exchange payable by each of the seller and the buyer and calculated on the value of the consideration for the Structured Products. 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 certain provisions 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 certain payments it makes ("**foreign passthru payments**") to persons that fail to meet certain certification, reporting or related requirements even though such payments would not otherwise subject to U.S. withholding tax. 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 prior to 1 January 2019 and 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 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 inspect the relevant documents?

The following documents are available for inspection during usual business hours on any weekday (Saturdays, Sundays and holidays excepted) at the offices of UBS Securities Asia Limited:

(a) the Annual Report 2017 of UBS Group AG and UBS AG ("**Annual Report 2017**");

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

(c) this document and any addendum to this document;

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

(e) the instrument executed by us by way of deed poll on 10 April 2006 which constitutes the Structured Products.

Requests for photocopies of the above documents will be subject to a reasonable fee which reflects the cost of making such copies.

The Listing Documents are also available on the website of the HKEX at *www.hkexnews.hk* and our website at *http://warrants.ubs.com/en*.

各上市文件亦可於香港交易所披露易網站 *www.hkexnews.hk* 以及我們的網站 *http://warrants.ubs.com/ch* 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 8 March 2018 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 exclusively 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

Freddie Tan and Dougal McAdam, 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.

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**").

PLACING AND SALE

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**"). 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 and sales 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. No person will offer, sell, re-sell, transfer or deliver any Structured Products 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 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, any estate or trust the income of which is subject to United States income taxation regardless of its source, and any other U.S. person as such term is defined in Regulation S under the Securities Act.

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 2002/92/EC (as amended, the Insurance Mediation 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 Directive 2003/71/EC (as amended, including by Directive 2010/73/EU, the Prospectus Directive); 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 the Structured Products.

United Kingdom

Each dealer has represented and agreed 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 the Financial Services and Markets Act, as amended (the "**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 not be offered or sold directly or indirectly in or from Switzerland to non-qualified investors. Some or all of the Structured Products constitute structured products within the meaning of Article 5 of the Swiss Federal Act on Collective Investment Schemes (CISA). The Structured Products do not constitute collective investment schemes within the meaning of the CISA and are not subject to the supervision of the Swiss Financial Market Supervisory Authority. Therefore, investors in the Structured Products are not eligible for the specific investor protection under the CISA.

What is a derivative warrant?

A derivative warrant linked to a share, a unit, 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 the website of HKEX at *http://www.hkex.com.hk/products/securities/derivative-warrants?sc_lang=en* or our website at *http://warrants.ubs.com/home/html/warrants_e.html* to obtain information on our warrants or any notice given by us or the Stock Exchange 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 and Hang Seng China H-Financials Index;

(c) unit trusts 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/Callable-Bull-Bear-Contracts/CBBC-Eligible-Underlying-Assets/Eligible-Single-Hong-Kong-Stocks-for-CBBC-Issuance-in-Current-Quarter?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 single unit trusts, 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 mirror 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 correspond with 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 the website of HKEX at *http://www.hkex.com.hk/Products/Securities/Callable-Bull-Bear-Contracts?sc_lang=en* or our website at *http://warrants.ubs.com/home/html/cbbc_e.html* to obtain information on our CBBCs or any notice given by us or the Stock Exchange in relation to our CBBCs.

1. Overview

UBS AG with its subsidiaries (together, "**UBS AG consolidated**", or "**UBS AG Group**"; together with UBS Group AG, which is the holding company of UBS AG, and its subsidiaries, "**UBS Group**", "**Group**", "**UBS**" or "**UBS Group AG consolidated**") provides financial advice and solutions to private, institutional and corporate clients worldwide, as well as private clients in Switzerland. The operational structure of the Group is comprised of the Corporate Center and the business divisions Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank. UBS's strategy is centered on its Global Wealth Management business and its universal bank in Switzerland, which are enhanced by Asset Management and the Investment Bank.

2. Corporate Information

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

The company 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. On 8 December 1997, the company changed its name to UBS AG. The company 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.

According to article 2 of the articles of association of UBS AG dated 4 May 2016, 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, CH-8001 Zurich, Switzerland, telephone +41 44 234 1111; and Aeschenvorstadt 1, CH-4051 Basel, Switzerland, telephone +41 61 288 5050.

3. Organizational 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 operates as a group with four business divisions and a Corporate Center.

In 2014, UBS began adapting its legal entity structure to improve the resolvability of the Group in response to too big to fail requirements in Switzerland and recovery and resolution regulation in other countries in which the Group operates. In December 2014, UBS Group AG became the holding company of the Group.

In 2015, UBS AG transferred its Personal & Corporate Banking and Wealth Management businesses booked in Switzerland to the newly established UBS Switzerland AG, a banking subsidiary of UBS AG in Switzerland, and UBS implemented a more self-sufficient business and operating model for UBS Limited, UBS's investment banking subsidiary in the UK. In 2016, UBS Americas Holding LLC was designated as intermediate holding company for UBS's US subsidiaries and UBS merged its Wealth Management subsidiaries in various European countries into UBS Europe SE.

Additionally, UBS transferred the majority of Asset Management's operating subsidiaries to UBS Asset Management AG.

UBS Business Solutions AG, a direct subsidiary of UBS Group AG, was established in 2015 and acts as the Group service company. In 2017, UBS's shared services functions in Switzerland and the UK were transferred from UBS AG to UBS Business Solutions AG, which is UBS's Group service company and a wholly owned subsidiary of UBS Group AG. UBS also completed the transfer of shared services functions in the US to its US service company, UBS Business Solutions US LLC, a wholly owned subsidiary of UBS Americas Holding LLC.

UBS continues to consider further changes to the Group's legal structure in response to regulatory requirements and other external developments, including the anticipated exit of the United Kingdom from the European Union. Such changes may include further consolidation of operating subsidiaries in the EU, and adjustments to the booking entity or location of products and services.

UBS Group AG's interests in subsidiaries and other entities as of 31 December 2017, including interests in significant subsidiaries, are discussed in "*Note 28 Interests in subsidiaries and other entities*" to the UBS Group AG's consolidated financial statements included in the UBS Group AG and UBS AG Annual Report 2017 published on 9 March 2018 ("**Annual Report 2017**").

UBS AG's interests in subsidiaries and other entities as of 31 December 2017, including interests in significant subsidiaries, are discussed in "*Note 28 Interests in subsidiaries and other entities*" to the UBS AG's consolidated financial statements included in the Annual Report 2017.

4. Board of Directors ("BoD")

The BoD is the most senior body of UBS AG. The BoD consists of at least five and no more than twelve members. All the members of the BoD are elected individually by the Annual General Meeting of Shareholders ("**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 Members of the Board of Directors

Member	Title	Term of office	Current principal positions outside UBS AG
Axel A. Weber	Chairman	2018	Chairman of the Board of Directors of UBS Group AG; board member of the Swiss Bankers Association; member of the Board of Trustees of Avenir Suisse; Advisory Board member of the "Beirat Zukunft Finanzplatz"; board member of the Swiss Finance Council; Chairman of the board of the Institute of International Finance; President of the International Monetary Conference; member of the European Financial Services Round Table; member of the European Banking Group; member of the Monetary Economics and International Advisory Panel, Monetary Authority of Singapore; member of the Group of Thirty, Washington, D.C.; Chairman of the DIW Berlin Board of Trustees; Advisory Board member of the Department of Economics at the University of Zurich; member of the Trilateral Commission.
Michel Demaré	Independent Vice Chairman	2018	Independent Vice-Chairman of the Board of Directors of UBS Group AG; board member of Louis-Dreyfus Commodities Holdings BV; Vice Chairman of the Supervisory Board of IMD, Lausanne; Advisory Board member of the Department of Banking and Finance at the University of Zurich; board member of Vodafone Group Plc.
David Sidwell	Member	2018	Senior Independent Director of the Board of Directors of UBS Group AG; Senior Advisor at Oliver Wyman, New York; board member of Chubb Limited; board member of GAVI Alliance; Chairman of the Board of Village Care, New York.
Reto Francioni	Member	2018	Member of the Board of Directors of UBS Group AG; professor at the University of Basel; board member of Coca-Cola HBC AG; Chairman of the board of Swiss International Air Lines AG; board member of Francioni AG; board member of MedTech Innovation Partners AG.
Ann F. Godbehere	Member	2018	Member of the Board of Directors of UBS Group AG; board member of Rio Tinto plc (chairman of the audit committee); board member of Rio Tinto Limited (chairman of the audit committee); board member of British American Tobacco plc.
William G. Parrett	Member	2018	Member of the Board of Directors of UBS Group AG; chairman of the Board of UBS Americas Holding LLC; board member of the Eastman Kodak Company (chairman of the audit and finance committee); board member of the Blackstone Group LP (chairman of the audit committee and chairman of the conflicts committee); board member of Thermo Fisher Scientific Inc. (chairman of the audit committee); Chairman of the Board of Conduent Inc; member of the Carnegie Hall Board of Trustees; Past Chairman of the board of the United States Council for International Business; Past Chairman of United Way Worldwide.
Julie G. Richardson	Member	2018	Member of the Board of Directors of UBS Group AG; board member of The Hartford Financial Services Group, Inc. (chairman of the audit committee); board member of Yext (chairman of the audit committee); board member of Vereit, Inc. (chairman of the compensation committee).
Isabelle Romy	Member	2018	Member of the Board of Directors of UBS Group AG; partner and board member at Froriep Legal AG, Zurich; associate professor at the University of Fribourg and at the Federal Institute of Technology, Lausanne; vice chairman of the Sanction Commission of SIX Swiss Exchange; member of the Fundraising Committee of the Swiss National Committee for UNICEF; Supervisory Board member of the CAS program Financial Regulation of the University of Bern and University of Geneva.

Member	Title	Term of office	Current principal positions outside UBS AG
Robert W. Scully	Member	2018	Member of the Board of Directors of UBS Group AG; board member of Chubb Limited; board member of Zoetis Inc.; board member of KKR & Co LP; board member of the Dean's Advisors of Harvard Business School.
Beatrice Weder di Mauro	Member	2018	Member of the Board of Directors of UBS Group AG; distinguished fellow at INSEAD in Singapore (on leave from the University of Mainz); Supervisory Board member of Robert Bosch GmbH; board member of Bombardier Inc.; member of the ETH Zurich Foundation Board of Trustees; Economic Advisory Board member of Fraport AG; Advisory Board member of Deloitte Germany; Deputy Chairman of the University Council of the University of Mainz.
Dieter Wemmer	Member	2018	Member of the Board of Directors of UBS Group AG; member of the CFO Forum; member of the Systemic Risk Working Group of the European Central Bank and the Bank for International Settlements; member of the Berlin Center of Corporate Governance.

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) the trustee or the manager of the underlying trust; 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.

Swiss resolution and recovery regime

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 AG, UBS Group 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 fulfils 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 our shareholders and creditors or may prevent UBS Group AG or UBS AG from paying dividends or making payments on debt obligations.

Protective measures may include, but are not limited to, certain measures that could require or result in a moratorium on, or the deferment of, payments. We would have limited ability to challenge any such protective measures. Additionally, creditors would have no right under Swiss law or in Swiss courts to reject, seek the suspension of, or challenge the imposition of any such protective measures, including those that require or result in the deferment of payments owed to creditors.

If restructuring proceedings are opened with respect to UBS Group AG, UBS AG or UBS Switzerland AG, the resolution powers, which 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 the termination of, or the exercise of rights to terminate, netting rights, rights to enforce or dispose of certain types of collateral or 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, if such equity capital is fully written down, convert into equity or write down the capital and 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 of the debt 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 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 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, and such conversion would also dilute the ownership of existing shareholders. In addition, creditors receiving equity would be effectively subordinated to all creditors in the event of a subsequent winding up, liquidation or dissolution of the entity subject to restructuring proceedings, which would increase the risk that investors would lose all or some of their investment.

FINMA has broad powers and significant discretion in the exercise of its powers in connection with a resolution proceeding. Certain categories of debt obligations, such as certain types of deposits, are protected. 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 or junior to such obligations are not written down or converted.

Moreover, FINMA has expressed its preference for a "single point- of-entry" resolution strategy for global systemically important financial groups, led by the bank's home supervisory and resolution authorities and focused on the top-level group company. This would mean that, if UBS AG or one of UBS Group AG's other subsidiaries faces substantial losses, FINMA could open restructuring proceedings with respect to UBS Group AG only and order a bail-in of its liabilities if there is a justified concern that in the near future such losses could impact UBS Group AG. In that case, it is possible that the obligations of UBS AG or any other subsidiary of UBS Group AG would remain untouched and outstanding, while the equity capital and the capital and other debt instruments of UBS Group AG would be written down and/or converted into equity of UBS Group AG in order to recapitalize UBS AG or such other subsidiary.

In any event, the exercise of any resolution power by the relevant resolution authorities in respect of UBS could materially adversely affect the value of the Structured Product, and you may not be able to recover all or even part of the amount due under the Structured Product.

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 or the trustee or the manager of the trust. 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 impact our ability to execute our strategy and directly affect our business activities, financial condition, results of operations and prospects. As a broad-based international financial services firm, we are inherently exposed to risks that become apparent only with the benefit of hindsight, risks of which we are not presently aware or which we currently do not consider to be material could also materially affect our business activities, financial condition, results of operations and prospects.

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.

Our operating results, financial condition and ability to pay obligations in the future

Our ability to pay its obligations in the future may be affected by the level of funding, dividends and other distributions, if any, received from UBS Switzerland AG and any other subsidiaries currently existing or established by us in the future. The ability of such subsidiaries to make loans or distributions (directly or indirectly) to us may be restricted as a result of several factors, including restrictions in financing agreements, the requirements of applicable laws and regulatory, fiscal or other restrictions. Our subsidiaries, including UBS Switzerland AG, UBS Limited and the US IHC (when designated) are subject to laws and regulations that restrict dividend payments, authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to us, or limit or prohibit transactions with affiliates. Restrictions and regulatory actions of this kind could impede access to funds that we may need to make payments.

In addition, our 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, we may guarantee some of the payment obligations of certain of our subsidiaries from time to time. Additionally, in connection with the transfer of the Retail & Corporate (now Personal & Corporate Banking) and Wealth Management business booked in Switzerland from us to UBS Switzerland AG in June 2015, under the Swiss Merger Act, UBS AG is jointly liable for obligations existing on the asset transfer date, 14 June 2015, that were transferred to UBS Switzerland AG. These guarantees may require us to provide substantial funds or assets to subsidiaries or their creditors or counterparties at a time when we are in need of liquidity to fund our own obligations.

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 5 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 a unit trust ("**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. 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 relating to Structured Products over trusts

General risks

In the case of Structured Products which relate to the units of a trust:

(a) neither we nor any of our affiliates have the ability to control or predict the actions of the trustee or the manager of the relevant trust. Neither the trustee nor the manager of the relevant trust (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 trust. The manager of the relevant trust is responsible for making strategic, investment and other trading decisions with respect to the management of the relevant trust consistent with its investment objectives and in compliance with the investment restrictions as set out in the constitutive documents of the relevant trust. The manner in which the relevant trust is managed and the timing of actions may have a significant impact on the performance of the relevant trust. Hence, the market price of the relevant units is also subject to these risks.

Exchange traded funds

Where the Underlying Asset of Structured Products comprises the units 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 unit creation or redemption 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 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 RQFII and/or China Connect

Where the Underlying Asset of Structured Products comprises the units of an ETF issued and traded outside Mainland China with direct investment in the Mainland China's securities markets through the Renminbi Qualified Foreign Institutional Investor ("**RQFII**") regime 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 novelty and untested nature of such ETF make it riskier than traditional ETFs investing directly in more developed markets. The policy and rules for RQFII and China Connect prescribed by the Mainland China government are new and subject to change, and there may be uncertainty to their implementation. The uncertainty and change of the laws and regulations in Mainland China may adversely impact on the performance of the relevant ETF and the trading price of the relevant units;

(b) such ETF primarily invests in securities traded in the Mainland China's securities markets and is subject to concentration risk. Investment in the Mainland China'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 such ETF may also be affected by interventions by the applicable government(s) and regulators in the financial markets; and

(c) investment by such ETF in the Mainland China's securities markets under the RQFII regime will be subject to its manager's RQFII quota allocated to such ETF. In addition, trading of securities invested by the ETF under China Connect will be subject to a daily quota which does not belong to such ETF and is utilised on a first-come-first-serve basis. In the event that the RQFII quota allocated to such ETF and/or the daily quota under China Connect are reached, the manager may need to suspend creation of further units of such ETF, and therefore may affect the liquidity in unit trading of such ETF. In such event, the trading price of a unit of such ETF is likely to be at a significant premium to its net asset value, and may be highly volatile.

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

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

ETF traded through dual counters model

Where the Underlying Asset of Structured Products comprises the units of an ETF which adopts the dual counters model for trading its units on the Stock Exchange in Renminbi ("**RMB**") and Hong Kong dollars ("**HKD**") separately, the novelty and relatively untested nature of the Stock Exchange's dual counters model may bring the following additional risks:

(a) the Structured Products may be linked to the HKD-traded units or the RMB-traded units. If the Underlying Asset of Structured Products is the HKD-traded units, movements in the trading prices of the RMB-traded units should not directly affect the price of the Structured Products. Similarly, if the Underlying Asset of Structured Products is the RMB-traded units, movements in the trading prices of the HKD-traded units should not directly affect the price of the Structured Products;

(b) if there is a suspension of inter-counter transfer of such units between the HKD counter and the RMB counter for any reason, such units 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 and have an adverse effect on the price of the Structured Products; and

(c) the trading price on the Stock Exchange of the HKD-traded units and RMB-traded units may deviate significantly due to different factors, such as market liquidity, RMB conversion risk, supply and demand in each counter and the exchange rate between RMB and HKD. Changes in the trading price of the Underlying Asset of Structured Products in HKD or RMB (as the case may be) may adversely affect the price of the Structured Products.

*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.

Risk 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 issuance of the tropical cyclone warning signal number 8 or above or the issuance of a "BLACK" rainstorm signal 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 the tropical cyclone warning signal number 8 or above or the "BLACK" rainstorm signal having been issued; 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. The Global Certificate must be executed manually on behalf of the Issuer by authorised person(s) or attorney(s) of the Issuer.

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 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 its undertaking, property or assets, all unexercised Warrants will lapse and shall cease to be valid for any purpose. In the case of 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 its undertaking, property or assets, on the date when such appointment is effective but subject (in any such case) to any contrary mandatory requirement of law.

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

A Chinese translation of these Conditions will be made available for collection during normal office hours from the Sponsor at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. 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:

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

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

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

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 issuance of the tropical cyclone warning signal number 8 or above or the issuance of a "BLACK" rainstorm signal 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 the tropical cyclone warning signal number 8 or above or the "BLACK" rainstorm signal having been issued;

(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. The Global Certificate must be executed manually on behalf of the Issuer by authorised officer(s) or attorney(s) of the Issuer.

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

A Chinese translation of these Conditions will be made available for collection during normal office hours from the Sponsor at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. 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 SINGLE UNIT TRUSTS

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 Trust 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;

"**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 issuance of the tropical cyclone warning signal number 8 or above or the issuance of a "BLACK" rainstorm signal 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 the tropical cyclone warning signal number 8 or above or the "BLACK" rainstorm signal having been issued; 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;

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

"**Unit**" means the unit 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 Trust 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 Trust 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 Trust 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 Trust shall subdivide its Units or any class of its outstanding Units into a greater number of units (a "**Subdivision**") or consolidate the Units or any class of its outstanding Units into a smaller number of units (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 Trust is to or may merge with or into any other trust 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 Trust 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 of the trust(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 Trust, 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 Trust.

If and whenever the Trust 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. The Global Certificate must be executed manually on behalf of the Issuer by authorised person(s) or attorney(s) of the Issuer.

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 trustee of the Trust (including any successor trustee appointed from time to time) ("**Trustee**") (in its capacity as trustee of the Trust) 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 Trustee's 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 the Trustee's 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 Trust is terminated, or the Trustee or the manager of the Trust (including any successor manager appointed from time to time) ("**Manager**") is required to terminate the Trust under the trust deed ("**Trust Deed**") constituting the Trust or applicable law, or the termination of the Trust commences; (ii) the Trust is held or is conceded by the Trustee or the Manager not to have been constituted or to have been imperfectly constituted; (iii) the Trustee ceases to be authorised under the Trust to hold the property of the Trust in its name and perform its obligations under the Trust Deed; or (iv) the Trust 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

A Chinese translation of these Conditions will be made available for collection during normal office hours from the Sponsor at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. 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.

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 issuance of the tropical cyclone warning signal number 8 or above or the issuance of a "BLACK" rainstorm signal 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 the tropical cyclone warning signal number 8 or above or the "BLACK" rainstorm signal having been issued; 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. The Global Certificate must be executed manually on behalf of the Issuer by authorised person(s) or attorney(s) of the Issuer.

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 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 its undertaking, property or assets, all unexercised CBBCs will lapse and shall cease to be valid for any purpose. In the case of 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 its undertaking, property or assets, on the date when such appointment is effective but subject (in any such case) to any contrary mandatory requirement of law.

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

A Chinese translation of these Conditions will be made available for collection during normal office hours from the Sponsor at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. 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:

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

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

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

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 issuance of the tropical cyclone warning signal number 8 or above or the issuance of a "BLACK" rainstorm signal 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 the tropical cyclone warning signal number 8 or above or the "BLACK" rainstorm signal having been issued;

(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:

$$\text{Residual Value per Board Lot} = \frac{(\text{Minimum Index Level - Strike Level}) \text{ x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

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

$$\text{Residual Value per Board Lot} = \frac{(\text{Strike Level - Maximum Index Level}) \text{ x one Board Lot x Index Currency Amount}}{\text{Divisor}}$$

"**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. The Global Certificate must be executed manually on behalf of the Issuer by authorised officer(s) or attorney(s) of the Issuer.

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

A Chinese translation of these Conditions will be made available for collection during normal office hours from the Sponsor at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. 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 SINGLE UNIT TRUSTS

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 Trust 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;

"**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 issuance of the tropical cyclone warning signal number 8 or above or the issuance of a "BLACK" rainstorm signal 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 the tropical cyclone warning signal number 8 or above or the "BLACK" rainstorm signal having been issued; 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;

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

"**Unit**" means the unit 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 Trust 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 Trust 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 Trust 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 Trust shall subdivide its Units or any class of its outstanding Units into a greater number of units (a "**Subdivision**") or consolidate the Units or any class of its outstanding Units into a smaller number of units (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 Trust is to or may merge with or into any other trust 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 Trust 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 of the trust(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 Trust, 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 Trust.

If and whenever the Trust 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. The Global Certificate must be executed manually on behalf of the Issuer by authorised person(s) or attorney(s) of the Issuer.

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 trustee of the Trust (including any successor trustee appointed from time to time) ("**Trustee**") (in its capacity as trustee of the Trust) 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 Trustee's 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 the Trustee's 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 Trust is terminated, or the Trustee or the manager of the Trust (including any successor manager appointed from time to time) ("**Manager**") is required to terminate the Trust under the trust deed ("**Trust Deed**") constituting the Trust or applicable law, or the termination of the Trust commences; (ii) the Trust is held or is conceded by the Trustee or the Manager not to be have been constituted or to have been imperfectly constituted; (iii) the Trustee ceases to be authorised under the Trust to hold the property of the Trust in its name and perform its obligations under the Trust Deed; or (iv) the Trust 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

A Chinese translation of these Conditions will be made available for collection during normal office hours from the Sponsor at 52nd Floor, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. 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 2017

This information in this Appendix 3 has been extracted from the Annual Report 2017 as at and for the year ended 31 December 2017. The page numbers of such document appear on the bottom left or right hand side of the pages in this Appendix 3.

Building a better working world

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of UBS AG

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of UBS AG and subsidiaries (the Company) as of 31 December 2017 and 2016, and the related consolidated income statements, statements of comprehensive income, changes in equity and cash flows, for each of the three years in the period ended 31 December 2017, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of UBS AG and subsidiaries as of December 31, 2017 and 2016, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2017, in conformity with International Financial Reporting Standards, as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), UBS AG and subsidiaries' internal control over financial reporting as of 31 December 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated 8 March 2018, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's Board of Directors. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the US federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Ernst & Young Ltd

Ernst & Young Ltd

We have served as the Company's auditor since 1998.

Basel, 8 March 2018

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To the General Meeting of
UBS AG, Zurich and Basel

Basel, 8 March 2018

App 1D, 5(c)

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 2017 and 2016, and the consolidated income statements, statements of comprehensive income, changes in equity and cash flows for each of the three years in the period ended 31 December 2017, and notes to the consolidated financial statements, including a summary of significant accounting policies in note 1.

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 2017 and 2016, and the consolidated results of its operations and its cash flows for each of the three years in the period ended 31 December 2017 in accordance with International Financial Reporting Standards (IFRS) and comply with Swiss law.

Basis for opinion

We conducted our audit in accordance with Swiss law, International Standards on Auditing (ISAs) and Swiss Auditing Standards. 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 and the requirements of the Swiss audit profession, as well as the IESBA Code of Ethics for Professional Accountants, 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.

Deferred tax asset valuation

Area of focus	We focused on this area because there is significant judgment exercised when determining the valuation of Deferred Tax Assets ("DTAs") given the significant amount of tax net operating loss carryforwards (net operating losses or "NOLs") the Group has available and the impact of the Tax Cuts and Jobs Act ("TCJA") in the United States. DTAs can be recognized to the extent it is probable they will be utilized to offset taxable profits within the loss carryforward period or be used against deductible temporary differences. The estimate of future taxable income is based on the strategic plan which is then allocated to the tax-paying entities in the various jurisdictions. The recognition of deferred tax assets is therefore sensitive to changes in the strategic plan as well as to assumptions made in the allocation of future taxable income. See note 8 to the financial statements.
Our audit response	We obtained an understanding of the TCJA. We evaluated the design and tested the operational effectiveness of the Group's key controls over accounting for the impact of the TCJA. We assessed the impact that the reduction in the federal corporate rate had on deferred taxes and the Group's disclosures in note 8. We obtained an understanding, evaluated the design and tested the operational effectiveness of the Group's key controls over the recognition and measurement of DTAs and the assumptions used in estimating the Group's future taxable income. We assessed the completeness and accuracy of the data used for the estimations of future taxable income. This included auditing of computations of the models applied to the recognition process for DTAs and testing the control framework around the models. We involved EY specialists to assess the key economic assumptions embedded in the strategic plan. We compared key inputs used by the Group to forecast future taxable income to externally available data, the Group's historical data and performance and assessed the sensitivity of the outcomes to reasonably possible changes in assumptions. We assessed the completeness and accuracy of the data used in the determination of the legal entity allocation, the assumptions applied by the Group, and the accuracy of the computation of the legal entity allocations. We also assessed whether the Group's disclosure regarding the application of judgment in estimating recognized and unrecognized DTAs appropriately reflects the Group's deferred tax position (within note 8).

Building a better working world

Legal provision & contingencies

Area of focus

We focused on this area because 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 outcome may be difficult to predict. These uncertainties inherently affect the amount and timing of potential outflows with respect to the provisions which have been established and other contingent liabilities. Overall, the legal provision represents the Group's best estimate for existing legal matters that have a probable and estimable impact on the Group's financial position.

See note 20 to the financial statements.

Our audit response

We obtained an understanding, evaluated the design and tested the operational effectiveness of the Group's key controls over the legal provision and contingencies process.

We assessed the methodologies on which the provision amounts are based, recalculated the provisions, and tested the completeness and accuracy of the underlying information. We read the legal analyses supporting the judgmental aspects impacted by legal interpretations. We obtained correspondence directly from external legal counsel to corroborate the information provided by the Group and followed up directly with external counsel as deemed necessary.

We also assessed the Group's provisions and contingent liabilities disclosure (within note 20).

IT Controls relevant to financial reporting

Area of focus

We focused on this area because the Group is highly dependent on its IT systems for business processes and financial reporting. The Group continues to invest in its IT systems to meet client needs and business requirements including the effectiveness of its logical access and change management IT controls.

Our audit response

In assessing the reliability of electronic data processing, we included specialized IT auditors as part of our audit team. Our audit procedures focused on the IT infrastructure and applications relevant to financial reporting including evaluation of the design and testing of the operating effectiveness of key IT general controls and IT automated controls.

Our audit procedures related to logical access included testing of user access management, privileged user access, periodic access right recertifications and user authentication controls.

Valuation of complex or illiquid trading portfolio assets and liabilities, financial assets and liabilities and derivative financial instruments held at fair value

Area of focus	We focused on this area because of the complexity and judgments and assumptions over the fair valuation of financial assets and liabilities with significant unobservable inputs. We have continued to focus on market developments in fair value methodologies and specifically on the Group's higher estimation uncertainty ("HEU") products, Credit Valuation Adjustment ("CVA") / and Funding Valuation Adjustment ("FVA"). See note 22 to the financial statements.
Our audit response	We obtained an understanding, evaluated the design and tested the operating effectiveness of the key controls over the financial instrument valuation processes, including controls over market data inputs into valuation models, model governance, and valuation adjustments. We tested a sample of the valuation models and the inputs used in those models, using a variety of techniques, including comparing inputs to available market data. We selected a sample of positions and independently determined estimated values and compared the values to the Group's recorded values. In addition, we evaluated the methodology and inputs used by the Group in determining funding and credit fair value adjustments on uncollateralized derivatives and fair value option liabilities. We also assessed the Group's disclosure (within note 22).

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, the unconsolidated financial statements of UBS AG , the compensation report (pages 278–281 and page 304), disclosures denoted with an audited "signpost", and our auditor's report thereon.

Our opinions on the consolidated financial statements, the standalone financial statements of UBS AG and the compensation report do not cover the other information in the annual report and we do not express any form of assurance conclusion thereon other than the disclosures denoted with an audited "signpost".

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.

Responsibility of the Board of Directors for the consolidated financial statements
The Board of Directors is responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with IFRS 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, ISAs, and Swiss Auditing Standards and 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 at the website of EXPERTsuisse: http://www.expertsuisse.ch/en/audit-report-for-public-companies. This description forms part of our auditor's report.

Report on other legal and regulatory requirements
In accordance with article 728a paragraph 1 item 3 CO and the Swiss Auditing Standard 890, we confirm that an internal control system exists, which has been designed for the preparation of consolidated financial statements in accordance with the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

Ernst & Young Ltd

App 1D, 5(a)

Marie-Laure Delarue Licensed Audit Expert (Auditor in Charge)	Ira S.Fitlin Certified Public Accountant (U.S.)

Financial statements

UBS AG consolidated financial statements

Primary financial statements

Audited |

Income statement

		For the year ended		
CHF million	Note	31.12.17	31.12.16	31.12.15
Interest income	3	14,208	13,782	13,178
Interest expense	3	(7,728)	(7,399)	(6,449)
Net interest income	3	6,480	6,383	6,729
Credit loss (expense) / recovery	11	(128)	(37)	(117)
Net interest income after credit loss expense		6,352	6,346	6,612
Net fee and commission income	4	17,214	16,447	17,184
Net trading income	3	4,974	4,943	5,696
Other income	5	939	685	1,112
Total operating income		29,479	28,421	30,605
Personnel expenses	6	14,673	15,591	15,954
General and administrative expenses	7	8,811	7,690	8,219
Depreciation and impairment of property, equipment and software	14	928	980	918
Amortization and impairment of intangible assets	15	70	91	107
Total operating expenses		24,481	24,352	25,198
Operating profit / (loss) before tax		4,998	4,069	5,407
Tax expense / (benefit)	8	4,077	781	(908)
Net profit / (loss)		921	3,288	6,314
Net profit / (loss) attributable to preferred noteholders		72	78	77
Net profit / (loss) attributable to non-controlling interests		4	4	3
Net profit / (loss) attributable to shareholders		845	3,207	6,235

Statement of comprehensive income

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Comprehensive income attributable to shareholders			
Net profit / (loss)	845	3,207	6,235
Other comprehensive income that may be reclassified to the income statement			
Foreign currency translation			
Foreign currency translation movements, before tax	(753)	251	(174)
Foreign exchange amounts reclassified to the income statement from equity	21	126	(90)
Income tax relating to foreign currency translation movements	196	(84)	(1)
Subtotal foreign currency translation, net of tax	(535)	293	(266)
Financial assets available for sale			
Net unrealized gains / (losses) on financial assets available for sale, before tax	99	240	180
Impairment charges reclassified to the income statement from equity	15	5	1
Realized gains reclassified to the income statement from equity	(206)	(372)	(298)
Realized losses reclassified to the income statement from equity	14	25	45
Income tax relating to net unrealized gains / (losses) on financial assets available for sale	(7)	28	8
Subtotal financial assets available for sale, net of tax	(86)	(73)	(64)
Cash flow hedges			
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	45	246	550
Net realized (gains) / losses reclassified to the income statement from equity	(826)	(1,082)	(1,199)
Income tax relating to cash flow hedges	160	170	131
Subtotal cash flow hedges, net of tax	(621)	(666)	(518)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(1,242)	(447)	(848)
Other comprehensive income that will not be reclassified to the income statement			
Defined benefit plans			
Gains / (losses) on defined benefit plans, before tax	299	(876)	322
Income tax relating to defined benefit plans	6	52	(19)
Subtotal defined benefit plans, net of tax	305	(824)	304
Own credit on financial liabilities designated at fair value			
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	(312)	(120)	
Income tax relating to own credit on financial liabilities designated at fair value	(1)	5	
Subtotal own credit on financial liabilities designated at fair value, net of tax	(313)	(115)	
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(8)	(939)	304
Total other comprehensive income	(1,250)	(1,386)	(545)
Total comprehensive income attributable to shareholders	(404)	1,820	5,690

Table continues on the next page.

Statement of comprehensive income (continued)

Table continued from previous page.

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Comprehensive income attributable to preferred noteholders			
Net profit / (loss)	72	78	77
Other comprehensive income that will not be reclassified to the income statement			
Foreign currency translation movements, before tax	351	271	(59)
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	351	271	(59)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	351	271	(59)
Total comprehensive income attributable to preferred noteholders	423	349	18
Comprehensive income attributable to non-controlling interests			
Net profit / (loss)	4	4	3
Other comprehensive income that will not be reclassified to the income statement			
Foreign currency translation movements, before tax	1	0	(2)
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	1	0	(2)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	1	0	(2)
Total comprehensive income attributable to non-controlling interests	5	3	1
Total comprehensive income			
Net profit / (loss)	921	3,288	6,314
Other comprehensive income	(898)	(1,115)	(606)
of which: other comprehensive income that may be reclassified to the income statement	*(1,242)*	*(447)*	*(848)*
of which: other comprehensive income that will not be reclassified to the income statement	*344*	*(669)*	*243*
Total comprehensive income	23	2,173	5,709

Balance sheet

CHF million	Note	31.12.17	31.12.16
Assets			
Cash and balances with central banks		87,775	107,767
Due from banks	10, 11	13,693	13,125
Cash collateral on securities borrowed	24	12,393	15,111
Reverse repurchase agreements	24	77,240	66,246
Trading portfolio assets	22	130,807	96,661
of which: assets pledged as collateral that may be sold or repledged by counterparties	*23*	*35,363*	*30,260*
Positive replacement values	12, 22, 24	118,229	158,411
Cash collateral receivables on derivative instruments	24	23,434	26,664
Loans	10, 11	321,718	307,004
Financial assets designated at fair value	22, 24, 25	58,556	65,024
Financial assets available for sale	13, 22	8,665	15,676
Financial assets held to maturity	13	9,166	9,289
Investments in associates	28	1,018	963
Property, equipment and software	14	7,985	8,297
Goodwill and intangible assets	15	6,398	6,556
Deferred tax assets	8	9,783	13,144
Other assets	16	29,505	25,412
Total assets		916,363	935,353
Liabilities			
Due to banks	17	7,533	10,645
Cash collateral on securities lent	24	1,789	2,818
Repurchase agreements	24	15,255	6,612
Trading portfolio liabilities	22	30,463	22,825
Negative replacement values	12, 22, 24	116,134	153,810
Cash collateral payables on derivative instruments	24	30,247	35,472
Due to customers	17	447,141	450,199
Financial liabilities designated at fair value	18, 22, 24	54,202	55,017
Debt issued	19	104,749	78,998
Provisions	20	3,084	4,169
Other liabilities	8, 21	54,990	60,443
Total liabilities		865,588	881,009
Equity			
Share capital		386	386
Share premium		26,966	29,505
Retained earnings		29,102	28,265
Other comprehensive income recognized directly in equity, net of tax		(5,736)	(4,494)
Equity attributable to shareholders		50,718	53,662
Equity attributable to preferred noteholders		0	642
Equity attributable to non-controlling interests		57	40
Total equity		50,775	54,343
Total liabilities and equity		916,363	935,353

Statement of changes in equity

CHF million	Share capital	Share premium	Treasury shares	Retained earnings
Balance as of 1 January 2015	**384**	**32,057**	**(37)**	**22,902**
Issuance of share capital	1			
Acquisition of treasury shares			(292)	
Premium on shares issued and warrants exercised		290		
Tax (expense) / benefit		9		
Dividends		(2,914)		(8)
Preferred notes				
New consolidations / (deconsolidations) and other increases / (decreases)		35	328	
Total comprehensive income for the year				6,538
of which: net profit / (loss)				*6,235*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax				
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans				*304*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation				
Balance as of 31 December 2015	**386**	**29,477**	**0**	**29,433**
Issuance of share capital				
Premium on shares issued and warrants exercised		4		
Tax (expense) / benefit		25		
Dividends				(3,434)
Preferred notes				
New consolidations / (deconsolidations) and other increases / (decreases)		(2)		(1)
Total comprehensive income for the year				2,267
of which: net profit / (loss)				*3,207*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax				
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans				*(824)*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit				*(115)*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation				

Other comprehensive income recognized directly in equity, net of tax[1]	*of which: foreign currency translation*	*of which: financial assets available for sale*	*of which: cash flow hedges*	Total equity attributable to shareholders	Preferred noteholders	Non-controlling interests	Total equity
(3,199)	*(5,591)*	*236*	*2,156*	**52,108**	**2,013**	**45**	**54,165**
				1			1
				(292)			(292)
				290			290
				9			9
				(2,922)	(77)	(5)	(3,004)
				0	1		1
				364		(1)	363
(848)	*(266)*	*(64)*	*(518)*	5,690	18	1	5,709
				6,235	*77*	*3*	*6,314*
(848)	*(266)*	*(64)*	*(518)*	*(848)*			*(848)*
				304			*304*
				0	*(59)*	*(2)*	*(61)*
(4,047)	*(5,857)*	*172*	*1,638*	**55,248**	**1,954**	**41**	**57,243**
				0			0
				4			4
				25			25
				(3,434)	(78)	(5)	(3,517)
				0	(1,583)		(1,583)
				(3)		0	(2)
(447)	*293*	*(73)*	*(666)*	1,820	349	3	2,173
				3,207	*78*	*4*	*3,288*
(447)	*293*	*(73)*	*(666)*	*(447)*			*(447)*
				(824)			*(824)*
				(115)			*(115)*
				0	*271*	*0*	*271*

Financial statements

Statement of changes in equity (continued)

CHF million	Share capital	Share premium	Treasury shares	Retained earnings
Balance as of 31 December 2016	**386**	**29,505**	**0**	**28,265**
Issuance of share capital				
Premium on shares issued and warrants exercised		6		
Tax (expense) / benefit		16		
Dividends		(2,250)		
Preferred notes				
New consolidations / (deconsolidations) and other increases / (decreases)		(311)[2]		
Total comprehensive income for the year				837
of which: net profit / (loss)				*845*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax				
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans				*305*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit				*(313)*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation				
Balance as of 31 December 2017	386	26,966	0	29,102

1 Excludes defined benefit plans and own credit that are recorded directly in retained earnings. 2 Includes a CHF 307 million reduction related to the transfer of shared services functions in Switzerland from UBS AG to UBS Business Solutions AG, a wholly owned subsidiary of UBS Group AG. Refer to Note 30 for more information.

Other comprehensive income recognized directly in equity, net of tax[1]	*of which: foreign currency translation*	*of which: financial assets available for sale*	*of which: cash flow hedges*	Total equity attributable to shareholders	Preferred noteholders	Non-controlling interests	Total equity
(4,494)	*(5,564)*	*98*	*972*	53,662	642	40	54,343
				0			0
				6			6
				16			16
				(2,250)	(72)	(4)	(2,327)
				0	(993)		(993)
				(311)		17	(294)
(1,242)	*(535)*	*(86)*	*(621)*	(404)	423	5	23
				845	*72*	*4*	*921*
(1,242)	*(535)*	*(86)*	*(621)*	*(1,242)*			*(1,242)*
				305			*305*
				(313)			*(313)*
				0	*351*	*1*	*352*
(5,736)	*(6,099)*	*12*	*351*	50,718	0	57	50,775

Financial statements

UBS AG shares issued and treasury shares held

As of 31 December 2017, shares issued by UBS AG totaled 3,858,408,466 (31 December 2016: 3,858,408,466 shares).

No treasury shares were held as of 31 December 2017 and as of 31 December 2016.

Conditional share capital

As of 31 December 2017, UBS AG's share capital could have been increased through the issuance of 136,200,312 shares upon exercise of employee options.

Additional conditional capital up to a maximum number of 380,000,000 shares was available as of 31 December 2017 for conversion rights and warrants granted in connection with the issuance of bonds or similar financial instruments.

Statement of cash flows

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Cash flow from / (used in) operating activities			
Net profit / (loss)	921	3,288	6,314
Non-cash items included in net profit and other adjustments:			
Depreciation and impairment of property, equipment and software	928	980	918
Amortization and impairment of intangible assets	70	91	107
Credit loss expense / (recovery)	128	37	117
Share of net profits of associates / joint ventures and impairment of associates	(68)	(106)	(169)
Deferred tax expense / (benefit)	3,248	2	(1,614)
Net loss / (gain) from investing activities	(203)	(1,176)	(934)
Net loss / (gain) from financing activities	2,132	9,647	(1,654)
Other net adjustments	(519)	(300)	3,628
Net change in operating assets and liabilities:			
Due from / to banks	(3,184)	(1,183)	1,768
Cash collateral on securities borrowed and reverse repurchase agreements	(7,654)	7,933	(2,712)
Cash collateral on securities lent and repurchase agreements	7,432	(6,637)	(2,909)
Trading portfolio and replacement values	(21,931)	6,024	6,853
Financial assets designated at fair value	7,316	(60,658)	(1,446)
Cash collateral on derivative instruments	(2,479)	(4,169)	3,285
Loans	(15,411)	3,740	841
Due to customers	(11,187)	33,925	(17,362)
Other assets, provisions and other liabilities	(10,417)	(8,204)	7,516
Income taxes paid, net of refunds	(992)	(649)	(551)
Net cash flow from / (used in) operating activities	(51,872)	(17,413)	1,997
Cash flow from / (used in) investing activities			
Purchase of subsidiaries, associates and intangible assets	(102)	(26)	(13)
Disposal of subsidiaries, associates and intangible assets[1]	336	93	477
Purchase of property, equipment and software	(1,500)	(1,746)	(1,841)
Disposal of property, equipment and software	213	209	547
Purchase of financial assets available for sale	(8,448)	(7,271)	(101,189)
Disposal and redemption of financial assets available for sale	14,917	54,097	93,584
Net (purchase) / redemption of financial assets held to maturity	(77)	(8,996)	
Net cash flow from / (used in) investing activities	5,338	36,359	(8,434)

Table continues on the next page.

Statement of cash flows (continued)

Table continued from previous page.

CHF million	For the year ended 31.12.17	31.12.16	31.12.15
Cash flow from / (used in) financing activities			
Net short-term debt issued / (repaid)	24,141	5,440	(6,404)
Distributions paid on UBS AG shares	(2,250)	(3,434)	(2,626)
Issuance of long-term debt, including financial liabilities designated at fair value	49,506	33,453	47,790
Repayment of long-term debt, including financial liabilities designated at fair value	(43,299)	(34,081)	(44,221)
Dividends paid and repayments of preferred notes	(776)	(1,366)	(108)
Net changes in non-controlling interests	(5)	(5)	(5)
Net cash flow from / (used in) financing activities	27,317	6	(5,573)
Total cash flow			
Cash and cash equivalents at the beginning of the year	121,107	102,962	116,715
Net cash flow from / (used in) operating, investing and financing activities	(19,216)	18,952	(12,011)
Effects of exchange rate differences on cash and cash equivalents	264	(807)	(1,742)
Cash and cash equivalents at the end of the year[2]	102,154	121,107	102,962
of which: cash and balances with central banks	87,700	107,715	91,306
of which: due from banks	12,406	11,927	10,732
of which: money market paper[3]	2,049	1,465	924
Additional information			
Net cash flow from / (used in) operating activities includes:			
Interest received in cash	12,457	12,223	11,144
Interest paid in cash	6,627	6,141	5,267
Dividends on equity investments, investment funds and associates received in cash[4]	1,790	1,595	2,120

1 Includes dividends received from associates. 2 CHF 2,434 million, CHF 2,662 million and CHF 3,963 million of cash and cash equivalents (mainly reflected in Due from banks) were restricted as of 31 December 2017, 31 December 2016 and 31 December 2015, respectively. Refer to Note 23 for more information. 3 Money market paper is included in the balance sheet under Trading portfolio assets (31 December 2017: CHF 131 million, 31 December 2016: CHF 75 million, 31 December 2015: CHF 795 million), Financial assets available for sale (31 December 2017: CHF 23 million, 31 December 2016: CHF 430 million, 31 December 2015: CHF 129 million) and Financial assets designated at fair value (31 December 2017: CHF 1,894 million, 31 December 2016: CHF 959 million, 31 December 2015: CHF 0 million). 4 Includes dividends received from associates (2017: CHF 51 million, 2016: CHF 50 million, 2015: CHF 114 million) reported within Cash flow from / (used in) investing activities.

Changes in liabilities arising from financing activities

CHF million	Debt issued	*of which: short-term*	*of which: long-term*	Financial liabilities designated at fair value	Funding from UBS Group AG and its subsidiaries[2]	Total
Balance as of 1 January 2017	78,998	*26,178*	*52,820*	55,017	24,632	158,647
Cash flows	25,534	*24,141*	*1,393*	(5,556)	10,371	30,348
Non-cash changes	217	*634*	*(417)*	4,740	(254)	4,704
of which: foreign currency translation	*561*	*634*	*(73)*	*593*	*(138)*	*1,016*
of which: fair value changes				*4,147*		*4,147*
of which: other	*(344)*[1]	*0*	*(344)*[1]	*0*	*(115)*[1]	*(459)*
Balance as of 31 December 2017	104,749	*50,953*	*53,796*	54,202	34,749	193,700

1 Includes the effect of fair value hedges on long-term debt issued. Refer to Note 1a item k and Note 19 for more information. 2 Represents Group-internal funding obtained from UBS Group AG and UBS Group Funding (Switzerland) AG that is reported in the balance sheet line Due to customers.

Notes to the UBS AG consolidated financial statements

Note 1 Summary of significant accounting policies

a) Significant accounting policies

This Note describes the significant accounting policies applied in the preparation of the consolidated financial statements (the "Financial Statements") of UBS AG and its subsidiaries ("UBS AG"). On 8 March 2018, the Financial Statements were authorized for issue by the Board of Directors.

Basis of accounting

The Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB), and are presented in Swiss francs (CHF), which is also the functional currency of UBS AG's Head Office and its Swiss-based operations.

Disclosures provided in the "Risk, treasury and capital management" section of this report that are marked as audited 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 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 the estimates and assumptions, which encompass historical experience, expectations of the future and other pertinent factors, to determine their continuing relevance based on current conditions and it updates them as necessary. Changes in those estimates and assumptions may have a significant impact on the Financial Statements. Further, actual results may differ significantly from UBS AG's estimates, which could result in significant loss to it, beyond what it anticipated or provided for.

The following areas contain estimation uncertainty or require critical judgment and have a significant effect on the amounts recognized in the Financial Statements:

– fair value of financial instruments (refer to item 3f in this Note and to Note 22)
– allowances and provisions for credit losses (refer to item 3g in this Note and to Note 11)
– pension and other post-employment benefit plans (refer to item 7 in this Note and to Note 26)
– income taxes (refer to item 8 in this Note and to Note 8)
– goodwill (refer to item 11 in this Note and to Note 15)
– provisions and contingent liabilities (refer to item 12 in this Note and to Note 20)
– consolidation of structured entities (refer to item 1 in this Note and to Note 28).

1) Consolidation

a. Consolidation principles

The Financial Statements comprise the financial statements of UBS AG and its subsidiaries, presented as a single economic entity, whereby intercompany transactions and balances have been eliminated. UBS AG consolidates all entities that it controls, including controlled structured entities (SEs), which is the case when it has (i) power over the relevant activities of the entity, (ii) exposure to an entity's variable returns and (iii) the ability to use its power to affect its own returns.

Where an entity is governed by voting rights, control is generally indicated by a direct shareholding of more than one-half of the voting rights.

Note 1 Summary of significant accounting policies (continued)

In other cases, the assessment of control is more complex and requires greater use of judgment. Where UBS AG has an interest in an entity that absorbs variability, UBS AG considers whether it has power over the relevant activities of the entity that allows it to affect the variability of its returns. Consideration is given to all facts and circumstances to determine whether UBS AG has power over another entity; that is, the current ability to direct the relevant activities of an entity when decisions about those activities need to be made. Factors such as the purpose and design of the entity, rights held through contractual arrangements, such as call rights, put rights or liquidation rights, as well as potential decision-making rights are all considered in this assessment. Where UBS AG has power over the relevant activities, a further assessment is made to determine whether, through that power, it has the ability to affect its own returns by assessing whether power is held in a principal or agent capacity. Consideration is given to (i) the scope of decision-making authority, (ii) rights held by other parties, including removal or other participating rights, and (iii) exposure to variability, including remuneration, relative to total variability of the entity as well as whether that exposure is different from that of other investors. If, after review of these factors, UBS AG concludes that it can exercise its power to affect its own returns, the entity is consolidated.

Subsidiaries, including SEs, are consolidated from the date when control is obtained and are 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 of the elements required to establish that control is present.

→ **Refer to Note 28 for more information**

b. Structured entities

UBS AG sponsors the formation of SEs and interacts with non-sponsored SEs for a variety of reasons, including allowing clients to obtain or be exposed to particular risk profiles, to provide funding or to sell or purchase credit risk. An SE is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity. Such entities generally have a narrow and well-defined objective and include those historically referred to as special purpose entities, as well as some investment funds. UBS AG assesses whether an entity is an SE by considering the nature of the activities of the entity as well as the substance of voting or similar rights afforded to other parties, including investors and independent boards or directors. UBS AG considers rights such as the ability to liquidate the entity or remove the decision maker to be similar to voting rights when the holder has the substantive ability to exercise such rights without cause. In the absence of such rights or in cases where the existence of such rights cannot be fully established, the entity is considered to be an SE.

The classes of SEs with which UBS AG is involved include:

- *Securitization structured entities* are established to issue securities to investors that are backed by assets held by the SE and whereby (i) significant credit risk associated with the securitized exposures has been transferred to third parties and (ii) there is more than one risk position or tranche issued by the securitization vehicle in line with the Basel III securitization definition. All securitization entities are classified as SEs.
- *Client investment structured entities* are established predominantly for clients to invest in specific assets or risk exposures through purchasing notes issued by the SE, predominantly on a fixed-term basis. The SE may source assets via a transfer from UBS AG or through an external market transaction. In some cases, UBS AG may enter into derivatives with the SE to either align the cash flows of the entity with the investor's intended investment objective or to introduce other desired risk exposures. In certain cases, UBS AG may have interests in a third-party-sponsored SE to hedge specific risks or participate in asset-backed financing.
- *Investment fund structured entities* have a collective investment objective, are managed by an investment manager 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 creates and sponsors a large number of funds in which it may have an interest through the receipt of variable management fees and / or a direct investment. In addition, UBS AG has interests in a number of funds created and sponsored by third parties, including exchange-traded funds and hedge funds, to hedge issued structured products.

When UBS AG does not consolidate an SE, but has an interest in an SE or has sponsored an SE, disclosures are provided on the nature of these interests and sponsorship activities.

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. As the nature and extent of UBS AG's involvement are unique to each entity, there is no uniform consolidation outcome by entity. Certain entities within a class may be consolidated while others may not.

→ **Refer to Note 28 for more information**

2) Segment reporting

As of 31 December 2017, UBS AG's businesses were organized globally into five business divisions: Wealth Management, Wealth Management Americas, Personal & Corporate Banking, Asset Management and the Investment Bank, all of which were supported by Corporate Center. The five business divisions qualify as reportable segments for the purpose of segment reporting and, together with Corporate Center, reflect the management structure of UBS AG. Corporate Center – Non-core and Legacy Portfolio is managed and reported as a separate reportable segment within Corporate Center. Financial information about the five business divisions and Corporate Center (with its units: Services, Group Asset and Liability Management (Group ALM), Non-core and Legacy Portfolio) is presented separately in internal reporting to management.

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. Commissions are credited to the reportable segments based on the corresponding client relationship. 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. Net interest income is generally allocated to the reportable segments based on their balance sheet positions. Interest income earned from managing UBS AG's consolidated equity is allocated to the reportable segments based on average attributed equity. Assets and liabilities of the reportable segments are funded through and invested with Corporate Center – Group ALM, 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. Certain assets managed centrally by Corporate Center – Services and Corporate Center – Group ALM may be allocated to other segments on a basis different to that on which the corresponding costs or revenues are allocated. For example, certain assets that are reported in Corporate Center – Services or Corporate Center – Group ALM may be retained on the balance sheet of these components of Corporate Center notwithstanding that the costs or revenues associated with these assets may be entirely or partly allocated to the segments. Similarly, certain assets are reported in the business divisions, whereas the corresponding costs or revenues are entirely or partly allocated to Corporate Center – Services and Corporate Center – Group ALM.

Non-current assets disclosed for segment reporting purposes represent assets that are expected to be recovered more than twelve months after the reporting date, excluding financial instruments, deferred tax assets, post-employment benefits and rights arising under insurance contracts.

→ **Refer to Notes 1c and 2 for more information**

3) Financial instruments

a. Recognition

UBS AG recognizes financial instruments when it becomes a party to the contractual provisions of the instrument. UBS AG applies settlement date accounting to all regular way purchases and sales of financial instruments.

In transactions in which UBS AG acts as a transferee, to the extent that the transfer of a financial asset does not qualify for derecognition by the transferor, UBS AG does not recognize the transferred asset as its asset.

UBS AG also acts in a fiduciary capacity, which results in the holding or placing of assets on behalf of individuals, trusts, retirement benefit plans and other institutions. Unless the recognition criteria are satisfied, these assets are not recognized on UBS AG's balance sheet. Consequently, the related income is excluded from these 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 the client cash balances.

b. Classification, measurement and presentation

Upon initial recognition, UBS records financial instruments at fair value plus, for financial instruments not measured at fair value through profit or loss, directly attributable transaction costs. After initial recognition, UBS AG classifies, measures and presents its financial assets and liabilities in accordance with IAS 39, *Financial Instruments: Recognition and Measurement* as described in the following table.

→ **Refer to Note 25a for an overview of financial assets and liabilities by IAS 39 category**

→ **Refer to the balance sheet for references to Notes that provide information on the composition of individual financial asset and liability categories**

Note 1 Summary of significant accounting policies (continued)

Financial assets classification	Significant items included	Measurement and presentation
Held for trading	All derivatives with a positive replacement value, except those that are designated and effective hedging instruments. Any other financial asset acquired principally for the purpose of selling or repurchasing in the near term, or 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), equity instruments, and assets held under unit-linked investment contracts.	Measured at fair value with changes recognized in profit or loss. Changes in fair value, initial transaction costs and gains and losses realized on disposal or redemption are recognized in *Net trading income,* except interest and dividend income on instruments other than derivatives (refer to item 3c in this Note), interest on derivatives designated as hedging instruments in certain types of hedge accounting relationships and forward points on certain short duration foreign exchange contracts, which are reported in *Net interest income.* Derivative assets are generally presented as *Positive replacement values.* Bifurcated embedded derivatives are measured at fair value, but presented on the same balance sheet line as the host contract measured at amortized cost. The presentation of fair value changes on derivatives that are designated and effective hedging instruments differs depending on the type of hedge relationship (refer to item 3k in this Note for more information). Financial assets held for trading (other than derivatives) are presented as *Trading portfolio assets.* Financial assets designated at fair value through profit or loss are presented as *Financial assets designated at fair value*.
Designated at fair value through profit or loss	A financial asset may be designated at fair value through profit or loss only upon initial recognition and this designation is irrevocable. The fair value option can be applied only if one of the following criteria is met: – the financial instrument is a hybrid instrument that includes a substantive embedded derivative; – the financial instrument is part of a portfolio that is risk managed on a fair value basis and reported to senior management on that basis; or – the application of the fair value option eliminates or significantly reduces an accounting mismatch that would otherwise arise. UBS AG designated at fair value through profit or loss the following financial assets: – Certain structured loans, reverse repurchase and securities borrowing agreements that are managed on a fair value basis. – Loans that are hedged predominantly with credit derivatives. These instruments are designated at fair value to eliminate an accounting mismatch. – Certain debt securities held as high-quality liquid assets (HQLA) and managed by Corporate Center – Group ALM on a fair value basis. – Assets held to hedge delivery obligations related to cash-settled employee compensation plans. These assets are designated at fair value in order to eliminate an accounting mismatch that would otherwise arise due to the liability being measured on a fair value basis.	
Loans and receivables (amortized cost)	Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and are not assets for which UBS AG may not recover substantially all of its initial net investment for reasons other than credit deterioration. This classification includes: – cash and balances with central banks – cash collateral receivables on derivative instruments – residential and commercial mortgages – secured loans, including reverse repurchase agreements, receivables under stock borrowing and Lombard loans, and unsecured loans – certain securities held within Corporate Center – Non-core and Legacy Portfolio – trade and lease receivables.	Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note). Upfront fees and direct costs relating to loan origination, refinancing or restructuring as well as to loan commitments are deferred and amortized over the life of the loan using the effective interest rate method. Loans and receivables are presented on the balance sheet primarily as *Cash and balances with central banks, Due from banks, Loans, Cash collateral on securities borrowed, Reverse repurchase agreements* and *Cash collateral receivables on derivative instruments.* Amounts arising from exchange-traded derivatives (ETD) and certain over-the-counter (OTC) derivatives cleared through central clearing counterparties that are either considered to be daily settled or qualify for netting (refer to items 3d and 3j in this Note) are presented within *Cash collateral receivables on derivative instruments.*

Note 1 Summary of significant accounting policies (continued)

Financial assets classification	Significant items included	Measurement and presentation
Available for sale	Financial assets classified as available for sale are non-derivative financial assets that are not classified as held for trading, designated at fair value through profit or loss, or loans and receivables. This classification mainly includes debt securities held as HQLA and managed by Corporate Center – Group ALM, certain asset-backed securities managed by Corporate Center – Group ALM, as well as investment fund holdings and strategic and commercial equity investments.	Measured at fair value with unrealized gains and losses reported in *Other comprehensive income*, net of applicable income taxes, until such investments are sold, collected or otherwise disposed of, or until any such investment is determined to be impaired (refer to item 3i in this Note). Upon disposal, any accumulated balances in *Other comprehensive income* are reclassified to the income statement and reported within *Other income.* Interest and dividend income are recognized in the income statement in accordance with item 3c in this Note. Refer to item 13 in this Note for information on the treatment of foreign exchange translation gains and losses.
Held to maturity	Non-derivative financial assets with fixed or determinable payments and fixed maturities for which UBS AG has the positive intention and ability to hold to maturity. This classification mainly includes debt securities held as HQLA and managed by Corporate Center – Group ALM.	Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note).

Financial liabilities classification	Significant items included	Measurement and presentation
Held for trading	– 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). – All derivatives with a negative replacement value, except those that are designated and effective hedging instruments.	Measurement of trading liabilities follows the same principles as for held for trading assets, and measurement of liabilities designated at fair value through profit or loss follows the same principles as for assets designated at fair value through profit or loss. Presented as *Trading portfolio liabilities* and *Financial liabilities designated at fair value,* respectively. Derivative liabilities are generally presented as *Negative replacement values.* Bifurcated embedded derivatives are measured at fair value, but are presented on the same balance sheet line as the host contract measured at amortized cost. Derivatives that are designated and effective hedging instruments are also measured at fair value. The presentation of fair value changes differs depending on the type of hedge relationship (refer to item 3k in this Note for more information). Amounts due under unit-linked investment contracts are presented as *Other liabilities.*
Designated at fair value through profit or loss	UBS AG designated at fair value through profit or loss the following financial liabilities: – Issued hybrid debt instruments that primarily include equity-linked, credit-linked and rates-linked bonds or notes. – Issued debt instruments managed on a fair value basis. – Loan commitments that are hedged predominantly with credit derivatives and hence eliminate an accounting mismatch.	
Amortized cost	This classification includes: – Demand and time deposits, retail savings / deposits, cash collateral on securities lent, non-structured fixed-rate bonds, subordinated debt, certificates of deposit, covered bonds. – Cash collateral payables on derivative instruments.	Measured at amortized cost using the effective interest rate method. Amortized cost liabilities are presented on the balance sheet primarily as *Due to banks, Due to customers, Cash collateral on securities lent, Repurchase agreements, Cash collateral payables on derivative instruments* and *Debt issued.* Amounts arising from ETD and certain OTC derivatives cleared through central clearing counterparties that are either considered to be daily settled or qualify for netting (refer to items 3d and 3j of this Note) are presented within *Cash collateral payables on derivative instruments.*

Note 1 Summary of significant accounting policies (continued)

c. Interest income and expense

Interest income or expense is determined by reference to a financial instrument's amortized-cost basis calculated using the effective interest rate (EIR) method. UBS AG also uses this method to determine the interest income and expense for financial instruments (excluding derivatives) measured at fair value through profit or loss. Interest income or expense on financial instruments measured at amortized cost, debt instruments measured at fair value through profit or loss and available-for-sale financial assets are presented within *Net interest income*. In addition, *Net interest income* includes the interest income and expense on derivatives designated as hedging instruments in effective hedge relationships and forward points on certain short duration foreign exchange contracts.

Upfront fees, including loan commitment fees 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 classified as available for sale. Such fees and costs are therefore 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.*

Interest income on financial assets, excluding derivatives, is included in *Interest income* when positive and in *Interest expense* when negative, because negative interest income arising on a financial asset does not meet the definition of revenue. 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*. Dividend income on all financial assets is included in *Interest income.*

→ **Refer to item 3k in this Note and Note 3 for more information**

d. Derecognition

Financial assets

UBS AG derecognizes a financial asset, or a portion of a financial asset, from its balance sheet where the contractual rights to cash flows from the asset have expired, or have been transferred, usually by sale, thus exposing the purchaser to either 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.

A financial asset is considered to have been transferred when UBS AG (i) transfers the contractual rights to receive the cash flows of the financial asset or (ii) retains the contractual rights to receive the cash flows of that asset, but assumes a contractual obligation to pay the cash flows to one or more entities.

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 right to the cash flows of the pledged assets, as may be evidenced, for example, by the counterparty's right to sell or repledge the assets. Where the counterparty to the pledged financial assets has not received the contractual right to the cash flows, UBS AG does not consider this to be a transfer for the purposes of derecognition.

UBS AG enters into certain transactions where it transfers financial assets recognized on its balance sheet but retains either all or a portion of the risks and rewards of the transferred financial assets. If all or substantially all of the risks and rewards are retained, the transferred financial assets are not derecognized from the balance sheet; for example, securities lending and repurchase transactions or where financial assets are sold to a third party with a total return swap resulting in UBS AG retaining all or substantially all of the risks and rewards of the transferred assets. These types of transactions are accounted for as secured financing transactions as described in item 3e of this Note.

In transactions where substantially all of the risks and rewards of ownership of a financial asset are neither retained nor transferred, UBS AG derecognizes the financial asset if control over the asset is surrendered, and the rights and obligations retained following the transfer are recognized separately as assets and liabilities, respectively. 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.

Certain over-the-counter (OTC) derivative contracts and most exchange-traded futures and options contracts cleared through central clearing counterparties are considered to be settled on a daily basis through the daily margining process, as the payment or receipt of the variation margin represents legal or economic settlement of a derivative contract, which results in derecognition of the associated positive and negative replacement values.

→ **Refer to Note 24 for more information**

Financial liabilities
UBS AG derecognizes a financial liability from its balance sheet when it is extinguished, that is, when the obligation specified in the contract is discharged, canceled or has expired. 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, such an exchange or modification results in derecognition of the original liability and the recognition of a new liability with any difference in the respective carrying amounts being recognized in the income statement.

e. Securities borrowing / lending and repurchase / reverse repurchase transactions

Securities borrowing / lending and repurchase / reverse repurchase transactions are generally entered into on a collateralized basis. In such transactions, UBS AG typically borrows or lends equity and debt securities in exchange for securities or cash collateral.

These transactions are treated as collateralized financing transactions where the securities transferred / received are not derecognized or recognized on balance sheet. Securities transferred / received with the right to resell or repledge are disclosed separately.

In reverse repurchase and securities borrowing agreements, the cash delivered is derecognized and a corresponding receivable, including accrued interest, is recorded in the balance sheet lines *Reverse repurchase agreements* and *Cash collateral on securities borrowed,* respectively*,* representing UBS AG's right to receive the cash. Similarly, in repurchase and securities lending agreements, the cash received is recognized and a corresponding obligation, including accrued interest, is recorded in the balance sheet lines *Repurchase agreements* and *Cash collateral on securities lent,* respectively. Additionally, the sale of securities that is settled by delivering securities received in reverse repurchase or securities borrowing transactions triggers the recognition of a trading liability.

Repurchase and reverse repurchase transactions with the same counterparty, maturity, currency and central securities depository (CSD) are generally presented net, subject to meeting the netting requirements described in item 3j of this Note.

→ **Refer to Notes 23 and 24 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.

All financial instruments measured at fair value are categorized into one of three fair value hierarchy levels. Level 1 financial instruments are those for which fair values can be derived from quoted prices in active markets. Level 2 financial instruments are those for which fair values must be derived using valuation techniques for which all significant inputs are, or are based on, observable market data. Level 3 financial instruments are those for which fair values can only be derived on the basis of valuation techniques for which significant inputs are not based on observable market data.

Critical accounting estimates and judgments
The use of valuation techniques, modeling assumptions and estimates of unobservable market inputs require 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 require a higher level of judgment to calculate a fair value than those entirely based on observable inputs.

Valuation techniques, including models, that are used to determine fair values are periodically reviewed and validated by qualified personnel, independent of those who created them. Models are calibrated to ensure that outputs reflect observable market data, to the extent possible. Also, models prioritize the use of observable inputs, when available, over unobservable inputs. Judgment is required in selecting appropriate models as well as inputs for which observable data is less readily or not available.

UBS AG's valuation techniques may not fully reflect all the factors relevant to the fair value of financial instruments held. Valuations are therefore adjusted, where appropriate, to allow for additional factors, including credit risk, model risk and liquidity risk.

UBS AG's governance framework over fair value measurement is described in Note 22b.

The level of subjectivity and the degree of management judgment involved in the development of estimates and the selection of assumptions are more significant for instruments valued using specialized and sophisticated models and where some or all of the parameter inputs are less observable (Level 3 instruments) and may require adjustment to reflect factors that market participants would consider in estimating fair value, such as close-out costs, credit exposure, model-driven valuation uncertainty, funding costs and benefits, trading restrictions and other factors, which are presented in Note 22d. 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 within Note 22g.

→ **Refer to Note 22 for more information**

Note 1 Summary of significant accounting policies (continued)

g. Allowances and provisions for credit losses

A claim is impaired and an allowance or provision for credit losses is recognized when objective evidence demonstrates that a loss event has occurred after the initial recognition and that the loss event has an impact on the future cash flows that can be reliably estimated (incurred loss approach). UBS AG considers a claim to be impaired if it will be unable to collect all amounts due on it based on the original contractual terms due to credit deterioration of the issuer or counterparty. A claim can be a loan or receivable carried at amortized cost, or a commitment, such as a letter of credit, a guarantee or a similar instrument.

An allowance for credit losses is reported as a decrease in the carrying value of a financial asset. For an off-balance sheet item, such as a commitment, a provision for credit loss is reported in *Provisions*. Changes to allowances and provisions for credit losses are recognized in *Credit loss expense / recovery*.

→ **Refer to Notes 10 and 11 for more information**

Critical accounting estimates and judgments

Allowances and provisions for credit losses are evaluated at both a counterparty-specific level and collectively. Judgment is used in making assumptions about the timing and amount of impairment losses.

Counterparty-specific allowances and provisions

Loans are evaluated individually for impairment if objective evidence indicates that a loan may be impaired. Individual credit exposures are evaluated on the basis of the borrower's overall financial condition, resources and payment record, the prospects of support from contractual guarantors and, where applicable, the realizable value of any collateral. The impairment loss for a loan is the excess of the carrying value of the financial asset over the estimated recoverable amount. The estimated recoverable amount is the present value, calculated using the loan's original effective interest rate, of expected future cash flows, including amounts that may result from restructuring or the liquidation of collateral. If a loan has a variable interest rate, the discount rate for calculating the recoverable amount is the current effective interest rate. Upon impairment, interest income is accrued by applying the original effective interest rate to the impaired carrying value of the loan.

All impaired loans are reviewed and analyzed at least annually. Any subsequent changes to the amounts and timing of the expected future cash flows compared with prior estimates result in a change in the allowance for credit losses and are charged or credited to *Credit loss expense / recovery*. An allowance for impairment is reversed only when the credit quality has improved to such an extent that there is reasonable assurance of timely collection of principal and interest in accordance with the original contractual terms of the instrument, or the equivalent value thereof. A write-off is made when all or part of a financial asset is deemed uncollectible or forgiven. Write-offs reduce the principal amount of a claim and are charged against previously established allowances for credit losses. Recoveries, in part or in full, of amounts previously written off are credited to *Credit loss expense / recovery.*

Collective allowances and provisions

Collective allowances and provisions are calculated for portfolios with similar credit risk characteristics, taking into account historical loss experience and current conditions. The methodology and assumptions used are reviewed regularly to reduce any differences between estimated and actual loss experience. For all of its portfolios, UBS AG also assesses whether there have been any unforeseen developments that might result in impairments that are not immediately observable at a counterparty level. To determine whether an event-driven collective allowance for credit losses is required, UBS AG considers global economic drivers to assess the most vulnerable countries and industries. As the allowance cannot be allocated to individual loans, the loans are not considered to be impaired and interest is accrued on each loan according to its contractual terms. If objective evidence becomes available that indicates that an individual financial asset is impaired, it is removed from the group of financial assets assessed for impairment on a collective basis and is assessed separately as counterparty-specific.

h. Restructured loans

A renegotiated or restructured loan is a loan for which the terms have been modified or for which additional collateral has been requested that was not contemplated in the original contract.

Typical key features of terms and conditions granted through restructuring to avoid default include special interest rates, postponement of interest or principal payments, debt / equity swaps, modification of the schedule of repayments, subordination or amendment of loan maturity. There is no change in the EIR following a renegotiation.

If a loan is restructured with preferential conditions (i.e., new or modified terms and conditions are agreed upon that do not meet the normal market criteria for the quality of the obligor and the type of loan), it is classified as defaulted. It will remain so until the loan is collected, written off or non-preferential conditions are granted that supersede the preferential conditions.

Concessions granted where there is no evidence of financial difficulty, or where any changes to terms and conditions are within UBS AG's usual risk appetite, are not deemed restructured.

A restructuring of a loan could lead to a fundamental change in the terms, resulting in the original loan being derecognized and a new loan being recognized.

If a loan is derecognized in these circumstances, the new loan is measured at fair value at initial recognition. Any allowance taken to date against the original loan is derecognized and is not attributed to the new loan. Consequently, the new loan is assessed for impairment on an individual basis. If the loan is not impaired, the loan is included within the general collective loan assessment for the purpose of measuring credit losses.

i. Impairment of financial assets classified as available for sale

At each balance sheet date, UBS AG assesses whether indicators of impairment are present. Available-for-sale debt instruments are impaired when there is objective evidence, using the same criteria described in item 3g, that, as a result of one or more events that occurred after the initial recognition of the asset, the estimated future cash flows have decreased.

Objective evidence that there has been an impairment of an available-for-sale equity instrument is a significant or prolonged decline in the fair value of the asset. UBS AG uses a rebuttable presumption that such instruments are impaired where there has been a decline in fair value of more than 20% below its original cost or fair value has been below original cost for more than six months.

To the extent a financial asset classified as available for sale is determined to be impaired, the related cumulative net unrealized loss previously recognized in *Other comprehensive income* is reclassified to the income statement within *Other income*. For equity instruments, any further loss is recognized directly in the income statement, whereas for debt instruments, any further loss is recognized in the income statement only if there is additional objective evidence of impairment. After the recognition of an impairment on a financial asset classified as available for sale, increases in the fair value of equity instruments are reported in *Other comprehensive income*. For debt instruments, such increases in the fair value, up to amortized cost in the transaction currency, are recognized in *Other income,* provided that the fair value increase is related to an event occurring after the impairment loss was recorded. Increases in excess of that amount are reported in *Other comprehensive income*.

j. Netting

UBS AG nets financial assets and liabilities on its balance sheet if (i) it has the unconditional and legally enforceable right to set off the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS AG and its counterparties, and (ii) 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. For OTC derivative contracts, balance sheet offsetting is generally only permitted in circumstances in which a market settlement mechanism exists via an exchange or central clearing counterparty that effectively accomplishes net settlement through a daily exchange of collateral via a cash margining process. For repurchase arrangements and securities financing transactions, balance sheet offsetting may be permitted 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 24 for more information**

k. Hedge accounting

UBS AG uses derivative and non-derivative instruments to manage exposures to interest rate and foreign currency risks, including exposures arising from forecast transactions. Qualifying instruments may be designated as hedging instruments in (i) hedges of the change in fair value of recognized assets or liabilities (fair value hedges), (ii) hedges of the variability in future cash flows attributable to a recognized asset or liability or highly probable forecast transactions (cash flow hedges) or (iii) hedges of a net investment in a foreign operation (net investment hedges).

Note 1 Summary of significant accounting policies (continued)

At the time a financial instrument is designated in a hedge relationship, UBS AG formally documents the relationship between the hedging instrument(s) and hedged item(s), including the risk management objectives and strategy in undertaking the hedge transaction and the methods that will be used to assess the effectiveness of the hedging relationship. Accordingly, UBS AG assesses, both at the inception of the hedge and on an ongoing basis, whether the hedging instruments, primarily derivatives, have been "highly effective" in offsetting changes in the fair value or cash flows associated with the designated risk of the hedged items. A hedge is considered highly effective if the following criteria are met: (i) at inception of the hedge and throughout its life, the hedge is expected to be highly effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk and (ii) actual results of the hedge are within a range of 80–125%. In the case of hedging forecast transactions, the transaction must have a high probability of occurring and must present an exposure to variations in cash flows that could ultimately affect the reported net profit or loss. UBS AG discontinues hedge accounting when (i) it determines that a hedging instrument is not, or has ceased to be, highly effective as a hedge, (ii) the derivative expires or is sold, terminated or exercised, (iii) the hedged item matures, is sold or repaid or (iv) forecast transactions are no longer deemed highly probable. UBS AG may also discontinue hedge accounting voluntarily.

Hedge ineffectiveness represents the amount by which the changes in the fair value of the hedging instrument differ from changes in the fair value of the hedged item attributable to the hedged risk, or the amount by which changes in the present value of future cash flows of the hedging instrument exceed changes in the present value of expected cash flows of the hedged item. Such ineffectiveness is recorded in current period earnings in *Net trading income*.

Interest from derivatives designated as hedging instruments in effective fair value hedge relationships is presented within *Interest income from loans and deposits* and *Interest expense on debt issued*, within *Net interest income*. Interest from derivatives designated as hedging instruments in effective cash flow hedge relationships that is reclassified from other comprehensive income when the hedged transaction affects profit or loss is presented within *Interest income from derivative instruments designated as cash flow hedges*.

→ **Refer to Note 3 for more information**

Fair value hedges

For qualifying fair value hedges, the change in the fair value of the hedging instrument is recognized in the income statement along with the change in the fair value of the hedged item that is attributable to the hedged risk. In fair value hedges of interest rate risk, the fair value change of the hedged item attributable to the hedged risk is reflected as an adjustment to the carrying value of the hedged item. If the hedge accounting relationship is terminated for reasons other than the derecognition of the hedged item, the adjustment to the carrying value is amortized to the income statement over the remaining term to maturity of the hedged item using the effective interest rate method. For a portfolio hedge of interest rate risk, the equivalent change in fair value is reflected within *Other assets* or *Other liabilities*. If the portfolio hedge relationship is terminated for reasons other than the derecognition of the hedged item, the amount included in *Other assets* or *Other liabilities* is amortized to the income statement over the remaining term to maturity of the hedged items using the straight-line method.

Cash flow hedges

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*. When the hedged forecast cash flows affect profit or loss, the associated gains or losses on the hedging derivatives are reclassified from *Equity* to the income statement.

If a cash flow hedge of forecast transactions is no longer considered effective, or if the hedge relationship is terminated, the cumulative gains or losses on the hedging derivatives previously reported in *Equity* remain there until the committed or forecast transactions occur and affect profit or loss. If the forecast transactions are no longer expected to occur, the deferred gains or losses are reclassified immediately to the income statement.

Hedges of net investments in foreign operations

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized directly in *Equity* (and presented in the statement of changes in equity and statement of comprehensive income under *Foreign currency translation*), 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 the income statement.

Economic hedges that do not qualify for hedge accounting

Derivative instruments that are transacted as economic hedges, but do not qualify for hedge accounting, are treated in the same way as derivative instruments used for trading purposes (i.e., realized and unrealized gains and losses are recognized in *Net trading income*), except for the forward points on certain short duration foreign exchange contracts, which are reported in *Net interest income*.

→ **Refer to Note 12 for more information**

l. Embedded derivatives

Derivatives may be embedded in other financial instruments (host contracts). For example, they could be represented by the conversion feature embedded in a convertible bond. Such hybrid instruments arise predominantly from the issuance of certain structured debt instruments. An embedded derivative is generally required to be separated from the host contract and accounted for as a standalone derivative instrument at fair value through profit or loss if (i) the host contract is not carried at fair value with changes in fair value reported in the income statement, (ii) the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host contract and (iii) the terms of the embedded derivative would meet the definition of a standalone derivative, were they contained in a separate contract.

Typically, UBS AG applies the fair value option to hybrid instruments (refer to item 3b in this Note for more information), in which case bifurcation of an embedded derivative component is not required.

m. Financial liabilities

Debt issued

Debt issued is carried at amortized cost, including contingent capital instruments that contain contractual provisions under which the principal amounts would be written down upon either a specified CET1 ratio breach or a determination by 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. Where there is a legal bail-in mechanism for write-down or conversion into equity (as is the case, for instance, with senior unsecured debt issued by UBS AG that is subject to write-down or conversion under resolution authority granted to FINMA under Swiss law), such mechanism does not form part of the contractual terms and, therefore, also does not affect the amortized cost accounting treatment applied to these instruments. If the debt were to be written down or converted into equity in a future period, this would result in the full or partial derecognition of the financial liabilities, with the difference between the carrying value of the debt written down or converted into equity and the fair value of any equity shares issued recognized in the income statement.

In cases where, as part of UBS AG's risk management activity, fair value hedge accounting is applied to fixed-rate debt instruments carried at amortized cost, their carrying amount is adjusted for changes in fair value related to the hedged exposure. Refer to item 3k for more information on hedge accounting.

Obligations of UBS AG arising from funding it has received from UBS Group AG or its subsidiaries, which are not within the UBS AG scope of consolidation, are presented as *Due to customers*.

Debt issued and subsequently repurchased in relation to market-making or other activities is treated as redeemed. A gain or loss on redemption (depending on whether the repurchase price of the bond is lower or higher than its carrying value) is recorded in *Other income*. A subsequent sale of own bonds in the market is treated as a reissuance of debt.

Financial liabilities designated at fair value

UBS AG uses the fair value option to designate certain issued debt instruments as financial liabilities designated at fair value through profit or loss, on the basis that such financial instruments include embedded derivatives and / or are managed on a fair value basis (refer to item 3b in this Note for more information).

n. Own credit

From 1 January 2016 onward, 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* and will not be reclassified to the income statement in future periods.

o. Loan commitments

Loan commitments are arrangements under which clients can borrow stipulated amounts under defined terms and conditions.

Loan commitments that can be canceled at any time by UBS AG at its discretion are neither recognized on the balance sheet nor included in off-balance sheet disclosures.

Loan commitments that cannot be canceled by UBS AG once the commitments are communicated to the beneficiary or which are revocable only due to automatic cancelation upon deterioration in a borrower's creditworthiness are considered irrevocable and 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) *other loan commitments*. Other loan commitments are not recorded on the balance sheet, but a provision is recognized through profit or loss if it is probable that a loss has been incurred and a reliable estimate of the amount of the obligation can be made. Any change in the liability relating to these other loan commitments is recorded in the income statement in *Credit loss expense / recovery*.

When a client draws on a commitment, the resulting loan is classified as a (i) *trading asset*, consistent with the associated *derivative loan commitment*, (ii) *financial asset designated at fair value through profit or loss*, consistent with the *loan commitment designated at fair value through profit or loss* or as a (iii) *loan*, when the associated loan commitment is accounted for as *other loan commitment*.

Note 1 Summary of significant accounting policies (continued)

p. Financial guarantee contracts

Financial guarantee contracts are contracts that require the issuer 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. UBS AG issues such financial guarantees to banks, financial institutions and other parties on behalf of clients to secure loans, overdrafts and other banking facilities.

Certain issued financial guarantees that are managed on a fair value basis are designated at fair value through profit or loss.

Financial guarantees that are not managed on a fair value basis are initially recognized in the financial statements at fair value and are subsequently measured at the higher of the amount initially recognized less cumulative amortization and, to the extent a payment under the guarantee has become probable, the present value of the expected payment. Any change in the liability relating to probable expected payments resulting from guarantees is recorded in the income statement in *Credit loss expense / recovery*.

4) Fee income

UBS AG earns fee income from a diverse range of services it provides to its clients. Fee income can be divided into two broad categories: (i) fees earned from services that are provided over a certain period of time, such as portfolio management and advisory fees, and (ii) fees earned from providing transaction-type services, such as underwriting fees, corporate finance fees and brokerage fees.

Fees earned from services that are provided over a certain period of time are recognized ratably over the service period, with the exception of performance-linked fees or fee components with specific performance criteria. Such fees are recognized when, as of the reporting date, the performance benchmark has been met and when collectibility is reasonably assured.

Fees earned from providing transaction-type services are recognized when the service has been completed and the fee is fixed or determinable, i.e., not subject to refund or adjustment.

Fee income generated from providing a service that does not result in the recognition of a financial instrument is presented within *Net fee and commission income.* Fees generated from the acquisition, issue or disposal of a financial instrument are presented in the income statement in line with the balance sheet classification of that financial instrument.

→ **Refer to Note 4 for more information**

5) Cash and cash equivalents

For the purposes of the statement of cash flows, cash and cash equivalents comprise balances with an original maturity of three months or less, including cash, money market paper and balances with central and other banks.

6) Share-based and other deferred 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. UBS AG recognizes the fair value of awards granted to its employees. These awards are generally subject to conditions that require employees to complete a specified period of service and, for performance shares, to satisfy specified performance conditions. Compensation expense is recognized, on a per tranche basis, over the service period based on an estimate of the number of instruments expected to vest and is adjusted to reflect actual outcomes. Where the service period is shortened, for example in the case of employees affected by restructuring programs or mutually agreed termination provisions, recognition of expense is accelerated to the termination date.

Where no future service is required, such as for employees who are retirement eligible or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized immediately on, or prior to, the date of grant. Such awards may remain forfeitable until the legal vesting date if certain non-vesting conditions are not met. For equity-settled awards, forfeiture events resulting from breach of a non-vesting condition do not result in an adjustment to expense.

UBS AG has no obligation to settle the awards and therefore awards over UBS Group AG shares are classified as equity-settled share-based payment transactions. Compensation expense is measured by reference to the fair value of UBS Group AG equity instruments on the date of grant adjusted, when relevant, to take into account the terms and conditions inherent in the award, including dividend rights, transfer restrictions in effect beyond the vesting date, and non-vesting conditions. Fair value is determined at the date of grant and is not remeasured unless its terms are modified such that the fair value immediately after modification exceeds the fair value immediately prior to modification. Any increase in fair value resulting from a modification is recognized as compensation expense, either over the remaining service period or, for vested awards, immediately.

→ **Refer to Note 27 for more information**

Other compensation plans
The employees of UBS AG are granted deferred compensation plans that are settled in cash or financial instruments other than UBS AG equity, the amount of which may be fixed or may vary based on the achievement of specified performance conditions or the value of specified underlying assets. Compensation expense is recognized over the period that the employee provides services 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 expense is accelerated to the termination date. Where no future service is required, such as for employees who are retirement eligible or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized immediately on, or prior to, the date of grant. The amount recognized is 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**

7) Pension and other post-employment benefit plans
UBS AG sponsors various post-employment benefit plans for its employees worldwide, which include defined benefit and defined contribution pension plans, and other post-employment benefits such as medical and life insurance benefits that are payable after the completion of employment.

→ **Refer to Note 26 for more information**

Defined benefit pension plans
Defined benefit pension 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 less the fair value of the plan assets at the balance sheet date with changes resulting from remeasurements recorded immediately in *Other comprehensive income*. If the fair value of the plan assets is higher than the present value of the defined benefit obligation, the recognition of the resulting net defined benefit 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. UBS AG applies the projected unit credit method to determine the present value of its defined benefit obligations, the related current service cost and, where applicable, past service cost. The projected unit credit method sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation. These amounts, which take into account the specific features of each plan, including risk sharing between employee and employer, are 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, the discount rate, expected salary increases, pension increases and, in addition for the Swiss plan and one of the US defined benefit pension plans, interest credits on retirement savings account balances. Life expectancy is determined by reference to published mortality tables. The discount rate is determined by reference to the rates of return on high-quality fixed-income investments of appropriate currency and term at the measurement date. The assumption for salary increases reflects the long-term expectations for salary growth and takes into account historical salary development by age groups, expected inflation and expected supply and demand in the labor market. A sensitivity analysis for reasonable possible movements in each significant assumption for UBS AG's post-employment obligations is provided within Note 26.

Note 1 Summary of significant accounting policies (continued)

Defined contribution plans
A defined contribution plan is a pension plan under which UBS AG 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 contributions if the plan does not hold sufficient assets to pay employees the benefits relating to employee service in the current and prior periods. UBS AG's contributions are expensed when the employees have rendered services in exchange for such 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.

Other post-employment benefits
UBS AG also provides post-employment medical insurance benefits to certain retirees in the US and the UK. The expected costs of these benefits are recognized over the period of employment using the same accounting methodology used for defined benefit pension plans.

8) 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 taxes are recognized for temporary differences between the carrying amounts and tax bases of assets and liabilities that will result in taxable or deductible amounts in future periods and are measured using the applicable tax rates and laws that have been enacted or substantively enacted by the end of the reporting period and which will be in effect when such differences are expected to reverse.

Deferred tax assets arise from a variety of sources, the most significant being: (i) tax losses that can be carried forward to be used against profits in future years and (ii) expenses recognized in UBS AG's income statement that are not deductible until the associated cash flows occur. Deferred tax assets are recognized only to the extent that 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, deferred tax assets are only recognized to the extent 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 tax liabilities are recognized for temporary differences between the carrying amounts of assets and liabilities in the balance sheet that reflect the expectation that certain items will give rise to taxable income in future periods.

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) 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 (i) upon the acquisition of a subsidiary, (ii) for unrealized gains or losses on financial instruments that are classified as available for sale, (iii) for changes in fair value of derivative instruments designated as cash flow hedges, (iv) for remeasurements of defined benefit plans, (v) for certain foreign currency translations of foreign operations and (vi) for gains and losses on the sale of treasury shares. Amounts relating to points (ii), (iii), (iv) and (v) are recognized in *Other comprehensive income* within *Equity*.

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 in evaluating the recoverability of its deferred tax assets, including the remaining tax loss carry-forward period, and its assessment of expected future taxable profits in the forecast period used for recognizing deferred tax assets. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

The level of deferred tax asset recognition is influenced by management's assessment of UBS AG's future profitability based on relevant business plan forecasts. Existing assessments are reviewed and, if necessary, revised to reflect changed circumstances. This review is conducted annually, in the second half of each year, but adjustments may be made at other times, if required. In a situation where recent losses have been incurred, convincing evidence that there will be sufficient future profitability is required.

If profit forecast assumptions in future periods deviate from the current outlook, the value of UBS AG's deferred tax assets may be affected. Any increase or decrease in the carrying amount of deferred tax assets would primarily be recognized through the income statement but would not affect cash flows.

Judgment is also required to forecast the expected outcome of uncertain tax positions that may require the interpretation of tax laws and the resolution of any income tax-related appeals or litigation that are incorporated into the estimate of income and deferred tax.

→ **Refer to Note 8 for more information**

9) Investment in associates

Entities where UBS AG has significant influence over the financial and operating policies of the entity, 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 a company'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 value of the investment in the associate is below its recoverable amount.

→ **Refer to Note 28 for more information**

10) Property, equipment and software

Property, equipment and software includes own-used properties, leasehold improvements, information technology hardware, externally purchased and internally generated software, as well as communication and other similar equipment. Property, equipment and software is carried at cost less accumulated depreciation and impairment losses and is reviewed at each reporting date for indication for impairment. 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, that is, when they are in the location and condition necessary for them to be capable of operating in the manner intended by management. Depreciation is calculated on a straight-line basis over an asset's estimated useful life. The estimated useful economic lives of UBS AG's property, equipment and software are:

- properties, excluding land: ≤ 67 years
- IT hardware and communication equipment: ≤ 7 years
- other machines and equipment: ≤ 10 years
- software: ≤ 10 years
- leasehold improvements: shorter of the lease term or the economic life of asset (typically ≤ 20 years)

→ **Refer to Note 14 for more information**

11) Goodwill and intangible assets

Goodwill represents the excess of the cost of an acquisition over the fair value of UBS AG's share of net identifiable assets of the acquired entity at the date of the acquisition. Goodwill is not amortized, but at the end of each reporting period or when indicators of impairment exist, UBS AG assesses whether there is any indication that goodwill is impaired. If such indicators exist, UBS AG is required to test the goodwill for impairment. Irrespective of whether there is any indication of impairment, UBS AG tests goodwill for impairment annually. UBS AG considers the segments, as reported in Note 2a, as separate cash-generating units, since this is the level at which the performance of investments is reviewed and assessed by management. The impairment test is performed for each segment to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, to the carrying amount of the respective segment. An impairment charge is recognized if the carrying amount exceeds the recoverable amount.

Note 1 Summary of significant accounting policies (continued)

If the estimated earnings and other assumptions in future periods deviate from the current outlook, the value of UBS AG's goodwill may become impaired in the future, giving rise to losses in the income statement. Recognition of any impairment of goodwill would reduce net profit and equity, but would not affect cash flows.

Intangible assets are comprised of separately identifiable intangible items arising from business combinations and certain purchased trademarks and similar items. Intangible assets are recognized at cost. The cost of an intangible asset acquired in a business combination is its fair value at the date of acquisition. Intangible assets with a finite useful life are amortized using the straight-line method over their estimated useful life, generally not exceeding 20 years. In rare cases, intangible assets can have an indefinite useful life, in which case they are not amortized. At each reporting date, intangible assets are reviewed for indications of impairment. If such indications exist, the intangible assets are analyzed to assess whether their carrying amount is fully recoverable. An impairment loss is recognized if the carrying amount exceeds the recoverable amount.

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 in years one to three, (ii) changes in the discount rates and (iii) changes in the long-term growth rate. Key assumptions used to determine the recoverable amounts of each segment are tested for sensitivity by applying a reasonably possible change to those assumptions. Refer to Note 15 for the discussion of how the reasonably possible changes in those key assumptions may affect the results delivered by UBS AG's model for goodwill impairment testing.

→ **Refer to Notes 2 and 15 for more information**

12) Provisions and contingent liabilities

Provisions are liabilities of uncertain timing or amount, and are recognized 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, employee benefits, real estate and loan commitments and guarantees.

UBS AG recognizes provisions for litigation, regulatory and similar matters when, in the opinion of management after seeking legal advice, it is more likely than not that UBS AG 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 AG, but are nevertheless expected to be, based on UBS AG's experience with similar asserted claims.

Restructuring provisions are recognized when a detailed and formal restructuring plan has been approved and a valid expectation has been raised that the restructuring will be carried out, either through commencement of the plan or announcements to affected employees.

Provisions are recognized for lease contracts if the unavoidable costs of a contract exceed the benefits expected to be received under it (onerous lease contracts). For example, this may occur when a significant portion of a leased property is expected to be vacant for an extended period.

Provisions for employee benefits are recognized mainly in respect of service anniversaries and sabbatical leave.

Provisions are recognized at the best estimate of the consideration required to settle the present obligation at the balance sheet date. Such estimates are based on all available information and are revised over time as more information becomes available. If the effect of the time value of money is material, provisions are discounted and measured at the present value of the expenditure expected to settle or discharge the obligation, using a rate that reflects the current market assessments of the time value of money and the risks specific to the obligation.

Provisions that are similar in nature are aggregated to form a class, while the remaining provisions, including those of less significant amounts, are presented under *Other provisions*. Provisions are presented separately on the balance sheet and, when they are no longer considered uncertain in timing or amount, are reclassified to *Other liabilities – Other*.

When all conditions required to recognize a provision are not met, a contingent liability is disclosed, unless the likelihood of an outflow of resources is remote, in which case no provision is recognized and no contingent liability is reported. Contingent liabilities are also disclosed for possible obligations that arise from past events whose existence will be confirmed only by uncertain future events not wholly within the control of UBS AG. Such disclosures are not made if it is not practicable to do so.

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, timing and 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. Such matters may involve unique fact patterns or novel legal theories, proceedings 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. Determining whether an obligation exists as a result of a past event and estimating the probability, timing and amount of any potential outflows is based on a variety of assumptions, variables, and known and unknown uncertainties.

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.

Statistical or other quantitative analytical tools are of limited use in determining whether to establish or determine the amount of provisions in the case of litigation, regulatory or similar matters. Furthermore, information currently available to management may be incomplete or inaccurate, increasing the risk of erroneous assumptions with regard to the future development of such matters. Management regularly reviews all the available information regarding such matters, including legal advice, which is a significant consideration, to assess whether the recognition criteria for provisions have been satisfied and to determine the timing and amount of any potential outflows.

→ **Refer to Note 20 for more information**

13) 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 and liabilities denominated in foreign currency are translated into the functional currency using the closing exchange rate. Non-monetary items measured at historical cost are translated at the exchange rate on the date of the transaction. Foreign currency translation differences on non-monetary financial assets classified as available for sale are generally recorded directly in *Equity* until the asset is sold or becomes impaired. However, translation differences on available-for-sale monetary financial assets are reported in *Net trading income* on an amortized-cost basis, along with all other foreign currency translation differences on monetary assets and liabilities.

Upon consolidation, assets and liabilities of foreign operations are translated into Swiss francs (CHF), UBS AG's presentation currency, at the closing exchange rate on the balance sheet date, and income and expense items are translated at the average rate for the period. The resulting foreign currency translation differences attributable to shareholders are recognized directly in *Foreign currency translation* within *Equity,* which forms part of *Total equity attributable to shareholders*, whereas the foreign currency translation differences attributable to non-controlling interests are shown within *Equity attributable to non-controlling interests*.

When a foreign operation is disposed or partially disposed of and UBS AG loses control over the foreign operation, the cumulative amount of foreign currency translation differences within *Total equity attributable to shareholders* and *Equity attributable to non-controlling interests* related to that foreign operation is reclassified to the income statement as part of the gain or loss on disposal. When UBS AG disposes of a portion of its interest in a subsidiary that includes a foreign operation but retains control, the related portion of the cumulative currency translation balance is reclassified to *Equity attributable to non-controlling interests*.

→ **Refer to Note 34 for more information**

14) Non-controlling interests and preferred noteholders

Net profit is split into *Net profit attributable to shareholders, Net profit attributable to non-controlling interests* and *Net profit attributable to preferred noteholders.* Similarly, *Equity* is split into *Equity attributable to shareholders, Equity attributable to non-controlling interests* and *Equity attributable to preferred noteholders.*

Note 1 Summary of significant accounting policies (continued)

15) Leasing

UBS AG enters into lease contracts, or contracts that include lease components, predominantly of premises and equipment, and primarily as lessee. 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. UBS AG is not a lessee in any material finance leases.

Lease contracts classified as operating leases where UBS AG is the lessee include non-cancelable long-term leases of office buildings in most UBS AG locations. Operating lease rentals payable are recognized as an expense on a straight-line basis over the lease term, which commences with control of the physical use of the property. Lease incentives are treated as a reduction of rental expense and are recognized on a consistent basis over the lease term.

Where UBS AG acts as lessor under a finance lease, a receivable is recognized in *Loans* at an amount equal to the present value of the aggregate of the minimum lease payments plus any unguaranteed residual value that UBS AG expects to recover at the end of the lease term. Initial direct costs are also included in the initial measurement of the lease receivable. Lease payments received during the lease term are allocated to repayment of the outstanding receivable and interest income to reflect a constant periodic rate of return on UBS AG's net investment using the interest rate implicit in the lease. UBS AG reviews the estimated unguaranteed residual value annually, and if the estimated residual value to be realized is less than the amount assumed at lease inception, a loss is recognized for the expected shortfall.

Certain arrangements do not take the legal form of a lease but convey a right to use an asset in return for a payment or series of payments. For such arrangements, UBS AG determines at the inception of the arrangement whether the fulfillment of the arrangement is dependent on the use of a specific asset or assets, and if so, the arrangement is accounted for as a lease.

→ **Refer to Notes 10 and 31 for more information**

b) Changes in accounting policies, comparability and other adjustments

Presentation of interest income and expense on derivatives designated as hedging instruments

Effective 1 January 2017, UBS AG refined the presentation of interest income and interest expense on derivatives designated as hedging instruments in effective hedge relationships to align the presentation with interest arising from designated hedged items. As a result of this presentation change:

- *Interest income from loans and deposits* was CHF 530 million lower, while *Interest expense on debt issued* and *Interest expense on loans and deposits* for the year ended 31 December 2017 were lower by CHF 382 million and CHF 148 million, respectively, with no change to *Net interest income.*
- Interest income from derivative instruments designated as cash flow hedges, previously included within *Interest income from loans and deposits,* is now separately disclosed within Note 3.

Prior-period information has not been restated, as the effect was not material.

→ **Refer to Note 3 for more information**

Amendments to IAS 7, Statement of Cash Flows

UBS AG adopted amendments to IAS 7, *Statement of Cash Flows,* in 2017 and now separately discloses the drivers of changes in financial liabilities arising from financing activities, including changes arising from cash flows and non-cash changes, in its statement of cash flows.

→ **Refer to the statement of cash flows for more information**
→ **Refer to the "Balance sheet, liquidity and funding management" section of this report for information on liabilities and funding management**

Amendments to IAS 12, Income Taxes

In 2017, UBS AG adopted amendments to IAS 12, *Income Taxes*, that clarify how to account for deferred tax assets related to debt instruments measured at fair value. The adoption of these amendments did not have a material impact on UBS AG's financial statements.

c) International Financial Reporting Standards and Interpretations to be adopted in 2018 and later and other changes

Effective from 2018

Changes in segment reporting
Effective 1 February 2018, UBS AG integrated its Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division, which is managed on an integrated basis, with a single set of key performance indicators, performance targets, operating plan and management structure. Consistent with this, the operating results of Global Wealth Management will be presented and assessed on an integrated basis in internal reporting to management. Consequently, beginning from the first quarter of 2018, Global Wealth Management qualifies as an operating and reportable segment for the purposes of segment reporting and will be presented alongside Personal & Corporate Banking, Asset Management, the Investment Bank, and Corporate Center (with its units Services, Group Asset and Liability Management (Group ALM) and Non-core and Legacy Portfolio).

IFRS 9, Financial Instruments
IFRS 9, *Financial Instruments* is effective from 1 January 2018 and will be applicable from UBS AG's first quarter 2018 reporting. IFRS 9 reflects the classification and measurement, impairment and hedge accounting phases of the IASB's project to replace IAS 39, *Financial Instruments: Recognition and Measurement.* In addition, UBS AG will early adopt the Amendment to IFRS 9, *Prepayment Features with Negative Compensation*, issued in October 2017, which allows it to continue to apply amortized cost accounting to Swiss private mortgages and corporate loans that provide for two-way compensation if a prepayment occurs.

Classification and measurement
IFRS 9 requires all financial assets, except equity instruments, to be classified at amortized cost, at fair value through other comprehensive income (OCI) or at fair value through profit or loss, based on the business model for managing the respective financial assets and their contractual cash flow characteristics. If a financial asset meets the criteria to be measured at amortized cost or at fair value through OCI, it can be designated at fair value through profit or loss if doing so would significantly reduce or eliminate an accounting mismatch. Equity instruments that are not held for trading may be accounted for at fair value through OCI, with no subsequent reclassification of realized gains or losses to the income statement under any circumstances, while all other equity instruments will be accounted for at fair value through profit or loss.

For UBS AG, the most significant IFRS 9 classification and measurement changes on transition are due to the following:
- financial assets that will no longer qualify for amortized cost accounting under IFRS 9 will be classified at fair value through profit or loss because their cash flow characteristics do not satisfy the solely payments of principal and interest criteria (e.g., auction rate securities and certain brokerage receivables);
- lending arrangements that no longer qualify for amortized cost accounting under IFRS 9 will be classified at fair value through profit or loss because the business model within which they are managed does not have an objective to hold financial assets in order to collect the contractual cash flows (e.g., certain Investment Bank lending arrangements);
- equity instruments classified as available for sale under IAS 39 will be classified at fair value through profit or loss under IFRS 9; and
- financial liabilities will be newly designated under IFRS 9 at fair value through profit or loss, from amortized cost accounting, to align with conclusions reached for associated financial assets that will be measured at fair value through profit or loss (e.g., brokerage payables).

IFRS 9 classification and measurement requirements for financial liabilities are unchanged from IAS 39, except that any gain or loss arising on a financial liability designated at fair value through profit or loss that is attributable to changes in the issuer's own credit risk (own credit) is presented in OCI and not recognized in the income statement. UBS AG early adopted the own credit presentation change from 1 January 2016.

Expected credit losses
IFRS 9 introduces an approach for determining impairment based on forward-looking expected credit losses (ECLs), which is intended to result in an earlier recognition of credit losses compared with the existing incurred-loss impairment approach for financial instruments in IAS 39, and the loss-provisioning approach for financial guarantees and loan commitments in IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*. The new impairment model applies to financial assets measured at amortized cost, debt instruments measured at fair value through OCI, lease receivables, and financial guarantee contracts and loan commitments that are not measured at fair value through profit or loss.

Note 1 Summary of significant accounting policies (continued)

Expected credit losses will be recognized on the following basis:

- A maximum of 12-month ECLs are required to be recognized from initial recognition, reflecting the portion of lifetime cash shortfalls that will result if a default occurs in the 12 months after the reporting date (or a shorter period if the expected life is less), weighted by the risk of that default occurring. Respective instruments are referred to as instruments in stage 1.
- Lifetime ECLs are required to be recognized if a significant increase in credit risk (SICR) is detected subsequent to the instrument's initial recognition, reflecting lifetime cash shortfalls that will result from all possible default events over the expected life of a financial instrument, weighted by the risk of default occurring. Respective instruments are referred to as instruments in stage 2. Where an SICR is no longer observed, the instrument will move back to stage 1.
- Lifetime ECLs are always recognized for credit-impaired financial instruments, referred to as instruments in stage 3. The IFRS 9 determination of whether an instrument is credit impaired will follow substantially the same principles used to determine whether an instrument is impaired under IAS 39, i.e., is based on the occurrence of one or more loss events. However, the ECL for credit-impaired financial instruments under IFRS 9 may differ mainly due to additional forward-looking considerations required under IFRS 9. Credit-impaired exposures may include positions for which no loss has occurred or no allowance has been recognized, for example because they are expected to be fully recoverable through the collateral held. Instruments that are no longer credit impaired move back to stage 2 or stage 1.
- Changes in lifetime ECLs since initial recognition are also recognized for instruments that are purchased or originated credit impaired.

The methodology applied will calculate an individual probability-weighted unbiased ECL in line with the complexity, structure and risk profile of relevant portfolios. The following principal factors will be applied: probability of default (PD), loss given default (LGD), exposure at default (EAD) and discounting of cash flows to the reporting date, alongside an evaluation of a range of possible outcomes, forecasts of future economic conditions and information on past events and current conditions.

PDs and LGDs used in the ECL calculation will be point in time (PIT) based and consider a range of scenarios (upside, baseline, mild downside, downside) to capture material non-linearity and asymmetries, and scenario weights will be applied to reflect a likelihood of their occurrence.

UBS AG will measure ECL over the maximum contractual period it is exposed to credit risk, taking into account contractual extension, termination and prepayment options. For certain credit card facilities without a defined contractual end date, which are callable on demand and where the drawn and undrawn portions are managed as one unit, the period over which UBS AG is exposed to credit risk exceeds the contractual notice period and therefore this longer period is used within the ECL calculation.

Qualitative and quantitative criteria are used to determine whether the credit risk on a particular instrument has significantly increased from its initial recognition. UBS AG will assess changes in an instrument's risk of default primarily based on a comparison of the annualized forward-looking and scenario-weighted lifetime PIT-based PDs at inception of the instrument and the reporting date. Additional qualitative information is considered, including internal indicators of credit risk such as days-past-due information, external market indicators of credit risk and general economic conditions, to detect significant increases in credit risk.

IFRS 9 does not provide an explicit definition of default. For the purpose of measuring expected credit losses, UBS AG will apply a definition of default that is consistent with the definition used in capital calculations and by internal credit risk management.

Overall, the level of credit losses is expected to increase under IFRS 9 alongside additional income statement volatility due to the use of forward-looking assumptions and the application of the SICR approach.

Hedge accounting

IFRS 9 also includes an optional revised hedge accounting model, which further aligns the accounting treatment with the risk management practices. As permitted by the standard, UBS AG will not adopt the optional IFRS 9 hedge accounting requirements pending completion of the International Accounting Standards Board's project on macro hedge accounting strategies.

However, new mandatory hedge accounting disclosures will be adopted on 1 January 2018 as required, providing additional information on UBS AG's hedging strategies by hedged risk and hedge type.

Transition

In line with transitional provisions in IFRS 9, UBS will recognize an estimated pre-tax transition impact of CHF 0.7 billion, as well as a tax credit of CHF 0.1 billion, resulting in a net reduction of CHF 0.6 billion in UBS's IFRS consolidated equity. Approximately half of this amount is attributable to the classification and measurement changes, arising predominantly from the change in measurement basis of certain financial assets that no longer qualify for amortized cost accounting due to their cash flow characteristics. The remainder of the reduction results from recognizing expected credit losses on all in-scope transactions, with the majority of the impact driven by the private and commercial mortgage portfolio in Switzerland within the Personal & Corporate Banking division. As permitted by IFRS 9, UBS AG will not restate prior-period data.

Presentation

Presentation of interest income: In line with consequential amendments to IAS 1, *Presentation of Financial Statements,* from 1 January 2018, UBS AG will present interest income calculated using the effective interest method on assets that are subsequently measured at amortized cost and debt instruments that are measured at fair value through OCI separately in the income statement.

Presentation of balance sheet: Effective with UBS AG's first quarter 2018 reporting, UBS AG will make a series of presentational changes to the IFRS balance sheet reflecting the implementation of IFRS 9*,* alongside consequential changes to improve comparability with prior periods. The primary changes include:

– IAS 39-specific asset categories such as "Financial assets held to maturity" and "Financial assets available for sale" will be superseded by the new categories "Financial assets measured at amortized cost" and "Financial assets measured at fair value through other comprehensive income (FVOCI)."
– A new category "Financial assets at fair value not held for trading" will be created to accommodate in particular financial assets previously designated at fair value, all of which are to be mandatorily classified at fair value through profit or loss given the assets are managed on a fair value basis.
– *Brokerage receivables* and *Brokerage payables designated at fair value* will be presented as separate line items, whereas they are presented within *Other assets* and *Other liabilities*, respectively, as of 31 December 2017.
– *Other assets* and *Other liabilities* will be split between measured at amortized cost, measured at fair value through profit or loss and other non-financial assets and liabilities.
– *Cash collateral on securities borrowed* and *Reverse repurchase agreements* will be combined into a single line, "Receivables from securities financing transactions". Similarly, *Cash collateral on securities lent* and *Repurchase agreements* will be combined into a single line, "Payables from securities financing transactions".
– Financial liabilities designated at fair value will be split into two lines, "Debt issued designated at fair value" and "Other financial liabilities designated at fair value".

The table on the next page illustrates the new balance sheet presentation of assets and liabilities in comparison with our current presentation. The presentation of the components of equity will not change, and therefore for illustration purposes total liabilities and equity are presented in a single line in the table on the next page. To support comparability, we will present prior-period information for periods ending before 1 January 2018 in this revised structure, beginning with the first quarter 2018 financial report. This table does not reflect any of the effects of adoption from the classification and measurement requirements of IFRS 9, *Financial Instruments*, which are only applicable for the periods ending after 1 January 2018. As permitted by the standard, we will not restate prior periods for classification and measurement or ECL changes with the adoption of IFRS 9.

Note 1 Summary of significant accounting policies (continued)

2018 balance sheet presentation changes

CHF million	31.12.17 Presentation in the 2017 financial statements	31.12.17 Revised presentation applicable beginning 2018
Assets		
Cash and balances at central banks	87,775	87,775
Loans and advances to banks (formerly: Due from banks)	13,693	13,693
Receivables from securities financing transactions (new line)		89,633
Cash collateral on securities borrowed (newly included in Receivables from securities financing transactions)	12,393	
Reverse repurchase agreements (newly included in Receivables from securities financing transactions)	77,240	
Cash collateral receivables on derivative instruments	23,434	23,434
Loans and advances to customers (formerly: Loans)	321,718	320,659
Financial assets held to maturity (superseded)	9,166	
Other financial assets measured at amortized cost (new line)		36,935
Total financial assets measured at amortized cost		572,129
Financial assets at fair value held for trading (formerly: Trading portfolio assets)	130,807	126,244
of which: assets pledged as collateral that may be sold or repledged by counterparties	*35,363*	*35,363*
Derivative financial instruments (formerly: Positive replacement values)	118,229	118,229
Brokerage receivables (new line, formerly included within Other assets)	n/a	n/a
Financial assets at fair value not held for trading (new line)		58,556
Financial assets designated at fair value	58,556	
Total financial assets measured at fair value through profit or loss		303,028
Financial assets available for sale (superseded)	8,665	
Financial assets measured at fair value through other comprehensive income (new line)[1]		8,665
Investments in associates	1,018	1,018
Property, equipment and software	7,985	7,985
Goodwill and intangible assets	6,398	6,398
Deferred tax assets	9,783	9,783
Other non-financial assets (new line)		7,358
Total non-financial assets		32,541
Other assets (superseded)	29,505	
Total assets	916,363	916,363
Liabilities		
Amounts due to banks	7,533	7,533
Payables from securities financing transactions (new line)		17,044
Cash collateral on securities lent (newly included in Payables from securities financing transactions)	1,789	
Repurchase agreements (newly included in Payables from securities financing transactions)	15,255	
Cash collateral payables on derivative instruments	30,247	30,247
Customer deposits (formerly: Due to customers)	447,141	447,141
Debt issued measured at amortized cost	104,749	104,749
Other financial liabilities measured at amortized cost (new line)		37,133
Total financial liabilities measured at amortized cost		643,847
Financial liabilities at fair value held for trading (formerly: Trading portfolio liabilities)	30,463	30,463
Derivative financial instruments (formerly: Negative replacement values)	116,134	116,134
Brokerage payables designated at fair value (new line, formerly included within Other liabilities)	n/a	n/a
Financial liabilities designated at fair value (superseded)	54,202	
Debt issued designated at fair value (new line)		49,502
Other financial liabilities designated at fair value (new line)		16,223
Total financial liabilities measured at fair value through profit or loss		212,323
Provisions	3,084	3,084
Other non-financial liabilities (new line)		6,335
Total non-financial liabilities		9,419
Other liabilities (superseded)	54,990	
Total liabilities	865,588	865,588
Total liabilities and equity	916,363	916,363

1 Consists of debt instruments.

IFRS 15, Revenue from Contracts with Customers
UBS AG will adopt IFRS 15, *Revenue from Contracts with Customers*, which replaces IAS 18, *Revenue* for periods beginning on 1 January 2018. IFRS 15 establishes principles for revenue recognition that apply to all contracts with customers except those relating to financial instruments, leases and insurance contracts and requires an entity to recognize revenue as performance obligations are satisfied. In particular, the standard now specifies that variable consideration is only recognized to the extent that it is highly probable that a significant reversal will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

IFRS 15 also provides guidance on when revenues and expenses should be presented on a gross or net basis and establishes a cohesive set of disclosure requirements for information on the nature, amount, timing and uncertainty of revenue and cash flows from contracts with customers.

UBS AG will adopt the standard on a modified retrospective basis that does not require comparatives to be restated. Instead, the cumulative effect of initially applying the standard will be recognized as an adjustment to the opening balance of retained earnings. The transition adjustment will not be material.

IFRS 15 will result in a deferral of some performance-based fees in Asset Management and research revenues in the Investment Bank. However, the impact on UBS AG's revenues is not expected to be material.

UBS AG will also present certain fee and commission income and expense on a gross basis, rather than net basis, if UBS AG is acting as a principal. *Fee and commission income* will be reported in the income statement separately from *Fee and commission expense*. The supporting note disclosure for fee and commission income will be enhanced to provide more information on the nature, amount, timing and uncertainty of revenues and cash flows from contracts with customers.

IAS 28, Investments in Associates and Joint Ventures
In October 2017, the IASB issued an amendment to IAS 28, *Investments in Associates and Joint Ventures* that clarified that IFRS 9 must be applied when accounting for long-term interests in an associate or joint venture to which the equity method of accounting is not applied. The amendment is mandatorily effective for accounting periods beginning on or after 1 January 2019. However, UBS AG will early adopt this amendment from 1 January 2018 to align with the mandatory application date of IFRS 9, and expects that it will have no material impact on its financial statements.

Amendments to IFRS 2, Share-based Payment
In June 2016, the IASB issued amendments to IFRS 2, *Share-based Payment*, which are mandatorily effective as of 1 January 2018. The amendments clarify that the approach used to account for vesting and non-vesting conditions when measuring cash-settled share-based payments is consistent with that used for equity-settled share-based payments. The amendments also clarify the classification of share-based payments settled net of withholding tax as well as the accounting consequences resulting from a modification of share-based payments from cash-settled to equity-settled. The adoption of these amendments will not have a material impact on UBS AG's financial statements.

IFRIC 22, Foreign Currency Transactions and Advance Consideration
In December 2016, the IFRS Interpretations Committee of the IASB issued IFRIC Interpretation 22, *Foreign Currency Transactions and Advance Consideration* (IFRIC 22), which clarifies that in circumstances when an advance consideration is received or paid before recognizing an associated asset, expense or income, the exchange rate to be used on initial recognition of the related asset, expense or income is the rate determined as of the date of transaction – i.e., the date of initial recognition of the non-monetary asset or non-monetary liability arising from the receipt or payment of advance consideration. UBS AG is required to apply IFRIC 22 from 1 January 2018. The adoption of this IFRS Interpretation will not have a material impact on UBS AG's financial statements.

Effective from 2019

IFRS 16, Leases
In January 2016, the IASB issued IFRS 16, *Leases,* which replaces IAS 17, *Leases* and is mandatorily effective as of 1 January 2019. The standard substantially changes how lessees must account for operating lease commitments, requiring a lease liability with a corresponding right-of-use asset to be recognized on the balance sheet, compared with the current off-balance sheet treatment of such leases. UBS AG expects to report an increase in assets and liabilities from adoption as of 1 January 2019 in line with its disclosure of undiscounted operating lease commitments as set out in Note 31.

Note 1 Summary of significant accounting policies (continued)

IFRIC 23, Uncertainty over Income Tax Treatments
In June 2017, the IASB issued IFRIC Interpretation 23, *Uncertainty over Income Tax Treatments* (IFRIC 23), which addresses how uncertain tax positions should be accounted for under IFRS. Under this interpretation, IFRIC 23 requires that, where acceptance of the tax treatment by the relevant tax authority is considered probable, it should be assumed as an accounting recognition matter that treatment of the item will ultimately be accepted. Therefore, no tax provision would be required in such cases. However, if acceptance of the tax treatment is not considered probable, the entity is required to reflect that uncertainty using an expected value (i.e., a probability-weighted approach) or the single most likely amount. IFRIC 23 is mandatorily effective for accounting periods beginning on or after 1 January 2019 and any resulting change to the tax provisions should be recognized in retained earnings. UBS AG is in the process of assessing the impact of this interpretation, which is not expected to have a material effect on its financial statements.

Amendments to IAS 19, Employee Benefits
In February 2018, the IASB issued amendments to IAS 19, *Employee Benefits*, which address the accounting when a plan amendment, curtailment or settlement occurs during the reporting period. The amendments require entities to use the updated actuarial assumption to determine current service cost and net interest for the remainder of the annual reporting period after such an event. The amendments also clarify how the requirements for accounting for a plan amendment, curtailment or settlement affect the asset ceiling requirements. The amendments are effective prospectively for plan amendments, curtailments or settlements that occur on or after 1 January 2019, with earlier application permitted. UBS AG does not intend to early adopt this amendment.

Annual Improvements to IFRS Standards 2015–2017 Cycle
In December 2017, the IASB issued *Annual Improvements to IFRS Standards 2015–2017 Cycle*, which resulted in amendments to IFRS 3, *Business Combinations*, IFRS 11, *Joint Arrangements*, IAS 12, *Income Taxes* and IAS 23, *Borrowing Costs*. The amendments are mandatorily effective as of 1 January 2019. UBS AG expects that the adoption of these amendments will not have a material impact on its financial statements.

Note 2a Segment reporting

The operational structure of UBS AG as of 31 December 2017 was comprised of Corporate Center and five business divisions: Wealth Management, Wealth Management Americas, Personal & Corporate Banking, Asset Management and the Investment Bank.

Wealth Management

Wealth Management provides comprehensive advice and tailored financial services to wealthy private clients around the world, except those served by Wealth Management Americas. Its clients benefit from the full spectrum of resources that UBS AG as a global firm can offer, including banking and lending solutions, wealth planning, investment management solutions and corporate finance advice. Wealth Management's guided architecture model gives clients access to a wide range of products from the world's leading third-party institutions that complement its own products.

Wealth Management Americas

Wealth Management Americas provides advice-based solutions through financial advisors who deliver a fully integrated set of products and services specifically designed to address the needs of their clients. Its business is primarily domestic US but includes Canada and international clients booked in the US.

Personal & Corporate Banking

Personal & Corporate Banking provides comprehensive financial products and services to private, corporate and institutional clients in Switzerland and is among the leading players in the private and corporate loan market in Switzerland, with a well-collateralized and conservatively managed lending portfolio.

Its business is central to UBS AG's universal bank delivery model in Switzerland. Personal & Corporate Banking works with the wealth management, investment bank and asset management businesses to help clients receive the best products and solutions for their specific financial needs. Personal & Corporate Banking is also an important source of growth for the other business divisions in Switzerland through client referrals. In addition, Personal & Corporate Banking manages a substantial part of UBS AG's Swiss infrastructure and banking products platform, both of which are leveraged across UBS AG.

Asset Management

Asset Management is a large-scale and diversified asset manager, with an onshore presence in 23 countries. It offers investment capabilities and investment styles across all major traditional and alternative asset classes, as well as platform solutions and advisory support, to institutions, wholesale intermediaries and wealth management clients around the world.

Investment Bank

The Investment Bank provides investment advice, financial solutions and capital market access in over 35 countries, with principal offices in all major financial centers. It serves corporate, institutional and wealth management clients across the globe and partners with UBS AG's wealth management, personal and corporate banking and asset management businesses.

The business division is organized into Corporate Client Solutions and Investor Client Services and also includes UBS AG Securities Research.

Corporate Center

Corporate Center provides services to the Group through the reporting units Corporate Center – Services and Group Asset and Liability Management (Group ALM). Corporate Center also includes the Non-core and Legacy Portfolio unit.

Services consists of the Group Chief Operating Officer area (Group Corporate Services, Group Human Resources, Group Operations, Group Sourcing and Group Technology), Group Finance (excluding Group ALM), Group Legal, Group Risk Control, Group Communications & Branding, Group Regulatory & Governance, and UBS and Society.

Group ALM manages the structural risks of UBS AG's balance sheet, including interest rate risk in the banking book, currency risk and collateral risk, as well as the risks associated with UBS AG's liquidity and funding portfolios. Group ALM also seeks to optimize UBS AG's financial performance by matching assets and liabilities within the context of UBS AG's liquidity, funding and capital targets and constraints. Group ALM serves all business divisions and other Corporate Center units through three main risk management areas, and its risk management is fully integrated into UBS AG's risk governance framework.

Non-core and Legacy Portfolio manages legacy positions from businesses exited by the Investment Bank, and is overseen by a committee chaired by the Group Chief Risk Officer.

Note 2a Segment reporting (continued)

CHF million	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS AG
For the year ended 31 December 2017									
Net interest income	2,088	1,562	1,916	(32)	1,194	(354)	83	23	6,480
Non-interest income	5,286	6,676	1,772	2,058	6,891	464	(68)	48	23,127
Allocations from CC – Group ALM	256	115	181	18	(344)	120	(264)	(83)	0
Income[1]	7,629	8,353	3,869	2,044	7,741	231	(249)	(11)	29,606
Credit loss (expense) / recovery	(4)	(4)	(19)	0	(90)	0	0	(11)	(128)
Total operating income	7,626	8,349	3,850	2,044	7,651	231	(249)	(22)	29,479
Personnel expenses	2,355	5,177	833	716	2,950	2,565	34	43	14,673
General and administrative expenses	605	677	294	234	715	6,147	26	113	8,811
Services (to) / from CC and other BDs	2,372	1,281	1,131	512	2,767	(8,274)	(13)	224	0
of which: services from CC – Services	*2,294*	*1,262*	*1,224*	*549*	*2,674*	*(8,338)*	*142*	*194*	*0*
Depreciation and impairment of property, equipment and software	3	2	13	1	10	899	0	0	928
Amortization and impairment of intangible assets[2]	7	41	0	3	12	7	0	0	70
Total operating expenses[3]	5,342	7,178	2,271	1,466	6,453	1,344	47	380	24,481
Operating profit / (loss) before tax	**2,284**	**1,171**	**1,579**	**578**	**1,198**	**(1,113)**	**(296)**	**(403)**	**4,998**
Tax expense / (benefit)									4,077
Net profit / (loss)									**921**
Additional Information									
Total assets	123,003	67,071	135,587	14,270	263,046	19,447	247,739	46,200	916,363
Additions to non-current assets	89	27	15	1	3	1,478	0	0	1,612

1 Impairments of financial assets available for sale for the year ended 31 December 2017 totaled CHF 15 million, of which CHF 13 million was recorded in Asset Management. 2 Refer to Note 15 for more information. 3 Refer to Note 30 for information on restructuring expenses.

Note 2a Segment reporting (continued)

CHF million	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS AG
For the year ended 31 December 2016									
Net interest income	1,932	1,347	1,892	(33)	1,006	(322)	559	3	6,383
Non-interest income	4,975	6,320	1,768	1,957	6,951	250	(229)	84	22,075
Allocations from CC – Group ALM	389	118	332	7	(260)	36	(512)	(110)	0
Income[1]	7,296	7,785	3,990	1,931	7,697	(36)	(183)	(23)	28,458
Credit loss (expense) / recovery	(5)	(3)	(6)	0	(11)	0	0	(13)	(37)
Total operating income	7,291	7,782	3,984	1,931	7,686	(36)	(183)	(36)	28,421
Personnel expenses	2,348	4,819	843	727	3,081	3,674	31	66	15,591
General and administrative expenses	653	597	286	242	852	4,312	17	731	7,690
Services (to) / from CC and other BDs	2,348	1,235	1,079	505	2,757	(8,156)	(49)	280	0
of which: services from CC – Services	*2,256*	*1,221*	*1,186*	*530*	*2,667*	*(8,196)*	*110*	*225*	*0*
Depreciation and impairment of property, equipment and software	2	2	15	1	21	938	0	0	980
Amortization and impairment of intangible assets[2]	4	50	0	4	12	21	0	0	91
Total operating expenses[3]	5,355	6,702	2,224	1,480	6,724	790	(1)	1,077	24,352
Operating profit / (loss) before tax	**1,936**	**1,081**	**1,761**	**451**	**962**	**(826)**	**(182)**	**(1,113)**	**4,069**
Tax expense / (benefit)									781
Net profit / (loss)									**3,288**
Additional Information									
Total assets	115,539	65,882	139,945	12,026	242,388	23,813	267,275	68,485	935,353
Additions to non-current assets	26	4	23	1	3	1,741	0	0	1,798

1 Impairments of financial assets available for sale for the year ended 31 December 2016 totaled CHF 5 million, of which CHF 3 million was recorded in Asset Management. 2 Refer to Note 15 for more information. 3 Refer to Note 30 for information on restructuring expenses.

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Note 2a Segment reporting (continued)

CHF million	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS AG
For the year ended 31 December 2015									
Net interest income	1,825	1,067	1,890	(34)	1,573	(337)	724	21	6,729
Non-interest income	5,859	6,213	1,603	2,077	7,525	434	383	(101)	23,993
Allocations from CC – Group ALM	471	104	421	15	(211)	145	(832)	(114)	0
Income[1]	8,155	7,384	3,913	2,057	8,889	243	275	(195)	30,721
Credit loss (expense) / recovery	0	(4)	(37)	0	(68)	0	0	(8)	(117)
Total operating income	8,155	7,381	3,876	2,057	8,821	243	275	(203)	30,605
Personnel expenses	2,532	4,579	873	729	3,220	3,875	30	116	15,954
General and administrative expenses	650	848	264	233	882	4,517	21	804	8,219
Services (to) / from CC and other BDs	2,289	1,209	1,077	502	2,816	(8,214)	(57)	379	0
of which: services from CC – Services	*2,209*	*1,193*	*1,180*	*523*	*2,730*	*(8,243)*	*96*	*313*	*0*
Depreciation and impairment of property, equipment and software	5	3	17	2	26	866	0	0	918
Amortization and impairment of intangible assets[2]	3	51	0	8	24	21	0	0	107
Total operating expenses[3]	5,478	6,689	2,231	1,475	6,969	1,065	(6)	1,298	25,198
Operating profit / (loss) before tax	**2,676**	**692**	**1,646**	**583**	**1,852**	**(822)**	**281**	**(1,501)**	**5,407**
Tax expense / (benefit)									(908)
Net profit / (loss)									**6,314**
Additional Information									
Total assets	119,850	60,993	141,174	12,874	253,571	22,866	237,560	94,369	943,256
Additions to non-current assets	6	4	14	1	18	1,844	0	1	1,888

1 Impairments of financial assets available for sale for the year ended 31 December 2015 totaled CHF 1 million, all in Wealth Management. 2 Refer to Note 15 for more information. 3 Refer to Note 30 for information on restructuring expenses.

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 operating income 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 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 Corporate Center – Non-core and Legacy Portfolio, are managed at a global 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 assets are recorded.

For the year ended 31 December 2017

	Total operating income		Total non-current assets	
	CHF billion	Share %	CHF billion	Share %
Americas	12.0	41	7.2	47
of which: USA	*11.4*	*39*	*6.7*	*44*
Asia Pacific	4.7	16	0.7	5
Europe, Middle East and Africa	6.0	20	1.6	10
Switzerland	6.9	23	5.9	38
Global	0.0	0	0.0	0
Total	29.5	100	15.4	100

For the year ended 31 December 2016

	Total operating income[1]		Total non-current assets	
	CHF billion	Share %	CHF billion	Share %
Americas	11.5	40	7.4	47
of which: USA	*11.0*	*39*	*7.0*	*44*
Asia Pacific	4.2	15	0.6	4
Europe, Middle East and Africa	6.1	21	1.8	11
Switzerland	6.9	24	6.0	38
Global	(0.3)	(1)	0.0	0
Total	**28.4**	**100**	**15.8**	**100**

For the year ended 31 December 2015

	Total operating income[1]		Total non-current assets	
	CHF billion	Share %	CHF billion	Share %
Americas	11.2	37	7.1	47
of which: USA	*10.5*	*34*	*6.7*	*44*
Asia Pacific	5.1	17	0.5	3
Europe, Middle East and Africa	6.8	22	1.7	11
Switzerland	7.2	24	5.9	39
Global	0.4	1	0.0	0
Total	**30.6**	**100**	**15.2**	**100**

1 The geographical allocation of Total operating income has been restated to reflect a refinement in the allocation methodology.

Income statement notes

Note 3 Net interest and trading income

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Net interest and trading income[1]			
Net interest income	6,480	6,383	6,729
of which: Wealth Management	*2,344*	*2,331*	*2,326*
of which: Wealth Management Americas	*1,680*	*1,467*	*1,174*
of which: Personal & Corporate Banking	*2,086*	*2,199*	*2,270*
of which: Asset Management	*(14)*	*(24)*	*(17)*
Net trading income	4,974	4,943	5,696
of which: Wealth Management	*694*	*667*	*708*
of which: Wealth Management Americas	*332*	*372*	*362*
of which: Personal & Corporate Banking	*375*	*333*	*343*
of which: Asset Management	*(10)*	*(5)*	*12*
Total net interest and trading income	11,454	11,326	12,425
of which: Investment Bank	*4,283*	*4,275*	*5,186*
of which: Corporate Client Solutions	*1,065*	*822*	*1,001*
of which: Investor Client Services	*3,218*	*3,453*	*4,185*
of which: Corporate Center	*(316)*	*(289)*	*61*
of which: Services	*(47)*	*(92)*	*(1)*
of which: Group ALM	*(199)*	*(134)*	*375*
of which: own credit on financial liabilities designated at fair value			*553*
of which: Non-core and Legacy Portfolio	*(71)*	*(62)*	*(313)*
Net interest income			
Interest income			
Interest income from loans and deposits[2,3,4]	8,475	9,566	8,626
Interest income from securities financing transactions[5]	1,542	1,136	896
Interest income from trading portfolio[6]	2,565	2,465	3,071
Interest income from financial assets and liabilities designated at fair value	548	361	194
Interest income from financial assets available for sale and held to maturity[6]	260	253	391
Interest income from derivative instruments designated as cash flow hedges[2]	818		
Total	14,208	13,782	13,178
Interest expense			
Interest expense on loans and deposits[2,7]	2,464	1,664	774
Interest expense on securities financing transactions[8]	1,444	1,233	976
Interest expense on trading portfolio[9]	1,506	1,614	1,670
Interest expense on financial assets and liabilities designated at fair value	864	841	730
Interest expense on debt issued[2]	1,451	2,046	2,299
Total	7,728	7,399	6,449
Net interest income	6,480	6,383	6,729
Net trading income			
Investment Bank Corporate Client Solutions	597	188	321
Investment Bank Investor Client Services	2,813	3,330	3,494
Other business divisions and Corporate Center	1,564	1,425	1,882
Net trading income	4,974	4,943	5,696
of which: net gains / (losses) from financial assets designated at fair value	*2,527*	*(186)*	*(119)*
of which: net gains / (losses) from financial liabilities designated at fair value[10]	*(3,920)*	*(1,362)*	*3,701*

1 Net interest and trading income presented for business divisions and Corporate Center units includes allocations from Corporate Center – Group ALM. 2 Effective 1 January 2017, the presentation of interest income and interest expense on derivatives designated as hedging instruments in effective hedge relationships was refined. Refer to Note 1b for more information. 3 Includes interest income on impaired loans and advances of CHF 12 million for 2017, CHF 21 million for 2016 and CHF 16 million for 2015. 4 Consists of interest income from balances with central banks, amounts due from banks and loans, and negative interest on amounts due to banks and customers. 5 Includes interest income on securities borrowed and reverse repurchase agreements and negative interest, including fees, on securities lent and repurchase agreements. 6 Includes dividend income. 7 Consists of interest expense on amounts due to banks and customers, and negative interest on balances with central banks, amounts due from banks and loans. 8 Includes interest expense on securities lent and repurchase agreements and negative interest, including fees, on securities borrowed and reverse repurchase agreements. 9 Includes expense related to dividend payment obligations on trading liabilities. 10 Excludes fair value changes of 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 Net trading income.

Note 4 Net fee and commission income

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Underwriting fees	1,321	994	1,290
of which: equity underwriting fees	*837*	*516*	*836*
of which: debt underwriting fees	*484*	*478*	*455*
M&A and corporate finance fees	683	733	737
Brokerage fees	3,441	3,544	3,930
Investment fund fees	3,219	3,155	3,567
Portfolio management and advisory fees	8,542	8,035	7,858
Other	1,811	1,747	1,678
Total fee and commission income	19,018	18,207	19,060
Brokerage fees paid	660	757	869
Other	1,144	1,003	1,007
Total fee and commission expense	1,804	1,760	1,876
Net fee and commission income	17,214	16,447	17,184
of which: net brokerage fees	*2,780*	*2,786*	*3,060*

Note 5 Other income

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Associates, joint ventures and subsidiaries			
Net gains / (losses) from disposals of subsidiaries[1]	37[2]	(150)	264
Share of net profits of associates and joint ventures	75	106	169
Impairment charges related to associates	(7)		
Total	105	(44)	433
Financial assets available for sale			
Net gains / (losses) from disposals	193	346	252
Impairment charges	(15)	(5)	(1)
Total	178	342	251
Net income from properties (excluding net gains / (losses) from disposals)[3]	23	25	28
Net gains / (losses) from disposals of properties held for sale	0	125	378
Net gains / (losses) from disposals of loans and receivables	15	(3)	26
Income from shared services provided to UBS Group AG or its subsidiaries	385[4]	48	0
Other	234[2]	192	(5)
Total other income	939	685	1,112

1 Includes foreign exchange gains / (losses) reclassified from Other comprehensive income related to disposed foreign subsidiaries and branches. 2 Net gains / (losses) from disposals of subsidiaries and Other include a net gain on sale of subsidiaries and businesses of CHF 153 million in Asset Management. Refer to Note 30 for more information. 3 Includes net rent received from third parties and net operating expenses. 4 The increase in 2017 was mainly due to the transfer of shared services functions from UBS AG to UBS Business Solutions AG. Refer to Note 30 for more information.

Note 6 Personnel expenses

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Salaries[1]	5,323	6,136	6,260
Variable compensation – performance awards[2]	2,996	2,963	3,209
of which: guarantees for new hires	*36*	*30*	*38*
Variable compensation – other[2]	227	418	346
of which: replacement payments[3]	*69*	*86*	*76*
of which: forfeiture credits	*(104)*	*(73)*	*(86)*
of which: severance payments[4]	*93*	*217*	*157*
of which: retention plan and other payments[5]	*169*	*188*	*198*
Wealth Management Americas: Financial advisor compensation[2,6]	3,986	3,697	3,552
Contractors	313	420	365
Social security	717	734	817
Pension and other post-employment benefit plans[7]	591	669	807
Other personnel expenses	521	554	597
Total personnel expenses[8]	14,673[9]	15,591	15,954

1 Includes role-based allowances. 2 Refer to Note 27 for more information. 3 Replacement payments are payments made to compensate employees for deferred awards forfeited as a result of joining UBS. 4 Includes legally obligated and standard severance payments. 5 Includes interest expense related to Deferred Contingent Capital Plan awards. 6 Financial advisor compensation consists of grid-based compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated based on financial advisor productivity, firm tenure, assets and other variables. It also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. 7 Refer to Note 26 for more information. 8 Includes net restructuring expenses of CHF 362 million, CHF 731 million and CHF 458 million for the years ended 31 December 2017, 31 December 2016 and 31 December 2015, respectively. Refer to Note 30 for more information. 9 The decrease in 2017 was mainly due to the transfer of shared services functions from UBS AG to UBS Business Solutions AG. Refer to Note 30 for more information.

Note 7 General and administrative expenses

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Occupancy	848	921	928
Rent and maintenance of IT and other equipment	415	511	510
Communication and market data services	534	624	610
Administration[1]	3,560	1,069	855
of which: shared services costs charged by UBS Group AG or its subsidiaries	*2,974[2]*	*365*	*223*
Marketing and public relations	332	465	484
Travel and entertainment	374	411	456
Professional fees	1,064	1,225	1,351
Outsourcing of IT and other services	1,147	1,592	1,742
Provisions for litigation, regulatory and similar matters[3]	420	795	1,087
Other	116	78	195
Total general and administrative expenses[4]	8,811[2]	7,690	8,219

1 Administration costs include net expenses related to the UK bank levy of CHF 17 million, CHF 123 million and CHF 166 million for the years ended 31 December 2017, 31 December 2016 and 31 December 2015, respectively. 2017 included a CHF 82 million credit related to prior years. 2 The increase in 2017 in shared services costs charged by UBS Group AG or its subsidiaries and the associated decrease in certain direct cost lines were mainly due to the transfer of shared services functions from UBS AG to UBS Business Solutions AG. Refer to Note 30 for more information. 3 Reflects the net increase in provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to Note 20 for more information. Also includes recoveries from third parties of CHF 53 million, CHF 13 million and CHF 10 million for the years ended 31 December 2017, 31 December 2016 and 31 December 2015, respectively. 4 Includes net restructuring expenses of CHF 818 million, CHF 700 million and CHF 760 million for the years ended 31 December 2017, 31 December 2016 and 31 December 2015, respectively. Refer to Note 30 for more information.

Note 8 Income taxes

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Tax expense / (benefit)			
Swiss			
Current	402	429	230
Deferred	21	635	329
Non-Swiss			
Current	427	350	476
Deferred	3,227	(633)	(1,943)
Total income tax expense / (benefit) recognized in the income statement	4,077	781	(908)

Income tax recognized in the income statement

An income tax expense of CHF 4,077 million was recognized for UBS AG in 2017, which included a net Swiss tax expense of CHF 423 million and a net non-Swiss tax expense of CHF 3,654 million.

The Swiss tax expense included a current tax expense of CHF 402 million related to taxable profits earned by Swiss subsidiaries, against which no losses were available to offset. In addition, it included a deferred tax expense of CHF 21 million, which reflected a net decrease in deferred tax assets (DTAs) previously recognized in relation to tax losses carried forward and temporary differences.

The non-Swiss tax expense included a current tax expense of CHF 427 million related to taxable profits earned by non-Swiss subsidiaries and branches, against which no losses were available to offset. In addition, it included a deferred tax expense of CHF 3,227 million, which reflected a net decrease in DTAs previously recognized in relation to tax losses carried forward and temporary differences and mainly related to the write-down of US DTAs resulting from the reduction in the federal corporate tax rate to 21% from 35% after the enactment of the Tax Cuts and Jobs Act (TCJA) during the fourth quarter of 2017.

UBS AG considers the performance of its businesses and the accuracy of historical forecasts and other factors in 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 is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Operating profit / (loss) before tax	4,998	4,069	5,407
of which: Swiss	*1,878*	*2,607*	*3,665*
of which: non-Swiss	*3,120*	*1,462*	*1,742*
Income taxes at Swiss tax rate of 21%	1,050	854	1,135
Increase / (decrease) resulting from:			
Non-Swiss tax rates differing from Swiss tax rate	224	71	(69)
Tax effects of losses not recognized	168	185	107
Previously unrecognized tax losses now utilized	(358)	(39)	(107)
Non-taxable and lower taxed income	(298)	(343)	(273)
Non-deductible expenses and additional taxable income	573	914	519
Adjustments related to prior years – current tax	(13)	22	29
Adjustments related to prior years – deferred tax	5	2	(48)
Change in deferred tax valuation allowances	(161)	(978)	(2,419)
Adjustments to deferred tax balances arising from changes in tax rates	2,824	19	191
Other items	63	72	26
Income tax expense / (benefit)	4,077	781	(908)

Note 8 Income taxes (continued)

The tax expense of CHF 4,077 million for 2017 was higher than the tax expense of CHF 781 million in 2016, mainly as 2017 included a net write-down of DTAs of CHF 2,865 million resulting from the aforementioned reduction in the US federal corporate tax rate.

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 on the previous page and explained below.

Non-Swiss tax rates differing from 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 or losses, an adjustment from the tax expense / benefit that would arise at the Swiss tax rate and the tax expense / benefit that would arise at the applicable local tax rate. If an entity generates a profit, a tax expense arises where the local tax rate is in excess of the Swiss tax rate and a tax benefit arises where the local tax rate is below the Swiss tax rate. Conversely, if an entity incurs a loss, a tax benefit arises where the local tax rate is in excess of the Swiss tax rate and a tax expense arises where the local tax rate is less than the Swiss tax rate.

Tax effects of losses not recognized

This item relates to tax losses of entities arising in the year, which are not recognized as DTAs. Consequently, 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, which 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. Therefore, the tax expense calculated by applying the local rate on those profits is reversed.

Non-taxable and lower taxed income

This item relates to profits for the year, which are either permanently not taxable or are taxable, but at a lower rate of tax than the local tax rate. It also includes any permanent deductions made for tax purposes, which are not reflected in the accounts.

Non-deductible expenses and additional taxable income

This item mainly relates to income for the year, which is imputed for tax purposes for an entity, but is not included in its operating profit. In addition, it includes expenses for the year that are permanently non-deductible.

Adjustments related to prior years – current tax

This item relates to adjustments to current tax expense for prior years, for example, if the tax payable for a year agreed with the tax authorities is expected to differ 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, for example, 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 valuation allowances

This item includes revaluations of 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. The amount in the year mainly relates to the upward revaluation of DTAs.

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. This item primarily relates to the net write-down of DTAs following a reduction in the US federal corporate tax rate to 21% from 35% after the enactment of the TCJA during the fourth quarter of 2017.

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 increases in provisions for uncertain positions in relation to the current year and other items.

Income tax recognized directly in equity

Certain tax expenses and benefits were recognized directly in equity, which included the following items:

– a net tax benefit of CHF 354 million recognized in other comprehensive income (OCI), which included a tax benefit of CHF 160 million related to cash flow hedges (2016: benefit of CHF 170 million), a tax expense of CHF 7 million related to financial assets classified as available for sale (2016: benefit of CHF 28 million), a tax benefit of CHF 196 million related to foreign currency translation gains and losses (2016: expense of CHF 84 million), a tax benefit of CHF 6 million related to defined benefit plans (2016: benefit of CHF 52 million) and a tax expense of CHF 1 million (2016: benefit of CHF 5 million) related to own credit
– a tax benefit of CHF 16 million recognized in share premium (2016: benefit of CHF 25 million)
– the effects of exchange rate changes on tax assets and liabilities denominated in currencies other than Swiss francs, which are included in foreign currency translation movements in OCI.

Deferred tax assets and liabilities

UBS AG has DTAs related to tax loss carry-forwards and other items as shown in the table below. As of 31 December 2017, DTAs of CHF 1,185 million (31 December 2016: CHF 1,689 million) were recognized by entities that incurred losses in either the current or preceding year based on projections of future taxable profits. The valuation allowance reflects DTAs that were not recognized because it was not considered probable that future taxable profits will be available to utilize the related tax loss carry-forwards and deductible temporary differences.

CHF million	31.12.17			31.12.16		
Deferred tax assets[1]	Gross	Valuation allowance	Recognized	Gross	Valuation allowance	Recognized
Tax loss carry-forwards	16,934	(11,191)	5,743	24,627	(16,430)	8,197
Temporary differences	5,016	(975)	4,040	6,335	(1,388)	4,947
of which: related to compensation and benefits	*1,133*	*(222)*	*911*	*1,419*	*(208)*	*1,211*
of which: related to trading assets	*473*	*(58)*	*414*	*935*	*(118)*	*817*
of which: related to investments in subsidiaries and goodwill	*2,327*	*0*	*2,327*	*2,059*	*0*	*2,059*
of which: other	*1,083*	*(695)*	*388*	*1,922*	*(1,062)*	*859*
Total deferred tax assets	21,949	(12,166)	9,783	30,962	(17,818)	13,144
Deferred tax liabilities						
Goodwill and intangible assets			18			24
Other			31			20
Total deferred tax liabilities			49			44

1 Less deferred tax liabilities as applicable.

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Note 8 Income taxes (continued)

As of 31 December 2017, tax loss carry-forwards totaling CHF 46,232 million (31 December 2016: CHF 49,477 million), which are not recognized as DTAs, were available to be offset against future taxable profits. These tax losses expire as outlined in the table below.

Unrecognized tax loss carry-forwards

CHF million	31.12.17	31.12.16
Within 1 year	167	0
From 2 to 5 years	103	66
From 6 to 10 years	3,185	909
From 11 to 20 years	26,015	32,603
No expiry	16,762	15,899
Total	46,232	49,477

In general, Swiss tax losses can be carried forward for seven years, US federal tax losses incurred before 31 December 2017 for 20 years and US federal tax losses incurred after 31 December 2017 and also UK and Jersey tax losses for an unlimited period.

UBS AG recognizes deferred tax liabilities on undistributed earnings of subsidiaries, except to the extent that those earnings are indefinitely invested. As of 31 December 2017, no such earnings were considered indefinitely invested.

The Financial Statements have been prepared on the basis that UBS Limited is able to offset part of its taxable profits against losses transferred from UBS AG. During 2016, the UK tax authorities indicated that they do not agree with this tax return filing position, but the authorities have now advised UBS that they accept that a transfer can occur and have also accepted UBS's proposed methods to calculate the amount of losses to be transferred as adopted on the tax return filing position.

Note 9 Earnings per share (EPS) and shares outstanding

In 2015, UBS AG shares were delisted from the SIX Swiss Exchange and the New York Stock Exchange. As of 31 December 2017, 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.

Balance sheet notes: assets

Note 10 Due from banks and loans (held at amortized cost)

CHF million	31.12.17	31.12.16
By type of exposure		
Due from banks, gross	13,695	13,128
Allowance for credit losses	(3)	(3)
Due from banks, net	13,693	13,125
Loans, gross		
Residential mortgages	144,431	142,197
Commercial mortgages	18,717	19,765
Lombard loans	115,059	104,999
Other loans[1]	40,987	37,160
Finance lease receivables[2]	1,069	986
Securities	2,113	2,494
Subtotal	322,376	307,601
Allowance for credit losses	(658)	(596)
Loans, net	321,718	307,004
Total due from banks and loans, net[3]	335,411	320,129

1 Includes corporate loans. 2 Refer to Note 31 for more information. 3 Refer to Note 25b for more information on collateral and credit enhancements.

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Note 11 Allowances and provisions for credit losses

CHF million

By movement	Specific allowances	Collective allowances	Total allowances – due from banks and loans	Allowances – other assets	Provisions[1]	Total 31.12.17	Total 31.12.16
Balance at the beginning of the year	587	12	599	0	54	653	727
Write-offs / usage of provisions	(115)	(2)	(117)	0	0	(117)	(145)
Recoveries	19	1	19	0	0	20	22
Increase / (decrease) recognized in the income statement	145	3	148	0	(21)	128	37
Foreign currency translation	(7)	0	(7)	0	0	(7)	0
Other	19	0	19	18	0	37	12
Balance at the end of the year	648	13	661	19	33	713	653

1 Represents provisions for loan commitments and guarantees. Refer to Note 20 for more information. Refer to the "Treasury management" section of this report for the maximum irrevocable amount of loan commitments and guarantees.

By balance sheet line	Specific allowances	Collective allowances	Total allowances	Allowances – other assets	Provisions[1]	Total 31.12.17	Total 31.12.16
Due from banks	3	0	3			3	3
Loans	645	13	658			658	596
Other assets				19		19	0
Provisions					33	33	54
Balance at the end of the year	648	13	661	19	33	713	653

1 Represents provisions for loan commitments and guarantees.

Note 12 Derivative instruments and hedge accounting

App 1D, 13(1)

Derivatives: overview

A derivative is a financial instrument for which the value is derived from one or more variables (underlyings). Underlyings may be indices, foreign currency exchange or interest rates, or the value of shares, commodities, bonds or other financial instruments. A derivative commonly requires little or no initial net investment by either counterparty to the trade.

The majority of derivative contracts are negotiated with respect to notional amounts, tenor, price and settlement mechanisms, as is customary with other financial instruments.

Over-the-counter (OTC) derivative contracts are usually traded under a standardized International Swaps and Derivatives Association (ISDA) master agreement between UBS and its counterparties. Terms are negotiated directly with counterparties and the contracts have industry-standard settlement mechanisms prescribed by ISDA. Recent rules, introduced by regulators in various jurisdictions, require or will soon require the payment and collection of initial and variation margin on certain OTC derivative contracts, which may have a bearing on their price and other relevant terms.

The industry continues to promote the use of central counterparties (CCPs) to clear OTC trades. The trend toward CCP clearing and settlement will generally facilitate the reduction of systemic credit exposures.

Other derivative contracts are standardized in terms of their amounts and settlement dates, and are bought and sold on regulated exchanges. These are commonly referred to as exchange-traded derivatives (ETD) contracts. Exchanges offer the benefits of pricing transparency, standardized daily settlement of changes in value and consequently reduced credit risk.

For presentation purposes, UBS AG's derivative contracts are subject to IFRS netting provisions. Derivative instruments are measured at fair value and generally classified as *Positive replacement values* and *Negative replacement values* on the balance sheet. However, ETD that are economically settled on a daily basis and OTC derivatives that are either legally settled or in substance net settled on a daily basis are classified as *Cash collateral receivables on derivative instruments* or *Cash collateral payables on derivative instruments*. Changes in the replacement values of derivatives are recorded in *Net trading income,* except for interest on derivatives designated as hedging instruments in effective hedge accounting relationships and forward points on certain short duration foreign exchange contracts that are recorded in *Net interest income*.

→ **Refer to Note 1a items 3j and 3k for more information**

→ **Refer to Note 24 for more information on the values of positive and negative replacement values after consideration of netting potential allowed under enforceable netting arrangements**

UBS AG uses various derivative instruments for both trading and hedging purposes. Derivative product types as well as valuation principles and techniques applied by UBS AG are described in Note 22. *Positive replacement values* represent the estimated amount UBS AG would receive if the derivative contract were sold on the balance sheet date. *Negative replacement values* indicate the estimated amount UBS AG would pay to transfer its obligations in respect of the underlying contract were it required or entitled to do so on the balance sheet date.

Derivatives embedded in other financial instruments are not included in the "Derivative instruments" table within this Note. Bifurcated embedded derivatives are presented on the same balance sheet line as the host contract. In cases where UBS applies the fair value option to hybrid instruments, bifurcation of an embedded derivative component is not required and as such this component is also not included in the "Derivative instruments" table.

→ **Refer to Notes 18 and 22 for more information**

Risks of derivative instruments

Derivative instruments are transacted in many trading portfolios, which generally include several types of instruments, not just derivatives. The market risk of derivatives is predominantly managed and controlled as an integral part of the market risk of these portfolios. UBS AG's approach to market risk is described in the audited portions of "Market risk" in the "Risk management and control" section of this report.

Derivative instruments are also transacted with many different counterparties, most of whom are also counterparties for other types of business. The credit risk of derivatives is managed and controlled in the context of UBS AG's overall credit exposure to its counterparties. UBS AG's approach to credit risk is described in the audited portions of "Credit risk" in the "Risk management and control" section of this report. It should be noted that, although the positive replacement values shown on the balance sheet can be an important component of UBS AG's credit exposure, 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 24 for more information on the values of positive and negative replacement values after consideration of netting potential allowed under enforceable netting arrangements**

Note 12 Derivative instruments and hedge accounting (continued)

Derivative instruments[1]

	31.12.17					31.12.16				
CHF billion	PRV[2]	Notional values related to PRV[3]	NRV[4]	Notional values related to NRV[3]	Other notional values[3,5]	PRV[2]	Notional values related to PRV[3]	NRV[4]	Notional values related to NRV[3]	Other notional values[3,5]
Interest rate contracts										
Over-the-counter (OTC) contracts										
Forward contracts[6]	0.1	22.1	0.3	8.2	2,321.1	0.1	29.6	0.1	21.9	2,242.8
Swaps	35.4	539.2	28.2	453.7	7,530.2	45.2	599.3	38.3	552.6	7,064.2
Options	8.5	558.1	9.8	547.2		12.6	478.1	13.9	480.6	
Exchange-traded contracts										
Futures					455.6					326.4
Options	0.0	22.7	0.0	34.4	155.4	0.0	45.4	0.0	4.5	96.2
Agency transactions[7]	0.0		0.0			0.2		0.2		
Total	44.0	1,142.1	38.4	1,043.6	10,462.2	58.0	1,152.4	52.5	1,059.6	9,729.6
Credit derivative contracts										
Over-the-counter (OTC) contracts										
Credit default swaps	2.7	85.2	3.0	94.4	1.2	3.7	116.9	3.9	135.2	
Total return swaps	0.2	2.2	0.8	3.9		0.2	3.3	0.9	4.3	
Options and warrants	0.0	4.3	0.0	0.1		0.0	2.9	0.0	0.1	
Total	2.8	91.8	3.8	98.3	1.2	3.9	123.1	4.8	139.6	
Foreign exchange contracts										
Over-the-counter (OTC) contracts										
Forward contracts	17.2	681.4	17.8	691.6		21.8	715.6	19.0	650.9	
Interest and currency swaps	23.8	1,275.5	21.8	1,098.4		43.2	1,220.8	42.0	1,115.0	
Options	6.1	427.0	5.8	397.6		11.1	530.3	11.0	513.7	
Exchange-traded contracts										
Futures					0.4					6.1
Options	0.0	4.7	0.1	5.6		0.0	2.9	0.1	6.0	
Agency transactions[7]	0.0		0.0			0.0		0.0		
Total	47.1	2,388.5	45.5	2,193.3	0.4	76.1	2,469.6	72.1	2,285.6	6.1
Equity / index contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Swaps	3.4	71.2	5.5	100.4		3.6	76.5	4.8	69.0	
Options	5.8	76.6	8.2	125.0		3.7	49.6	5.8	92.8	
Exchange-traded contracts										
Futures					51.9					33.0
Options	6.9	232.6	6.9	261.2	31.0	3.8	142.5	4.6	155.8	21.6
Agency transactions[7]	6.2		6.1			6.9		6.9		
Total	22.2	380.3	26.7	486.6	82.9	18.0	268.6	22.1	317.6	54.5

Table continues on the next page.

Derivative instruments[1] (continued)

Table continued from the previous page.

Derivative instruments (continued)[1]

	31.12.17					31.12.16				
CHF billion	PRV[2]	Notional values related to PRV[3]	NRV[4]	Notional values related to NRV[3]	Other notional values[3,5]	PRV[2]	Notional values related to PRV[3]	NRV[4]	Notional values related to NRV[3]	Other notional values[3,5]
Commodity contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.1	2.9	0.1	3.8		0.3	4.8	0.1	2.7	
Swaps	0.2	8.5	0.4	12.8		0.4	10.9	0.5	13.4	
Options	0.3	11.3	0.1	7.9		0.5	14.1	0.2	9.9	
Exchange-traded contracts										
Futures					8.2					9.1
Forward contracts	0.2	9.4	0.0	7.9		0.1	5.9	0.0	4.6	
Options	0.0	1.0	0.1	4.4	0.3	0.0	3.2	0.1	5.3	0.0
Agency transactions[7]	0.9		0.9			0.9		0.9		
Total	1.7	33.1	1.6	36.9	8.4	2.3	39.0	2.0	35.9	9.1
Unsettled purchases of non-derivative financial instruments[8]	0.1	12.0	0.1	10.9		0.1	18.4	0.1	9.7	
Unsettled sales of non-derivative financial instruments[8]	0.1	14.8	0.1	8.7		0.1	13.0	0.2	11.5	
Total derivative instruments, based on IFRS netting[9]	118.2	4,062.6	116.1	3,878.3	10,555.0	158.4	4,084.0	153.8	3,859.6	9,799.3

1 Bifurcated embedded derivatives are presented on the same balance sheet lines as their host contracts and are excluded from this table. The replacement values and related notional values of these derivatives were not material for the periods presented. 2 PRV: positive replacement value. 3 In cases where replacement values are presented on a net basis on the balance sheet, the respective notional values of the netted replacement values are still presented on a gross basis. 4 NRV: negative replacement value. 5 Other notional values relate to derivatives that are cleared through either a central clearing 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 the periods presented. 6 Negative replacement values as of 31 December 2017 include CHF 0.0 billion related to derivative loan commitments (31 December 2016: CHF 0.1 billion). No notional amounts related to these replacement values are included in the table. The maximum irrevocable amount related to these commitments was CHF 5.3 billion as of 31 December 2017 (31 December 2016: CHF 14.3 billion). 7 Notional values of exchange-traded agency transactions and OTC-cleared transactions entered into on behalf of clients are not disclosed due to their significantly different risk profile. 8 Changes in the fair value of purchased and sold non-derivative financial instruments between trade date and settlement date are recognized as replacement values. 9 Refer to Note 24 for more information on netting arrangements.

The notional amount of a derivative is generally the quantity of the underlying instrument on which the derivative contract is based and is the reference against which changes in the value of the derivative are measured. Notional values in themselves are generally not a direct indication of the values that are exchanged between parties, and are therefore not a direct measure of risk or financial exposure but are viewed as an indication of the scale of the different types of derivatives entered into by UBS AG.

On a notional value basis, approximately 54% of OTC interest rate contracts held as of 31 December 2017 (31 December 2016: 52%) mature within one year, 28% (31 December 2016: 29%) within one to five years and 18% (31 December 2016: 19%) after five years. Notional values of interest rate contracts cleared with a clearing house that qualify for IFRS balance sheet netting or are legally settled on a daily basis are presented under *Other notional values* and are categorized into maturity buckets on the basis of contractual maturities of the cleared underlying derivative contracts.

Derivatives transacted for trading purposes

Most of UBS AG's derivative transactions relate to sales and trading activities. 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. Trading activities include market-making to directly support the facilitation and execution of client activity. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenues based on spread and volume.

Credit derivatives

UBS is an active dealer in the fixed income market, including credit default swaps (CDS) and related products, with respect to a large number of issuers' securities. The primary objectives of these activities are market-making, primarily on behalf of clients, and ongoing hedging of trading book exposures.

Note 12 Derivative instruments and hedge accounting (continued)

Market-making activity, which is undertaken within the Investment Bank, consists of buying and selling single-name CDS, index CDS, loan CDS and related referenced cash instruments to facilitate client trading activity. UBS also actively utilizes CDS to economically hedge specific counterparty credit risks in its accrual and traded loan portfolios (including off-balance sheet loan commitments) with the aim of reducing concentrations in individual names, sectors or specific portfolios.

In addition, UBS actively utilizes CDS to economically hedge specific counterparty credit risks in its OTC derivative portfolios, including financial instruments that are designated at fair value through profit or loss.

The tables below provide more information on credit protection bought and sold, including replacement and notional value information by instrument type and counterparty type. The value of protection bought and sold is not, in isolation, a measure of UBS's credit risk. Counterparty relationships are viewed in terms of the total outstanding credit risk, which relates to other instruments in addition to CDS, and in connection with collateral arrangements in place. On a notional value basis, approximately 23% of credit protection bought and sold as of 31 December 2017 matures within one year (31 December 2016: 29%), approximately 65% within one to five years (31 December 2016: 61%) and approximately 12% after five years (31 December 2016: 10%).

Credit derivatives by type of instrument

	Protection bought			Protection sold		
CHF billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	0.6	1.1	61.3	1.1	0.6	55.7
Multi-name index-linked credit default swaps	0.2	0.9	31.8	0.9	0.2	31.9
Multi-name other credit default swaps	0.0	0.0	0.1	0.0	0.0	0.0
Total rate of return swaps	0.0	0.8	4.4	0.1	0.0	1.7
Options and warrants	0.0	0.0	4.3	0.0	0.0	0.1
Total 31 December 2017	0.8	2.9	101.9	2.0	0.9	89.4
of which: credit derivatives related to economic hedges	*0.7*	*2.4*	*81.5*	*1.6*	*0.8*	*70.5*
of which: credit derivatives related to market-making	*0.0*	*0.5*	*20.3*	*0.5*	*0.0*	*18.9*

	Protection bought			Protection sold		
CHF billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	1.6	1.3	91.4	1.3	1.4	81.3
Multi-name index-linked credit default swaps	0.2	0.8	38.4	0.5	0.4	38.3
Multi-name other credit default swaps	0.0	0.0	1.5	0.0	0.0	1.1
Total rate of return swaps	0.1	0.7	5.5	0.0	0.2	2.1
Options and warrants	0.0	0.0	2.9	0.0	0.0	0.1
Total 31 December 2016	2.0	2.8	139.7	1.9	2.0	122.9
of which: credit derivatives related to economic hedges	*1.4*	*2.4*	*111.7*	*1.5*	*1.5*	*96.2*
of which: credit derivatives related to market-making	*0.5*	*0.3*	*28.0*	*0.4*	*0.5*	*26.7*

Note 12 Derivative instruments and hedge accounting (continued)

Credit derivatives by counterparty

	Protection bought			Protection sold		
CHF billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.2	0.2	16.2	0.2	0.1	12.3
Banks	0.3	0.7	37.0	0.5	0.4	31.6
Central clearing counterparties	0.1	1.1	41.5	1.0	0.1	40.6
Other	0.3	0.9	7.2	0.3	0.2	4.9
Total 31 December 2017	0.8	2.9	101.9	2.0	0.9	89.4

	Protection bought			Protection sold		
CHF billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.4	0.2	20.9	0.2	0.3	16.1
Banks	0.9	1.0	60.8	0.8	1.0	52.6
Central clearing counterparties	0.3	0.9	47.2	0.8	0.4	47.1
Other	0.4	0.8	10.9	0.2	0.3	7.1
Total 31 December 2016	2.0	2.8	139.7	1.9	2.0	122.9

UBS's CDS trades are documented using industry standard forms of documentation or equivalent terms documented in a bespoke agreement. The agreements that govern CDS generally do not contain recourse provisions that would enable UBS to recover from third parties any amounts paid out by UBS.

The types of credit events that would require UBS to perform under a CDS contract are subject to agreement between the parties at the time of the transaction. However, nearly all transactions are traded with reference to credit events that are applicable under certain market conventions based on the type of reference entity to which the transaction relates. Applicable credit events according to market conventions include bankruptcy, failure to pay, restructuring, obligation acceleration and repudiation / moratorium.

Contingent collateral features of derivative liabilities

Certain derivative instruments contain contingent collateral or termination features triggered upon a downgrade of the published credit ratings of UBS AG in the normal course of business. Based on UBS's credit ratings as of 31 December 2017, CHF 0.1 billion, CHF 0.3 billion and CHF 1.2 billion would have been required for contractual obligations related to OTC derivatives in the event of a one-notch, two-notch and three-notch reduction in long-term credit ratings, respectively. In evaluating UBS's liquidity requirements, UBS considers additional collateral or termination payments that would be required in the event of a reduction in UBS's long-term credit ratings, and a corresponding reduction in UBS's short-term ratings.

Derivatives transacted for hedging purposes

UBS AG enters into derivative transactions for the purposes of hedging risks inherent in assets, liabilities and forecast transactions. The accounting treatment of hedge transactions varies according to the nature of the instrument hedged and whether the hedge qualifies as such for accounting purposes.

Derivative transactions that qualify and are designated as hedges for accounting purposes are described under the corresponding headings in this Note (fair value hedges, cash flow hedges and hedges of net investments in foreign operations).

UBS AG has also executed various hedging strategies utilizing derivatives for which hedge accounting has not been applied. These economic hedges include interest rate swaps and other interest rate derivatives (e.g., futures) for day-to-day economic interest rate risk management purposes. In addition, UBS AG has used equity futures, options and, to a lesser extent, swaps in a variety of equity trading strategies to offset underlying equity and equity volatility exposure. UBS AG has also entered into CDS that provide economic hedges for credit risk exposures (refer to "Credit derivatives" in this Note).

UBS AG's accounting policies for derivatives designated and accounted for as hedging instruments or economic hedges that do not qualify for hedge accounting are described in Note 1a item 3k, where terms used in the following sections are explained.

Note 12 Derivative instruments and hedge accounting (continued)

Fair value hedges: interest rate risk related to debt instruments

UBS AG's fair value hedges principally consist of interest rate swaps that are used to protect against changes in the fair value of fixed-rate debt instruments, such as non-structured fixed-rate bonds, covered bonds and subordinated debt, due to movements in market interest rates. The fair values of outstanding interest rate derivatives designated as fair value hedges were assets of CHF 47 million and liabilities of CHF 2 million as of 31 December 2017 and assets of CHF 152 million and liabilities of CHF 1 million as of 31 December 2016.

Fair value hedges of interest rate risk

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Gains / (losses) on hedging instruments	(20)	140	554
Gains / (losses) on hedged items attributable to the hedged risk	1	(144)	(552)
Net gains / (losses) representing ineffective portions of fair value hedges	(19)	(4)	2

Fair value hedges: portfolio interest rate risk related to loans

UBS AG also applies fair value hedge accounting to mortgage loan portfolio interest rate risk. The change in fair value of the hedged items is recorded separately from the hedged item and is included within *Other assets* on the balance sheet. The fair values of outstanding interest rate derivatives designated for these hedges as of 31 December 2017 were liabilities of CHF 32 million (31 December 2016: liabilities of CHF 44 million).

Fair value hedges of portfolio interest rate risk

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Gains / (losses) on hedging instruments	(11)	(128)	(176)
Gains / (losses) on hedged items attributable to the hedged risk	4	116	147
Net gains / (losses) representing ineffective portions of fair value hedges	(7)	(12)	(29)

Cash flow hedges of forecast transactions

UBS AG is exposed to variability in future interest 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. 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 11 years. The table on the following page shows forecast principal balances on which expected interest cash flows arise as of 31 December 2017. Amounts shown represent, by time bucket, average assets and liabilities subject to forecast cash flows designated as hedged items in cash flow hedge accounting relationships.

As of 31 December 2017, the fair values of outstanding derivatives designated as cash flow hedges of forecast transactions were CHF 30 million assets and CHF 2 million liabilities (31 December 2016: CHF 68 million assets and CHF 5 million liabilities).

Other comprehensive income from cash flow hedges, net of tax was negative CHF 621 million, compared with negative CHF 666 million in 2016 and negative CHF 518 million in 2015. This result included the reclassification of a pre-tax net gain from *Other comprehensive income* to the income statement of CHF 826 million in 2017, compared with a pre-tax net gain of CHF 1,082 million in 2016 and a pre-tax net gain of CHF 1,199 million in 2015, partly offset by a pre-tax net fair value gain associated with the effective portion of derivative instruments designated as cash flow hedges recognized in comprehensive income of CHF 45 million in 2017, compared with a pre-tax net gain of CHF 246 million in 2016 and a pre-tax net gain of CHF 550 million in 2015.

As of 31 December 2017, the cumulative net gains associated with the effective portion of derivative instruments designated as cash flow hedges reported in *Equity* were CHF 351 million (31 December 2016: CHF 972 million).

In 2017, a gain of CHF 8 million was recognized in *Net trading income* due to hedge ineffectiveness, compared with a gain of CHF 11 million in 2016 and a gain of CHF 150 million in 2015.

Note 12 Derivative instruments and hedge accounting (continued)

Principal balances subject to cash flow forecasts

CHF billion	Within 1 year	1–3 years	3–5 years	5–10 years	Over 10 years
Assets	52	74	49	49	0
Liabilities	3	4	2	2	0
Net balance	50	70	47	47	0

Hedges of net investments in foreign operations

UBS AG applies hedge accounting for certain net investments in foreign operations. As of 31 December 2017, the positive replacement values and negative replacement values of foreign exchange (FX) derivatives (mainly FX swaps) designated as hedging instruments in net investment hedge accounting relationships were CHF 78 million and CHF 130 million, respectively (31 December 2016: positive replacement values of CHF 122 million and negative replacement values of CHF 79 million). As of 31 December 2017, the underlying hedged structural exposures in several currencies amounted to CHF 8.2 billion (31 December 2016: CHF 7.5 billion).

Hedges of structural FX exposures in currencies other than the US dollar may be comprised of two jointly designated derivatives as the foreign currency risk may be hedged against the US dollar first and then converted into Swiss francs, the presentation currency of UBS AG, as part of a separate FX derivative transaction. The aggregated notional amount of designated hedging derivatives as of 31 December 2017 was CHF 13 billion in total (31 December 2016: CHF 12.5 billion), including CHF 8.1 billion notional values related to US dollar versus Swiss franc swaps and CHF 5.0 billion notional values related to derivatives hedging foreign currencies (other than the US dollar) versus the US dollar. The effective portion of gains and losses of these FX swaps is transferred directly to OCI to offset foreign currency translation (FCT) gains and losses on the net investments in foreign branches and subsidiaries. As such, these FX swaps hedge the structural FX exposure resulting in the accumulation of FCT on the level of individual foreign branches and subsidiaries and hence on the total FCT OCI of UBS AG.

UBS designates certain non-derivative foreign currency financial assets and liabilities of foreign branches or subsidiaries as hedging instruments in net investment hedge accounting arrangements. The FX translation difference recorded in FCT OCI of the non-derivative hedging instrument of one foreign entity offsets the structural FX exposure of another foreign entity. Therefore, the aggregated FCT OCI of UBS AG is unchanged from this hedge designation. As of 31 December 2017, the nominal amount of non-derivative financial assets and liabilities designated as hedging instruments in such net investment hedges was CHF 1.4 billion and CHF 1.4 billion, respectively (31 December 2016: CHF 1.5 billion non-derivative financial assets and CHF 1.5 billion non-derivative financial liabilities).

Ineffectiveness of hedges of net investments in foreign operations was not material in 2017, 2016 and 2015.

Undiscounted cash flows

The table below provides undiscounted cash flow information for derivative instruments designated in hedge accounting relationships.

Derivatives designated in hedge accounting relationships (undiscounted cash flows)

CHF billion	On demand	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]							
FX swaps / forwards							
Cash inflows	0	8	4	0	0	0	12
Cash outflows	0	8	4	0	0	0	12
Net cash flows	0	0	0	0	0	0	0

1 Undiscounted cash inflows and cash outflows of interest rate swaps as of 31 December 2017 were not material as the majority of interest rate swaps designated in hedge accounting relationships are legally settled on a daily basis.

Financial statements

Note 13 Financial assets available for sale and held to maturity

a) Financial assets available for sale

CHF million	31.12.17	31.12.16
Financial assets available for sale by issuer type[1]		
Debt instruments		
Government and government agencies	7,000	11,650
of which: USA	*6,569*	*7,779*
Banks	299	1,845
Corporates and other	821	1,554
Total debt instruments	8,120	15,048
Equity instruments	546	628
Total financial assets available for sale	8,665	15,676
Unrealized gains – before tax	216	309
Unrealized (losses) – before tax	(105)	(117)
Net unrealized gains / (losses) – before tax	111	193
Net unrealized gains / (losses) – after tax	8	96

1 Refer to Note 22c for more information on product type and fair value hierarchy categorization.

b) Financial assets held to maturity

CHF million	31.12.17	31.12.16
Financial assets held to maturity by issuer type		
Debt instruments		
Government and government agencies	7,476	7,416
of which: USA	*4,833*	*4,688*
of which: Germany	*1,682*	*1,708*
of which: France	*669*	*867*
Banks	1,689	1,873
Total financial assets held to maturity	9,166	9,289

Note 14 Property, equipment and software

At historical cost less accumulated depreciation

CHF million	Own-used properties	Leasehold improvements	IT hardware and communication	Internally generated software	Purchased software	Other machines and equipment	Projects in progress	31.12.17	31.12.16
Historical cost									
Balance at the beginning of the year	7,732	3,440	1,512	3,037	408	853	1,123	18,106	17,823
Additions	44	15	101	1	43	13	1,291	1,508	1,770
Disposals / write-offs[1]	(672)	(303)	(645)	(355)	(174)	(59)	(32)	(2,239)	(1,102)
Reclassifications	(17)	117	46	1,196	(5)	22	(1,406)	(46)[6]	(214)
Foreign currency translation	(2)	(43)	3	(12)	1	(15)	(1)	(70)	(171)
Balance at the end of the year	7,085	3,226	1,018	3,867	272	815	975	17,259	18,106
Accumulated depreciation									
Balance at the beginning of the year	4,300	2,124	1,021	1,542	233	589	0	9,809	10,140
Depreciation	153	191	133	328	48	59	0	912	954
Impairment[2]	(2)	8	2	6	1	1	0	15	26
Disposals / write-offs[1]	(373)	(298)	(432)	(155)	(100)	(55)	0	(1,413)	(1,090)
Reclassifications	(9)	4	0	0	(1)	0	0	(7)[6]	(147)
Foreign currency translation	(2)	(36)	5	(3)	3	(10)	0	(43)	(74)
Balance at the end of the year	4,066	1,993	729	1,719	183	583	0	9,274	9,809
Net book value									
Net book value at the beginning of the year	3,432	1,316	492	1,495	175	264	1,123	8,297	7,683
Net book value at the end of the year[3,4]	**3,019**	**1,233**	**289**	**2,148**	**89**	**232**	**975[5]**	7,985	**8,297**

1 Mainly comprises CHF 819 million of assets on a net book value basis relating to the transfer of shared services functions from UBS AG to UBS Business Solutions AG. Refer to Note 30 for more information. Also includes write-offs of fully depreciated assets. 2 Impairment charges recorded in 2017 relate to assets for which the recoverable amount was determined based on value-in-use. Recoverable amounts for these impaired assets were not material as of 31 December 2017. 3 As of 31 December 2017, contractual commitments to purchase property in the future amounted to approximately CHF 0.3 billion (31 December 2016: approximately CHF 0.3 billion). 4 Includes CHF 22 million related to leased assets, mainly IT hardware and communication. 5 Consists of CHF 754 million related to Internally generated software, CHF 188 million related to Own-used properties and CHF 33 million related to Leasehold improvements. 6 Reflects reclassifications to Properties held for sale (CHF 40 million on a net basis) of properties sold in 2017.

Note 15 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 the segments, as reported in Note 2a, as separate cash-generating units (CGUs). The impairment test is performed for each segment to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, with the carrying amount of the respective segment. An impairment charge is recognized if the carrying amount exceeds the recoverable amount. As of 31 December 2017, total goodwill recognized on the balance sheet was CHF 6.2 billion, of which CHF 1.3 billion, CHF 3.4 billion and CHF 1.4 billion was carried by Wealth Management, Wealth Management Americas and Asset Management, respectively. Based on the impairment testing methodology described below, UBS AG concluded that the goodwill balances as of 31 December 2017 allocated to these segments remain recoverable and thus were not impaired.

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 segment 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 the perpetual growth implied by the long-term growth rate. The terminal value, which covers all periods beyond the third year, is calculated on the basis of the forecast of third-year profit, the discount rate and the long-term growth rate, as well as the implied perpetual capital growth.

The carrying amount for each segment is determined by reference to the Group's equity attribution framework. Within this framework, which is described in the "Capital management" section of this report, we attribute equity to the businesses on the basis of their risk-weighted assets and leverage ratio denominator, their goodwill and intangible assets as well as equity directly associated with activity that Group ALM manages centrally on behalf of the business divisions. The framework is primarily used for purposes of measuring the performance of the businesses and includes certain management assumptions. Attributed equity equals the capital that a segment requires to conduct its business and is considered an appropriate starting point from which to determine the carrying value of the segments. The attributed equity methodology is aligned with the business planning process, the inputs from which are used in calculating the recoverable amounts of the respective CGU.

→ **Refer to the "Capital management" section of this report for more information on the equity attribution framework**

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 BoD.

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. The discount rates were unchanged between 2016 and 2017.

Key assumptions used to determine the recoverable amounts of each segment 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 that would be material to the consolidated financial statements or to the reported financial performance of any of the business divisions.

If the estimated earnings and other assumptions in future periods deviate from the current outlook, the value of goodwill may become impaired in the future, giving rise to losses in the income statement. Recognition of any impairment of goodwill would reduce IFRS 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 total capital ratios.

Note 15 Goodwill and intangible assets (continued)

Discount and growth rates

	Discount rates		Growth rates	
In %	31.12.17	31.12.16	31.12.17	31.12.16
Wealth Management	9.0	9.0	1.7	1.7
Wealth Management Americas	9.0	9.0	2.4	2.4
Asset Management	9.0	9.0	2.4	2.4
Investment Bank	11.0	11.0	2.4	2.4

	Goodwill	Intangible assets				
CHF million	Total	Infrastructure	Customer relationships, contractual rights and other	Total	31.12.17	31.12.16
Historical cost						
Balance at the beginning of the year	6,311	773	739	1,512	7,823	7,821
Additions	37		64	64	101	24
Disposals	(27)		(34)	(34)	(61)	(3)
Write-offs				0	0	(75)
Foreign currency translation	(139)	(33)	(2)	(35)	(174)	57
Balance at the end of the year	6,182	741	766	1,507	7,689	7,823
Accumulated amortization and impairment						
Balance at the beginning of the year		626	641	1,267	1,267	1,253
Amortization		37	32	70	70	91
Impairment[1]			0	0	0	0
Disposals			(15)	(15)	(15)	(1)
Write-offs				0	0	(75)
Foreign currency translation		(27)	(3)	(29)	(29)	(1)
Balance at the end of the year		637	655	1,292	1,292	1,267
Net book value at the end of the year	6,182	104	111	215	6,398	6,556

1 Impairment charges recorded in 2017 and 2016 relate to assets for which the recoverable amount was determined based on value-in-use (recoverable amount of the impaired assets: CHF 0 million for 2017 and CHF 3 million for 2016).

The table below presents goodwill and intangible assets by segment for the year ended 31 December 2017.

CHF million	Wealth Management	Wealth Management Americas	Investment Bank	Asset Management	Corporate Center – Services	Total
Goodwill						
Balance at the beginning of the year	1,303	3,571	36	1,401		6,311
Additions	37					37
Disposals	(2)			(25)		(27)
Foreign currency translation	8	(151)	(2)	6		(139)
Balance at the end of the year	1,346	3,420	34	1,382		6,182
Intangible assets						
Balance at the beginning of the year	40	152	41	4	9	245
Additions / transfers	47	17				64
Disposals	(19)					(19)
Amortization	(7)	(41)	(12)	(3)	(7)	(70)
Impairment		0				0
Foreign currency translation	2	(6)	(1)	0		(5)
Balance at the end of the year	63	121	28	1	2	215

Note 15 Goodwill and intangible assets (continued)

The table below presents estimated, aggregated amortization expenses for intangible assets.

CHF million	Intangible assets
Estimated, aggregated amortization expenses for:	
2018	63
2019	49
2020	42
2021	11
2022	11
Thereafter	35
Not amortized due to indefinite useful life	5
Total	215

Note 16 Other assets

CHF million	31.12.17	31.12.16
Prime brokerage receivables[1]	19,080	9,828
Recruitment loans to financial advisors	2,553	3,087
Other loans to financial advisors	565	471
Bail deposit[2]	1,337	1,213
Accrued interest income	578	526
Accrued income – other	781	822
Prepaid expenses	819	1,008
Settlement and clearing accounts	716	516
VAT and other tax receivables	292	261
Properties and other non-current assets held for sale	95	111
Assets of disposal group held for sale[3]	0	5,137
Other	2,688	2,433
Total other assets	29,505	25,412

1 Prime brokerage services include clearance, settlement, custody, financing and portfolio reporting services for corporate clients trading across multiple asset classes. Prime brokerage receivables are mainly comprised of margin lending receivables. 2 Refer to Note 20b item 1 for more information. 3 Refer to Note 30 for more information.

Balance sheet notes: liabilities

Note 17 Due to banks and customers

CHF million	31.12.17	31.12.16
Due to banks	7,533	10,645
Due to customers	447,141	450,199
of which: demand deposits	*190,341*	*195,756*
of which: retail savings / deposits	*161,828*	*170,729*
of which: time deposits [1]	*83,773*	*77,531*
of which: fiduciary deposits	*11,200*	*6,184*
Total due to banks and customers	454,675	460,844

1 Includes Group-internal funding obtained from UBS Group AG and UBS Group Funding (Switzerland) AG of CHF 35 billion as of 31 December 2017 (31 December 2016: CHF 25 billion).

Note 18 Financial liabilities designated at fair value

CHF million	31.12.17	31.12.16
Issued debt instruments		
Equity-linked[1]	34,162	29,831
Rates-linked	5,811	10,150
Credit-linked	2,937	4,101
Fixed-rate	3,921	2,972
Other	2,671	2,875
Total issued debt instruments	49,502	49,930
of which: issued by UBS AG with original maturity greater than one year [2,3]	*37,266*	*36,347*
Over-the-counter debt instruments		
Equity-linked[1]	1,350	1,992
Other	2,967	2,671
Total over-the-counter debt instruments	4,317	4,663
of which: issued by UBS AG with original maturity greater than one year [2,4]	*3,049*	*4,210*
Repurchase agreements	375	395
Loan commitments and guarantees[5]	9	29
Total	54,202	55,017
of which: life-to-date own credit (gain) / loss	*195*	*(141)*

1 Includes investment fund unit-linked instruments issued. 2 Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. 3 More than 99% of the balance as of 31 December 2017 was unsecured (31 December 2016: more than 99% of the balance was unsecured). 4 More than 40% of the balance as of 31 December 2017 was unsecured (31 December 2016: more than 35% of the balance was unsecured). 5 Loan commitments recognized as Financial liabilities designated at fair value until drawn and recognized as Loans. See Note 1a item 3o for more information.

As of 31 December 2017 and 31 December 2016, the contractual redemption amount at maturity of financial liabilities designated at fair value through profit or loss was not materially different from the carrying value.

The table on the following page shows the residual contractual maturity of the carrying value of financial liabilities designated at fair value, split between fixed-rate and floating-rate instruments based on the contractual terms, and does not consider any early redemption features. Interest rate ranges for future interest payments related to these financial liabilities designated at fair value have not been included in the table on the following page as a majority of these liabilities are structured products, and therefore the future interest payments are highly dependent upon the embedded derivative and prevailing market conditions at the time each interest payment is made.

→ **Refer to Note 25d for maturity information on an undiscounted cash flow basis**

Note 18 Financial liabilities designated at fair value (continued)

Contractual maturity of carrying value

CHF million	2018	2019	2020	2021	2022	2023–2027	Thereafter	Total 31.12.17	Total 31.12.16
UBS AG[1]									
Non-subordinated debt									
Fixed-rate	3,339	1,350	872	401	571	511	3,610	10,653	9,505
Floating-rate	16,428	5,660	4,418	1,297	1,883	4,983	6,497	41,167	42,757
Subtotal	19,767	7,010	5,290	1,697	2,455	5,494	10,107	51,820	52,262
Other subsidiaries[2]									
Non-subordinated debt									
Fixed-rate	90	797	52	74	7	345	136	1,502	1,768
Floating-rate	330	18	194	0	48	27	263	879	987
Subtotal	420	816	246	74	55	372	399	2,382	2,755
Total	20,187	7,826	5,536	1,772	2,510	5,866	10,506	54,202	55,017

1 Comprises instruments issued by the legal entity UBS AG. 2 Comprises instruments issued by subsidiaries of UBS AG.

Note 19 Debt issued held at amortized cost

CHF million	31.12.17	31.12.16
Certificates of deposit	23,831	20,207
Commercial paper	23,532	1,653
Other short-term debt	3,590	4,318
Short-term debt[1]	50,953	26,178
Senior fixed-rate bonds	32,268	27,008
of which: issued by UBS AG with original maturity greater than one year[2]	*32,256*	*26,850*
Covered bonds	4,112	5,836
Subordinated debt	8,985	11,554
of which: low-trigger loss-absorbing tier 2 capital instruments	*8,286*	*10,429*
of which: non-Basel III-compliant tier 2 capital instruments	*700*	*1,125*
Debt issued through the central bond institutions of the Swiss regional or cantonal banks	8,345	8,302
Other long-term debt	87	121
of which: issued by UBS AG with original maturity greater than one year[2]	*66*	*94*
Long-term debt[3]	53,796	52,820
Total debt issued held at amortized cost[4]	104,749	78,998

1 Debt with an original maturity of less than one year. 2 Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. 100% of the balance as of 31 December 2017 was unsecured (31 December 2016: 100% of the balance was unsecured). 3 Debt with 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. 4 Net of bifurcated embedded derivatives, the fair value of which was not material for the periods presented.

UBS AG uses interest rate and foreign exchange derivatives to manage the risks inherent in certain debt instruments held at amortized cost. In certain cases, UBS AG applies hedge accounting for interest rate risk as discussed in Note 1a item 3k and Note 12. As a result of applying hedge accounting, the life-to-date adjustment to the carrying value of debt issued was an increase of CHF 480 million as of 31 December 2017 and an increase of CHF 821 million as of 31 December 2016, reflecting changes in fair value due to interest rate movements.

Note 19 Debt issued held at amortized cost (continued)

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 2017 pay a fixed rate of interest.

The table below shows the residual contractual maturity of the carrying value of debt issued, split between fixed-rate and floating-rate based on the contractual terms, and does not consider any early redemption features. The effects from interest rate swaps, which are used to hedge various fixed-rate debt issuances by changing the repricing characteristics into those similar to floating-rate debt, are also not considered in the table below.

→ **Refer to Note 25d for maturity information on an undiscounted cash flow basis**

Contractual maturity of carrying value

CHF million, except where indicated	2018	2019	2020	2021	2022	2023–2027	Thereafter	Total 31.12.17	Total 31.12.16
UBS AG[1]									
Non-subordinated debt									
Fixed-rate	38,470	3,975	7,987	4,162	1,643	0	3	56,239	42,999
Interest rates (range in %)	0–6.6	2.4–4.0	0–4.9	0.1–1.4	4.0–4.0				
Floating-rate	21,158	4,818	3,926	0	0	0	1,223	31,125	15,937
Subordinated debt									
Fixed-rate	0	0	0	0	1,912	7,073	0	8,985	11,554
Interest rates (range in %)					7.6–7.6	4.8–8.8			
Subtotal	59,628	8,793	11,913	4,162	3,555	7,073	1,225	96,349	70,490
Other subsidiaries[2]									
Non-subordinated debt									
Fixed-rate	805	747	725	1,000	835	3,384	903	8,398	8,507
Interest rates (range in %)	0.4–3.8	0.6–2.9	0.1–2.8	0.1–2.4	0.1–3.4	0.1–2.8	0.2–2.7		
Floating-rate	1	0	1	0	0	0	0	1	1
Subtotal	806	746	726	1,000	835	3,384	903	8,400	8,507
Total	60,434	9,540	12,639	5,162	4,389	10,457	2,128	104,749	78,998

1 Comprises debt issued by the legal entity UBS AG. 2 Comprises debt issued by subsidiaries of UBS AG.

Note 20 Provisions and contingent liabilities

a) Provisions

CHF million	Operational risks[1]	Litigation, regulatory and similar matters[2]	Restruc-turing	Loan com-mitments and guarantees	Real estate	Employee benefits[5]	Other	Total 31.12.17	Total 31.12.16
Balance at the beginning of the year	50	3,261	498	54	138	77	91	4,169	4,163
Additions from acquired companies	0	0	0	0	0	0	7	7	0
Increase in provisions recognized in the income statement	15	682	174	11	3	11	45	941	1,430
Release of provisions recognized in the income statement	(7)	(209)	(74)	(32)	(2)	(18)	(20)	(362)	(288)
Provisions used in conformity with designated purpose	(13)	(1,230)	(280)	0	(12)	(1)	(34)	(1,571)	(1,152)
Capitalized reinstatement costs	0	0	0	0	4	0	0	4	(1)
Reclassifications	0	0	(21)	0	0	(14)	0	(36)	7
Foreign currency translation / unwind of discount	(3)	(59)	(2)	0	(5)	1	1	(68)	10
Balance at the end of the year	43	2,444	294[3]	33	125[4]	55	89	3,084	4,169

1 Comprises provisions for losses resulting from security risks and transaction processing risks. 2 Comprises provisions for losses resulting from legal, liability and compliance risks. 3 Primarily consists of personnel-related restructuring provisions of CHF 54 million as of 31 December 2017 (31 December 2016: CHF 150 million) and provisions for onerous lease contracts of CHF 235 million as of 31 December 2017 (31 December 2016: CHF 348 million). 4 Consists of reinstatement costs for leasehold improvements of CHF 86 million as of 31 December 2017 (31 December 2016: CHF 85 million) and provisions for onerous lease contracts of CHF 39 million as of 31 December 2017 (31 December 2016: CHF 53 million). 5 Includes provisions for sabbatical and anniversary awards as well as provisions for severance that are not part of restructuring provisions.

Restructuring provisions primarily relate to onerous lease contracts and severance payments. The use of onerous lease provisions is driven by the maturities of the underlying lease contracts. Severance-related provisions are used within a short time period, usually within six months, but potential changes in amount may be triggered when natural staff attrition reduces the number of people affected by a restructuring and therefore the estimated costs.

Information on provisions and contingent liabilities in respect of litigation, regulatory and similar matters, as a class, is included in Note 20b. 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 (which for purposes of this Note may refer to UBS AG and / or one or more of its subsidiaries, as applicable) 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. 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.

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 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.

Note 20 Provisions and contingent liabilities (continued)

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

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

The aggregate amount provisioned for litigation, regulatory and similar matters as a class is disclosed in the "Provisions" table in Note 20a 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 us 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 we therefore cannot provide a numerical estimate of the future losses that could arise from litigation, regulatory and similar matters, we believe 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. For example, the Non-Prosecution Agreement (NPA) described in item 5 of this Note, which we entered into with the US Department of Justice (DOJ), Criminal Division, Fraud Section in connection with our submissions of benchmark interest rates, including, among others, the British Bankers' Association London Interbank Offered Rate (LIBOR), was terminated by the DOJ based on its determination that we had committed a US crime in relation to foreign exchange matters. As a consequence, UBS AG pleaded guilty to one count of wire fraud for conduct in the LIBOR matter, paid a fine and is subject to probation through January 2020. A guilty plea to, or conviction of, a crime could have material consequences for UBS. Resolution of regulatory proceedings may require 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 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 our capital requirements. Information concerning our capital requirements and the calculation of operational risk for this purpose is included in the "Capital management" section of this report.

Provisions for litigation, regulatory and similar matters by business division and Corporate Center unit[1]

CHF million	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Total 31.12.17	Total 31.12.16
Balance at the beginning of the year	292	425	78	5	616	259	0	1,585	3,261	2,983
Increase in provisions recognized in the income statement	30	158	3	6	8	248	0	229	682	856
Release of provisions recognized in the income statement	(4)	(12)	(1)	(9)[2]	(49)	(6)	0	(129)	(209)	(48)
Provisions used in conformity with designated purpose	(135)	(207)	(2)	(1)	(216)	(262)	0	(406)	(1,230)	(554)
Foreign currency translation / unwind of discount	24	(17)	2	0	(15)	1	0	(55)	(59)	25
Balance at the end of the year	207	348	79	1	345	240	0	1,224	2,444	3,261

1 Provisions, if any, for the matters described in this Note are recorded in Wealth Management (item 3), Wealth Management Americas (item 4), the Investment Bank (item 7) and Corporate Center – Non-core and Legacy Portfolio (item 2). Provisions, if any, for the matters described in items 1 and 6 of this Note are allocated between Wealth Management and Personal & Corporate Banking, and provisions, if any, for the matters described in this Note in item 5 are allocated between the Investment Bank, Corporate Center – Services and Corporate Center – Non-core and Legacy Portfolio. 2 In 2017, a release of CHF 5 million was recognized in Provisions for litigation, regulatory and similar matters, with a corresponding increase in Other provisions.

Note 20 Provisions and contingent liabilities (continued)

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. It is possible that the implementation of automatic tax information exchange and other measures relating to cross-border provision of financial services could give rise to further inquiries in the future. UBS has received disclosure orders from the Swiss Federal Tax Administration (FTA) to transfer information based on requests for international administrative assistance in tax matters. The requests concern a number of UBS account numbers pertaining to current and former clients and are based on data from 2006 and 2008. UBS has taken steps to inform affected clients about the administrative assistance proceedings and their procedural rights, including the right to appeal. The requests are based on data received from the German authorities, who seized certain data related to UBS clients booked in Switzerland during their investigations and have apparently shared this data with other European countries. UBS expects additional countries to file similar requests.

The Swiss Federal Administrative Court ruled in 2016 that in the administrative assistance proceedings related to a French bulk request, UBS has the right to appeal all final FTA client data disclosure orders.

Since 2013, UBS (France) S.A. and UBS AG and certain former employees have been under investigation in France for alleged complicity in having illicitly solicited clients on French territory and regarding the laundering of proceeds of tax fraud and of banking and financial solicitation by unauthorized persons. In connection with this investigation, the investigating judges ordered UBS AG to provide bail ("*caution*") of EUR 1.1 billion and UBS (France) S.A. to post bail of EUR 40 million, which was reduced on appeal to EUR 10 million.

In February 2016, the investigating judges notified UBS AG and UBS (France) S.A. that they have closed their investigation. In July 2016, UBS AG and UBS (France) S.A. received the National Financial Prosecutor's recommendation ("*réquisitoire*"). In March 2017, the investigating judges issued the trial order ("*ordonnance de renvoi*") that charges UBS AG and UBS (France) S.A., as well as various former employees, with illicit solicitation of clients on French territory and with participation in the laundering of the proceeds of tax fraud, and which transfers the case to court. The trial schedule has not yet been announced. In October 2017, the Investigation Chamber of the Court of Appeals decided that UBS (France) S.A. shall not be constituted as a civil party in the guilty plea proceedings against the former UBS (France) S.A. Head of Front Office. UBS (France) S.A. has appealed this decision to the French Supreme Court ("*Cour de cassation*").

In 2016, UBS was notified by the Belgian investigating judge that it is under formal investigation ("*inculpé*") regarding the laundering of proceeds of tax fraud and of banking, financial solicitation by unauthorized persons and serious tax fraud.

In 2015, UBS received inquiries from the US Attorney's Office for the Eastern District of New York and from the US Securities and Exchange Commission (SEC), which are investigating potential sales to US persons of bearer bonds and other unregistered securities in possible violation of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) and the registration requirements of the US securities laws. UBS is cooperating with the authorities in these investigations. In 2018, UBS was informed by the US Attorney's Office and the SEC that they have closed their investigations and that they will not take any action.

UBS has, and reportedly numerous other financial institutions have, received inquiries from authorities concerning accounts relating to the Fédération Internationale de Football Association (FIFA) and other constituent soccer associations and related persons and entities. UBS is cooperating with authorities in these inquiries.

Our balance sheet at 31 December 2017 reflected provisions with respect to matters described in this item 1 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. Claims related to sales of residential mortgage-backed securities and mortgages

From 2002 through 2007, prior to the crisis in the US residential loan market, UBS was a substantial issuer and underwriter of US residential mortgage-backed securities (RMBS) and was a purchaser and seller of US residential mortgages. A subsidiary of UBS, UBS Real Estate Securities Inc. (UBS RESI), acquired pools of residential mortgage loans from originators and (through an affiliate) deposited them into securitization trusts. In this manner, from 2004 through 2007, UBS RESI sponsored approximately USD 80 billion in RMBS, based on the original principal balances of the securities issued.

UBS RESI also sold pools of loans acquired from originators to third-party purchasers. These whole loan sales during the period 2004 through 2007 totaled approximately USD 19 billion in original principal balance.

UBS was not a significant originator of US residential loans. A branch of UBS originated approximately USD 1.5 billion in US residential mortgage loans during the period in which it was active from 2006 to 2008, and securitized less than half of these loans.

Lawsuits related to contractual representations and warranties concerning mortgages and RMBS: When UBS acted as an RMBS sponsor or mortgage seller, it generally made certain representations relating to the characteristics of the underlying loans. In the event of a material breach of these representations, UBS was in certain circumstances contractually obligated to repurchase the loans to which the representations related or to indemnify certain parties against losses. In 2012, certain RMBS trusts filed an action (Trustee Suit) in the US District Court for the Southern District of New York (SDNY) seeking to enforce UBS RESI's obligation to repurchase loans in the collateral pools for three RMBS securitizations with an original principal balance of approximately USD 2 billion. Approximately 9,000 loans were at issue in a bench trial in the SDNY in 2016, following which the court issued an order ruling on numerous legal and factual issues and applying those rulings to 20 exemplar loans. The court further ordered that a lead master be appointed to apply the court's rulings to the loans that remain at issue following the trial. In October 2017, UBS and certain holders of the RMBS in the Trustee Suit entered into an agreement under which UBS has agreed to pay an aggregate of USD 543 million into the relevant RMBS trusts, plus certain attorneys' fees. A portion of these settlement costs will be borne by other parties that indemnified UBS. The agreement is subject to the trustee for the RMBS trusts becoming a party thereto by 9 March 2018. The trustee for the RMBS trusts has evaluated the proposed settlement under the agreement between UBS and the RMBS holders and UBS has been in discussions with the trustee about the terms on which it would become a party to a settlement. Giving effect to a settlement of the Trustee Suit, UBS considers claims relating to substantially all loan repurchase demands to be resolved, and believes that new demands to repurchase US residential mortgage loans are time-barred under a decision rendered by the New York Court of Appeals.

Mortgage-related regulatory matters: In 2014, UBS received a subpoena from the US Attorney's Office for the Eastern District of New York issued pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA), which seeks documents and information related to UBS's RMBS business from 2005 through 2007. In 2015, the Eastern District of New York identified a number of transactions that are the focus of their inquiry, and subsequently provided a revised list of transactions. UBS has provided information in response to this subpoena. UBS has also received and responded to subpoenas from the New York State Attorney General (NYAG) and other state attorneys general relating to UBS's RMBS business. In 2017, the NYAG identified a number of transactions that are the focus of its inquiry. In addition, UBS responded to inquiries from both the Special Inspector General for the Troubled Asset Relief Program (SIGTARP) (who is working in conjunction with the US Attorney's Office for Connecticut and the DOJ) and the SEC relating to trading practices in connection with purchases and sales of mortgage-backed securities in the secondary market from 2009 through 2014. UBS is cooperating with the authorities in these matters.

Our balance sheet at 31 December 2017 reflected a provision with respect to matters described in this item 2 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 this matter 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.

3. Madoff

In relation to the Bernard L. Madoff Investment Securities LLC (BMIS) investment fraud, UBS AG, UBS (Luxembourg) S.A. (now UBS Europe SE, Luxembourg branch) and certain other UBS subsidiaries have been subject to inquiries by a number of regulators, including the Swiss Financial Market Supervisory Authority (FINMA) and the Luxembourg Commission de Surveillance du Secteur Financier (CSSF). 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 aggregating approximately EUR 2.1 billion, which includes amounts that the funds may be held liable to pay the trustee for the liquidation of BMIS (BMIS Trustee).

Note 20 Provisions and contingent liabilities (continued)

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 2 billion. 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 fraudulent conveyances and preference payments. In 2016, the Bankruptcy Court dismissed the remaining claims against the UBS entities. The BMIS Trustee appealed. In 2014, several claims, including a purported class action, were filed in the US by BMIS customers against UBS entities, asserting claims similar to those made by the BMIS Trustee, and seeking unspecified damages. These claims have either been voluntarily withdrawn or dismissed on the basis that the courts did not have jurisdiction to hear the claims against the UBS entities. In 2016, the plaintiff in one of those claims appealed the dismissal. In February 2018, the United States Court of Appeals for the Second Circuit affirmed the dismissal of the plaintiff's claim.

4. Puerto Rico

Declines since 2013 in the market prices of Puerto Rico municipal bonds and of closed-end funds (funds) that are sole-managed and co-managed by UBS Trust Company of Puerto Rico and distributed by UBS Financial Services Incorporated of Puerto Rico (UBS PR) have led to multiple regulatory inquiries, as well as customer complaints and arbitrations with aggregate claimed damages of USD 2.4 billion, of which claims with aggregate claimed damages of USD 1.4 billion have been resolved through settlements, arbitration or withdrawal of the claim. The claims are filed by clients in Puerto Rico who own the funds or Puerto Rico municipal bonds and / or who used their UBS account assets as collateral for UBS non-purpose loans; customer complaint and arbitration allegations include fraud, misrepresentation and unsuitability of the funds and of the loans. A shareholder derivative action was filed in 2014 against various UBS entities and current and certain former directors of the funds, alleging hundreds of millions of US dollars in losses in the funds. In 2015, defendants' motion to dismiss was denied. Defendants' requests for permission to appeal that ruling were denied by the Puerto Rico Court of Appeals and the Puerto Rico Supreme Court. In 2014, a federal class action complaint also was filed against various UBS entities, certain members of UBS PR senior management and the co-manager of certain of the funds, seeking damages for investor losses in the funds during the period from May 2008 through May 2014. In 2016, defendants' motion to dismiss was granted in part and denied in part. In 2015, a class action was filed in Puerto Rico state court against UBS PR seeking equitable relief in the form of a stay of any effort by UBS PR to collect on non-purpose loans it acquired from UBS Bank USA in December 2013 based on plaintiffs' allegation that the loans are not valid. The trial court denied defendant's motion for summary judgment based on a forum selection clause in the loan agreements. The Puerto Rico Supreme Court reversed that decision and remanded the case back to the trial court for reconsideration. On reconsideration the trial court granted defendant's motion and dismissed the action.

In 2014, UBS reached a settlement with the Office of the Commissioner of Financial Institutions for the Commonwealth of Puerto Rico (OCFI) in connection with OCFI's examination of UBS's operations from January 2006 through September 2013, pursuant to which UBS is paying up to an aggregate of USD 7.7 million in investor education contributions and restitution.

In 2015, the SEC and the Financial Industry Regulatory Authority (FINRA) announced settlements with UBS PR of their separate investigations stemming from the 2013 market events. Without admitting or denying the findings in either matter, UBS PR agreed in the SEC settlement to pay USD 15 million and USD 18.5 million in the FINRA matter. We also understand that the DOJ is conducting a criminal inquiry into the impermissible reinvestment of non-purpose loan proceeds. We are cooperating with the authorities in this inquiry.

In 2011, a purported derivative action was filed on behalf of the Employee Retirement System of the Commonwealth of Puerto Rico (System) against over 40 defendants, including UBS PR, which was named in connection with its underwriting and consulting services. Plaintiffs alleged that defendants violated their purported fiduciary duties and contractual obligations in connection with the issuance and underwriting of USD 3 billion of bonds by the System in 2008 and sought damages of over USD 800 million. In 2016, the court granted the System's request to join the action as a plaintiff, but ordered that plaintiffs must file an amended complaint. In 2017, the court denied defendants' motion to dismiss the amended complaint.

Beginning in 2012, two federal class action complaints, which were subsequently consolidated, were filed against various UBS entities, certain closed-end funds and certain members of UBS PR senior management, seeking damages for investor losses in the funds during the period from January 2008 through May 2012. In 2016, the court denied plaintiffs' motion for class certification. In March 2017, the US Court of Appeals for the First Circuit denied plaintiffs' petition seeking permission to bring an interlocutory appeal challenging the denial of their motion for class certification.

Beginning in 2015, certain agencies and public corporations of the Commonwealth of Puerto Rico (Commonwealth) defaulted on certain interest payments, in 2016, the Commonwealth defaulted on payments on its general obligation debt (GO Bonds), and in 2017 the Commonwealth defaulted on payments on its debt backed by the Commonwealth's Sales and Use Tax (COFINA Bonds) as well as on bonds issued by the Commonwealth's Employee Retirement System (ERS Bonds). The funds hold significant amounts of both COFINA and ERS Bonds and the defaults on interest payments are expected to adversely affect dividends from the funds. Executive orders of the Governor that have diverted funds to pay for essential services instead of debt payments and stayed any action to enforce creditors' rights on the Puerto Rico bonds continue to be in effect. In 2016, US federal legislation created an oversight board with power to oversee Puerto Rico's finances and to restructure its debt. The oversight board is authorized to impose, and has imposed, a stay on exercise of creditors' rights. In May and June 2017, the oversight board placed the GO, COFINA and ERS Bonds, among others, into a bankruptcy-like proceeding under the supervision of a Federal District Judge as authorized by the oversight board's enabling statute. These events, further defaults, any further legislative action to create a legal means of restructuring Commonwealth obligations or to impose additional oversight on the Commonwealth's finances, or any restructuring of the Commonwealth's obligations may increase the number of claims against UBS concerning Puerto Rico securities, as well as potential damages sought.

Our balance sheet at 31 December 2017 reflected provisions with respect to matters described in this item 4 in amounts 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 provisions that we have recognized.

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

Foreign exchange-related regulatory matters: Following an initial media report in 2013 of widespread irregularities in the foreign exchange markets, UBS immediately commenced an internal review of its foreign exchange business, which includes our precious metals and related structured products businesses. Numerous authorities commenced investigations concerning possible manipulation of foreign exchange markets and precious metals prices. In 2014 and 2015, UBS reached settlements with the UK Financial Conduct Authority (FCA) and the US Commodity Futures Trading Commission (CFTC) in connection with their foreign exchange investigations, FINMA issued an order concluding its formal proceedings relating to UBS's foreign exchange and precious metals businesses, and the Board of Governors of the Federal Reserve System (Federal Reserve Board) and the Connecticut Department of Banking issued a Cease and Desist Order and assessed monetary penalties against UBS AG. In addition, the DOJ's Criminal Division (Criminal Division) terminated the 2012 Non-Prosecution Agreement (NPA) with UBS AG related to UBS's submissions of benchmark interest rates and UBS AG pleaded guilty to one count of wire fraud, paid a fine and is subject to probation through January 2020. In January 2018, UBS reached a settlement with the CFTC in connection with the CFTC's precious metals investigations. As part of that settlement, UBS paid a USD 15 million civil monetary penalty. UBS has ongoing obligations to cooperate with these authorities and to undertake certain remediation. UBS has also been granted conditional immunity by the Antitrust Division of the DOJ (Antitrust Division) and by authorities in other jurisdictions in connection with potential competition law violations relating to foreign exchange and precious metals businesses. Refer to Note 20b in the "Consolidated financial statements" section of the Annual Report 2016 for more information on regulatory actions related to foreign exchange and precious metals and grants of conditional immunity or leniency. Investigations relating to foreign exchange and precious metals matters by certain authorities remain ongoing notwithstanding these resolutions.

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. They allege collusion by the defendants and assert claims under the antitrust laws and for unjust enrichment. In 2015, additional putative class actions were filed in federal court in New York against UBS and other banks on behalf of a putative class of persons who entered into or held any foreign exchange futures contracts and options on foreign exchange futures contracts since 2003. The complaints assert claims under the Commodity Exchange Act (CEA) and the US antitrust laws. In 2015, a consolidated complaint was filed on behalf of both putative classes of persons covered by the US federal court class actions described above. UBS has entered into a settlement agreement that would resolve all of these US federal court class actions. The agreement, which has been preliminarily approved by the court and is subject to final court approval, requires, among other things, that UBS pay an aggregate of USD 141 million and provide cooperation to the settlement classes.

Note 20 Provisions and contingent liabilities (continued)

A putative class action has been filed in federal court in New York against UBS and other banks on behalf of participants, beneficiaries and named fiduciaries of plans qualified under the Employee Retirement Income Security Act of 1974 (ERISA) for whom a defendant bank provided foreign currency exchange transactional services, exercised discretionary authority or discretionary control over management of such ERISA plan, or authorized or permitted the execution of any foreign currency exchange transactional services involving such plan's assets. The complaint asserts claims under ERISA. The parties filed a stipulation to dismiss the case with prejudice. The plaintiffs have appealed the dismissal. The appeals court heard oral argument in June 2017.

In 2015, a putative class action was filed in federal court against UBS and numerous other banks on behalf of a putative class of persons and businesses in the US who directly purchased foreign currency from the defendants and their co-conspirators for their own end use. That action was transferred to federal court in New York. In March 2017, the court granted UBS's (and the other banks') motions to dismiss the complaint. The plaintiffs filed an amended complaint in August 2017.

In 2016, a putative class action was filed in federal court in New York against UBS and numerous other banks on behalf of a putative class of persons and entities who had indirectly purchased foreign exchange instruments from a defendant or co-conspirator in the US. The complaint asserts claims under federal and state antitrust laws. In response to defendants' motion to dismiss, plaintiffs agreed to dismiss their complaint. In April and June 2017, two new putative class actions were filed in federal court in New York against UBS and numerous other banks on behalf of different proposed classes of indirect purchasers of currency, and a consolidated complaint was filed in June 2017.

In 2015, UBS was added to putative class actions pending against other banks in federal court in New York and other jurisdictions on behalf of putative classes of persons who had bought or sold physical precious metals and various precious metal products and derivatives. The complaints in these lawsuits assert claims under the antitrust laws and the CEA, and other claims. In 2016, the court in New York granted UBS's motions to dismiss the putative class actions relating to gold and silver. Plaintiffs in those cases sought to amend their complaints to add new allegations about UBS, which the court granted. The plaintiffs filed amended complaints in June 2017. In March 2017, the court in New York granted UBS's motion to dismiss the platinum and palladium action. In May 2017, plaintiffs in the platinum and palladium action filed an amended complaint that did not allege claims against UBS.

LIBOR and other benchmark-related regulatory matters: Numerous government agencies, including the SEC, the CFTC, the DOJ, the FCA, the UK Serious Fraud Office (SFO), the Monetary Authority of Singapore (MAS), the Hong Kong Monetary Authority (HKMA), FINMA, various state attorneys general in the US and competition authorities in various jurisdictions, have conducted or are continuing to conduct investigations regarding potential improper attempts by UBS, among others, to manipulate LIBOR and other benchmark rates at certain times. In 2012, UBS reached settlements relating to benchmark interest rates with the FSA, the CFTC and the Criminal Division of the DOJ, and FINMA issued an order in its proceedings with respect to UBS relating to benchmark interest rates. In addition, UBS entered into settlements with the European Commission (EC) and with the Swiss Competition Commission (WEKO) regarding its investigation of bid-ask spreads in connection with Swiss franc interest rate derivatives. UBS has ongoing obligations to cooperate with the authorities with whom we have reached resolutions and to undertake certain remediation with respect to benchmark interest rate submissions. UBS has been granted conditional leniency or conditional immunity from authorities in certain jurisdictions, including the Antitrust Division of the DOJ and 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. Refer to Note 20b in the "Consolidated financial statements" section of the Annual Report 2016 for more information on regulatory actions relating to benchmark rates and grants of conditional immunity or leniency. Investigations by certain governmental authorities remain ongoing notwithstanding these resolutions.

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 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. All of the complaints allege manipulation, through various means, of various benchmark interest rates, including USD LIBOR, Euroyen TIBOR, Yen LIBOR, EURIBOR, CHF LIBOR, GBP LIBOR, USD and SGD SIBOR and SOR, Australian BBSW and USD ISDAFIX, and seek unspecified compensatory and other damages under varying legal theories.

In 2013, the US district court in the USD LIBOR action dismissed the federal antitrust and racketeering claims of certain USD LIBOR plaintiffs and a portion of their claims brought under the CEA and state common law. Certain plaintiffs appealed the decision to the Second Circuit, which, in 2016, vacated the district court's ruling finding no antitrust injury and remanded the case back to the district court for a further determination on whether plaintiffs have antitrust standing. In December 2016, the district court again dismissed plaintiffs' antitrust claims, this time for lack of personal jurisdiction over UBS and other foreign banks. Certain plaintiffs appealed that decision to the Second Circuit in 2017. In 2018, the district court denied certain plaintiffs' motions for class certification. In 2014, the court in one of the Euroyen TIBOR lawsuits dismissed certain of the plaintiff's claims, including federal antitrust claims. In 2015, the same court dismissed plaintiff's federal racketeering claims and affirmed its previous dismissal of plaintiff's antitrust claims. In 2017, the court also dismissed the other Yen LIBOR / Euroyen TIBOR action in its entirety on standing grounds, as did the court in the CHF LIBOR action. Also in 2017, the courts in the EURIBOR and the SIBOR and SOR lawsuits dismissed the cases as to UBS and certain other foreign defendants for lack of personal jurisdiction. Plaintiffs in the CHF LIBOR and SIBOR and SOR actions have filed amended complaints following the dismissals, which UBS and other defendants have moved to dismiss. UBS and other defendants in other lawsuits have also moved to dismiss the GBP LIBOR and Australian BBSW actions. In 2016, UBS entered into an agreement with representatives of a class of bondholders to settle their USD LIBOR class action. The agreement has received preliminary court approval and remains subject to final approval. Since 2014, putative class actions have been filed in federal court in New York and New Jersey against UBS and other financial institutions, among others, on behalf of parties who entered into interest rate derivative transactions linked to ISDAFIX. The court has given preliminary approval of a settlement agreement under which UBS would pay USD 14 million to settle the case in its entirety.

Government bonds: Putative class actions have been filed in US federal courts against UBS and other banks on behalf of persons who participated in markets for US Treasury securities since 2007. The complaints generally allege that the banks colluded with respect to, and manipulated prices of, US Treasury securities sold at auction. They assert claims under the antitrust laws and the CEA and for unjust enrichment. The cases have been consolidated in the SDNY, and a consolidated complaint was filed in November 2017. Following filing of these complaints, UBS and reportedly other banks are responding to investigations and requests for information from various authorities regarding US Treasury securities and other government bond trading practices. As a result of its review to date, UBS has taken appropriate action.

With respect to additional matters and jurisdictions not encompassed by the settlements and orders referred to above, our balance sheet at 31 December 2017 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.

6. 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 has 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 may continue 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 2017 reflected a provision with respect to matters described in this item 6 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.

7. Investigation of UBS's role in initial public offerings in Hong Kong

The Hong Kong Securities and Futures Commission (SFC) has been conducting investigations into UBS's role as a sponsor of certain initial public offerings listed on the Hong Kong Stock Exchange. The SFC has previously indicated that it intended to take enforcement action against UBS and certain employees in relation to certain of these offerings. In March 2018, the SFC issued a decision notice in relation to one of the offerings under investigation. The notice provides for a fine of HKD 119 million and a suspension of UBS Securities Hong Kong Limited's ability to act as a sponsor for Hong Kong listed initial public offerings for 18 months. UBS intends to appeal the decision.

Note 21 Other liabilities

CHF million	31.12.17	31.12.16
Prime brokerage payables[1]	29,646	31,973
Amounts due under unit-linked investment contracts	11,523	9,286
Compensation-related liabilities	4,909	5,256
of which: accrued expenses	*2,372*	*2,367*
of which: other deferred compensation plans	*1,613*	*1,623*
of which: net defined benefit pension and post-employment liabilities[2]	*925*	*1,266*
Third-party interest in consolidated investment funds	269	751
Settlement and clearing accounts	1,380	1,011
Current and deferred tax liabilities[3]	844	911
VAT and other tax payables	378	487
Deferred income	150	168
Accrued interest expenses	1,533	1,571
Other accrued expenses	2,105	2,427
Liabilities of disposal group held for sale[4]	0	5,213
Other	2,252	1,390
Total other liabilities	**54,990**	**60,443**

1 Prime brokerage services include clearance, settlement, custody, financing and portfolio reporting services for corporate clients trading across multiple asset classes. Prime brokerage payables are mainly comprised of client securities financing and deposits. 2 Refer to Note 26 for more information. 3 Refer to Note 8 for more information. 4 Refer to Note 30 for more information.

Additional information

Note 22 Fair value measurement

This Note provides fair value measurement information for both financial and non-financial instruments and is structured as follows:

a) Valuation principles
b) Valuation governance
c) Fair value hierarchy
d) Valuation adjustments
e) Transfers between Level 1 and Level 2
f) Level 3 instruments: valuation techniques and inputs
g) Level 3 instruments: sensitivity to changes in unobservable input assumptions
h) Level 3 instruments: movements during the period
i) Financial instruments not measured at fair value

a) Valuation principles

Fair value is defined as the price 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 most advantageous market, in the absence of a principal market) as of the measurement date. In measuring fair value, UBS AG uses various valuation approaches and applies a hierarchy for prices and inputs that maximizes the use of observable market data, if available.

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 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 the 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.

If available, fair values are determined using quoted prices in active markets for identical assets or liabilities. An active market is one in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing data on an ongoing basis. Assets and liabilities that are quoted and traded in an active market are valued at the currently quoted price multiplied by the number of units of the instrument held.

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 techniques involve the use of estimates, the extent of which depends on the complexity of the instrument and the availability of market-based data. 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 an asset or liability's classification within the fair value hierarchy.

Many cash instruments and over-the-counter (OTC) derivative contracts have bid and offer prices that can be observed in the marketplace. Bid prices reflect the highest price that a party is willing to pay for an asset. Offer prices represent the lowest price that a party is willing to accept for an asset. In general, long positions are measured at a bid price and short positions at an offer price, reflecting the prices at which the instruments could be transferred under normal market conditions. Offsetting positions in the same financial instrument are marked at the mid-price within the bid-offer spread.

Generally, the unit of account for a financial instrument is the individual instrument, and UBS applies valuation adjustments at an individual instrument level, consistent with that unit of account. However, if certain conditions are met, UBS 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.

For 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. This initial recognition amount may differ from the fair value obtained using the valuation technique. Any such difference is deferred and not recognized in the income statement and referred to as deferred day-1 profit or loss.

→ **Refer to Note 22d for more information**

Note 22 Fair value measurement (continued)

b) Valuation governance

UBS'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 risk and finance control functions. Responsibility for the ongoing measurement of financial and non-financial instruments at fair value resides with the business divisions. In carrying out their valuation responsibilities, the businesses are required to consider the availability and quality of external market data and to provide justification and rationale for their fair value estimates.

Fair value estimates are validated by 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. Controls and a governance framework are in place and are intended to ensure 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'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 22d for more information**

Note 22 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 the different product types, valuation techniques used in measuring their fair value, including significant valuation inputs and assumptions used, and the factors determining their classification within the fair value hierarchy.

Determination of fair values from quoted market prices or valuation techniques[1]

	31.12.17				31.12.16			
CHF million	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets measured at fair value on a recurring basis								
Financial assets held for trading[2]	108,963	15,309	1,972	126,244	76,046	14,377	1,689	92,112
of which:								
Government bills / bonds	*11,935*	*918*	*0*	*12,854*	*10,500*	*1,319*	*0*	*11,820*
Corporate and municipal bonds	*37*	*8,072*	*552*	*8,662*	*58*	*6,722*	*591*	*7,371*
Loans	*0*	*3,346*	*501*	*3,847*	*0*	*1,356*	*681*	*2,037*
Investment fund units	*7,223*	*1,839*	*571*	*9,632*	*6,114*	*3,521*	*63*	*9,698*
Asset-backed securities	*0*	*194*	*174*	*368*	*0*	*470*	*215*	*685*
Equity instruments	*79,276*	*186*	*105*	*79,566*	*50,916*	*397*	*65*	*51,378*
Financial assets for unit-linked investment contracts	*10,492*	*755*	*69*	*11,316*	*8,459*	*591*	*74*	*9,123*
Positive replacement values	458	116,222	1,549	118,229	434	155,428	2,549	158,411
of which:								
Interest rate contracts	*1*	*43,913*	*135*	*44,049*	*8*	*57,703*	*278*	*57,988*
Credit derivative contracts	*0*	*2,266*	*550*	*2,816*	*0*	*2,562*	*1,313*	*3,875*
Foreign exchange contracts	*207*	*46,749*	*189*	*47,145*	*263*	*75,607*	*222*	*76,092*
Equity / index contracts	*16*	*21,541*	*675*	*22,232*	*1*	*17,274*	*729*	*18,003*
Commodity contracts	*0*	*1,727*	*0*	*1,727*	*0*	*2,269*	*8*	*2,277*
Financial assets designated at fair value	23,032	34,104	1,419	58,556	39,641	23,304	2,079	65,024
of which:								
Government bills / bonds	*22,062*	*3,900*	*0*	*25,961*	*39,439*	*4,361*	*0*	*43,799*
Corporate and municipal bonds	*765*	*20,702*	*0*	*21,467*	*15*	*16,860*	*0*	*16,875*
Loans (including structured loans)	*0*	*9,385*	*758*	*10,143*	*0*	*2,043*	*1,195*	*3,238*
Structured reverse repurchase and securities borrowing agreements	*0*	*118*	*173*	*291*	*0*	*40*	*644*	*684*
Other	*205*	*0*	*489*	*694*	*187*	*0*	*240*	*427*
Financial assets available for sale	3,000	5,157	507	8,665	6,299	8,891	486	15,676
of which:								
Government bills / bonds	*2,733*	*133*	*0*	*2,866*	*5,444*	*450*	*0*	*5,894*
Corporate and municipal bonds	*121*	*1,060*	*9*	*1,189*	*646*	*4,939*	*12*	*5,596*
Investment fund units	*0*	*70*	*115*	*185*	*0*	*51*	*126*	*177*
Asset-backed securities	*0*	*3,880*	*0*	*3,880*	*0*	*3,381*	*0*	*3,381*
Equity instruments	*146*	*16*	*384*	*546*	*204*	*71*	*336*	*611*
Non-financial assets								
Precious metals and other physical commodities	4,563	0	0	4,563	4,583	0	0	4,583
Assets measured at fair value on a non-recurring basis								
Other assets[3]	0	54	42	95	5,060	131	56	5,248
Total assets measured at fair value	140,017	170,848	5,489	316,353	132,064	202,132	6,860	341,056

Note 22 Fair value measurement (continued)

Determination of fair values from quoted market prices or valuation techniques (continued)[1]

	31.12.17				31.12.16			
CHF million	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Liabilities measured at fair value on a recurring basis								
Trading portfolio liabilities	26,037	4,309	117	30,463	18,808	3,898	119	22,825
of which:								
Government bills / bonds	*5,153*	*256*	*0*	*5,409*	*5,573*	*648*	*0*	*6,221*
Corporate and municipal bonds	*50*	*3,453*	*35*	*3,538*	*12*	*2,927*	*37*	*2,976*
Investment fund units	*541*	*263*	*16*	*820*	*484*	*91*	*20*	*595*
Equity instruments	*20,293*	*336*	*66*	*20,695*	*12,740*	*227*	*62*	*13,028*
Negative replacement values	398	112,929	2,807	116,134	539	149,255	4,016	153,810
of which:								
Interest rate contracts	*5*	*38,196*	*186*	*38,387*	*12*	*51,990*	*475*	*52,476*
Credit derivative contracts	*0*	*3,196*	*601*	*3,797*	*0*	*3,269*	*1,538*	*4,807*
Foreign exchange contracts	*213*	*45,151*	*122*	*45,486*	*274*	*71,668*	*148*	*72,089*
Equity / index contracts	*42*	*24,803*	*1,896*	*26,741*	*1*	*20,254*	*1,854*	*22,109*
Commodity contracts	*0*	*1,561*	*1*	*1,562*	*0*	*2,040*	*1*	*2,041*
Financial liabilities designated at fair value	0	41,376	12,826	54,202	2	44,007	11,008	55,017
of which:								
Issued debt instruments	*0*	*38,617*	*10,885*	*49,502*	*0*	*40,242*	*9,688*	*49,930*
Over-the-counter debt instruments	*0*	*2,385*	*1,930*	*4,315*	*2*	*3,611*	*1,050*	*4,663*
Structured repurchase agreements	*0*	*372*	*4*	*376*	*0*	*130*	*266*	*395*
Loan commitments and guarantees	*0*	*2*	*7*	*9*	*0*	*25*	*5*	*29*
Other liabilities – amounts due under unit-linked investment contracts	0	11,523	0	11,523	0	9,286	0	9,286
Liabilities measured at fair value on a non-recurring basis								
Other liabilities[3]	0	1	0	1	0	5,213	0	5,213
Total liabilities measured at fair value	26,435	170,139	15,750	212,324	19,349	211,660	15,143	246,152

1 Bifurcated embedded derivatives are presented on the same balance sheet lines as their host contracts and are excluded from this table. The fair value of these derivatives was not material for the periods presented. 2 Financial assets held for trading exclude precious metals and other physical commodities. 3 Other assets and other liabilities primarily consist of assets held for sale as well as assets and liabilities of a disposal group held for sale, which are measured at the lower of their net carrying amount or fair value less costs to sell.

Valuation techniques

Valuation techniques are used to value positions for which a market price is not available from market sources. This includes certain less liquid debt and equity instruments, certain exchange-traded derivatives and all derivatives transacted in the OTC market. UBS 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 and instruments not traded in an active market, 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 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 22f for more information. The discount curves used by UBS AG incorporate the funding and credit characteristics of the instruments to which they are applied.

Financial instruments excluding derivatives: product description, valuation and classification in the fair value hierarchy

Government bills and bonds

Product description: government bills and bonds include fixed-rate, floating-rate and inflation-linked bills and bonds issued by sovereign governments.

Valuation: these instruments are generally valued using prices obtained directly from the market. Instruments that cannot be 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: government bills and bonds are 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.

Corporate and municipal bonds

Product description: corporate bonds include senior, junior and subordinated debt issued by corporate entities. Municipal bonds are issued by state and local governments. While most instruments are standard fixed- or floating-rate securities, some may have more complex coupon or embedded option features.

Valuation: corporate and municipal bonds are 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 where no directly comparable price is available, issuances may be priced using a convertible bond model.

Fair value hierarchy: corporate and municipal bonds are 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 and also cannot be referenced to other securities issued by the same issuer. Therefore, such instruments are measured based on price levels for similar issuers adjusted for relative tenor and issuer quality.

Note 22 Fair value measurement (continued)

Traded loans and loans designated at fair value

Product description: these instruments include fixed-rate loans, corporate loans, recently originated commercial real estate loans and contingent lending transactions.

Valuation: loans are 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 using 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. The valuation of the contingent lending transactions is dependent on actuarial mortality levels and actuarial life insurance policy lapse rates. Mortality and lapse rate assumptions are based on external actuarial estimations for large homogeneous pools, and contingencies are derived from a range relative to the actuarially expected amount.

Fair value hierarchy: instruments with suitably deep and liquid pricing information are classified as Level 2, while any 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

Product description: investment fund units are pools of assets, generally equity instruments and bonds, broken down to redeemable units.

Valuation: investment fund units are 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 (NAV), taking into account any restrictions imposed upon redemption.

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 NAV is not available or that are not redeemable at the measurement date or shortly thereafter are classified as Level 3.

Asset-backed securities (ABS)

Product description: ABS include residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), other asset-backed securities (ABS) and collateralized debt obligations (CDO) and are instruments generally issued through the process of securitization of underlying interest-bearing assets.

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. Inputs to discounted expected cash flow techniques include asset prepayment rates, discount margin or discount yields, asset default rates and asset loss on default severity.

Fair value hierarchy: RMBS, CMBS and 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.

Equity instruments

Product description: equity instruments include stocks and shares, private equity positions and units held in hedge funds.

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 for units held in hedge funds is measured based on their published NAV, taking into account any restrictions imposed upon redemption.

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. Units held in hedge funds are classified as Level 2, except for positions for which published NAV is not available or that are not redeemable at the measurement date or shortly thereafter, in which case such positions are classified as Level 3.

Financial assets for unit-linked investment contracts

Product description: unit-linked investment contracts allow investors to invest in a pool of assets through issued investment units.

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. However, instruments for which prices are not readily available are classified as Level 3.

Structured (reverse) repurchase agreements

Product description: structured (reverse) repurchase agreements are securities purchased under resale agreements and securities sold under repurchase agreements.

Valuation: these instruments are valued using discounted expected cash flow techniques. The discount rate applied is based on funding curves that are specific to the collateral eligibility terms for the contract in question.

Fair value hierarchy: collateral terms for these positions are often not standard and therefore funding spread levels used for valuation purposes cannot be observed in the market. As a result, these positions are classified as Level 2 and Level 3.

Financial liabilities designated at fair value

Product description: debt instruments, primarily comprised of equity-, rates- and credit-linked issued notes, which are held at fair value under the fair value option. These instruments are tailored specifically to the holder's risk or investment appetite with structured coupons or payoffs.

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. For example, equity-linked notes should be referenced to equity / index contracts and credit-linked notes should be referenced to credit derivative contacts.

Fair value hierarchy: observability is closely aligned with the equivalent derivatives business and the underlying risk.

→ **Refer to Note 18 for more information on financial liabilities designated at fair value**

→ **Refer to Note 22d for more information on own credit adjustments related to financial liabilities designated at fair value**

Amounts due under unit-linked investment contracts

Product description: the financial liability represents the amounts due to unit holders.

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.

Derivative instruments: product description, 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 that is 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 LIBOR (or equivalent) curve for the currency of the instrument. As described in Note 22d, the fair value of uncollateralized and partially collateralized derivatives is then adjusted by CVA, DVA and FVA as applicable, to reflect an estimation of the effect of counterparty credit risk, UBS's own credit risk and funding costs and benefits.

Interest rate contracts

Product description: interest rate swap contracts include interest rate swaps, basis swaps, cross-currency swaps, inflation swaps and interest rate forwards, often referred to as forward-rate agreements (FRA). Interest rate option contracts include caps and floors, swaptions, swaps with complex payoff profiles and other more complex interest rate options.

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, FRA 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. The volatility and correlation inputs within the models are implied from market data based on market-observed prices for standard option instruments trading within the market. Option models used to value more exotic products have a number of model parameter inputs that require calibration to enable the exotic model to price standard option instruments to the price levels observed in the market. When the maturity of the 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 as well as more exotic products. In most cases, there are active and observable markets for the standard market instruments that form the inputs for yield curve models as well as the financial instruments from which volatility and correlation inputs are derived. Exotic options for which appropriate volatility or correlation input levels cannot be implied from observable market data are classified as Level 3. Interest rate swap or option contracts are classified as Level 3 when the term exceeds standard market observable quotes.

Note 22 Fair value measurement (continued)

Credit derivative contracts

Product description: a credit derivative is a financial instrument that transfers credit risk related to a single underlying entity, a portfolio of underlying entities or a pool of securitized referenced assets. Credit derivative products include credit default swaps (CDS) on single names, indices, bespoke portfolios and securitized products, plus first to default swaps and certain total return swaps (TRS).

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. Correlation is an additional input for certain portfolio credit derivatives. Asset-backed credit derivatives are valued using a similar valuation technique to the underlying security with an adjustment to reflect the funding differences between cash and synthetic form. Inputs include prepayment rates, default rates, loss severity, discount margin / rate.

Fair value hierarchy classification: single entity and portfolio credit derivative contracts are classified as Level 2 when credit spreads, recovery rates and correlations 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.

Foreign exchange contracts

Product description: this includes open spot and forward foreign exchange (FX) contracts and OTC FX option contracts. OTC FX option contracts include standard call and put options, options with multiple exercise dates, path-dependent options, options with averaging features, options with discontinuous payoff characteristics, options on a number of underlying FX rates and multi-dimensional FX option contracts, which have a dependency on multiple FX pairs.

Valuation: open spot 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. 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. Inputs to the option valuation models include spot FX rates, FX forward points, FX volatilities, interest rate yield curves, interest rate volatilities and correlations. The inputs for volatility and correlation are implied through the calibration of observed prices for standard option contracts trading within the market. 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 both 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. OTC FX option contracts classified as Level 3 include multi-dimensional FX options and long-dated FX exotic option contracts where there is no active market from which to derive volatility or correlation inputs. The inputs used to value these OTC FX option contracts are calculated using consensus pricing services without an underlying principal market, historical asset prices or by extrapolation.

Equity / index contracts

Product description: equity / index contracts are equity forward contracts and equity option contracts. Equity option contracts include market standard single or basket stock or index call and put options as well as equity option contracts with more complex features.

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 using 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.

Note 22 Fair value measurement (continued)

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

Product description: commodity derivative contracts include forward, swap and option contracts on individual commodities and on commodity indices.

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.

→ **Refer to Note 12 for more information on derivative instruments**

d) Valuation adjustments

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. Valuation adjustments are an important component of fair value for assets and liabilities that are measured using valuation techniques. Such adjustments are applied to reflect uncertainties within the fair value measurement process, to adjust for an identified model simplification or to incorporate an aspect of fair value that requires an overall portfolio assessment rather than an evaluation based on an individual instrument level characteristic.

Day-1 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. These day-1 profit or loss reserves are reflected, where appropriate, as valuation adjustments.

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

Deferred day-1 profit or loss related to financial instruments other than financial assets available for sale is released into *Net trading income* when pricing of equivalent products or the underlying parameters become observable or when the transaction is closed out.

Deferred day-1 profit or loss related to financial assets available for sale is released into *Other comprehensive income* when pricing of equivalent products or the underlying parameters become observable and is released into *Other income* when the assets are sold.

Deferred day-1 profit or loss

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Balance at the beginning of the year	371	421	480
Profit / (loss) deferred on new transactions	242	254	268
(Profit) / loss recognized in the income statement	(274)	(290)	(321)
(Profit) / loss recognized in other comprehensive income		(23)	
Foreign currency translation	(10)	9	(6)
Balance at the end of the year	329	371	421

Note 22 Fair value measurement (continued)

Own credit

In addition to considering the valuation of the derivative risk component, the valuation of financial liabilities designated at fair value also requires consideration of the funded component and specifically the own credit component of fair value. Own credit risk is reflected in the valuation of UBS's fair value option liabilities where this component is considered relevant for valuation purposes by UBS's counterparties and other market participants. However, own credit risk is not reflected in the valuation of UBS's liabilities that are fully collateralized or for other obligations for which it is established market practice not to include an own credit component.

The own credit presentation requirements of IFRS 9, *Financial Instruments,* were adopted as of 1 January 2016. From this date onward, changes in the fair value of financial liabilities designated at fair value through profit or loss related to own credit have been recognized in *Other comprehensive income* directly within *Retained earnings.* As UBS AG does not hedge changes in own credit arising on financial liabilities designated at fair value, presenting own credit within *Other comprehensive income* does not create or increase an accounting mismatch in the income statement. The unrealized and any realized own credit recognized in *Other comprehensive income* will not be reclassified to the income statement in future periods. Comparative period information was not restated.

Own credit is estimated using an own credit adjustment (OCA) curve, which incorporates observable market data, including market-observed secondary prices for UBS senior debt, UBS credit default swap (CDS) spreads and senior debt curves of peers. The table below summarizes the effects of own credit adjustments related to financial liabilities designated at fair value. The change in unrealized own credit for the period ended consists of changes in fair value that are attributable to the change in UBS'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 own credit adjustment is repurchased prior to the contractual maturity date. Life-to-date amounts reflect the cumulative unrealized change since initial recognition.

→ **Refer to Note 18 for more information on financial liabilities designated at fair value**

Own credit adjustments on financial liabilities designated at fair value

	For the year ended		
	Included in Other comprehensive income		Included in Net trading income
CHF million	31.12.17	31.12.16	31.12.15
Recognized during the year:			
Realized gain / (loss)	21	18	
Unrealized gain / (loss)	(333)	(138)	553
Total gain / (loss), before tax	(312)	(120)	

	As of		
CHF million	31.12.17	31.12.16	31.12.15
Recognized on the balance sheet as of the end of the year:			
Unrealized life-to-date gain / (loss)	(195)	141	287

Credit valuation adjustments

In order to measure the fair value of OTC derivative instruments, including funded derivative instruments that are classified as *Financial assets designated at fair value,* credit valuation adjustments (CVA) are necessary 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 to that counterparty, and is dependent on the expected future value of exposures, default probabilities and recovery rates, applicable collateral or netting arrangements, break clauses and other contractual factors.

Funding valuation adjustments

Funding valuation adjustments (FVA) 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 LIBOR to OCA using the CVA framework.

An FVA is also applied to collateralized derivative assets in cases where the collateral cannot be sold or repledged.

Debit valuation adjustments

A debit valuation adjustment (DVA) is estimated to incorporate own credit in the valuation of derivatives, effectively consistent with the CVA framework. DVA is 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'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.

Valuation adjustments on financial instruments

	As of	
Life-to-date gain / (loss), CHF million	31.12.17	31.12.16
Credit valuation adjustments[1]	(113)	(216)
Funding valuation adjustments	(49)	(106)
Debit valuation adjustments	2	5
Other valuation adjustments	(715)	(713)
of which: liquidity	*(465)*	*(439)*
of which: model uncertainty	*(250)*	*(274)*

1 Amounts do not include reserves against defaulted counterparties.

e) Transfers between Level 1 and Level 2

The amounts provided below reflect transfers between Level 1 and Level 2 for instruments that were held for the entire reporting period.

Assets totaling approximately CHF 0.8 billion, which were mainly comprised of financial assets designated at fair value, largely corporate and municipal bonds, and financial assets held for trading, predominantly investment fund units as well as corporate and municipal bonds, were transferred from Level 2 to Level 1 during 2017, generally due to increased levels of trading activity observed within the market. Transfers of financial liabilities from Level 2 to Level 1 during 2017 were not significant.

Assets totaling approximately CHF 0.3 billion, which were mainly comprised of financial assets available for sale, largely government bonds, and financial assets held for trading, predominantly investment fund units and equity instruments, were transferred from Level 1 to Level 2 during 2017, generally due to diminished levels of trading activity observed within the market. Transfers of financial liabilities from Level 1 to Level 2 during 2017 were not significant.

Note 22 Fair value measurement (continued)

f) 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 significant inputs used in the valuation technique that are considered unobservable and a range of values for those unobservable inputs. Several inputs disclosed in prior periods are not disclosed in the table below because they are not considered significant to the respective valuation technique as of 31 December 2017.

The range of values represents the highest- and lowest-level input used in the valuation techniques. Therefore, the range does not reflect the level of uncertainty regarding a particular input, but rather the different underlying characteristics of the relevant assets and liabilities. 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. Further, the ranges of unobservable inputs may differ across other financial institutions due to 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				31.12.17			31.12.16			
CHF billion	31.12.17	31.12.16	31.12.17	31.12.16	Valuation technique(s)	Significant unobservable input(s)[1]	low	high	weighted average[2]	low	high	weighted average[2]	unit[1]
Financial assets held for trading / Trading portfolio liabilities, Financial assets / liabilities designated at fair value and Financial assets available for sale													
Corporate and municipal bonds	*0.6*	*0.6*	*0.0*	*0.0*	Relative value to market comparable	Bond price equivalent	0	133	92	0	128	88	points
Traded loans, loans designated at fair value, loan commitments and guarantees	*1.7*	*2.0*	*0.0*	*0.0*	Relative value to market comparable	Loan price equivalent	50	102	98	39	103	94	points
					Discounted expected cash flows	Credit spread	23	124		71	554		basis points
					Market comparable and securitization model	Discount margin	0	14	2	0	16	2	%
Investment fund units[3]	*0.7*	*0.2*	*0.0*	*0.0*	Relative value to market comparable	Net asset value							
Equity instruments[3]	*0.5*	*0.4*	*0.1*	*0.1*	Relative value to market comparable	Price							
Structured (reverse) repurchase agreements	*0.2*	*0.6*	*0.0*	*0.3*	Discounted expected cash flows	Funding spread	15	195		15	195		basis points
Issued and over-the-counter debt instruments[4]			*12.8*	*10.7*									
Replacement values													
Interest rate contracts	*0.1*	*0.3*	*0.2*	*0.5*	Option model	Volatility of interest rates	26	229		26	176		%
Credit derivative contracts	*0.5*	*1.3*	*0.6*	*1.5*	Discounted expected cash flows	Credit spreads	6	550		0	791		basis points
						Bond price equivalent	2	102		3	100		points
Equity / index contracts	*0.7*	*0.7*	*1.9*	*1.9*	Option model	Equity dividend yields	0	13		0	15		%
						Volatility of equity stocks, equity and other indices	0	172		0	150		%
						Equity-to-FX correlation	(39)	70		(45)	82		%
						Equity-to-equity correlation	(50)	97		12	98		%

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 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 derivative contracts as this would not be meaningful. 3 The range of inputs is not disclosed due to the dispersion of values given the diverse nature of the investments. 4 Valuation techniques, significant unobservable inputs and the respective input ranges for issued debt instruments and over-the-counter debt instruments are the same as the equivalent derivative or structured financing instruments presented elsewhere 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, including information to facilitate an understanding of factors that give rise to the input ranges shown. Relationships between observable and unobservable inputs have not been included in the summary below.

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 LIBOR). Bond prices are expressed as points of the nominal, where 100 represents a fair value equal to the nominal value (i.e., par).

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 that 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, 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 in measuring 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 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 LIBOR, 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 CDS 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 (e.g., approximating the risk of LIBOR) and the upper end of the range representing greater levels of credit risk.

Discount margin (DM)

The DM spread represents the discount rates used 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., LIBOR) 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 can fund itself on an unsecured basis, but provide an estimate of where UBS can source and deploy secured funding with counterparties for a given type of collateral. The funding spreads are expressed in terms of basis points over or under LIBOR, 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.

Note 22 Fair value measurement (continued)

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. The minimum level of volatility is 0% and there is no theoretical maximum. 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.

The volatility of interest rates reflects the range of unobservable volatilities across different currencies and related underlying interest rate 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. The volatility of equity stocks, equity and other indices reflects the range of underlying stock volatilities.

Correlation

Correlation measures the inter relationship 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 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, due to the range of different payoff features within such instruments.

Equity-to-FX correlation is important for equity options based on a currency different than the currency of the underlying stock. Equity-to-equity correlation is particularly important for complex options that incorporate, in some manner, different equities in the projected payoff. The closer the correlation is to 100%, the more related one equity is to another. For example, equities with a very high correlation could be from different parts of the same corporate structure.

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 represents the most significant parameter in determining fair value for instruments that are sensitive to an equity forward price.

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

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

The table shown presents the favorable and unfavorable effects for each class of financial assets and liabilities for which the potential change in fair value is considered significant. The sensitivity data presented represent an estimation of valuation uncertainty based on reasonably possible alternative values for Level 3 inputs at the balance sheet date and do not represent the estimated effect of stress scenarios. Typically, these financial assets and liabilities are sensitive to a combination of inputs from Levels 1–3. Although well-defined interdependencies may exist between Levels 1–2 and Level 3 parameters (e.g., between interest rates, which are generally Level 1 or Level 2, and prepayments, which are generally Level 3), these have not been incorporated in the table. Further, direct inter relationships between the Level 3 parameters discussed below are not a significant element of the valuation uncertainty.

Sensitivity data are 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 are determined at a product or parameter level and then aggregated assuming no diversification benefit. The calculated sensitivity is applied to both the outright position and any related Level 3 hedge. The main interdependencies across different Level 3 products to a single unobservable input parameter have been included in the basis of netting exposures within the calculation. Aggregation without allowing for diversification involves the simple summation of individual results with the total sensitivity, therefore representing the effect of all unobservable inputs that, if moved to a reasonably possible favorable or unfavorable level at the same time, would result in a significant change in the valuation. 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. UBS AG believes that, while there are diversification benefits within the portfolios representing these sensitivity numbers, they are not significant to this analysis.

Sensitivity of fair value measurements to changes in unobservable input assumptions[1]

	31.12.17		31.12.16	
CHF million	Favorable changes[2]	Unfavorable changes[2]	Favorable changes[2]	Unfavorable changes[2]
Traded loans, loans designated at fair value, loan commitments and guarantees	79	(11)	80	(8)
Asset-backed securities	19	(15)	23	(29)
Equity instruments	79	(53)	85	(66)
Interest rate derivative contracts, net	13	(26)	30	(30)
Credit derivative contracts, net	64	(99)	128	(174)
Foreign exchange derivative contracts, net	12	(6)	18	(9)
Equity / index derivative contracts, net	190	(193)	142	(143)
Structured (reverse) repurchase agreements	34	(34)	43	(46)
Other	13	(13)	12	(12)
Total	502	(450)	560	(517)

1 Effective 31 December 2017, the sensitivity of issued and over-the-counter debt instruments is reported with the equivalent derivative or structured financing instrument. Prior-period information has been restated to reflect this change in presentation. 2 Of the total favorable changes, CHF 78 million as of 31 December 2017 (31 December 2016: CHF 75 million) related to financial assets available for sale. Of the total unfavorable changes, CHF 51 million as of 31 December 2017 (31 December 2016: CHF 55 million) related to financial assets available for sale.

h) Level 3 instruments: movements during the period

Significant changes in Level 3 instruments

The table on the following pages presents additional information about 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 within 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.

Assets transferred into and out of Level 3 totaled CHF 1.4 billion and CHF 1.1 billion, respectively. Transfers into Level 3 were primarily comprised of investment fund units and equity / index contracts, due to decreased observability of the respective net asset value and equity volatility inputs. Transfers out of Level 3 were primarily comprised of credit derivative and equity / index contracts, reflecting increased observability of the respective credit spread and equity volatility inputs.

Liabilities transferred into and out of Level 3 totaled CHF 1.8 billion and CHF 3.2 billion, respectively. Transfers into Level 3 were primarily comprised of equity-linked issued debt instruments and equity / index contracts, due to decreased observability of the respective equity volatility inputs used to determine the fair value of the options embedded in these structures. Transfers out of Level 3 were primarily comprised of equity-linked issued debt instruments and credit derivative contracts resulting from changes in the availability of the observable equity volatility and credit spread inputs used to determine the fair value of the options embedded in these structures.

Note 22 Fair value measurement (continued)

Movements of Level 3 instruments

		Total gains / (losses) included in comprehensive income								
CHF billion	**Balance as of 31 December 2015**	Net interest income, net trading income and other income	*of which: related to Level 3 instruments held at the end of the reporting period*	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation
Financial assets held for trading	**2.1**	**0.1**	***0.0***	**0.9**	**(6.8)**	**4.1**	**0.0**	**1.7**	**(0.3)**	**(0.1)**
of which:										
Corporate and municipal bonds	*0.7*	*0.2*	*0.1*	*0.6*	*(0.8)*	*0.0*	*0.0*	*0.1*	*(0.1)*	*(0.1)*
Loans	*0.8*	*(0.1)*	*(0.1)*	*0.1*	*(5.2)*	*4.1*	*0.0*	*1.1*	*(0.2)*	*0.0*
Other	*0.6*	*0.0*	*0.0*	*0.2*	*(0.8)*	*0.0*	*0.0*	*0.5*	*0.0*	*0.0*
Financial assets designated at fair value	**3.3**	**(0.4)**	***(0.1)***	**0.1**	**0.0**	**0.7**	**(1.9)**	**0.5**	**(0.1)**	**0.0**
of which:										
Loans (including structured loans)	*1.7*	*(0.4)*	*(0.1)*	*0.0*	*0.0*	*0.6*	*(1.0)*	*0.4*	*(0.1)*	*0.0*
Structured reverse repurchase and securities borrowing agreements	*1.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.9)*	*0.0*	*0.0*	*0.0*
Other	*0.1*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Financial assets available for sale	**0.7**	**0.0**	***0.0***	**0.1**	**(0.1)**	**0.0**	**0.0**	**0.0**	**(0.1)**	**0.0**
Positive replacement values	**2.9**	**(0.4)**	***(0.5)***	**0.0**	**0.0**	**1.0**	**(1.9)**	**1.3**	**(0.4)**	**0.0**
of which:										
Credit derivative contracts	*1.3*	*(0.2)*	*(0.1)*	*0.0*	*0.0*	*0.6*	*(0.7)*	*0.4*	*(0.1)*	*0.0*
Equity / index contracts	*1.0*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.4*	*(0.6)*	*0.2*	*(0.2)*	*0.0*
Other	*0.6*	*(0.1)*	*(0.3)*	*0.0*	*0.0*	*0.1*	*(0.6)*	*0.7*	*(0.1)*	*0.0*
Negative replacement values	**3.3**	**0.6**	***0.5***	**0.0**	**0.0**	**1.5**	**(2.1)**	**1.2**	**(0.6)**	**0.0**
of which:										
Credit derivative contracts	*1.3*	*0.5*	*0.6*	*0.0*	*0.0*	*0.2*	*(0.7)*	*0.3*	*(0.1)*	*0.0*
Equity / index contracts	*1.4*	*0.3*	*0.1*	*0.0*	*0.0*	*1.0*	*(0.8)*	*0.2*	*(0.3)*	*0.0*
Other	*0.6*	*(0.2)*	*(0.2)*	*0.0*	*0.0*	*0.3*	*(0.6)*	*0.7*	*(0.2)*	*0.0*
Financial liabilities designated at fair value	**10.7**	**1.0**	***0.6***	**0.0**	**0.0**	**5.0**	**(3.5)**	**0.9**	**(2.9)**	**(0.1)**
of which:										
Issued debt instruments	*9.3*	*0.9*	*0.6*	*0.0*	*0.0*	*4.1*	*(2.5)*	*0.8*	*(2.9)*	*(0.1)*
Over-the-counter debt instruments	*0.8*	*0.1*	*0.0*	*0.0*	*0.0*	*0.8*	*(0.6)*	*0.1*	*0.0*	*0.0*
Structured repurchase agreements	*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*(0.4)*	*0.0*	*0.0*	*0.0*

1 Total Level 3 assets as of 31 December 2017 were CHF 5.5 billion (31 December 2016: CHF 6.9 billion). Total Level 3 liabilities as of 31 December 2017 were CHF 15.7 billion (31 December 2016: CHF 15.1 billion).

	Total gains / (losses) included in comprehensive income									
Balance as of 31 December 2016	Net interest income, net trading income and other income	*of which: related to Level 3 instruments held at the end of the reporting period*	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation	Balance as of 31 December 2017[1]
1.7	(0.1)	*0.0*	0.7	(3.8)	2.7	0.0	0.9	(0.2)	0.0	2.0
0.6	*0.1*	*0.1*	*0.4*	*(0.7)*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.6*
0.7	*0.0*	*(0.1)*	*0.1*	*(2.8)*	*2.7*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.5*
0.4	*(0.1)*	*0.0*	*0.2*	*(0.3)*	*0.0*	*0.0*	*0.8*	*0.0*	*0.0*	*0.9*
2.1	0.2	*0.2*	0.0	0.0	0.4	(1.2)	0.1	(0.1)	0.0	1.4
1.2	*0.2*	*0.2*	*0.0*	*0.0*	*0.1*	*(0.6)*	*0.0*	*(0.1)*	*0.0*	*0.8*
0.6	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*(0.6)*	*0.0*	*0.0*	*0.0*	*0.2*
0.2	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.2*	*0.0*	*0.1*	*0.0*	*0.0*	*0.5*
0.5	0.0	*0.0*	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5
2.5	(0.3)	*(0.4)*	0.0	0.0	0.9	(1.2)	0.4	(0.8)	0.0	1.5
1.3	*(0.2)*	*(0.2)*	*0.0*	*0.0*	*0.0*	*(0.3)*	*0.0*	*(0.4)*	*0.0*	*0.5*
0.7	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.9*	*(0.7)*	*0.3*	*(0.4)*	*0.0*	*0.7*
0.5	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*	*(0.2)*	*0.1*	*(0.1)*	*0.0*	*0.3*
4.0	0.2	*0.1*	0.0	0.0	0.7	(1.4)	0.5	(1.3)	0.1	2.8
1.5	*0.0*	*(0.2)*	*0.0*	*0.0*	*0.1*	*(0.4)*	*0.2*	*(0.8)*	*0.0*	*0.6*
1.9	*0.3*	*0.2*	*0.0*	*0.0*	*0.6*	*(0.6)*	*0.2*	*(0.5)*	*0.0*	*1.9*
0.6	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.4)*	*0.1*	*(0.1)*	*0.0*	*0.3*
11.0	1.4	*0.9*	0.0	0.0	6.7	(5.7)	1.3	(1.8)	(0.1)	12.8
9.7	*1.4*	*0.9*	*0.0*	*0.0*	*5.2*	*(4.9)*	*1.2*	*(1.6)*	*(0.1)*	*10.9*
1.1	*0.0*	*0.0*	*0.0*	*0.0*	*1.5*	*(0.7)*	*0.1*	*0.0*	*0.0*	*1.9*
0.3	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*(0.2)*	*0.0*	*0.0*

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Note 22 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

	31.12.17					31.12.16				
	Carrying value	Fair value				Carrying value	Fair value			
CHF billion	Total	Total	Level 1	Level 2	Level 3	Total	Total	Level 1	Level 2	Level 3
Assets										
Cash and balances with central banks	87.8	87.8	87.8	0.0	0.0	107.8	107.8	107.8	0.0	0.0
Due from banks	13.7	13.7	13.1	0.6	0.0	13.1	13.1	12.5	0.7	0.0
Cash collateral on securities borrowed	12.4	12.4	0.0	12.4	0.0	15.1	15.1	0.0	15.1	0.0
Reverse repurchase agreements	77.2	77.2	0.0	74.8	2.5	66.2	66.2	0.0	62.5	3.7
Cash collateral receivables on derivative instruments	23.4	23.4	0.0	23.4	0.0	26.7	26.7	0.0	26.7	0.0
Loans	321.7	323.1	0.0	178.9	144.3	307.0	310.4	0.0	170.0	140.4
Financial assets held to maturity	9.2	9.0	6.3	2.7	0.0	9.3	9.1	6.3	2.8	0.0
Other assets	28.0	28.0	0.0	28.0	0.0	18.5	18.5	0.0	18.5	0.0
Liabilities										
Due to banks	7.5	7.5	6.5	1.1	0.0	10.6	10.6	8.8	1.9	0.0
Cash collateral on securities lent	1.8	1.8	0.0	1.8	0.0	2.8	2.8	0.0	2.8	0.0
Repurchase agreements	15.3	15.3	0.0	15.3	0.0	6.6	6.6	0.0	6.6	0.0
Cash collateral payables on derivative instruments	30.2	30.2	0.0	30.2	0.0	35.5	35.5	0.0	35.5	0.0
Due to customers	447.1	448.8	0.0	448.8	0.0	450.2	450.6	0.0	450.6	0.0
Debt issued	104.8	107.0	0.0	102.7	4.3	79.0	81.1	0.0	78.5	2.6
Other liabilities	37.1	37.1	0.0	37.1	0.0	39.0	39.0	0.0	39.0	0.0

The fair values included in the table above were calculated for disclosure purposes only. The valuation techniques and assumptions described below relate only to the fair value of UBS's financial instruments not measured at fair value. Other institutions may use different methods and assumptions for their fair value estimation, 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'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. The following financial instruments not measured at fair value had remaining maturities of three months or less as of 31 December 2017: 100% of cash and balances with central banks, 95% of amounts due from banks, 100% of cash collateral on securities borrowed, 81% of reverse repurchase agreements, 100% of cash collateral receivables on derivative instruments, 51% of loans, 0% of financial assets held to maturity, 86% of amounts due to banks, 100% of cash collateral on securities lent, 96% of repurchase agreements, 100% of cash collateral payables on derivative instruments, 99% of amounts due to customers and 13% of debt issued.
- The fair value estimates for repurchase and reverse repurchase agreements with variable and fixed interest rates, for all maturities, include the valuation of the interest rate component of these instruments. Credit and debit valuation adjustments have not been included in the valuation due to the short-term nature of these instruments.

Note 23 Restricted and transferred financial assets

This Note provides information on restricted financial assets (Note 23a), transfers of financial assets (Note 23b and 23c) and financial assets that are received as collateral with the right to resell or repledge these assets (Note 23d).

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, against loans from Swiss mortgage institutions and in connection with the issuance of covered bonds. UBS AG generally enters into repurchase and securities lending arrangements 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. Pledged mortgage loans serve as collateral for existing liabilities against Swiss central mortgage institutions and for existing covered bond issuances of CHF 12,457 million as of 31 December 2017 (31 December 2016: CHF 14,137 million).

Other restricted financial assets include assets protected under client asset segregation rules, assets held by UBS AG's insurance entities to back related liabilities to the policy holders, assets held in certain jurisdictions to comply with explicit minimum local asset maintenance requirements and assets held in consolidated bankruptcy remote entities such as certain investment funds and other structured entities. The carrying value of the liabilities associated with these other restricted financial assets is generally equal to the carrying value of the assets, with the exception of assets held to comply with local asset maintenance requirements, for which the associated liabilities are greater.

UBS AG and its subsidiaries are, in certain cases, subject to regulatory requirements that affect the transfer of dividends and capital within UBS AG. Certain regulated subsidiaries are required to maintain capital and / or liquidity to comply with local regulations and may be subject to prudential limitations by regulators that limit the amount of funds that they can distribute or otherwise transfer. Supervisory authorities generally have discretion to impose higher requirements or to otherwise limit the activities of subsidiaries. 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 that affects UBS Americas Holding LLC, and may limit the ability of the entity to engage in new activities or take capital actions based on the results of those tests. 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.

→ **Refer to "Financial and regulatory key figures for our significant regulated subsidiaries and sub-groups" in the "Significant regulated subsidiary and sub-group information" section of this report for financial information on significant regulated subsidiaries of the group**

Restricted financial assets

CHF million	31.12.17	31.12.16
Financial assets pledged as collateral		
Trading portfolio assets	46,257	36,549
of which: assets pledged as collateral that may be sold or repledged by counterparties	*35,363*	*30,260*
Loans[1]	17,631	19,887
Financial assets designated at fair value	170	776
of which: assets pledged as collateral that may be sold or repledged by counterparties	*170*	*636*
Total financial assets pledged as collateral[2]	64,059	57,213
Other restricted financial assets		
Due from banks	3,280	2,625
Reverse repurchase agreements	0	658
Trading portfolio assets	12,273	12,129
Cash collateral receivables on derivative instruments	3,822	4,329
Loans	1,256	958
Financial assets designated at fair value	2,225	0
Financial assets available for sale	246	247
Other	95	5,195
Total other restricted financial assets	23,196	26,141
Total financial assets pledged and other restricted financial assets	87,255	83,354

1 All related to mortgage loans that serve as collateral for existing liabilities against Swiss central mortgage institutions and for existing covered bond issuances. Of these pledged mortgage loans, approximately CHF 2.1 billion for 31 December 2017 (31 December 2016: approximately CHF 1.9 billion) could be withdrawn or used for future liabilities or covered bond issuances without breaching existing collateral requirements. 2 Does not include assets placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes (31 December 2017: CHF 2.5 billion; 31 December 2016: CHF 4.7 billion).

Note 23 Restricted and transferred financial assets (continued)

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

CHF million	31.12.17		31.12.16	
	Carrying value of transferred assets	Carrying value of associated liabilities recognized on-balance sheet	Carrying value of transferred assets	Carrying value of associated liabilities recognized on-balance sheet
Trading portfolio assets that may be sold or repledged by counterparties	35,363	12,942	30,260	11,260
relating to securities lending and repurchase agreements in exchange for cash received	*13,145*	*12,942*	*11,410*	*11,260*
relating to securities lending agreements in exchange for securities received	*21,137*	*0*	*17,341*	*0*
relating to other financial asset transfers	*1,081*	*0*	*1,509*	*0*
Financial assets designated at fair value that may be sold or repledged by counterparties	170	169	636	630
Total financial assets transferred	35,533	13,111	30,896	11,890

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 3e for more information on repurchase agreements and securities lending agreements**

As of 31 December 2017, approximately one-third of the transferred financial assets were trading portfolio assets transferred in exchange for cash, in which case the associated recognized liability represents the amount to be repaid to counterparties. For securities lending and repurchase agreements, a haircut between 0% and 15% is generally applied to the transferred assets, which results in associated liabilities having a carrying value below the carrying value of the transferred assets. The counterparties to the associated liabilities presented 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 value of associated liabilities is not provided 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 2017 and as of 31 December 2016.

Note 23 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 transfer agreement or from a separate agreement with the counterparty or a third party entered into in connection with the transfer.

Purchased and retained interests in securitization vehicles

In cases where UBS AG has transferred assets into a securitization vehicle and retained or purchased interests therein, UBS AG has a continuing involvement in those transferred assets.

As of 31 December 2017, the majority of the retained continuing involvement related to securitization positions held in the trading portfolio, primarily collateralized debt obligations, US commercial mortgage-backed securities and residential mortgage-backed securities. The fair value and carrying amount of UBS AG's continuing involvement related to these purchased and retained interests was CHF 8 million as of 31 December 2017, and UBS AG recognized gains of CHF 4 million in 2017 related to these positions. As of 31 December 2017, life-to-date losses of CHF 1,170 million were recorded related to the positions held as of 31 December 2017.

As of 31 December 2016, the fair value and carrying amount of UBS AG's continuing involvement related to purchased and retained interests in securitization vehicles was CHF 5 million, and UBS AG recognized gains of CHF 11 million in 2016 related to these positions. As of 31 December 2016, life-to-date losses of CHF 1,173 million were recorded related to the positions held as of 31 December 2016.

The maximum exposure to loss related to purchased and retained interests in securitization structures was CHF 14 million as of 31 December 2017 compared with CHF 28 million as of 31 December 2016.

Undiscounted cash outflows of CHF 7 million may be payable to the transferee in future periods as a consequence of holding the purchased and retained interests. The earliest period in which payment may be required is less than one month.

d) Off-balance sheet assets received

The table below presents assets received from third parties that can be sold or repledged, 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

CHF million	31.12.17	31.12.16
Fair value of assets received that can be sold or repledged	469,132	429,327
received as collateral under reverse repurchase, securities borrowing and lending arrangements, derivative transactions and other transactions [1]	*462,460*	*423,524*
received in unsecured borrowings	*6,672*	*5,803*
Thereof sold or repledged[2]	337,514	316,324
in connection with financing activities	*293,295*	*277,341*
to satisfy commitments under short sale transactions	*30,463*	*22,825*
in connection with derivative and other transactions [1]	*13,756*	*16,158*

1 Includes securities received as initial margin from its clients that UBS AG is required to remit to CCPs, brokers and deposit banks through its exchange-traded derivative (ETD) clearing and execution services.
2 Does not include off-balance sheet securities (31 December 2017: CHF 28.1 billion; 31 December 2016: CHF 30.9 billion) 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 24 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 (OTC) derivatives and exchange-traded derivatives (ETD). 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 counterparty to the transaction is unable to fulfill its contractual obligations. The right of setoff is a legal right to settle or otherwise eliminate all or a portion of an amount due by applying an amount receivable from the same counterparty against it, thus reducing credit exposure.

The table below provides a summary of financial assets subject to offsetting, enforceable master netting arrangements and similar agreements, as well as financial collateral received to mitigate credit exposures for these financial assets. The gross financial assets of UBS AG that are subject to offsetting, enforceable netting arrangements and similar agreements are reconciled to the net amounts presented within the associated balance sheet line, after giving effect to financial liabilities with the same counterparties that have been offset on the balance sheet and other financial assets not subject to an enforceable netting arrangement or similar agreement. Further, related amounts for financial liabilities and collateral received that are not offset on the balance sheet are shown to arrive at financial assets after consideration of netting potential.

UBS AG engages in a variety of counterparty credit mitigation strategies in addition to netting and collateral arrangements. Therefore, the net amounts presented in the tables on this and on the next page do not purport to represent UBS AG's actual credit exposure.

Financial assets subject to offsetting, enforceable master netting arrangements and similar agreements

	Assets subject to netting arrangements								
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet[3]			Assets not subject to netting arrangements[4]	Total assets	
As of 31.12.17, CHF billion	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
Cash collateral on securities borrowed	3.7	0.0	3.7	(0.6)	(3.1)	0.0	8.7	8.7	12.4
Reverse repurchase agreements	140.5	(76.8)	63.7	(6.9)	(56.8)	0.0	13.5	13.5	77.2
Positive replacement values	114.3	(2.1)	112.2	(83.5)	(20.7)	8.0	6.0	14.0	118.2
Cash collateral receivables on derivative instruments[1]	21.6	(1.0)	20.6	(11.7)	(0.7)	8.1	2.9	11.0	23.4
Financial assets designated at fair value	0.4	0.0	0.4	0.0	(0.2)	0.2	58.1	58.4	58.6
Total assets	280.5	(79.9)	200.6	(102.7)	(81.6)	16.4	89.2	105.6	289.9
As of 31.12.16, CHF billion									
Cash collateral on securities borrowed	4.2	0.0	4.2	(0.9)	(3.3)	0.0	10.9	10.9	15.1
Reverse repurchase agreements	128.4	(71.5)	56.9	(2.1)	(54.8)	0.0	9.3	9.3	66.2
Positive replacement values	152.3	(2.5)	149.8	(113.1)	(26.7)	10.0	8.6	18.6	158.4
Cash collateral receivables on derivative instruments[1]	37.2	(15.1)	22.1	(14.2)	(1.0)	7.0	4.5	11.5	26.7
Financial assets designated at fair value	1.7	0.0	1.7	0.0	(0.6)	1.1	63.3	64.4	65.0
Total assets	**323.8**	**(89.1)**	**234.7**	**(130.3)**	**(86.3)**	**18.1**	**96.7**	**114.8**	**331.5**

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 ETD that are economically settled on a daily basis. Effective 3 January 2017, interest rate swaps and credit derivatives transacted with the Chicago Mercantile Exchange (CME) were legally converted from the previous collateral model to a settlement model resulting in a derecognition of the associated assets and liabilities. Previously, UBS applied IAS 32 netting principles to offset the fair value of CME interest rate swaps with the associated variation margin. Gross cash collateral receivables and payables on derivative instruments and corresponding IAS 32 netting, decreased by approximately CHF 11.4 billion as of 31 December 2017, with no change to net cash collateral receivables and payables on derivative instruments recognized and presented on the balance sheet. 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 on the following page. 3 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped by the relevant netting agreement 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.

Note 24 Offsetting financial assets and financial liabilities (continued)

The table below provides a summary of financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements, as well as financial collateral pledged to mitigate credit exposures for these financial liabilities. The gross financial liabilities of UBS AG that are subject to offsetting, enforceable netting arrangements and similar agreements are reconciled to the net amounts presented within the associated balance sheet line, after giving effect to financial assets with the same counterparties that have been offset on the balance sheet and other financial liabilities not subject to an enforceable netting arrangement or similar agreement. Further, related amounts for financial assets and collateral pledged that are not offset on the balance sheet are shown to arrive at financial liabilities after consideration of netting potential.

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 31.12.17, CHF billion	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
Cash collateral on securities lent	1.7	0.0	1.7	(0.6)	(1.2)	0.0	0.1	0.1	1.8
Repurchase agreements	88.4	(76.8)	11.6	(6.9)	(4.7)	0.0	3.6	3.6	15.3
Negative replacement values	111.4	(2.1)	109.4	(83.5)	(15.0)	10.9	6.8	17.7	116.1
Cash collateral payables on derivative instruments[1]	29.5	(1.0)	28.4	(16.3)	(1.2)	11.0	1.8	12.8	30.2
Financial liabilities designated at fair value	1.9	0.0	1.9	0.0	(0.1)	1.8	52.3	54.1	54.2
Total liabilities	233.0	(79.9)	153.0	(107.3)	(22.1)	23.7	64.6	88.3	217.6
As of 31.12.16, CHF billion									
Cash collateral on securities lent	2.6	0.0	2.6	(0.9)	(1.7)	0.0	0.2	0.2	2.8
Repurchase agreements	76.7	(71.5)	5.2	(2.1)	(3.1)	0.0	1.4	1.4	6.6
Negative replacement values	146.3	(2.5)	143.9	(113.1)	(16.6)	14.2	10.0	24.2	153.8
Cash collateral payables on derivative instruments[1]	48.5	(15.1)	33.4	(20.8)	(1.4)	11.2	2.1	13.3	35.5
Financial liabilities designated at fair value	2.8	0.0	2.8	0.0	(0.2)	2.6	52.2	54.8	55.0
Total liabilities	**276.9**	**(89.1)**	**187.9**	**(137.0)**	**(22.9)**	**28.0**	**65.9**	**93.9**	**253.7**

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 ETD that are economically settled on a daily basis. Effective 3 January 2017, interest rate swaps and credit derivatives transacted with the Chicago Mercantile Exchange (CME) were legally converted from the previous collateral model to a settlement model resulting in a derecognition of the associated assets and liabilities. Previously, UBS applied IAS 32 netting principles to offset the fair value of CME interest rate swaps with the associated variation margin. Gross cash collateral receivables and payables on derivative instruments and corresponding IAS 32 netting, decreased by approximately CHF 11.4 billion as of 31 December 2017, with no change to net cash collateral receivables and payables on derivative instruments recognized and presented on the balance sheet. 2 The logic of the table results in amounts presented in the "Netting with gross assets" column corresponding directly to the amounts presented in the "Netting with gross liabilities" column in the assets table presented on the previous page. 3 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped by the relevant netting agreement 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 25 Measurement categories, credit risk and maturity analysis of financial instruments

a) Measurement categories of financial assets and liabilities

The table below provides information about the carrying amounts of individual classes of financial instruments within the measurement categories of financial assets and liabilities as defined in IAS 39, *Financial Instruments: Recognition and Measurement*. Only those assets and liabilities that are financial instruments as defined in IAS 32, *Financial Instruments: Presentation* are included in the table below, which causes certain balances to differ from those presented on the balance sheet.

→ **Refer to Note 22 for more information on how the fair value of financial instruments is determined**

Measurement categories of financial assets and financial liabilities

CHF million	31.12.17	31.12.16
Financial assets[1]		
Held for trading		
Trading portfolio assets	126,244	92,112
Due to customers[2]	7	12
Debt issued[2]	10	38
Positive replacement values	118,229	158,411
Total	244,489	250,572
Fair value through profit or loss		
Financial assets designated at fair value	58,556	65,024
Other assets	122	131
Total	58,678	65,155
Financial assets at amortized cost		
Cash and balances with central banks	87,775	107,767
Due from banks	13,693	13,125
Cash collateral on securities borrowed	12,393	15,111
Reverse repurchase agreements	77,240	66,246
Cash collateral receivables on derivative instruments	23,434	26,664
Loans[3]	321,718	307,004
Financial assets held to maturity	9,166	9,289
Other assets	27,986	18,519
Total	573,405	563,727
Available for sale		
Financial assets available for sale	8,665	15,676
Total financial assets	885,237	895,131
Financial liabilities		
Held for trading		
Trading portfolio liabilities	30,463	22,825
Negative replacement values	116,134	153,810
Total	146,598	176,635
Fair value through profit or loss		
Financial liabilities designated at fair value	54,202	55,017
Amounts due under unit-linked investment contracts	11,523	9,286
Other liabilities	122	131
Total	65,847	64,434
Financial liabilities at amortized cost		
Due to banks	7,533	10,645
Cash collateral on securities lent	1,789	2,818
Repurchase agreements	15,255	6,612
Cash collateral payables on derivative instruments	30,247	35,472
Due to customers	447,148	450,211
Debt issued	104,759	79,036
Other liabilities	37,064	38,992
Total	643,795	623,786
Total financial liabilities	856,240	864,855

1 As of 31 December 2017, CHF 134 billion of Loans, CHF 0 billion of Due from banks, CHF 2 billion of Reverse repurchase agreements, CHF 7 billion of Financial assets available for sale, CHF 24 billion of Financial assets designated at fair value and CHF 7 billion of Financial assets held to maturity are expected to be recovered or settled after 12 months. As of 31 December 2016, CHF 126 billion of Loans, CHF 0 billion of Due from banks, CHF 1 billion of Reverse repurchase agreements, CHF 10 billion of Financial assets available for sale, CHF 29 billion of Financial assets designated at fair value and CHF 8 billion of Financial assets held to maturity are expected to be recovered or settled after 12 months. 2 Represents the embedded derivative component of structured financial instruments for which the fair value option has not been applied and that is presented within Due to customers and Debt issued on the balance sheet. 3 Includes finance lease receivables of CHF 1.1 billion as of 31 December 2017 (31 December 2016: CHF 1.0 billion). Refer to Notes 10 and 31 for more information.

Note 25 Measurement categories, credit risk and maturity analysis of financial instruments (continued)

b) Maximum exposure to credit risk

The tables on the following pages provide UBS AG's maximum exposure to credit risk by class of financial instrument 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 section "Risk management and control" describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS.

Maximum exposure to credit risk

	31.12.17								
		Collateral				Credit enhancements			
CHF billion	Maximum exposure to credit risk	Cash collateral received	Collateral-ized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at amortized cost on the balance sheet									
Balances with central banks	87.1								87.1
Due from banks[2]	13.7		0.1						13.6
Cash collateral on securities borrowed	12.4		12.2						0.2
Reverse repurchase agreements	77.2		72.8		4.2				0.2
Cash collateral receivables on derivative instruments[3,4]	23.4					12.5			11.0
Loans[5]	321.7	17.9	111.4	160.1	15.9		0.0	1.3	15.1
Financial assets held to maturity	9.2								9.2
Other assets	25.8		19.5						6.3
Total financial assets measured at amortized cost	570.6	17.9	216.0	160.1	20.1	12.5	0.0	1.3	142.7
Financial assets measured at fair value on the balance sheet									
Positive replacement values[4]	118.2		4.0			100.2			14.0
Trading portfolio assets – debt instruments[6,7]	25.7								25.7
Financial assets designated at fair value – debt instruments[8]	58.4		9.8						48.5
Financial assets available for sale – debt instruments[8]	7.9								7.9
Total financial assets measured at fair value	210.2	0.0	13.8	0.0	0.0	100.2	0.0	0.0	96.2
Total maximum exposure to credit risk reflected on the balance sheet	780.8	17.9	229.8	160.1	20.1	112.7	0.0	1.3	238.9
Guarantees[9]	18.8	1.0	2.1	0.2	1.2			3.0	11.3
Loan commitments[9]	39.1		2.8	1.1	9.5		1.0	1.4	23.3
Forward starting transactions, reverse repurchase and securities borrowing agreements	12.7		12.4						0.2
Total maximum exposure to credit risk not reflected on the balance sheet	70.6	1.0	17.4	1.2	10.7	0.0	1.0	4.4	34.8
Total	851.4	18.9	247.1	161.3	30.8	112.7	1.1	5.8	273.7

Note 25 Measurement categories, credit risk and maturity analysis of financial instruments (continued)

Maximum exposure to credit risk (continued)

	31.12.16								
		Collateral				Credit enhancements			
CHF billion	Maximum exposure to credit risk	Cash collateral received	Collateral-ized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at amortized cost on the balance sheet									
Balances with central banks	107.1								107.1
Due from banks[2]	13.1								13.1
Cash collateral on securities borrowed	15.1		14.8						0.3
Reverse repurchase agreements	66.2		62.5		3.2				0.5
Cash collateral receivables on derivative instruments[3,4]	26.7					15.1			11.5
Loans[5]	307.0	17.9	99.6	158.2	14.6		0.1	1.8	14.8
Financial assets held to maturity	9.3								9.3
Other assets	18.6		10.0						8.7
Total financial assets measured at amortized cost	563.2	17.9	186.9	158.2	17.7	15.1	0.1	1.8	165.3
Financial assets measured at fair value on the balance sheet									
Positive replacement values[4]	158.4		5.3			134.5			18.6
Trading portfolio assets – debt instruments[6,7]	21.9								21.9
Financial assets designated at fair value – debt instruments[8]	64.8		2.6				0.6		61.6
Financial assets available for sale – debt instruments[8]	14.9								14.9
Total financial assets measured at fair value	260.0	0.0	7.9	0.0	0.0	134.5	0.6	0.0	117.0
Total maximum exposure to credit risk reflected on the balance sheet	823.2	17.9	194.9	158.2	17.7	149.6	0.7	1.8	282.3
Guarantees[9]	16.7	1.4	2.0	0.2	1.2		0.1	3.0	8.8
Loan commitments[9]	54.4	0.1	3.9	1.0	9.5		4.8	2.0	33.1
Forward starting transactions, reverse repurchase and securities borrowing agreements	10.2		10.2						0.0
Total maximum exposure to credit risk not reflected on the balance sheet	81.3	1.5	16.1	1.1	10.6	0.0	4.9	5.1	41.9
Total	904.5	19.4	210.9	159.4	28.4	149.6	5.7	6.8	324.3

1 Includes but is not limited to life insurance contracts, inventory, accounts receivable, mortgage loans, patents and copyrights. 2 Due from banks includes amounts held with third-party banks on behalf of clients. The credit risk associated with these balances may be borne by those clients. 3 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. 4 The amount shown in the netting column represents the netting potential not recognized on the balance sheet. Refer to Note 24 for more information. 5 Collateral arrangements generally incorporate a range of collateral, including cash, securities, property and other collateral. In 2017, we further aligned our collateral allocation processes within Wealth Management Americas to prioritize collateral mainly according to its liquidity profile. This change resulted in increases in loans secured by cash and decreases in loans secured by securities of CHF 4.5 billion. 6 These positions are generally managed under the market risk framework. For the purpose of this disclosure, collateral and credit enhancements were not considered. 7 Does not include debt instruments held for unit-linked investment contracts and investment fund units. 8 Does not include investment fund units. Financial assets designated at fair value collateralized by securities consisted of structured loans and reverse repurchase and securities borrowing agreements. 9 The amount shown in the "Guarantees" column largely relates to sub-participations. Refer to the "Treasury management" section of this report for more information.

Maximum exposure to credit risk for financial assets designated at fair value

The maximum exposure to credit risk of loans, but not structured loans, designated at fair value is generally mitigated by credit derivatives or similar instruments. As of 31 December 2017, the credit risk of such loans with a total notional amount of CHF 4 million (31 December 2016: CHF 609 million) was mitigated by credit derivatives for which the notional amount and fair value were not material (31 December 2016: notional amount was CHF 578 million, fair value was negative CHF 7 million).

Changes in the fair value of loans designated at fair value attributable to changes in credit risk were not material for the years ended 31 December 2017 and 31 December 2016 and from inception until 31 December 2017 and 31 December 2016.

Similarly, changes in the fair value of credit derivatives mitigating the credit risk of loans designated at fair value were not material for the years ended 31 December 2017 and 31 December 2016 and from inception until 31 December 2017 and 31 December 2016.

→ **Refer to Note 22 for more information on financial assets designated at fair value**

Note 25 Measurement categories, credit risk and maturity analysis of financial instruments (continued)

c) Financial assets subject to credit risk by rating category

Financial assets subject to credit risk by rating category

CHF billion	31.12.17						
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Defaulted	Total
Balances with central banks	86.6	0.5					87.1
Due from banks	0.6	10.6	1.4	0.9	0.3		13.7
Cash collateral on securities borrowed and reverse repurchase agreements	24.3	36.4	16.8	10.4	1.8		89.6
Positive replacement values	17.0	75.3	19.4	6.2	0.3		118.2
Cash collateral receivables on derivative instruments	6.5	9.7	5.6	1.6	0.1		23.4
Trading portfolio assets – debt instruments[2]	10.3	7.4	3.0	2.1	3.0		25.7
Loans	3.2	163.6	65.7	70.0	17.6	1.5	321.7
Financial assets designated at fair value – debt instruments[3]	33.8	14.2	1.5	0.8	8.0		58.4
Financial assets available for sale – debt instruments[3]	6.8	1.0		0.1			7.9
Financial assets held to maturity	8.5	0.7					9.2
Other assets	0.1	0.4	8.4	15.9	0.8	0.3	25.8
Guarantees, commitments and forward starting transactions							
Guarantees	2.0	9.1	4.1	2.7	0.8	0.2	18.8
Loan commitments	1.9	15.4	9.4	5.8	6.5		39.1
Forward starting transactions, reverse repurchase and securities borrowing agreements		12.7					12.7
Total	**201.7**	**356.8**	**135.2**	**116.5**	**39.1**	**2.0**	**851.4**

CHF billion	31.12.16						
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Defaulted	Total
Balances with central banks	106.2	0.9					107.1
Due from banks	0.6	9.7	2.0	0.5	0.3		13.1
Cash collateral on securities borrowed and reverse repurchase agreements	29.2	24.5	20.1	6.9	0.7		81.4
Positive replacement values	19.6	96.9	34.2	7.4	0.4		158.4
Cash collateral receivables on derivative instruments	6.4	12.2	6.4	1.6	0.2		26.7
Trading portfolio assets – debt instruments[2]	9.0	6.9	2.9	1.7	1.3		21.9
Loans	31.7	127.8	63.2	63.6	19.1	1.6	307.0
Financial assets designated at fair value – debt instruments[3]	48.4	12.6	1.0	1.6	1.3		64.8
Financial assets available for sale – debt instruments[3]	12.7	1.8	0.2	0.1			14.9
Financial assets held to maturity	8.4	0.9					9.3
Other assets	0.1	2.1	6.2	7.7	2.2	0.3	18.6
Guarantees, commitments and forward starting transactions							
Guarantees	2.0	6.4	3.7	3.6	0.7	0.3	16.7
Loan commitments	2.4	19.5	17.1	8.7	6.5	0.1	54.4
Forward starting transactions, reverse repurchase and securities borrowing agreements	0.6	9.4	0.3				10.2
Total	**277.4**	**331.6**	**157.2**	**103.5**	**32.7**	**2.2**	**904.5**

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. 2 Does not include debt instruments held for unit-linked investment contracts and investment fund units. 3 Does not include investment fund units.

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Note 25 Measurement categories, credit risk and maturity analysis of financial instruments (continued)

d) Maturity analysis of financial liabilities

The contractual maturities for non-derivative and non-trading financial liabilities as of 31 December 2017 are based on the earliest date on which UBS could be contractually required to pay. The total amounts that contractually mature in each time band are also shown for 31 December 2016. Derivative positions and trading liabilities, predominantly made up of short sale transactions, are assigned to the column *Due within 1 month,* as this provides a conservative reflection of the nature of these trading activities. The contractual maturities may extend over significantly longer periods.

Maturity analysis of financial liabilities[1]

CHF billion	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
Financial liabilities recognized on balance sheet[2]						
Due to banks	6.1	0.4	1.0	0.1	0.0	7.5
Cash collateral on securities lent	1.7	0.2				1.9
Repurchase agreements	11.9	2.8	0.6	0.0	0.0	15.3
Trading portfolio liabilities[3,4]	30.5					30.5
Negative replacement values[3]	116.1					116.1
Cash collateral payables on derivative instruments	30.2					30.2
Due to customers	394.8	11.4	5.8	22.2	19.1	453.3
Financial liabilities designated at fair value[5]	18.4	10.3	11.6	8.8	7.1	56.3
Debt issued	4.1	14.5	44.5	34.8	12.5	110.3
Other liabilities	47.4					47.4
Total 31.12.17	**661.2**	**39.6**	**63.4**	**65.9**	**38.7**	**868.9**
Total 31.12.16	706.7	39.2	40.2	45.9	45.6	877.7
Guarantees, commitments and forward starting transactions[6]						
Loan commitments	38.2	0.2	0.2	0.1		38.7
Guarantees	18.8	0.0				18.9
Forward starting transactions						
Reverse repurchase agreements	12.7					12.7
Securities borrowing agreements	0.0					0.0
Total 31.12.17	**69.7**	**0.2**	**0.2**	**0.1**	**0.0**	**70.2**
Total 31.12.16	81.0	0.2	0.2	0.0	0.0	81.4

1 Non-financial liabilities such as deferred income, deferred tax liabilities, provisions and liabilities on employee compensation plans are not included in this analysis. 2 Except for trading portfolio liabilities and negative replacement values (see footnote 3), the amounts presented generally represent undiscounted cash flows of future interest and principal payments. 3 Carrying value 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. Refer to Note 12 for undiscounted cash flows of derivatives designated in hedge accounting relationships. 4 Contractual maturities of trading portfolio liabilities are: CHF 29.5 billion due within one month (2016: CHF 21.8 billion), CHF 0.8 billion due between one month and one year (2016: CHF 1.0 billion) and CHF 0.1 billion due between 1 and 5 years (2016: CHF 0.1 billion). 5 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 reporting date. 6 Comprises the maximum irrevocable amount of guarantees, commitments and forward starting transactions.

e) Reclassification of financial assets

In 2008 and 2009, certain financial assets were reclassified from *Trading portfolio assets* to *Loans*. On their reclassification date, these assets had fair values of CHF 26 billion and CHF 0.6 billion, respectively.

The reclassification of financial assets reflected UBS's change in intent and ability to hold these financial assets for the foreseeable future rather than for trading in the near term. The financial assets were reclassified using their fair value on the date of the reclassification, which became their new cost basis at that date.

As of 31 December 2017, the carrying value of the remaining reclassified financial assets, which were entirely comprised of municipal auction rate securities, was CHF 0.1 billion (31 December 2016: CHF 0.2 billion), which was approximately equal to the fair value of these assets.

The overall effect on operating profit before tax from reclassified financial assets for the year ended 31 December 2017 was a profit of CHF 1 million (2016: CHF 1 million). If the financial assets had not been reclassified, the impact on operating profit before tax for the year ended 31 December 2017 would have been a loss of CHF 4 million.

Note 26 Pension and other post-employment benefit plans

The table below provides information about expenses for pension and other post-employment benefit plans. These expenses are part of *Personnel expenses*.

Income statement – expenses related to pension and other post-employment benefit plans

CHF million	31.12.17	31.12.16	31.12.15
Net periodic expenses for defined benefit plans	359	433	568
of which: related to major pension plans [1]	*347*	*412*	*546*
of which: Swiss plan [2]	*302*	*381*	*515*
of which: UK plan	*14*	*(2)*	*18*
of which: US and German plans	*31*	*33*	*12*
of which: related to post-employment medical insurance plans [3]	*3*	*4*	*4*
of which: UK plan	*1*	*1*	*1*
of which: US plans	*2*	*3*	*2*
of which: related to remaining plans and other expenses [4]	*8*	*17*	*19*
Expenses for defined contribution plans[5]	232	236	239
of which: UK plans	*64*	*77*	*86*
of which: US plan	*108*	*106*	*100*
of which: remaining plans	*59*	*53*	*53*
Total pension and other post-employment benefit plan expenses[6]	591	669	807

1 Refer to Note 26a for more information. 2 The decrease in net periodic pension expenses for the Swiss pension plan in 2017 was mainly due to the transfer of shared services functions from UBS AG to UBS Business Solutions AG. 3 Refer to Note 26b for more information. 4 Other expenses include differences between actual and estimated performance award accruals and net accrued pension expenses related to restructuring. 5 Refer to Note 26c for more information. 6 Refer to Note 6.

The table below provides information relating to amounts recognized in *Other comprehensive income* for defined benefit plans.

Other comprehensive income – gains / (losses) on defined benefit plans

CHF million	31.12.17	31.12.16	31.12.15
Major pension plans[1]	266	(837)	339
of which: Swiss plan	*(56)*	*(105)*	*58*
of which: UK plan	*295*	*(610)*	*317*
of which: US and German plans	*28*	*(122)*	*(35)*
Post-employment medical insurance plans[2]	1	(13)	(3)
of which: UK plan	*1*	*(6)*	*6*
of which: US plans	*0*	*(7)*	*(9)*
Remaining plans	31	(26)	(14)
Gains / (losses) recognized in other comprehensive income, before tax	299	(876)	322
Tax (expense) / benefit relating to defined benefit plans recognized in other comprehensive income	6	52	(19)
Gains / (losses) recognized in other comprehensive income, net of tax[3]	305	(824)	304

1 Refer to Note 26a for more information. 2 Refer to Note 26b for more information. 3 Refer to the "Statement of comprehensive income."

Note 26 Pension and other post-employment benefit plans (continued)

UBS AG recognizes assets and liabilities with respect to defined benefit plans within *Other assets* and *Other liabilities*.

As of 31 December 2017 and 31 December 2016, the Swiss pension plan was in a surplus situation. However, a surplus is only recognized on the balance sheet to the extent that it does not exceed the estimated future economic benefit. Since the estimated future economic benefit was zero as of 31 December 2017 and 31 December 2016, no net defined benefit pension asset was recognized on the balance sheet.

The table below provides information on UBS AG's liabilities with respect to defined benefit plans.

Balance sheet – net defined benefit pension and post-employment liability

CHF million	31.12.17	31.12.16
Major pension plans[1]	805	1,140
of which: Swiss plan	*0*	*0*
of which: UK plan	*268*	*529*
of which: US and German plans[2]	*536*	*611*
Post-employment medical insurance plans[3]	86	91
of which: UK plan	*26*	*26*
of which: US plans	*59*	*65*
Remaining plans	34	34
Total net defined benefit pension and post-employment liability[4]	925	1,266

1 Refer to Note 26a for more information. 2 Of the total liability as of 31 December 2017, CHF 149 million related to US plans and CHF 388 million related to German plans (31 December 2016: CHF 265 million related to US plans and CHF 346 million related to German plans). 3 Refer to Note 26b for more information. 4 Refer to Note 21.

a) Defined benefit pension plans

UBS AG has established defined benefit pension plans for its employees in various jurisdictions, with the major plans located in Switzerland, the UK, the US and Germany.

The overall investment policy and strategy for UBS AG's defined benefit pension plans is guided by the objective of achieving an investment return that, together with contributions, ensures that there will be sufficient assets to pay pension benefits as they fall due while also mitigating various risks. For the plans with assets, i.e. funded plans, the investment strategies are managed under local laws and regulations in each jurisdiction. The asset allocation is determined by the governance body with reference to the prevailing current and expected economic and market conditions and in consideration of specific asset class risk in the risk profile. Within this framework, UBS AG ensures that the fiduciaries consider how the asset investment strategy correlates with the maturity profile of the plan liabilities and the respective potential effect on the funded status of the plans, including potential short-term liquidity requirements.

The defined benefit obligations (DBOs) for all of UBS AG's defined benefit pension plans are directly affected by changes in yields of high-quality corporate bonds quoted in an active market in the currency of the respective pension plan, as the applicable discount rate used to determine the DBO is based on these yields. For the funded plans, the pension assets are invested in a diversified portfolio of financial assets, including real estate, bonds, investment funds and cash, across geographic regions to ensure a balance of risk and return. Under IAS 19, volatility arises in each pension plan's net asset / liability position because the fair value of the plan's financial assets is not fully correlated to movements in the value of the plan's DBO. Specific asset-liability matching strategies for each pension plan are independently determined by the responsible governance body. The net asset / liability volatility for each plan is dependent on the specific financial assets chosen by each plan's governance body. For certain pension plans, a liability-driven investment approach is applied to a portion of the plan assets to reduce potential volatility.

Swiss pension plan

The Swiss pension plan covers employees of UBS AG and employees of companies having close economic or financial ties with UBS AG and exceeds the minimum benefit requirements under Swiss pension law.

In 2017, a significant number of employees 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 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 UBS's 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, any OCI impacts from remeasurements and the net pension asset / liability of the 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.

Contributions to the pension plan are paid by both the employer and the employees. The Swiss pension plan allows employees to choose the level of contributions paid by them. Employee contributions are calculated as a percentage of the contributory salary and are deducted monthly. The percentages deducted from salary depend on age and choice of contribution category and vary between 1% and 13.5% of contributory base salary and between 0% and 9% of contributory variable compensation. Depending on the age of the employee, UBS AG pays a contribution that ranges between 6.5% and 27.5% of contributory base salary and between 3.6% and 9% of contributory variable compensation. UBS AG also pays risk contributions that are used to finance benefits paid out in the event of death and disability, as well as to finance bridging pensions.

The plan benefits include retirement, disability and survivor benefits. The pension plan offers to members at the normal retirement age of 64 a choice between a lifetime pension with or without full restitution and a partial or full lump sum payment. Members can draw early retirement benefits starting from the age of 58. Employees have the possibility to make additional purchases of benefits to fund early retirement benefits (Plan 58+).

The pension amount payable is a result of the conversion rate applied on the accumulated balance of the individual plan participant's pension account at the retirement date. The accumulated balance of each individual plan participant's pension account is based on credited vested benefits transferred from previous employers, purchases of benefits and the employee and employer contributions that have been made to the pension account of each individual plan participant, as well as the interest accrued on the accumulated balance. The interest rate accrued is defined annually by the Pension Foundation Board.

Although the Swiss pension plan is based on a defined contribution promise under Swiss pension law, it is accounted for as a defined benefit plan under IAS 19, primarily because of the obligation to accrue interest on the pension accounts and the payment of lifetime pension benefits.

Note 26 Pension and other post-employment benefit plans (continued)

The Swiss pension plan is governed by a Pension Foundation Board. The responsibilities of this board are defined by Swiss pension law and by the plan rules. An actuarial valuation under Swiss pension law is performed regularly. According to Swiss pension law, a temporary limited underfunding is permitted. However, should an underfunded situation 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 pension 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 2017, the Swiss pension plan had a technical funding ratio under Swiss pension law of 131.9% (31 December 2016: 125.4%).

The investment strategy of the Swiss plan is implemented on the basis of a multi-level investment and risk management process and complies with Swiss pension law, including the rules and regulations relating to diversification of plan assets. These rules, among others, specify restrictions to the composition of plan assets, e.g., there is a limit of 50% for investments in equities. The investment strategy of the Swiss plan is aligned with the defined risk budget set out by the Pension Foundation Board. The risk budget is determined on the basis of regularly performed asset and liability management analyses. In order to implement the risk budget, the Swiss plan may use direct investments, investment funds and derivatives. To mitigate foreign currency risk, a specific currency hedging strategy is in place. The Pension Foundation Board strives for a medium- and long-term balance between assets and liabilities.

As of 31 December 2017, the Swiss pension plan was in a surplus situation on an International Financial Reporting Standards (IFRS) measurement basis, as the fair value of plan assets exceeded the DBO by CHF 1,940 million (31 December 2016: surplus of CHF 1,749 million). 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. The maximum future economic benefit is highly variable based on changes in the discount rate. Both as of 31 December 2017 and 31 December 2016, the estimated future economic benefit was zero and hence no net defined benefit asset was recognized on the balance sheet. As of 31 December 2017, the difference between the pension plan surplus and the estimated future economic benefit, i.e., the asset ceiling effect, was CHF 1,940 million (31 December 2016: CHF 1,749 million). CHF 999 million out of the total movement of CHF 1,008 million was recognized in *Other comprehensive income* and CHF 9 million related to interest expense on the asset ceiling effect was recognized in the income statement. As of 31 December 2016, CHF 452 million out of the total movement of CHF 466 million was recognized in *Other comprehensive income* and CHF 14 million related to interest expense on the asset ceiling effect was recognized in the income statement.

The employer contributions expected to be made to the Swiss pension plan in 2018 are estimated to be CHF 294 million.

→ **Refer to Note 35 for information on changes to the Swiss pension plan that will take effect from the start of 2019**

Non-Swiss pension plans

UBS AG locations outside of Switzerland offer various defined benefit pension plans in accordance with local regulations and practices. The non-Swiss locations with major defined benefit pension plans are the UK, the US and Germany. Defined benefit pension plans in other locations are not material to the financial results of UBS AG and hence not separately disclosed.

The non-Swiss plans provide benefits in the event of retirement, death or disability. The level of benefits provided depends on the specific rate of benefit accrual and the level of employee compensation. UBS AG's general principle is to ensure that the plans are adequately funded on the basis of actuarial valuations. Local pension regulations and tax requirements are the primary drivers for determining when contributions are required.

UK pension plan

The UK plan is a career-average revalued earnings scheme, and benefits increase automatically based on UK price inflation. Normal retirement age for participants in the UK plan is 60. The UK plan is closed to new entrants and pension plan participants are no longer accruing benefits for current or future service. Employees instead participate in the UK defined contribution plan.

The governance responsibility for the UK plan lies jointly with the Pension Trustee Board, which is required under local pension laws, and UBS AG. The employer contributions to the pension fund reflect agreed-upon deficit-funding contributions, which are determined on the basis of the most recent actuarial valuation using assumptions agreed by the Pension Trustee Board and UBS AG. In the event of underfunding, UBS AG and the Pension Trustee Board must agree on a deficit recovery plan within statutory deadlines. In 2017 and 2016, UBS AG did not make any deficit-funding contributions.

The plan assets are invested in a diversified portfolio of financial assets. A liability-driven investment approach is applied, as a portion of the plan assets is invested in inflation-indexed bonds that provide a partial hedge against price inflation. If price inflation increases, the DBO will likely increase more significantly than the change in the fair value of plan assets, which would result in an increase in the net defined benefit liability. Plan rules and local pension legislation cap the level of inflationary increase that can be applied to plan benefits.

As the plan is obligated to provide guaranteed lifetime pension benefits to plan participants upon retirement, increases in life expectancy will result in an increase in the plan's liabilities. The sensitivity to changes in life expectancy is particularly high in the UK plan as the pension benefits are indexed to price inflation.

As of 31 December 2017, the UK plan was in a deficit situation on an IFRS measurement basis as the DBO exceeded the fair value of plan assets by CHF 268 million (31 December 2016: deficit of CHF 529 million).

No employer contributions are currently scheduled to be made to the UK defined benefit pension plan in 2018, subject to periodic review.

US pension plans

There are two distinct major defined benefit pension plans in the US. Normal retirement age for participants in both US plans is 65. The plans are closed to new entrants, who instead can participate in defined contribution plans.

One of the major defined benefit pension plans is a contribution-based plan in which each participant accrues a percentage of salary in a pension account. The pension 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 major defined benefit pension plan, retirement benefits accrue based on the career-average earnings of each individual plan participant. Former employees with vested benefits have the option to take a lump sum payment or a lifetime annuity commencing early or at retirement age.

As required under local state pension laws, both plans have fiduciaries who, together with UBS AG, are responsible for the governance of the plans. UBS AG regularly reviews the contribution strategy for these plans. In determining the contribution strategy, UBS AG considers local statutory funding rules and the cost of any premiums that must be paid to the Pension Benefit Guaranty Corporation for having an underfunded plan. In 2017, the contributions made by UBS AG were CHF 89 million (2016: CHF 172 million).

The plan assets for both plans are invested in a diversified portfolio of financial assets. Each pension plan's fiduciaries are responsible for the investment decisions with respect to the plan assets. Both US plans apply a liability-driven investment approach to support the volatility management in the net asset / liability position. Derivative instruments may also be employed to manage volatility.

The employer contributions expected to be made to the US defined benefit pension plans in 2018 are estimated to be CHF 8 million.

German pension plans

There are two different defined benefit pension plans in Germany, and both are contribution-based plans. No plan assets are set aside to fund these plans, and benefits are directly paid by UBS AG. Normal retirement age for the participants in the German plans is 65. Within the larger of the two pension plans, each participant accrues a percentage of salary in a pension account. The accumulated account balance of the plan participant is credited on an annual basis with guaranteed interest at a rate of 5%. In the other plan, amounts are accrued annually based on employee elections. For this plan, the accumulated account balance is credited on an annual basis with a guaranteed interest rate of 4% for amounts accrued after 2009. Both German plans are regulated under German pension law, under which the responsibility to pay pension benefits when they are due rests entirely with UBS AG. For the German plans, a portion of the pension payments is directly increased in line with price inflation.

The benefits expected to be paid by UBS AG to the participants of the German plans in 2018 are estimated to be CHF 10 million.

Financial information by plan

The tables on the following pages provide an analysis of the movement in the net asset / liability recognized on the balance sheet for defined benefit pension plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

Note 26 Pension and other post-employment benefit plans (continued)

Defined benefit pension plans

CHF million	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Defined benefit obligation at the beginning of the year	22,865	22,636	3,704	3,350	1,755	1,619	28,325	27,605
Current service cost	324	471	0	0	9	9	333	480
Interest expense	117	240	100	116	61	62	279	419
Plan participant contributions	155	210	0	0	0	0	155	210
Remeasurements	51	477	(82)	922	80	125	49	1,524
of which: actuarial (gains) / losses due to changes in demographic assumptions	*4*	*(659)*	*(80)*	*(63)*	*(5)*	*3*	*(81)*	*(719)*
of which: actuarial (gains) / losses due to changes in financial assumptions	*138*	*698*	*47*	*1,022*	*84*	*107*	*269*	*1,827*
of which: experience (gains) / losses [1]	*(90)*	*438*	*(49)*	*(37)*	*2*	*15*	*(138)*	*416*
Curtailments	(27)	(96)	0	0	0	0	(27)	(96)
Benefit payments	(767)	(1,074)	(251)	(135)	(107)	(98)	(1,126)	(1,307)
Other movements[2]	(8,682)	0	0	0	0	19	(8,682)	19
Foreign currency translation	0	0	179	(549)	(29)	20	150	(529)
Defined benefit obligation at the end of the year	14,035	22,865	3,650	3,704	1,770	1,755	19,454	28,325
of which: amounts owed to active members	*6,437*	*10,419*	*176*	*290*	*248*	*258*	*6,861*	*10,967*
of which: amounts owed to deferred members	*0*	*0*	*1,881*	*2,210*	*628*	*584*	*2,510*	*2,794*
of which: amounts owed to retirees	*7,598*	*12,446*	*1,593*	*1,204*	*893*	*913*	*10,083*	*14,563*
Fair value of plan assets at the beginning of the year	24,614	23,919	3,175	3,400	1,144	997	28,934	28,316
Return on plan assets excluding amounts included in interest income	994	824	213	312	108	2	1,314	1,139
Interest income	128	258	86	118	44	44	257	420
Employer contributions	351	486	0	0	97	179	448	665
Plan participant contributions	155	210	0	0	0	0	155	210
Benefit payments	(767)	(1,074)	(251)	(135)	(107)	(98)	(1,126)	(1,307)
Administration expenses, taxes and premiums paid	(7)	(10)	0	0	(4)	(6)	(12)	(16)
Other movements[2]	(9,492)	0	0	0	0	0	(9,492)	0
Foreign currency translation	0	0	159	(520)	(48)	26	111	(494)
Fair value of plan assets at the end of the year	15,975	24,614	3,381	3,175	1,234	1,144	20,590	28,934
Asset ceiling effect at the beginning of the year	1,749	1,283	0	0	0	0	1,749	1,283
Interest expense on asset ceiling effect	9	14	0	0	0	0	9	14
Asset ceiling effect excluding interest expense on asset ceiling effect	999	452	0	0	0	0	999	452
Other movements[2]	(817)	0	0	0	0	0	(817)	0
Asset ceiling effect at the end of the year	1,940	1,749	0	0	0	0	1,940	1,749
Net defined benefit asset / (liability)	0	0	(268)	(529)	(536)	(611)	(805)	(1,140)
Movement in the net asset / (liability) recognized on the balance sheet								
Net asset / (liability) recognized on the balance sheet at the beginning of the year	0	0	(529)	50	(611)	(622)	(1,140)	(572)
Net periodic expenses recognized in net profit	(302)	(381)	(14)	2	(31)	(33)	(347)	(412)
Gains / (losses) recognized in other comprehensive income	(56)	(105)	295	(610)	28	(122)	266	(837)
Employer contributions	351	486	0	0	97	179	448	665
Other movements	8	0	0	0	0	(19)	8	(19)
Foreign currency translation	0	0	(20)	29	(20)	6	(39)	35
Net asset / (liability) recognized on the balance sheet at the end of the year	0	0	(268)	(529)	(536)	(611)	(805)	(1,140)
Funded and unfunded plans								
Defined benefit obligation from funded plans	14,035	22,865	3,650	3,704	1,291	1,316	18,975	27,885
Defined benefit obligation from unfunded plans	0	0	0	0	479	440	479	440
Plan assets	15,975	24,614	3,381	3,175	1,234	1,144	20,590	28,934
Surplus / (deficit)	1,940	1,749	(268)	(529)	(536)	(611)	1,135	609
Asset ceiling effect	1,940	1,749	0	0	0	0	1,940	1,749
Net defined benefit asset / (liability)	0	0	(268)	(529)	(536)	(611)	(805)	(1,140)

1 Experience (gains) / losses are a component of actuarial remeasurements of the defined benefit obligation that reflect the effects of differences between the previous actuarial assumptions and what has actually occurred. 2 Primarily reflects the transfer of employees from UBS AG to UBS Business Solutions AG.

Note 26 Pension and other post-employment benefit plans (continued)

Analysis of amounts recognized in net profit

CHF million	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Current service cost	324	471	0	0	9	9	333	480
Interest expense related to defined benefit obligation	117	240	100	116	61	62	279	419
Interest income related to plan assets	(128)	(258)	(86)	(118)	(44)	(44)	(257)	(420)
Interest expense on asset ceiling effect	9	14	0	0	0	0	9	14
Administration expenses, taxes and premiums paid	7	10	0	0	4	6	12	16
Curtailments	(27)	(96)	0	0	0	0	(27)	(96)
Net periodic expenses recognized in net profit	302	381	14	(2)	31	33	347	412

Analysis of amounts recognized in other comprehensive income (OCI)

CHF million	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Remeasurement of defined benefit obligation	(51)	(477)	82	(922)	(80)	(125)	(49)	(1,524)
Return on plan assets excluding amounts included in interest income	994	824	213	312	108	2	1,314	1,139
Asset ceiling effect excluding interest expense on asset ceiling effect	(999)	(452)	0	0	0	0	(999)	(452)
Total gains / (losses) recognized in other comprehensive income, before tax	(56)	(105)	295	(610)	28	(122)	266	(837)

The table below provides information on the duration of the DBO and the timing for expected benefit payments.

	Swiss plan[1]		UK plan		US and German plans[2]	
	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Duration of the defined benefit obligation (in years)	15.1	15.1	20.0	22.6	10.6	10.6
Maturity analysis of benefits expected to be paid						
CHF million						
Benefits expected to be paid within 12 months	689	1,140	81	72	105	103
Benefits expected to be paid between 1 and 3 years	1,389	2,204	177	164	212	213
Benefits expected to be paid between 3 and 6 years	2,085	3,394	328	315	321	328
Benefits expected to be paid between 6 and 11 years	3,326	5,439	699	710	558	562
Benefits expected to be paid between 11 and 16 years	3,090	5,041	786	856	501	514
Benefits expected to be paid in more than 16 years	10,453	17,162	4,216	6,064	865	958

1 The decrease in benefits expected to be paid in 2017 was mainly due to the transfer of shared services functions from UBS AG to UBS Business Solutions AG. 2 The duration of the defined benefit obligation represents a weighted average across US and German plans.

Note 26 Pension and other post-employment benefit plans (continued)

Actuarial assumptions

The measurement of each pension plan's DBO considers different actuarial assumptions. Changes in those assumptions lead to volatility in the DBO. The following principal actuarial assumptions are applied:

– 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 pension plan. Consequently, a decrease in the yield of high-quality corporate bonds increases the DBO. Conversely, an increase in the yield of high-quality corporate bonds decreases the DBO.
– Rate of salary increase: an increase in the salary of plan participants generally increases the DBO, specifically for the Swiss and German plans. For the UK plan, as the plan is closed for future service, UBS AG employees no longer accrue future service benefits and thus salary increases have no effect on the DBO. For the US plans, only a small percentage of the total population continues to accrue benefits for future service and therefore the effect of a salary increase on the DBO is minimal.
– Rate of pension increase: for the Swiss plan, there is no automatic indexing of pensions. Any increase would be decided by the Pension Foundation Board. For the US plans, there is also no automatic indexing of pensions. For the UK plan, pensions are automatically indexed to price inflation as per plan rules and local pension legislation. The German plans are also automatically indexed and a portion of the pensions are directly increased by price inflation. An increase in price inflation in the UK and Germany increases the respective plan's DBO.
– Rate of interest credit on retirement savings: the Swiss plan and one of the US plans have retirement saving balances that are increased annually by an interest credit rate. For these plans, an increase in the interest credit rate increases the respective plan's DBO.
– Life expectancy: for most of UBS AG's defined benefit pension plans, the respective plan is obligated to provide guaranteed lifetime pension benefits. The DBO for all plans is calculated using an underlying best estimate of the life expectancy of plan participants. An increase in the life expectancy of plan participants increases the plan's DBO.

The actuarial assumptions used for the pension plans are based on the economic conditions prevailing in the jurisdiction in which they are offered.

→ **Refer to Note 1a item 7 for a description of the accounting policy for defined benefit pension plans**

Changes in actuarial assumptions

UBS AG regularly reviews the actuarial assumptions used in calculating its DBO to determine their continuing relevance.

Swiss pension plan

In 2017, a net loss of CHF 51 million was recognized in *Other comprehensive income* (OCI) related to the remeasurement of the DBO. This was primarily due to a market-driven decrease in the discount rate, which resulted in an OCI loss of CHF 164 million. This effect was partly offset by experience gains of CHF 90 million, reflecting differences between the previous actuarial assumptions and what actually occurred, and by market-driven changes to the assumed rate of interest credit on retirement savings, which resulted in a gain of CHF 26 million. Changes in other assumptions were not significant.

In 2016, UBS AG continued to enhance its methodology for estimating the discount rate by improving the construction of the yield curve from Swiss high-quality corporate bonds. Furthermore, UBS AG refined its approach for estimating the life expectancy, the rate of employee disability and the rate of salary increases. These changes in estimates decreased the DBO of the Swiss pension plan by CHF 319 million, of which changes in demographic assumptions decreased the DBO by CHF 659 million and changes in financial assumptions increased the DBO by CHF 339 million. However, the effect from these changes in estimates was more than offset by experience losses and market-driven changes in the discount rate, resulting in a total upward remeasurement of the Swiss plan DBO of CHF 477 million recognized in OCI.

UK pension plan

In 2017, a net gain of CHF 82 million was recognized in OCI related to the remeasurement of the DBO for the UK plan. This was primarily driven by changes in the life expectancy assumption, which resulted in a gain of CHF 80 million. In addition, market-driven changes in the inflation rate assumption resulted in a gain of CHF 60 million and experience gains were CHF 49 million. These gains were partly offset by a market-driven decrease in the discount rate, which resulted in a loss of CHF 105 million.

In 2016, a net loss of CHF 922 million was recognized in OCI related to the remeasurement of the DBO for the UK plan, resulting from a loss of CHF 866 million due to a market-driven decrease in the discount rate and a loss of CHF 156 million from market-driven changes in the inflation rate assumption, partly offset by a gain of CHF 63 million from changes in the life expectancy assumption and an experience gain of CHF 37 million.

US and German pension plans

In 2017, a net loss of CHF 80 million was recognized in OCI related to the remeasurement of the DBO for the US and German plans compared with a net loss of CHF 125 million in 2016. OCI losses in both years were primarily driven by market-driven decreases in discount rates.

Note 26 Pension and other post-employment benefit plans (continued)

The tables below show the principal actuarial assumptions used in calculating the DBO at the end of the year.

Principal actuarial assumptions used

	Swiss plan		UK plan		US and German plans[1]	
In %	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Discount rate	0.67	0.73	2.55	2.69	3.14	3.58
Rate of salary increase	1.30	1.30	0.00	0.00	2.83	2.86
Rate of pension increase	0.00	0.00	3.11	3.18	1.50	1.50
Rate of interest credit on retirement savings	0.67	0.73	0.00	0.00	2.56	1.74

1 Represents weighted average assumptions across US and German 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	31.12.17	31.12.16	31.12.17	31.12.16
Switzerland	BVG 2015 G with CMI 2016 projections[1]	21.6	21.5	23.0	22.9
UK	S2PA with CMI 2016 projections[2]	23.4	23.7	24.6	25.0
USA	RP2014 WCHA with MP2017 projection scale[3]	22.8	22.9	24.4	24.4
Germany	Dr. K. Heubeck 2005 G	20.3	20.1	22.9	22.8

		Life expectancy at age 65 for a female member currently			
		aged 65		aged 45	
Country	Mortality table	31.12.17	31.12.16	31.12.17	31.12.16
Switzerland	BVG 2015 G with CMI 2016 projections[1]	23.4	23.4	24.9	24.9
UK	S2PA with CMI 2016 projections[2]	25.2	25.6	26.5	27.4
USA	RP2014 WCHA with MP2017 projection scale[3]	24.4	24.5	26.0	26.1
Germany	Dr. K. Heubeck 2005 G	24.3	24.2	26.8	26.7

1 In 2016, the mortality table BVG 2015 G with proposed CMI 2016 was used. 2 In 2016, the mortality table S2PA with CMI 2015 projections was used. 3 In 2016, the mortality table RP2014 WCHA with MP2016 projection scale 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[2]		UK plan		US and German plans	
CHF million	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Discount rate						
Increase by 50 basis points	(875)	(1,435)	(341)	(388)	(88)	(86)
Decrease by 50 basis points	996	1,630	391	452	96	94
Rate of salary increase						
Increase by 50 basis points	60	86	–[3]	–[3]	1	1
Decrease by 50 basis points	(57)	(79)	–[3]	–[3]	(1)	(1)
Rate of pension increase						
Increase by 50 basis points	708	1,178	370	435	7	6
Decrease by 50 basis points	–[4]	–[4]	(327)	(377)	(6)	(6)
Rate of interest credit on retirement savings						
Increase by 50 basis points	164	264	–[5]	–[5]	9	9
Decrease by 50 basis points	(155)	(250)	–[5]	–[5]	(9)	(8)
Life expectancy						
Increase in longevity by one additional year	485	796	139	136	47	44

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 The decrease in sensitivity in 2017 was mainly due to the transfer of shared services functions from UBS AG to UBS Business Solutions AG. 3 As the plan is closed for future service, a change in assumption is not applicable. 4 As the assumed rate of pension increase was 0% as of 31 December 2017 and as of 31 December 2016, a downward change in assumption is not applicable. 5 As the UK plan does not provide interest credits on retirement savings, a change in assumption is not applicable.

Note 26 Pension and other post-employment benefit plans (continued)

Fair value of plan assets

The tables below provide information on the composition and fair value of plan assets of the Swiss, the UK and the US pension plans.

Composition and fair value of plan assets

Swiss plan

	31.12.17				31.12.16			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
CHF million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	72	0	72	0	869	0	869	4
Real estate / property								
Domestic	0	1,714	1,714	11	0	2,689	2,689	11
Investment funds								
Equity								
Domestic	400	0	400	3	938	0	938	4
Foreign	4,499	798	5,297	33	6,558	1,170	7,728	31
Bonds[1]								
Domestic, AAA to BBB–	1,366	0	1,366	9	2,222	0	2,222	9
Foreign, AAA to BBB–	3,821	0	3,821	24	5,877	0	5,877	24
Foreign, below BBB–	346	0	346	2	1,176	0	1,176	5
Real estate								
Foreign	0	14	14	0	0	42	42	0
Other	516	2,423	2,940	18	283	2,776	3,059	12
Other investments	0	7	7	0	0	15	15	0
Total fair value of plan assets	11,019	4,956	15,975	100	17,923	6,691	24,614	100

	31.12.17	31.12.16
Total fair value of plan assets	15,975	24,614
of which:[2]		
Bank accounts at UBS AG	*117*	*432*
UBS AG debt instruments	*3*	*5*
UBS Group AG shares	*33*	*47*
Securities lent to UBS AG[3]	*1,979*	*1,855*
Property occupied by UBS AG	*83*	*83*
Derivative financial instruments, counterparty UBS AG[3]	*23*	*(220)*

1 The bond credit ratings are primarily based on Standard & Poor'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 the Standard & Poor'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 2017 and 31 December 2016. Net of collateral, derivative financial instruments amounted to CHF 11 million as of 31 December 2017 (31 December 2016: CHF 76 million).

Note 26 Pension and other post-employment benefit plans (continued)

Composition and fair value of plan assets (continued)

UK plan

	31.12.17				31.12.16			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
CHF million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	159	0	159	5	133	0	133	4
Bonds[1]								
Domestic, AAA to BBB–	1,666	0	1,666	49	1,131	0	1,131	36
Domestic, below BBB–	1	0	1	0	1	0	1	0
Investment funds								
Equity								
Domestic	31	0	31	1	39	0	39	1
Foreign	1,020	0	1,020	30	984	0	984	31
Bonds[1]								
Domestic, AAA to BBB–	625	81	706	21	500	28	528	17
Domestic, below BBB–	21	0	21	1	23	0	23	1
Foreign, AAA to BBB–	143	0	143	4	245	0	245	8
Foreign, below BBB–	56	0	56	2	39	0	39	1
Real estate								
Domestic	100	27	128	4	39	72	111	4
Other	(4)	5	1	0	(35)	111	76	2
Other investments[2]	(560)	11	(549)	(16)	(144)	10	(134)	(4)
Total fair value of plan assets	3,257	124	3,381	100	2,955	221	3,175	100

1 The bond credit ratings are primarily based on Standard & Poor'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 the Standard & Poor's rating classification. 2 Mainly relates to repurchase arrangements on UK treasury bonds.

Note 26 Pension and other post-employment benefit plans (continued)

Composition and fair value of plan assets (continued)

US plans

	31.12.17				31.12.16			
	Fair value			Weighted average plan asset allocation %	Fair value			Weighted average plan asset allocation %
CHF million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	74	0	74	6	75	0	75	7
Bonds[1]								
Domestic, AAA to BBB–	195	0	195	16	158	0	158	14
Domestic, below BBB–	10	0	10	1	13	0	13	1
Foreign, AAA to BBB–	44	0	44	4	42	0	42	4
Foreign, below BBB–	1	0	1	0	1	0	1	0
Investment funds								
Equity								
Domestic	291	0	291	24	264	0	264	23
Foreign	270	0	270	22	248	0	248	22
Bonds[1]								
Domestic, AAA to BBB–	210	0	210	17	218	0	218	19
Domestic, below BBB–	19	0	19	2	18	0	18	2
Foreign, AAA to BBB–	46	0	46	4	42	0	42	4
Foreign, below BBB–	5	0	5	0	5	0	5	0
Real estate								
Domestic	0	12	12	1	0	11	11	1
Other	21	0	21	2	19	0	19	2
Insurance contracts	0	17	17	1	0	18	18	2
Asset-backed securities	15	0	15	1	8	0	8	1
Other investments	4	0	4	0	3	0	3	0
Total fair value of plan assets	1,204	30	1,234	100	1,115	29	1,144	100

1 The bond credit ratings are primarily based on Standard & Poor'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 the Standard & Poor's rating classification.

b) Post-employment medical insurance plans

In the US and the UK, UBS AG offers post-employment medical insurance benefits that contribute to the health care coverage of certain employees and their beneficiaries after retirement. The UK post-employment medical insurance plan is closed to new entrants.

These plans are not prefunded. In the US, the retirees also contribute to the cost of the post-employment medical benefits.

The benefits expected to be paid by UBS AG to the post-employment medical insurance plans in 2018 are estimated to be CHF 5 million.

The table below provides an analysis of the movement in the net asset / liability recognized on the balance sheet for post-employment medical plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

Post-employment medical insurance plans

CHF million	UK plan		US plans		Total	
For the year ended	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Post-employment benefit obligation at the beginning of the year	26	25	65	59	91	84
Current service cost	0	0	0	0	0	0
Interest expense	1	1	2	3	3	3
Plan participant contributions	0	0	3	2	3	2
Remeasurements	(1)	6	0	7	(1)	13
of which: actuarial (gains) / losses due to changes in demographic assumptions	*0*	*1*	*0*	*(1)*	*(1)*	*0*
of which: actuarial (gains) / losses due to changes in financial assumptions	*(1)*	*5*	*2*	*1*	*2*	*6*
of which: experience (gains) / losses [1]	*0*	*0*	*(2)*	*6*	*(2)*	*6*
Benefit payments[2]	(1)	(1)	(7)	(7)	(9)	(8)
Foreign currency translation	1	(4)	(3)	1	(1)	(3)
Post-employment benefit obligation at the end of the year	26	26	59	65	86	91
of which: amounts owed to active members	*6*	*6*	*0*	*0*	*6*	*6*
of which: amounts owed to deferred members	*0*	*0*	*0*	*0*	*0*	*0*
of which: amounts owed to retirees	*20*	*21*	*59*	*65*	*79*	*86*
Fair value of plan assets at the end of the year	0	0	0	0	0	0
Net post-employment benefit asset / (liability)	(26)	(26)	(59)	(65)	(86)	(91)
Analysis of amounts recognized in net profit						
Current service cost	0	0	0	0	0	0
Interest expense related to post-employment benefit obligation	1	1	2	3	3	3
Net periodic expenses	1	1	2	3	3	4
Analysis of amounts recognized in other comprehensive income (OCI)						
Remeasurement of post-employment benefit obligation	1	(6)	0	(7)	1	(13)
Total gains / (losses) recognized in other comprehensive income, before tax	1	(6)	0	(7)	1	(13)

1 Experience (gains) / losses are a component of actuarial remeasurements of the post-employment benefit obligation that reflect the effects of differences between the previous actuarial assumptions and what has actually occurred. 2 Benefit payments are funded by employer contributions and plan participant contributions.

Note 26 Pension and other post-employment benefit plans (continued)

Actuarial assumptions

The measurement of each medical insurance plan's post-employment benefit obligation considers different actuarial assumptions. Changes in assumptions lead to volatility in the post-employment benefit obligation. The following principal actuarial assumptions are applied:

- Discount rate: discount rates used for post-employment medical insurance plans are the same as those used for defined benefit pension plans. A decrease in the yield of high-quality corporate bonds increases the post-employment benefit obligation. Conversely, an increase in the yield of high-quality corporate bonds decreases the post-employment benefit obligation.
- Average health care cost trend rate: an increase in health care costs generally increases the post-employment benefit obligation.
- Life expectancy: as some plan participants have lifetime benefits under these plans, an increase in life expectancy increases the post-employment benefit obligation.

UBS AG regularly reviews the actuarial assumptions used in calculating its post-employment benefit obligations to determine their continuing relevance. Principal actuarial assumptions used to determine post-employment benefit obligations at the end of the year were:

Principal actuarial assumptions used[1]

	UK plan		US plans[2]	
In %	31.12.17	31.12.16	31.12.17	31.12.16
Discount rate	2.55	2.69	3.54	3.97
Average health care cost trend rate – initial	5.10	5.10	7.99	7.03
Average health care cost trend rate – ultimate	5.10	5.10	4.50	4.50

1 The assumptions for life expectancies are provided within Note 26a. 2 Represents weighted average assumptions across US plans.

Sensitivity analysis of significant actuarial assumptions

The table below presents a sensitivity analysis for each significant actuarial assumption showing how the post-employment benefit obligation 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 post-employment benefit obligation, as the sensitivities may not be linear.

Sensitivity analysis of significant actuarial assumptions[1]

Increase / (decrease) in post-employment benefit obligation	UK plan		US plans	
CHF million	31.12.17	31.12.16	31.12.17	31.12.16
Discount rate				
Increase by 50 basis points	(2)	(2)	(3)	(3)
Decrease by 50 basis points	2	2	3	3
Average health care cost trend rate				
Increase by 100 basis points	4	4	1	2
Decrease by 100 basis points	(3)	(3)	(1)	(1)
Life expectancy				
Increase in longevity by one additional year	2	2	4	5

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.

c) Defined contribution plans

UBS AG sponsors a number of defined contribution plans in locations outside Switzerland. The locations with significant defined contribution plans are the US and the UK. Certain plans allow employees to make contributions and earn matching or other contributions from UBS AG. Employer contributions to defined contribution plans are recognized as an expense, which, for the years ended 31 December 2017, 2016 and 2015, amounted to CHF 232 million, CHF 236 million and CHF 239 million, respectively.

Note 26 Pension and other post-employment benefit plans (continued)

d) 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.

Also, UBS AG leases certain properties that are owned by the Swiss pension fund. As of 31 December 2017, the minimum commitment toward the Swiss pension fund under the related leases was approximately CHF 5 million (31 December 2016: CHF 11 million).

→ **Refer to the "Composition and fair value of plan assets" table in Note 26a for more information on fair value of investments in UBS AG instruments held by the Swiss pension fund**

The following amounts have been received or paid by UBS AG from and to the pension and other post-employment benefit plans located in Switzerland, the UK and the US in respect of these banking activities and arrangements.

Related-party disclosure

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Received by UBS AG			
Fees	36	36	33
Paid by UBS AG			
Rent	4	4	5
Dividends, capital repayments and interest	9	15	13

The transaction volumes in UBS Group AG shares and UBS AG debt instruments and the balances of UBS Group AG shares held as of 31 December were:

Transaction volumes – UBS Group AG shares and UBS AG debt instruments

	For the year ended	
	31.12.17	31.12.16
Financial instruments bought by pension funds		
UBS Group AG shares (in thousands of shares)	905	2,427
UBS AG debt instruments (par values, CHF million)	2	0
Financial instruments sold by pension funds or matured		
UBS Group AG shares (in thousands of shares)	2,897	1,618
UBS AG debt instruments (par values, CHF million)	4	0

UBS Group AG shares held by pension and other post-employment benefit plans

	31.12.17	31.12.16
Number of shares (in thousands of shares)	16,370	18,363
Fair value (CHF million)	293	293

Note 27 Employee benefits: variable compensation

a) Plans offered

UBS has several share-based and other compensation plans that align the interests of Group Executive Board (GEB) members, Key Risk Takers (KRTs) and other employees with the interests of shareholders and other investors. These compensation plans are also designed to meet regulatory requirements. Section a) of this Note provides a description of the most significant compensation plans.

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.

→ **Refer to Note 1a item 6 for a description of the accounting policy related to share-based and other compensation plans**

Mandatory deferred compensation plans

Equity Ownership Plan (EOP)

The EOP is a mandatory deferred compensation plan for all employees with total compensation greater than CHF / USD 300,000. These employees receive at least 60% of their deferred performance award under the EOP in notional shares.

EOP awards granted to GEB members and certain other employees only vest if both Group and business division performance conditions are met. Group performance is measured based on the average adjusted return on tangible equity (RoTE) excluding deferred tax assets over the performance period. Business division performance is measured on the basis of the business division's average adjusted return on attributed equity (RoAE). For Corporate Center employees, it is measured on the basis of the average operating businesses RoAE.

Certain awards, such as replacement awards issued outside the normal performance year cycle, may take the form of deferred cash under the EOP plan rules.

Notional shares represent a promise to receive UBS shares at vesting and do not carry voting rights during the vesting period. Notional shares granted before February 2014 have no rights to dividends, whereas awards granted since February 2014 carry a dividend equivalent that may be paid in notional shares or cash and that vests on the same terms and conditions as the awards. However, awards that have been granted in February 2018 for the performance year 2017 to individuals who are deemed to be Material Risk Takers (MRTs) based on regulatory guidance in the EU do not carry such a dividend equivalent. Awards are settled by delivering UBS shares at vesting, except in jurisdictions where this is not permitted for legal or tax reasons. EOP awards generally vest in equal installments after two and three years following grant (for GEB members, generally after three, four and five years). The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Deferred Contingent Capital Plan (DCCP)

The DCCP is a mandatory deferred compensation plan for all employees with total compensation greater than CHF / USD 300,000. DCCP awards granted up to January 2015 represent a right to receive a cash payment at vesting. For awards granted since February 2015, DCCP takes the form of notional additional tier 1 (AT1) capital instruments, which can be settled in the form of either a cash payment or a perpetual, marketable AT1 capital instrument, at the discretion of UBS. Awards vest in full after five years and up to seven years for certain employees subject to specific regulation in the UK unless there is a trigger event.

Awards are written down if the Group's common equity tier 1 (CET1) capital ratio falls below 10% for GEB members and below 7% for all other employees. Awards are also forfeited if a viability event occurs, that is, if FINMA notifies the firm in writing that the DCCP awards must be written down to prevent an 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. As an additional performance condition, GEB members forfeit 20% of their award for each loss-making year during the vesting period.

For awards granted up to January 2015, interest on the awards is paid annually, provided that UBS achieved an adjusted profit before tax in the preceding year. For awards granted since February 2015, interest payments are discretionary. Awards granted to MRTs since February 2018 are not eligible for interest payments. The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Asset Management EOP

In order to align deferred compensation of certain Asset Management employees with the performance of the investment funds they manage, awards are granted to such employees in the form of cash-settled notional investment funds. The amount delivered depends on the value of the underlying investment funds at the time of vesting. The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Wealth Management Americas financial advisor compensation

In line with market practice for US wealth management businesses, the compensation for financial advisors in Wealth Management Americas is comprised of production payout and deferred compensation awards. Production payout, paid monthly in the form of non-deferred cash payments, is primarily based on compensable revenue.

Financial advisors may also qualify for deferred compensation awards, which vest over various time periods of up to 10 years. Production payout rates and deferred compensation awards may be reduced for, among other things, errors, negligence or carelessness, or a failure to comply with the firm's rules, standards, practices and policies or applicable laws and regulations.

Strategic objective awards

Strategic objective awards are deferred compensation awards based on strategic performance measures, including production, length of service with the firm and net new business. These awards are granted in the form of both deferred share-based and deferred cash-based awards with a vesting period of up to six years.

Through performance year 2016, strategic objective awards were partly granted under the PartnerPlus deferred cash plan. In addition to such granted awards (UBS AG company contributions), participants were also allowed to voluntarily contribute additional amounts otherwise payable as production payout up to a certain percentage, which vest upon contribution. Company contributions and voluntary contributions are credited with interest in accordance with the terms of the plan. Rather than being credited with interest, a participant may elect to have voluntary contributions, along with vested company contributions, credited with notional earnings based on the performance of various mutual funds. Company contributions and interest on both company and voluntary contributions ratably vest in 20% installments six to ten years following grant date. Company contributions and interest on notional earnings on both company and voluntary contributions are forfeitable under certain circumstances.

GrowthPlus

GrowthPlus is a compensation plan for selected financial advisors whose revenue production and length of service exceed defined thresholds from 2010 through 2017. Awards were granted in 2010, 2011, 2015 and early 2018. The awards are distributed over seven years, with the exception of 2018 awards, which will be distributed over five years.

Other compensation plans

Equity Plus Plan (Equity Plus)

Equity Plus is a voluntary share-based compensation plan that provides eligible employees with the opportunity to purchase UBS shares at market value and receive one notional share for every three shares purchased, up to a maximum annual limit. Share purchases may be made annually from the performance award and / or monthly through deductions from salary. If the shares purchased are held until three years from the start of the associated plan year and, in general, if the employee remains in employment, the notional shares vest. For notional shares granted since April 2014, employees are entitled to receive a dividend equivalent, which may be paid in notional shares and / or cash.

Role-based allowances (RBAs)

Certain employees of legal entities regulated in the EU may receive an RBA in addition to their base salary. This allowance reflects the market value of a specific role and is only paid as long as the employee is within such a role. RBAs are offered in line with market practice and are generally paid in cash. In the UK, RBAs are awarded in cash and, above a certain threshold, in blocked UBS shares. Such shares will be unblocked in equal installments after two and three years. The compensation expense is recognized in the year of grant.

Discontinued deferred compensation plans

Senior Executive Equity Ownership Plan (SEEOP)

Up to February 2012, GEB members and selected senior executives received a portion of their mandatory deferral in UBS shares or notional shares, which vested in equal installments over a five-year vesting period and were forfeitable if certain conditions had not been met. The employee's business division or the Group as a whole had to be profitable in the financial year preceding scheduled vesting. Awards granted under SEEOP were settled by delivering UBS shares at vesting. No SEEOP awards have been granted since 2012.

Senior Executive Stock Option Plan (SESOP)

Up to February 2008, GEB members and selected senior executives were granted UBS options with a strike price set at 110% of the fair market value of a UBS share on the grant date. These awards vested in full following a three-year vesting period and generally expire ten years from the grant date. No SESOP awards have been granted since 2008.

Long-Term Deferred Retention Senior Incentive Scheme (LTDRSIS)

Awards under the LTDRSIS were granted to employees in Australia up to and including 2014 and represented a profit share amount based on the profitability of the Australian business. Awards vested after three years and included an arrangement that allowed for unpaid installments to be reduced if the business recorded a loss for the calendar year preceding vesting. The awards were generally forfeitable upon voluntary termination of employment with UBS.

Key Employee Stock Appreciation Rights Plan (KESAP) and Key Employee Stock Option Plan (KESOP)

Until 2009, certain key and high-potential employees were granted discretionary share-settled stock appreciation rights (SARs) or options on UBS shares with a strike price not less than the market value of a UBS share on the date of grant. A SAR gives employees the right to receive a number of UBS shares equal to the value of any market price increase of a UBS share between the grant date and the exercise date. One option entitles the holder to acquire one registered UBS share at the option's strike price. SARs and options are settled by delivering UBS shares, except in jurisdictions where this is not permitted for legal reasons. No options or SARs awards have been granted since 2009.

Note 27 Employee benefits: variable compensation (continued)

b) Effect on the income statement

Effect on the income statement for the financial year and future periods

The table below provides information on compensation expenses related to total variable compensation, including financial advisor compensation in Wealth Management Americas, that were recognized in the financial year ended 31 December 2017, as well as expenses that were deferred and will be recognized in the income statement for 2018 and later. The majority of expenses deferred to 2018 and later that are related to the performance year 2017 relates to awards granted in February 2018. The total compensation expense for unvested share-based awards granted up to 31 December 2017 will be recognized in future periods over a weighted average period of 2.1 years.

Variable compensation including Wealth Management Americas financial advisor compensation

	Expenses recognized in 2017			Expenses deferred to 2018 and later		
CHF million	Related to the performance year 2017	Related to prior performance years	Total	Related to the performance year 2017	Related to prior performance years	Total
Non-deferred cash	1,944	(24)	1,920	0	0	0
Deferred compensation awards	385	691	1,076	575	668	1,243
of which: Equity Ownership Plan	*231*	*357*	*588*	*314*	*279*	*593*
of which: Deferred Contingent Capital Plan	*130*	*299*	*429*	*234*	*360*	*594*
of which: Asset Management EOP	*25*	*31*	*55*	*27*	*26*	*52*
of which: Other performance awards	*0*	*4*	*4*	*0*	*3*	*3*
Total variable compensation – performance awards	**2,329**	**667**	**2,996**	**575**	**668**	**1,243**
Replacement payments	12	57	69	79	40	119
Forfeiture credits	0	(104)	(104)	0	0	0
Severance payments	93	0	93	0	0	0
Retention plan and other payments	24	37	61	29	31	61
Deferred Contingent Capital Plan: interest expense	0	108	108	78	212	290
Total variable compensation – other	**129**	**98**	**227**	**186**	**283**	**470**
Financial advisor compensation	2,995	252	3,247	153	779	932
of which: non-deferred cash	*2,836*	*0*	*2,836*	*0*	*0*	*0*
of which: deferred share-based awards	*56*	*44*	*100*	*69*	*117*	*186*
of which: deferred cash-based awards	*102*	*209*	*311*	*84*	*662*	*746*
Compensation commitments with recruited financial advisors[1]	30	710	740	360	2,009	2,369
Total Wealth Management Americas: Financial advisor compensation	**3,025**	**962**	**3,986**	**513**	**2,788**	**3,300**
Total variable compensation including WMA FA compensation	**5,483**	**1,727**	**7,209[2]**	**1,274**	**3,739**	**5,013**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes CHF 713 million in expenses related to share-based compensation (performance awards: CHF 588 million; other variable compensation: CHF 25 million; Wealth Management Americas financial advisor compensation: CHF 100 million). A further CHF 95 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: CHF 25 million, related to role-based allowances; Social security: CHF 48 million; Other personnel expenses: CHF 22 million, related to the Equity Plus Plan).

Note 27 Employee benefits: variable compensation (continued)

Variable compensation including Wealth Management Americas financial advisor compensation

	Expenses recognized in 2016			Expenses deferred to 2017 and later		
CHF million	Related to the performance year 2016	Related to prior performance years	Total	Related to the performance year 2016	Related to prior performance years	Total
Non-deferred cash	1,808	(41)	1,767	0	0	0
Deferred compensation awards	373	823	1,196	671	856	1,527
of which: Equity Ownership Plan	*214*	*484*	*698*	*372*	*356*	*727*
of which: Deferred Contingent Capital Plan	*133*	*295*	*428*	*266*	*468*	*735*
of which: Asset Management EOP	*26*	*39*	*65*	*34*	*27*	*60*
of which: Other performance awards	*0*	*6*	*6*	*0*	*5*	*5*
Total variable compensation – performance awards	**2,181**	**782**	**2,963**	**671**	**856**	**1,527**
Replacement payments	24	62	86	40	31	71
Forfeiture credits	0	(73)	(73)	0	0	0
Severance payments	217	0	217	0	0	0
Retention plan and other payments	25	51	76	24	27	50
Deferred Contingent Capital Plan: interest expense	0	112	112	98	243	341
Total variable compensation – other	**265**	**151**	**418**	**162**	**301**	**463**
Financial advisor compensation	2,651	247	2,898	196	893	1,089
of which: non-deferred cash	*2,506*	*0*	*2,506*	*0*	*0*	*0*
of which: deferred share-based awards	*33*	*48*	*81*	*57*	*120*	*177*
of which: deferred cash-based awards	*112*	*199*	*311*	*139*	*773*	*912*
Compensation commitments with recruited financial advisors[1]	43	756	799	607	2,120	2,727
Total Wealth Management Americas: Financial advisor compensation	**2,695**	**1,002**	**3,697**	**804**	**3,013**	**3,816**
Total variable compensation including WMA FA compensation	**5,142**	**1,935**	**7,078[2]**	**1,637**	**4,169**	**5,806**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes CHF 819 million in expenses related to share-based compensation (performance awards: CHF 698 million; other variable compensation: CHF 40 million; Wealth Management Americas financial advisor compensation: CHF 81 million). A further CHF 90 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: CHF 39 million, related to role-based allowances; Social security: CHF 27 million; Other personnel expenses: CHF 24 million, related to the Equity Plus Plan).

Note 27 Employee benefits: variable compensation (continued)

Variable compensation including Wealth Management Americas financial advisor compensation

	Expenses recognized in 2015			Expenses deferred to 2016 and later		
CHF million	Related to the performance year 2015	Related to prior performance years	Total	Related to the performance year 2015	Related to prior performance years	Total
Non-deferred cash	2,073	(94)	1,979	0	0	0
Deferred compensation awards	461	769	1,230	900	822	1,722
of which: Equity Ownership Plan	*261*	*461*	*722*	*524*	*338*	*861*
of which: Deferred Contingent Capital Plan	*172*	*258*	*429*	*343*	*446*	*789*
of which: Asset Management EOP	*28*	*38*	*67*	*34*	*35*	*69*
of which: Other performance awards	*0*	*12*	*12*	*0*	*3*	*3*
Total variable compensation – performance awards	**2,534**	**675**	**3,209**	**900**	**822**	**1,722**
Replacement payments	11	65	76	72	41	114
Forfeiture credits	0	(86)	(86)	0	0	0
Severance payments	157	0	157	0	0	0
Retention plan and other payments	15	103	118	15	52	67
Deferred Contingent Capital Plan: interest expense	0	80	80	160	200	360
Total variable compensation – other	**184**	**162**	**346**	**248**	**293**	**541**
Financial advisor compensation	2,629	187	2,816	776	571	1,347
of which: non-deferred cash	*2,460*	*0*	*2,460*	*0*	*0*	*0*
of which: deferred share-based awards	*37*	*45*	*82*	*66*	*115*	*182*
of which: deferred cash-based awards	*132*	*142*	*275*	*710*	*456*	*1,166*
Compensation commitments with recruited financial advisors[1]	43	692	735	940	1,899	2,839
Total Wealth Management Americas: Financial advisor compensation	**2,673**	**879**	**3,552**	**1,716**	**2,470**	**4,186**
Total variable compensation including WMA FA compensation	**5,391**	**1,716**	**7,107[2]**	**2,864**	**3,585**	**6,449**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes CHF 858 million in expenses related to share-based compensation (performance awards: CHF 722 million; other variable compensation: CHF 54 million; Wealth Management Americas financial advisor compensation: CHF 82 million). A further CHF 108 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: CHF 26 million, related to role-based allowances; Social security: CHF 61 million; Other personnel expenses: CHF 21 million, 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 under the EOP plan during 2017 and 2016 are provided in the table below. The awards presented are granted by UBS AG, but are based on UBS Group AG shares.

Movements in outstanding share and performance share awards granted under the EOP

	Number of shares 2017	Weighted average grant date fair value (CHF)	Number of shares 2016	Weighted average grant date fair value (CHF)
Outstanding, at the beginning of the year	512,185	16	427,443	18
Shares awarded during the year	117,082	14	199,755	13
Distributions during the year	(212,984)	16	(115,014)	18
Forfeited during the year	(11,563)	14	0	0
Outstanding, at the end of the year	404,720	14	512,185	16
of which: shares vested for accounting purposes	*132,117*		*189,953*	

The total carrying amount of the liability related to cash-settled share-based awards as of 31 December 2017 and 31 December 2016 was CHF 5 million and CHF 7 million, respectively.

d) Valuation

Share awards

UBS AG measures compensation expense based on the average market price of the UBS Group AG share 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 their 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 (SEC).

Individually significant subsidiaries

The table below lists UBS AG's individually significant subsidiaries as of 31 December 2017. Unless otherwise stated, the subsidiaries listed below have share capital consisting solely of ordinary shares that are held fully 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 network of branches and a significant proportion of its business activity is conducted outside Switzerland in the UK, US, Singapore, Hong Kong and other countries. UBS Europe SE has branches and offices in a number of EU member states, including Germany, Italy, Luxembourg, Spain and Austria.

Individually significant subsidiaries as of 31 December 2017

Company	Registered office	Primary business division	Share capital in million		Equity interest accumulated in %
UBS Americas Holding LLC	Wilmington, Delaware, USA	Corporate Center	USD	2,250.0[1]	100.0
UBS Asset Management AG	Zurich, Switzerland	Asset Management	CHF	43.2	100.0
UBS Bank USA	Salt Lake City, Utah, USA	Wealth Management Americas	USD	0.0	100.0
UBS Europe SE	Frankfurt, Germany	Wealth Management	EUR	446.0	100.0
UBS Financial Services Inc.	Wilmington, Delaware, USA	Wealth Management Americas	USD	0.0	100.0
UBS Limited	London, United Kingdom	Investment Bank	GBP	226.6	100.0
UBS Securities LLC	Wilmington, Delaware, USA	Investment Bank	USD	1,283.1[2]	100.0
UBS Switzerland AG	Zurich, Switzerland	Personal & Corporate Banking	CHF	10.0	100.0

1 Comprised of common share capital of USD 1,000 and non-voting preferred share capital of USD 2,250,000,000. 2 Comprised of common share capital of USD 100,000 and non-voting preferred share capital of USD 1,283,000,000.

Note 28 Interests in subsidiaries and other entities (continued)

Other subsidiaries

The table below lists other subsidiaries of UBS AG that are not individually significant but that contribute to UBS AG's total assets and aggregated profit before tax thresholds and are thereby disclosed in accordance with the requirements set by the SEC.

Other subsidiaries as of 31 December 2017

Company	Registered office	Primary business division	Share capital in million		Equity interest accumulated in %
UBS Americas Inc.	Wilmington, Delaware, USA	Corporate Center	USD	0.0	100.0
UBS Asset Management (Americas) Inc.	Wilmington, Delaware, USA	Asset Management	USD	0.0	100.0
UBS Asset Management (Australia) Ltd	Sydney, Australia	Asset Management	AUD	20.1[1]	100.0
UBS Asset Management (Deutschland) GmbH	Frankfurt, Germany	Asset Management	EUR	7.7	100.0
UBS Asset Management (Hong Kong) Limited	Hong Kong, Hong Kong	Asset Management	HKD	206.0	100.0
UBS Asset Management (Japan) Ltd	Tokyo, Japan	Asset Management	JPY	2,200.0	100.0
UBS Asset Management (Singapore) Ltd	Singapore, Singapore	Asset Management	SGD	4.0	100.0
UBS Asset Management (UK) Ltd	London, United Kingdom	Asset Management	GBP	125.0	100.0
UBS Business Solutions US LLC	Wilmington, Delaware, USA	Corporate Center	USD	0.0	100.0
UBS Card Center AG	Glattbrugg, Switzerland	Personal & Corporate Banking	CHF	0.1	100.0
UBS Credit Corp.	Wilmington, Delaware, USA	Wealth Management Americas	USD	0.0	100.0
UBS (France) SA.	Paris, France	Wealth Management	EUR	133.0	100.0
UBS Fund Advisor, L.L.C.	Wilmington, Delaware, USA	Wealth Management Americas	USD	0.0	100.0
UBS Fund Management (Luxembourg) S.A.	Luxembourg, Luxembourg	Asset Management	EUR	13.0	100.0
UBS Fund Management (Switzerland) AG	Basel, Switzerland	Asset Management	CHF	1.0	100.0
UBS Hedge Fund Solutions LLC	Wilmington, Delaware, USA	Asset Management	USD	0.1	100.0
UBS (Monaco) S.A.	Monte Carlo, Monaco	Wealth Management	EUR	49.2	100.0
UBS O'Connor LLC	Dover, Delaware, USA	Asset Management	USD	1.0	100.0
UBS Real Estate Securities Inc.	Wilmington, Delaware, USA	Investment Bank	USD	0.0	100.0
UBS Realty Investors LLC	Boston, Massachusetts, USA	Asset Management	USD	9.0	100.0
UBS Securities (Thailand) Ltd	Bangkok, Thailand	Investment Bank	THB	500.0	100.0
UBS Securities Australia Ltd	Sydney, Australia	Investment Bank	AUD	0.3[1]	100.0
UBS Securities India Private Limited	Mumbai, India	Investment Bank	INR	140.0	100.0
UBS Securities Japan Co., Ltd.	Tokyo, Japan	Investment Bank	JPY	32,100.0	100.0
UBS Securities Pte. Ltd.	Singapore, Singapore	Investment Bank	SGD	420.4	100.0
UBS South Africa (Proprietary) Limited	Sandton, South Africa	Investment Bank	ZAR	0.0	100.0
UBS UK Properties Limited	London, United Kingdom	Corporate Center	GBP	132.0	100.0

1 Includes a nominal amount relating to redeemable preference shares.

Note 28 Interests in subsidiaries and other entities (continued)

Changes in consolidation scope

In 2017, no significant subsidiaries were added to or removed from the scope of consolidation as a result of acquisitions or disposals.

Non-controlling interests

As of 31 December 2017 and 31 December 2016, non-controlling interests were not material to UBS AG.

Consolidated structured entities

UBS AG consolidates a structured entity (SE) if it has power over the relevant activities of the entity, exposure to variable returns and the ability to use its power to affect its returns. Consolidated SEs include certain investment funds, securitization vehicles and client investment vehicles. UBS AG has no individually significant subsidiaries that are SEs.

Investment fund SEs are generally consolidated when UBS AG's aggregate exposure combined with its decision-making rights indicate the ability to use such power in a principal capacity. Typically, UBS AG will have decision-making rights as fund manager, earning a management fee, and will provide seed capital at the inception of the fund or hold a significant percentage of the fund units. Where other investors do not have the substantive ability to remove UBS as decision maker, UBS AG is deemed to have control and therefore consolidates the fund.

Securitization SEs are generally consolidated when UBS AG holds a significant percentage of the asset-backed securities issued by the SE and has the power to remove without cause the servicer of the asset portfolio.

Client investment SEs are generally consolidated when UBS AG has a substantive liquidation right over the SE or a decision right over the assets held by the SE and has exposure to variable returns through derivatives traded with the SE or holding notes issued by the SE.

In 2017 and 2016, UBS AG has not entered 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 has UBS AG an intention to do so in the future. Further, 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.

Note 28 Interests in subsidiaries and other entities (continued)

b) Interests in associates and joint ventures

As of 31 December 2017 and 2016, no associate or joint venture was individually material to UBS AG. In addition, there were no significant restrictions on the ability of associates or joint ventures to transfer funds to UBS AG or its subsidiaries in the form of 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

CHF million	31.12.17	31.12.16
Carrying amount at the beginning of the year	963	954
Additions	3	3
Disposals	0	(2)
Share of comprehensive income	98	82
of which: share of net profit [1]	*75*	*106*
of which: share of other comprehensive income [2]	*23*	*(24)*
Dividends received	(51)	(50)
Impairment	(7)	0
Foreign currency translation	12	(23)
Carrying amount at the end of the year	1,018	963
of which: associates	*989*	*934*
of which: UBS Securities Co. Limited, Beijing [3]	*401*	*392*
of which: SIX Group AG, Zurich [4]	*464*	*426*
of which: other associates	*124*	*116*
of which: joint ventures	*29*	*29*

1 For 2017, consists of CHF 60 million from associates and CHF 15 million from joint ventures. For 2016, consists of CHF 94 million from associates and CHF 12 million from joint ventures. 2 For 2017, consists of CHF 24 million from associates and negative CHF 1 million from joint ventures. For 2016, consists of negative CHF 25 million from associates and CHF 0 million from joint ventures. 3 UBS AG's equity interest amounts to 24.99%. 4 UBS AG's equity interest amounts to 17.31%. UBS AG is represented on the Board of Directors.

Note 28 Interests in subsidiaries and other entities (continued)

c) Interests in unconsolidated structured entities

During 2017, UBS AG sponsored the creation of various SEs and interacted with a number of non-sponsored SEs, including securitization vehicles, client vehicles as well as certain investment funds, which UBS did not consolidate as of 31 December 2017 because it did not control these 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 value of UBS's interest as of year-end has been disclosed.

Interests in unconsolidated structured entities

	31.12.17				
CHF million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total	Maximum exposure to loss[1]
Trading portfolio assets	363	308	6,143	6,815	6,815
Positive replacement values	21	68	22	111	111
Loans	0	0	97	97	97
Financial assets designated at fair value	84	66[2]	0	150	1,675
Financial assets available for sale	0	3,865	45	3,910	3,910
Other assets	291	29[2]	0	320	1,407
Total assets	760[3]	4,337	6,307	11,403	
Negative replacement values	20[4]	53	203	276	14
Total liabilities	20	53	203	276	
Assets held by the unconsolidated structured entities in which UBS had an interest (CHF billion)	57[5]	78[6]	412[7]		

	31.12.16				
CHF million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total	Maximum exposure to loss[1]
Trading portfolio assets	634	394	6,215	7,243	7,243
Positive replacement values	40	76	101	217	217
Loans	0	0	79	79	79
Financial assets designated at fair value	103	83[2]	0	186	1,765
Financial assets available for sale	0	3,381	58	3,439	3,439
Other assets	289	37[2]	0	327	1,490
Total assets	1,066[3]	3,971	6,454	11,491	
Negative replacement values	33[4]	346	67	446	90
Total liabilities	33	346	67	446	
Assets held by the unconsolidated structured entities in which UBS had an interest (CHF billion)	72[5]	102[6]	334[7]		

1 For purposes of this disclosure, maximum exposure to loss amounts do not consider the risk-reducing effects of collateral or other credit enhancements. 2 Represents the carrying value of loan commitments, both designated at fair value and held at amortized cost. The maximum exposure to loss for these instruments is equal to the notional amount. 3 As of 31 December 2017, CHF 0.7 billion of the CHF 0.8 billion (31 December 2016: CHF 1.0 billion of the CHF 1.1 billion) was held in Corporate Center – Non-core and Legacy Portfolio. 4 Comprised of credit default swap (CDS) liabilities and other swap liabilities. The maximum exposure to loss for CDS is equal to the sum of the negative carrying value and the notional amount. For other swap liabilities, no maximum exposure to loss is reported. 5 Represents principal amount outstanding. 6 Represents the market value of total assets. 7 Represents the net asset value of the investment funds sponsored by UBS and the carrying value 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, derivatives and through management contracts.

UBS AG's maximum exposure to loss is generally equal to the carrying value of UBS AG's interest in the SE, with the exception of guarantees, letters of credit and credit derivatives, for which the contract's notional amount, adjusted for losses already incurred, represents the maximum loss that UBS AG is exposed to. In addition, the current fair value of derivative swap instruments with a positive replacement value only, such as total return swaps, is presented as the maximum exposure to loss. Risk exposure for these swap instruments could change over time with market movements.

The maximum exposure to loss disclosed in the table on the previous page does not reflect UBS AG's risk management activities, including effects from financial instruments that may be used to economically hedge the risks inherent in the unconsolidated SE or the risk-reducing effects of collateral or other credit enhancements.

In 2017 and 2016, UBS AG did not provide support, financial or otherwise, to an unconsolidated SE when not contractually obligated to do so, nor has UBS AG an intention to do so in the future.

In 2017 and 2016, income and expenses from interests in unconsolidated SEs primarily resulted from mark-to-market movements recognized in net trading income, which have generally been 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 2017 and 31 December 2016, UBS AG held interests, both retained and acquired, in various securitization vehicles, a majority of which are held within Corporate Center – Non-core and Legacy Portfolio. The Investment Bank also retained interests in securitization vehicles related to financing, underwriting, secondary market and derivative trading activities. In some cases UBS AG may be required to absorb losses from an unconsolidated SE before other parties because UBS AG's interest is subordinated to others in the ownership structure. An overview of UBS AG's interests in unconsolidated securitization vehicles and the relative ranking and external credit rating of those interests is presented in the table on the following pages.

→ **Refer to Note 1a item 1 for more information on UBS AG's accounting policies regarding consolidation and sponsorship of securitization vehicles and other structured entities**

Interests in client vehicles

As of 31 December 2017 and 31 December 2016, UBS AG retained interests in client vehicles sponsored by UBS and third parties that relate to financing and derivative activities, and to hedge structured product offerings. Included within these investments are securities guaranteed by US government agencies.

Interests in investment funds

UBS AG holds interests in a number of investment funds, primarily resulting from seed investments or to hedge structured product offerings. In addition to the interests disclosed in the table on the previous page, UBS AG manages the assets of various pooled investment funds and receives fees that are based, in whole or part, on the net asset value of the fund and / or the performance of the fund. The specific fee structure is determined on the basis of various market factors and considers the nature of the fund, 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 that is based on the performance of the entity. Depending on the structure of the fund, these fees may be collected directly from the fund assets and / or from the investors. Any amounts due are collected on a regular basis and are generally backed by the assets of the fund. UBS AG did not have any material exposure to loss from these interests as of 31 December 2017 or as of 31 December 2016.

Note 28 Interests in subsidiaries and other entities (continued)

Interests in unconsolidated securitization vehicles[1]

	31.12.17				
CHF million, except where indicated	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities[2]	Re-securitization[3]	Total
Sponsored by UBS					
Interests in senior tranches	84	24	0	10	118
of which: rated investment grade	*0*	*24*			*24*
of which: rated sub-investment grade	*84*				*84*
of which: defaulted				*10*	*10*
Interests in junior tranches	0	9	0	0	9
of which: rated investment grade		*9*			*9*
Total	84	32	0	10	126
of which: Trading portfolio assets	*0*	*32*	*0*	*10*	*43*
of which: Financial assets designated at fair value	*84*	*0*	*0*	*0*	*84*
Total assets held by the vehicles in which UBS had an interest (CHF billion)	1	10	0	1	12
Not sponsored by UBS					
Interests in senior tranches	75	6	165	64	311
of which: rated investment grade	*75*	*6*	*165*	*64*	*311*
Interests in mezzanine tranches	9	1	0	0	9
of which: rated investment grade		*1*			*1*
of which: defaulted	*9*				*9*
Interests in junior tranches	1	0	0	0	1
of which: rated sub-investment grade	*1*				*1*
Tranche information not available	0	0	0	0	0
of which: rated investment grade	*0*				*0*
of which: not rated	*0*				*0*
Total	85	7	165	64	321
of which: Trading portfolio assets	*85*	*7*	*165*	*64*	*321*
Total assets held by the vehicles in which UBS had an interest (CHF billion)	18	5	20	0	43

1 This table excludes receivables and derivative transactions with securitization vehicles. 2 Includes credit card, auto and student loan structures. 3 Includes collateralized debt obligations.

Note 28 Interests in subsidiaries and other entities (continued)

Interests in unconsolidated securitization vehicles (continued)[1]

	31.12.16				
CHF million, except where indicated	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities[2]	Re-securitization[3]	Total
Sponsored by UBS					
Interests in senior tranches	103	34	0	14	151
of which: rated investment grade	*0*	*34*			*34*
of which: rated sub-investment grade	*103*				*103*
of which: defaulted				*14*	*14*
Interests in mezzanine tranches	1	0	0	0	1
of which: rated sub-investment grade	*1*				*1*
Total	104	34	0	14	152
of which: Trading portfolio assets	*1*	*34*	*0*	*14*	*49*
of which: Financial assets designated at fair value	*103*	*0*	*0*	*0*	*103*
Total assets held by the vehicles in which UBS had an interest (CHF billion)	2	13	0	1	16
Not sponsored by UBS					
Interests in senior tranches	165	4	241	125	535
of which: rated investment grade	*165*	*4*	*241*	*125*	*535*
Interests in mezzanine tranches	32	0	0	0	32
of which: rated investment grade	*29*				*29*
of which: defaulted	*3*				*3*
Interests in junior tranches	18	0	0	0	18
of which: rated investment grade	*17*				*17*
of which: rated sub-investment grade	*1*				*1*
Total	215	4	241	125	585
of which: Trading portfolio assets	*215*	*4*	*241*	*125*	*585*
Total assets held by the vehicles in which UBS had an interest (CHF billion)	41	8	5	1	56

1 This table excludes receivables and derivative transactions with securitization vehicles. 2 Includes credit card, auto and student loan structures. 3 Includes collateralized debt obligations.

Note 28 Interests in subsidiaries and other entities (continued)

Sponsored unconsolidated structured entities in which UBS did not have an interest

For several sponsored SEs, no interest was held by UBS AG at year-end. However, during the respective reporting period UBS AG transferred assets, provided services and held instruments that did not qualify as an interest in these sponsored SEs, and accordingly earned income or incurred expenses from these entities. The table below presents the income earned and expenses incurred directly from these entities during the year as well as corresponding asset information. The table does not include income earned and expenses incurred from risk management activities, including income and expenses from financial instruments used to economically hedge instruments transacted with the unconsolidated SEs.

The majority of the fee income arose from investment funds that are sponsored and administrated by UBS AG, but managed by third parties. As UBS AG does not provide any active management services, UBS was not exposed to risk from the performance of these entities and was therefore deemed not to have an interest in them. In certain structures, the fees receivable may be collected directly from the investors and have therefore not been included in the table below.

UBS AG also recorded net trading income from mark-to-market movements arising primarily from derivatives, such as interest rate and currency swaps as well as credit derivatives, through which UBS AG purchases protection, and financial liabilities designated at fair value, which do not qualify as interests because UBS AG does not absorb variability from the performance of the entity. Total income reported does not reflect economic hedges or other mitigating effects from UBS AG's risk management activities.

During 2017, UBS and third parties transferred assets totaling CHF 17 billion (2016: CHF 13 billion) into sponsored securitization and client vehicles created in 2017. 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 CHF 15 billion (31 December 2016: CHF 14 billion).

Sponsored unconsolidated structured entities in which UBS did not have an interest at year-end[1]

	As of or for the year ended			
	31.12.17			
CHF million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total
Net interest income	2	(9)	0	(7)
Net fee and commission income	0	0	40	40
Net trading income	(8)	(49)	2	(55)
Total income	(6)	(58)	43	(21)
Asset information (CHF billion)	10[2]	7[3]	15[4]	

	As of or for the year ended			
	31.12.16			
CHF million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total
Net interest income	3	(6)	0	(3)
Net fee and commission income	0	0	53	53
Net trading income	2	(158)	29	(128)
Total income	4	(165)	82	(78)
Asset information (CHF billion)	7[2]	6[3]	14[4]	

1 These tables exclude profit attributable to preferred noteholders of CHF 72 million for the year ended 31 December 2017 and CHF 78 million for the year ended 31 December 2016. 2 Represents the amount of assets transferred to the respective securitization vehicles. Of the total amount transferred, CHF 2 billion was transferred by UBS (31 December 2016: CHF 2 billion) and CHF 8 billion was transferred by third parties (31 December 2016: CHF 5 billion). 3 Represents total assets transferred to the respective client vehicles. Of the total amount transferred, CHF 6 billion was transferred by UBS (31 December 2016: CHF 5 billion) and CHF 1 billion was transferred by third parties (31 December 2016: CHF 1 billion). 4 Represents the total net asset value of the respective investment funds.

Note 29 Business combinations

In 2017 and 2016, UBS AG did not complete any significant business combinations.

Note 30 Changes in organization and disposals

Measures to improve the resolvability of the UBS Group

In December 2014, UBS Group AG became the holding company of the UBS Group. In 2015, UBS transferred its Personal & Corporate Banking and Wealth Management businesses booked in Switzerland from UBS AG to UBS Switzerland AG and implemented a more self-sufficient business and operating model for UBS Limited.

UBS Business Solutions AG was established in 2015 as a direct subsidiary of UBS Group AG to act as the UBS Group service company. In the second half of 2015, UBS AG transferred the ownership of the majority of its existing service subsidiaries outside the US to UBS Business Solutions AG, and in 2017 shared services functions in Switzerland and the UK were transferred from UBS AG to UBS Business Solutions AG. UBS AG also completed the transfer of the shared services functions in the US to its US service company, UBS Business Solutions US LLC, a wholly owned subsidiary of UBS Americas Holding LLC.

In addition, UBS AG transferred the majority of the operating subsidiaries of Asset Management to UBS Asset Management AG during 2016. Furthermore, UBS AG merged its Wealth Management subsidiaries in Italy, Luxembourg (including its branches in Austria, Denmark and Sweden), the Netherlands and Spain into UBS Deutschland AG, which was renamed to UBS Europe SE, to establish UBS AG's new European legal entity, which is headquartered in Frankfurt, Germany.

Transfers of shared services functions to UBS Business Solutions AG

In 2017, UBS transferred shared services functions in Switzerland and the UK from UBS AG to UBS Business Solutions AG. The transfer in Switzerland to UBS Business Solutions AG was executed in the second quarter of 2017. For UK shared services, a similar transfer to the UK branch of UBS Business Solutions AG was completed in the fourth quarter of 2017.

The transfer in Switzerland was effected by a distribution of the shares of an interim shared services subsidiary of UBS AG to UBS Group AG through a dividend in kind, and the merger of the subsidiary with the previously established UBS Business Solutions AG. The transfer resulted in a CHF 307 million reduction of net assets and of share premium within equity attributable to shareholders.

The transferred functions include Group Technology, Group Operations, Group Corporate Services and most other shared services functions. As a consequence, UBS AG no longer incurs the respective direct costs, no longer charges other Group entities for underlying services and no longer earns a related markup, but rather receives a charge including a markup from a service company for its own consumption of services provided by the service company. UBS AG retained the vast majority of its real estate portfolio and selected other Corporate Center – Services functions and continues to charge UBS Business Solutions AG for services provided to it, earning a markup.

The new shared services model resulted in a reduction of *Operating profit before tax* for UBS AG consolidated of approximately CHF 0.1 billion for the year 2017. This amount includes net increases in *Other income* of approximately CHF 0.3 billion and *General and administrative expenses* of approximately CHF 1.7 billion and net decreases in *Personnel expenses* of approximately CHF 1.2 billion and *Depreciation and impairment of property, equipment and software* of approximately CHF 0.1 billion.

Sale of subsidiaries and businesses

In the fourth quarter of 2017, UBS AG completed the sale of Asset Management's fund administration servicing units in Luxembourg and Switzerland to Northern Trust, resulting in a pre-tax gain on sale of CHF 153 million.

In the second quarter of 2017, UBS AG completed the sale of a life insurance subsidiary within Wealth Management. A loss on sale of CHF 23 million was recognized in 2016 relating to this transaction. Prior to completion of the sale, the assets and liabilities of this business were presented as a disposal group held for sale within *Other assets* and *Other liabilities* (31 December 2016: CHF 5.1 billion and CHF 5.2 billion, respectively).

In 2015, UBS AG sold its Alternative Fund Services (AFS) business to Mitsubishi UFJ Financial Group Investor Services. Upon completion of the sale, UBS AG recognized a gain on sale of CHF 56 million and reclassified an associated net foreign currency translation gain of CHF 119 million from *Other comprehensive income* to the income statement. Also during 2015, UBS AG completed the sale of certain subsidiaries and businesses within Wealth Management, which resulted in the recognition of a combined net gain of CHF 169 million.

Restructuring expenses

Restructuring expenses arise from programs that materially change either the scope of business that UBS AG engages in or the manner in which such business is conducted. Restructuring expenses are necessary to effect such programs and include items such as severance and other personnel-related expenses, duplicate headcount costs, impairment and accelerated depreciation of assets, contract termination costs, consulting fees, and related infrastructure and system costs. These costs are presented in the income statement according to the underlying nature of the expense.

Note 30 Changes in organization and disposals (continued)

Net restructuring expenses by business division and Corporate Center unit

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Wealth Management	463	447	323
Wealth Management Americas	113	139	137
Personal & Corporate Banking	103	117	101
Asset Management	100	100	82
Investment Bank	359	577	396
Corporate Center	49	62	194
of which: Services	*39*	*41*	*138*
of which: Group ALM	*4*	*0*	*0*
of which: Non-core and Legacy Portfolio	*6*	*21*	*56*
Total net restructuring expenses	1,188	1,442	1,233
of which: personnel expenses	*362*	*731*	*458*
of which: general and administrative expenses	*818*	*700*	*760*
of which: depreciation and impairment of property, equipment and software	*7*	*11*	*12*
of which: amortization and impairment of intangible assets	*0*	*0*	*2*

Net restructuring expenses by personnel expense category

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Salaries	213	422	311
Variable compensation – performance awards	22	101	38
Variable compensation – other	80	208	108
Contractors	48	56	46
Social security	6	8	5
Pension and other post-employment benefit plans	(15)	(76)	(65)
Other personnel expenses	8	12	15
Total net restructuring expenses: personnel expenses	362	731	458

Net restructuring expenses by general and administrative expense category

	For the year ended		
CHF million	31.12.17	31.12.16	31.12.15
Occupancy	75	123	109
Rent and maintenance of IT and other equipment	36	93	31
Communication and market data services	1	1	0
Administration	397	28	7
Marketing and public relations	1	0	0
Travel and entertainment	8	12	16
Professional fees	143	162	187
Outsourcing of IT and other services	166	287	316
Other[1]	(8)	(5)	95
Total net restructuring expenses: general and administrative expenses	818	700	760

1 Mainly comprised of onerous real estate lease contracts.

Note 31 Operating leases and finance leases

Information on lease contracts classified as operating leases where UBS AG is the lessee is provided in Note 31a and information on finance leases where UBS AG acts as a lessor is provided in Note 31b.

a) Operating lease commitments

As of 31 December 2017, UBS AG was obligated under a number of non-cancelable operating leases for premises and equipment used primarily for banking purposes. The significant premises leases usually include renewal options and escalation clauses in line with general office rental market conditions, as well as rent adjustments based on price indices. However, the lease agreements do not contain contingent rent payment clauses and purchase options, nor do they impose any restrictions on UBS AG's ability to pay dividends, engage in debt financing transactions or enter into further lease agreements.

CHF million	31.12.17
Expenses for operating leases to be recognized in:	
2018	652
2019	588
2020	506
2021	422
2022	375
2023 and thereafter	1,984
Subtotal commitments for minimum payments under operating leases	4,526
Less: Sublease rental income commitments	262
Net commitments for minimum payments under operating leases	4,265

CHF million	31.12.17	31.12.16	31.12.15
Gross operating lease expense recognized in the income statement	684	737	741
Sublease rental income	67	78	70
Net operating lease expense recognized in the income statement	617	659	671

b) Finance lease receivables

UBS AG leases a variety of assets to third parties under finance leases, such as commercial vehicles, production lines, medical equipment, construction equipment and aircraft. At the end of the respective lease term, assets may be sold to third parties or further leased. Lessees may participate in any sales proceeds achieved. Lease expenses cover the cost of the assets less their residual value as well as financing costs.

As of 31 December 2017, unguaranteed residual values of CHF 158 million had been accrued, and the accumulated allowance for uncollectible minimum lease payments receivable amounted to CHF 10 million. No contingent rents were received in 2017.

Lease receivables

CHF million	31.12.17		
	Total minimum lease payments	Unearned finance income	Present value
2018	333	22	311
2019–2022	684	36	648
Thereafter	112	3	110
Total	1,129	61	1,069

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Note 32 Related parties

UBS AG defines related parties as associates (entities that are significantly influenced by UBS), joint ventures (entities in which UBS shares control with another party), post-employment benefit plans for UBS AG employees, key management personnel, close family members of key management personnel and entities that are, directly or indirectly, controlled or jointly controlled by key management personnel or their close family members. Key management personnel is defined as members of the Board of Directors (BoD) and Executive Board (EB).

a) Remuneration of key management personnel

The Chairman of the BoD has a specific management employment contract and receives pension benefits upon retirement. Total remuneration of the Chairman of the Board of Directors and all EB members is included in the table below.

Remuneration of key management personnel

CHF million	31.12.17	31.12.16	31.12.15
Base salaries and other cash payments[1]	23	24	21
Incentive awards – cash[2]	13	10	9
Annual incentive award under DCCP	20	20	20
Employer's contributions to retirement benefit plans	2	2	1
Benefits in kind, fringe benefits (at market value)	2	2	2
Equity-based compensation[3]	36	38	39
Total	98	97	92

1 Includes role-based allowances that have been made in line with market practice in response to the EU Capital Requirements Directive of 2013 (CRD IV). 2 Includes immediate and deferred cash. 3 Expenses for shares granted are calculated at grant date of the respective award and allocated over the vesting period, generally for 5 years. Refer to Note 27 for more information. In 2017, 2016 and 2015, equity-based compensation was entirely comprised of EOP awards.

The independent members of the BoD 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 external board members amounted to CHF 7.1 million in 2017, CHF 7.2 million in 2016 and CHF 6.7 million in 2015.

b) Equity holdings of key management personnel

Equity holdings of key management personnel

	31.12.17	31.12.16
Number of stock options from equity participation plans held by non-independent members of the BoD and the EB members[1]	398,867	620,950
Number of shares held by members of the BoD, EB and parties closely linked to them[2]	3,709,539	3,267,911

1 Refer to Note 27 for more information. 2 Excludes shares granted under variable compensation plans with forfeiture provisions.

Of the share totals above, 95,597 shares were held by close family members of key management personnel on 31 December 2017 and 31 December 2016. 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 2017 and 31 December 2016. Refer to Note 27 for more information. As of 31 December 2017, no member of the BoD or EB was the beneficial owner of more than 1% of UBS Group AG's shares.

Note 32 Related parties (continued)

c) Loans, advances and mortgages to 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 collectibility 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.

Movements in the loan, advances and mortgage balances are as follows.

Loans, advances and mortgages to key management personnel[1]

CHF million	2017	2016
Balance at the beginning of the year	33	33
Additions	1	13
Reductions	(1)	(13)
Balance at the end of the year[2]	34	33

1 All loans are secured loans. 2 Excludes unused uncommitted credit facilities for two EB members and one BoD member of CHF 5,196,294 as of 31 December 2017 and for one EB and one BoD member of CHF 2,684,498 as of 31 December 2016.

d) Other related party transactions with entities controlled by key management personnel

In 2017 and 2016, UBS AG did not enter into transactions with entities that are directly or indirectly controlled or jointly controlled by UBS AG's key management personnel or their close family members and as of 31 December 2017, 31 December 2016 and 31 December 2015, there were no outstanding balances related to such transactions. Furthermore, in 2017 and 2016, entities controlled by key management personnel 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 2017 and 2016, and therefore also received no fees.

Note 32 Related parties (continued)

e) Transactions with associates and joint ventures

Loans to and outstanding receivables from associates and joint ventures

CHF million	2017	2016
Carrying value at the beginning of the year	472	476
Additions	82	4
Reductions	(3)	(8)
Carrying value at the end of the year	551	472
of which: unsecured loans	*540*	*461*

Other transactions with associates and joint ventures

	As of or for the year ended	
CHF million	31.12.17	31.12.16
Payments to associates and joint ventures for goods and services received	177	153
Fees received for services provided to associates and joint ventures	2	3
Commitments and contingent liabilities to associates and joint ventures	4	4

→ **Refer to Note 28 for an overview of investments in associates and joint ventures**

f) Receivables and payables from / to UBS Group AG and other subsidiaries of UBS Group AG

CHF million	2017	2016
Receivables		
Loans	2,152	681
Trading portfolio assets	98	84
Other assets	113	35
Payables		
Due to customers[1]	38,150	26,527
Other liabilities	1,547	1,111

1 Includes Group-internal funding obtained from UBS Group AG and UBS Group Funding (Switzerland) AG of CHF 35 billion as of 31 December 2017 (31 December 2016: CHF 25 billion).

Note 33 Invested assets and net new money

Invested assets

Invested assets include 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 the assets 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 that manages the investment and the one that distributes it. This results in double counting within UBS AG total invested assets, 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 that are entrusted to UBS AG by new and existing clients, less those withdrawn by existing clients and clients who terminated their relationship 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 the effects resulting from any acquisition or divestment of a UBS AG subsidiary or business. Reclassifications between invested assets and custody-only assets as a result of a change in the service level delivered are generally treated as net new money flows; however, where such change in service level directly results from a new externally imposed regulation, the one-time net effect of the implementation is reported as an asset reclassification without net new money impact.

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 produces net new money even though client assets were already with UBS AG. There were no such transfers between the Investment Bank and other business divisions in 2017 and 2016.

Invested assets and net new money

	For the year ended	
CHF billion	31.12.17	31.12.16
Fund assets managed by UBS	330	275
Discretionary assets	1,025	886
Other invested assets[1]	1,824	1,649
Total invested assets[1,2]	3,179	2,810
of which: double counts	*204*	*176*
Net new money[2]	104	27

1 Certain account types were corrected during 2017. As a result, invested assets as of 31 December 2016 were corrected by CHF 12 billion. 2 Includes double counts.

Development of invested assets

	For the year ended	
CHF billion	31.12.17	31.12.16
Total invested assets at the beginning of the year[1,2]	2,810	2,678
Net new money	104	27
Market movements[3]	313	98
Foreign currency translation	(45)	21
Other effects	(3)	(14)
of which: acquisitions / (divestments)	*4*	*(14)*
Total invested assets at the end of the year[1,2]	3,179	2,810

1 Includes double counts. 2 Certain account types were corrected during 2017. As a result, invested assets as of 31 December 2016 and 31 December 2015 were corrected by CHF 12 billion and CHF 11 billion, respectively. 3 Includes interest and dividend income.

Note 34 Currency translation rates

The following table shows the rates of the main currencies used to translate the financial information of foreign operations into Swiss francs.

	Spot rate		Average rate[1]		
	As of		For the year ended		
	31.12.17	31.12.16	31.12.17	31.12.16	31.12.15
1 USD	0.97	1.02	0.98	0.99	0.97
1 EUR	1.17	1.07	1.12	1.09	1.06
1 GBP	1.32	1.26	1.28	1.32	1.47
100 JPY	0.86	0.87	0.88	0.91	0.80

1 Monthly income statement items of foreign operations with a functional currency other than the Swiss franc are translated with month-end rates into Swiss francs. Disclosed average rates for a year represent an average of 12 month-end rates, weighted according to the income and expense volumes of all foreign operations 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 35 Events after the reporting period

Events subsequent to the publication of the unaudited fourth quarter 2017 report

The 2017 results and the balance sheet as of 31 December 2017 differ from those presented in the unaudited fourth quarter 2017 report published on 22 January 2018 as a result of events adjusted for after the balance sheet date. Provisions for litigation, regulatory and similar matters increased, which reduced 2017 operating profit before tax by CHF 141 million and 2017 net profit attributable to shareholders by CHF 112 million.

Integration of Wealth Management and Wealth Management Americas into a single business division

Effective 1 February 2018, UBS is integrating its Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division. The firm will report the results for Global Wealth Management beginning with the first quarter of 2018.

→ **Refer to Note 1c for more information on the change in segment reporting**

Changes to the Pension Fund of UBS in Switzerland

As a result of the effects of continuing low and in some cases negative interest rates, diminished investment return expectations and increasing life expectancy, the Pension Fund of UBS in Switzerland and UBS have agreed measures that will take effect from the start of 2019 to support the long-term financial stability of the Swiss pension fund. As a result, the conversion rate will be lowered, the regular retirement age and employee contributions will be increased, and savings contributions will start earlier. These measures will have no effect on current pensioners of UBS.

To mitigate the effects of the reduction of the conversion rate on future pensions, UBS AG will make a payment to employees' retirement assets in the Swiss pension fund of up to CHF 450 million in three installments in 2020, 2021 and 2022.

In accordance with International Financial Reporting Standards (IFRS), these measures, including the portion of the payment to be made by UBS that is attributable to past service, will lead to a reduction in the pension obligation recognized by UBS AG, resulting in a pre-tax gain of CHF 123 million in the first quarter of 2018 with no overall effect on total equity and a reduced pension service cost starting from January 2018. The gain will be recognized as a reduction in personnel expense within the income statement across the business divisions and Corporate Center, with a corresponding effect in *Other comprehensive income*, as the Swiss pension plan is currently in a surplus situation that cannot be recognized due to the IFRS asset ceiling requirement. If the Swiss pension plan remains in an asset ceiling position, the annual payments adjusted for expected forfeitures are expected to reduce total equity by approximately CHF 130 million per year over the installment period, with no effect on the income statement.

→ **Refer to Note 26 for more information on the Swiss pension plan and the asset ceiling effect**

Note 36 Main differences between IFRS and Swiss GAAP

The consolidated financial statements of UBS AG are prepared in accordance with International Financial Reporting Standards (IFRS). The Swiss Financial Market Supervisory Authority (FINMA) requires financial groups that present their financial statements under IFRS to provide a narrative explanation of the main differences between IFRS and Swiss GAAP (FINMA Circular 2015 / 1 and the Banking Ordinance). Included in this Note are the significant differences in the recognition and measurement between IFRS and the provisions of the Banking Ordinance and the guidelines of FINMA governing true and fair view financial statement reporting pursuant to article 25 through article 42 of the Banking Ordinance.

1. Consolidation

Under IFRS, all entities that are controlled by the holding entity are consolidated.

Under Swiss GAAP, controlled entities that are deemed immaterial to UBS AG or that are held temporarily only 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. Financial assets available for sale

Under IFRS, financial assets available for sale are carried at fair value. Changes in fair value are recorded directly in equity until an asset is sold, collected or otherwise disposed of, or until an asset is determined to be impaired. At the time an available-for-sale asset is determined to be impaired, the cumulative unrealized loss previously recognized in equity is included in net profit or loss for the respective period. On disposal of a financial asset available for sale, the cumulative unrealized gain or loss previously recognized in equity is reclassified to the income statement.

Under Swiss GAAP, classification and measurement of financial assets designated as available for sale depend on the nature of the asset. Equity instruments with no permanent holding intent, as well as debt instruments, 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 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 as well as realized gains or losses upon disposal of the investment are recorded as *Extraordinary income / Extraordinary expenses* in the income statement.

3. Hedge accounting

Under IFRS, when cash flow hedge accounting is applied, the fair value gain or loss on the effective portion of the derivative designated as a cash flow hedge is recognized in equity. When fair value hedge accounting is applied, the fair value gains or losses of the derivative and the hedged item are recognized in the income statement.

Under Swiss GAAP, the effective portion of the fair value change of the derivative instrument designated as a cash flow or as fair value hedge is deferred on the balance sheet as *Other assets* or *Other liabilities*. The carrying value of the hedged item designated in fair value hedges is not adjusted for fair value changes attributable to the hedged risk.

4. Fair value option

Under IFRS, UBS AG applies the fair value option to certain financial assets and financial liabilities not held for trading. Instruments for which the fair value option is applied are accounted for at fair value with changes in fair value reflected in *Net trading income*. The fair value option is applied primarily to structured debt instruments, certain non-structured debt instruments, high-quality liquid debt securities, structured reverse repurchase and repurchase agreements and securities borrowing agreements, certain structured and non-structured loans as well as loan commitments.

Under Swiss GAAP, the fair value option can only be applied to structured debt instruments that consist of a debt host contract and one or more embedded derivatives that do not relate to own equity. Furthermore, changes in fair value attributable to changes in unrealized own credit are not recognized.

Note 36 Main differences between IFRS and Swiss GAAP (continued)

5. Goodwill and intangible assets

Under IFRS, 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.

6. Pension and other post-employment benefit plans

Swiss GAAP permits the use of IFRS or Swiss accounting standards for pension and other post-employment benefit plans, with the election made on a plan-by-plan basis.

UBS AG has elected to apply IFRS (IAS 19) for the non-Swiss defined benefit plans and Swiss GAAP (FER 16) for the Swiss pension plan in its 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. Key differences between Swiss GAAP and IFRS 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 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 requires the full defined benefit obligation net of the plan assets to be recorded on the balance sheet, with changes resulting from remeasurements recognized directly in equity. However, for non-Swiss defined benefit plans for which IFRS accounting is elected, changes due to remeasurements are recognized in the income statement of UBS AG standalone under Swiss GAAP.

Swiss GAAP requires that employer contributions to the pension fund are recognized as personnel expenses in the income statement. Further, Swiss GAAP requires an assessment as to whether, based on the financial statements of the pension fund prepared in accordance with Swiss accounting standards (FER 26), an economic benefit to, or obligation of, the employer arises from the pension fund and 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).

7. Netting of replacement values

Under IFRS, replacement values and related cash collateral are reported on a gross basis unless the restrictive IFRS netting requirements are met: i) existence of master netting agreements and related collateral arrangements that are unconditional and legally enforceable, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS AG and its counterparties, and ii) UBS AG's intention to either settle on a net basis or to realize the asset and settle the liability simultaneously.

Under Swiss GAAP, replacement values and related cash collateral 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 AG's counterparties.

8. Negative interest

Under IFRS, 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.

9. 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, as well as reversals of impairments of participations and fixed assets, are classified as extraordinary items under Swiss GAAP. This distinction is not available under IFRS. ▲

Note 37 Supplemental guarantor information required under SEC regulations

Guarantee of PaineWebber securities

Prior to its acquisition by UBS in 2000, Paine Webber Group Inc. (PaineWebber) was an SEC registrant. Upon acquisition, PaineWebber was merged into UBS Americas Inc., a wholly owned subsidiary of UBS AG. Following the acquisition, UBS AG entered into a full and unconditional guarantee of the senior notes (Debt Securities) issued by PaineWebber. Under the guarantee, if UBS Americas Inc. fails to make any timely payment under the Debt Securities agreements, the holders of the Debt Securities or the Debt Securities trustee may demand payment from UBS AG without first proceeding against UBS Americas Inc.

As of 31 December 2017, CHF 1 million of these Debt Securities were outstanding. These remaining notes mature in 2018.

Guarantee of other securities

As of 31 December 2017 and 31 December 2016, UBS Preferred Funding Trust IV and UBS Preferred Funding Trust V had no balances outstanding. These entities are presented in a separate column in supplemental guarantor information provided for prior periods in the following tables. Amounts presented in this column are eliminated in the *Elimination entries* column, as these entities were not consolidated by UBS AG because UBS AG did not absorb any variability from the performance of these entities.

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 existing guarantee of aforementioned PaineWebber and other securities. To reflect this joint liability, UBS Switzerland AG is presented in a separate column as a subsidiary co-guarantor.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

CHF million For the year ended 31 December 2017	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Operating income						
Interest income	8,632	3,917	2,732	1,742	(2,815)	14,208
Interest expense	(7,114)	(596)	(1,307)	(1,434)	2,724	(7,728)
Net interest income	1,518	3,321	1,425	308	(91)	6,480
Credit loss (expense) / recovery	(135)	(22)	(4)	(5)	39	(128)
Net interest income after credit loss expense	1,382	3,299	1,421	303	(53)	6,352
Net fee and commission income	1,564	3,966	8,281	3,449	(47)	17,214
Net trading income	3,325	901	457	220	71	4,974
Other income	4,303	167	419	3,439	(7,388)	939
Total operating income	10,574	8,334	10,577	7,411	(7,417)	29,479
Operating expenses						
Personnel expenses	4,409	2,020	6,312	1,932	0	14,673
General and administrative expenses	4,830	3,334	3,014	3,087	(5,455)	8,811
Depreciation and impairment of property, equipment and software	652	11	156	108	0	928
Amortization and impairment of intangible assets	8	0	51	11	0	70
Total operating expenses	9,899	5,366	9,532	5,138	(5,455)	24,481
Operating profit / (loss) before tax	675	2,968	1,045	2,273	(1,962)	4,998
Tax expense / (benefit)	448	616	2,800	213	(1)	4,077
Net profit / (loss)	227	2,351	(1,755)	2,059	(1,962)	921
Net profit / (loss) attributable to preferred noteholders	72	0	0	0	0	72
Net profit / (loss) attributable to non-controlling interests	0	0	0	4	0	4
Net profit / (loss) attributable to shareholders	155	2,351	(1,755)	2,056	(1,962)	845

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 for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

CHF million For the year ended 31 December 2017	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders						
Net profit / (loss)	155	2,351	(1,755)	2,056	(1,962)	845
Other comprehensive income						
Other comprehensive income that may be reclassified to the income statement						
Foreign currency translation, net of tax	(170)	0	(751)	426	(40)	(535)
Financial assets available for sale, net of tax	(6)	2	43	(31)	(93)	(86)
Cash flow hedges, net of tax	(465)	(157)	0	(1)	1	(621)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(641)	(156)	(709)	394	(132)	(1,242)
Other comprehensive income that will not be reclassified to the income statement						
Defined benefit plans, net of tax	275	(22)	41	(14)	25	305
Own credit on financial liabilities designated at fair value, net of tax	(313)	0	0	0	0	(313)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(38)	(22)	41	(14)	25	(8)
Total other comprehensive income	(679)	(177)	(668)	380	(107)	(1,250)
Total comprehensive income attributable to shareholders	(524)	2,174	(2,423)	2,436	(2,069)	(404)
Total comprehensive income attributable to preferred noteholders	423					423
Total comprehensive income attributable to non-controlling interests				5		5
Total comprehensive income	(101)	2,174	(2,423)	2,441	(2,069)	23

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 for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

CHF million As of 31 December 2017	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Assets						
Cash and balances with central banks	36,552	38,467	3,100	9,656	0	87,775
Due from banks	30,467	3,977	4,712	66,649	(92,112)	13,693
Cash collateral on securities borrowed	9,907	20,972	10,775	6,188	(35,448)	12,393
Reverse repurchase agreements	51,293	13,858	20,676	19,368	(27,955)	77,240
Trading portfolio assets	104,118	1,719	6,720	25,974	(7,723)	130,807
of which: assets pledged as collateral that may be sold or repledged by counterparties	*58,524*	*0*	*2,303*	*7,411*	*(32,877)*	*35,363*
Positive replacement values	114,044	4,123	12,948	21,118	(34,004)	118,229
Cash collateral receivables on derivative instruments	22,346	696	2,129	10,828	(12,565)	23,434
Loans	106,469	184,331	51,743	24,078	(44,903)	321,718
Financial assets designated at fair value	34,097	12,768	3,351	10,820	(2,481)	58,556
Financial assets available for sale	3,607	790	6,495	918	(3,145)	8,665
Financial assets held to maturity	950	8,215	0	0	0	9,166
Investments in subsidiaries and associates	49,632	15	1	27	(48,657)	1,018
Property, equipment and software	6,384	92	979	529	0	7,985
Goodwill and intangible assets	294	0	4,880	1,281	(58)	6,398
Deferred tax assets	1,252	421	5,999	2,110	0	9,783
Other assets	18,157	1,179	11,101	2,456	(3,389)	29,505
Total assets	589,570	291,624	145,611	202,001	(312,442)	916,363
Liabilities						
Due to banks	24,361	20,728	3,160	51,915	(92,631)	7,533
Cash collateral on securities lent	29,898	1,323	2,243	3,774	(35,448)	1,789
Repurchase agreements	18,264	321	12,681	11,945	(27,955)	15,255
Trading portfolio liabilities	24,358	250	3,877	9,122	(7,145)	30,463
Negative replacement values	111,448	3,675	12,932	22,082	(34,004)	116,134
Cash collateral payables on derivative instruments	27,768	60	2,215	12,768	(12,565)	30,247
Due to customers	118,684	241,313	79,684	54,438	(46,977)	447,141
Financial liabilities designated at fair value	53,532	0	104	3,329	(2,762)	54,202
Debt issued	96,572	8,367	8	514	(711)	104,749
Provisions	1,057	145	1,682	200	0	3,084
Other liabilities	30,430	2,246	10,117	15,625	(3,428)	54,990
Total liabilities	536,372	278,430	128,702	185,711	(263,626)	865,588
Equity attributable to shareholders	53,198	13,194	16,909	16,233	(48,816)	50,718
Equity attributable to non-controlling interests				57		57
Total equity	53,198	13,194	16,909	16,290	(48,816)	50,775
Total liabilities and equity	589,570	291,624	145,610	202,001	(312,442)	916,363

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 for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

CHF million For the year ended 31 December 2017	UBS AG[1]	UBS Switzerland AG[1]	UBS Americas Inc.[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(34,372)	(8,192)	(4,859)	(4,448)	(51,872)
Cash flow from / (used in) investing activities					
Purchase of subsidiaries, associates and intangible assets	(1)	(2)	(17)	(82)	(102)
Disposal of subsidiaries, associates and intangible assets[2]	289	0	0	46	336
Purchase of property, equipment and software	(1,032)	(83)	(291)	(94)	(1,500)
Disposal of property, equipment and software	1	0	53	160	213
Purchase of financial assets available for sale	(231)	0	(2,855)	(5,362)	(8,448)
Disposal and redemption of financial assets available for sale	3,385	1,282	2,777	7,473	14,917
Net (purchase) / redemption of financial assets held to maturity	(448)	370	0	0	(77)
Net cash flow from / (used in) investing activities	1,964	1,567	(333)	2,140	5,338
Cash flow from / (used in) financing activities					
Net short-term debt issued / (repaid)	24,195	(5)	0	(49)	24,141
Distributions paid on UBS AG shares	(2,250)	0	0	0	(2,250)
Issuance of long-term debt, including financial liabilities designated at fair value	48,484	622	103	297	49,506
Repayment of long-term debt, including financial liabilities designated at fair value	(41,722)	(580)	(129)	(867)	(43,299)
Dividends paid and repayments of preferred notes	(776)	0	0	0	(776)
Net changes in non-controlling interests	0	0	0	(5)	(5)
Net activity related to group internal capital transactions and dividends	1,242	(191)	883	(1,934)	0
Net cash flow from / (used in) financing activities	29,173	(154)	857	(2,558)	27,317
Total cash flow					
Cash and cash equivalents at the beginning of the year	44,269	46,629	11,892	18,317	121,107
Net cash flow from / (used in) operating, investing and financing activities	(3,236)	(6,780)	(4,335)	(4,866)	(19,216)
Effects of exchange rate differences on cash and cash equivalents	(511)	79	(400)	1,096	264
Cash and cash equivalents at the end of the year[3]	40,522	39,928	7,157	14,547	102,154
of which: cash and balances with central banks	*36,477*	*38,467*	*3,100*	*9,656*	*87,700*
of which: due from banks	*2,285*	*1,455*	*3,945*	*4,721*	*12,406*
of which: money market paper[4]	*1,760*	*7*	*112*	*169*	*2,049*

1 Cash flows generally represent a third-party view from a UBS AG consolidated perspective. 2 Includes dividends received from associates. 3 CHF 2,434 million of cash and cash equivalents were restricted. 4 Money market paper is included in the balance sheet under Trading portfolio assets, Financial investments available for sale and Financial assets designated at fair value.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

CHF million For the year ended 31 December 2016	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	UBS Preferred Funding Trust IV & V	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Operating income							
Interest income	8,500	4,151	2,227	25	1,148	(2,269)	13,782
Interest expense	(6,686)	(714)	(1,135)		(919)	2,054	(7,399)
Net interest income	1,815	3,438	1,092	25	229	(215)	6,383
Credit loss (expense) / recovery	(24)	(3)	(6)		(3)		(37)
Net interest income after credit loss expense	1,790	3,434	1,086	25	226	(215)	6,346
Net fee and commission income	1,500	3,782	7,873		3,332	(40)	16,447
Net trading income	3,717	780	454		310	(318)	4,943
Other income	8,113	346	576		1,677	(10,027)	685
Total operating income	15,120	8,343	9,988	25	5,545	(10,600)	28,421
Operating expenses							
Personnel expenses	5,691	2,044	6,243		1,613	0	15,591
General and administrative expenses	5,213	3,507	3,402		2,458	(6,891)	7,690
Depreciation and impairment of property, equipment and software	699	12	184		85	0	980
Amortization and impairment of intangible assets	22	0	60		9	0	91
Total operating expenses	11,625	5,563	9,889		4,165	(6,891)	24,352
Operating profit / (loss) before tax	3,495	2,780	99	25	1,380	(3,710)	4,069
Tax expense / (benefit)	892	589	(1,175)		482	(7)	781
Net profit / (loss)	2,603	2,191	1,274	25	898	(3,703)	3,288
Net profit / (loss) attributable to preferred noteholders	78	0	0	31	0	(31)	78
Net profit / (loss) attributable to non-controlling interests	0	0	0		4	0	4
Net profit / (loss) attributable to shareholders	2,525	2,191	1,274	(6)	894	(3,672)	3,207

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 for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

CHF million For the year ended 31 December 2016	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	UBS Preferred Funding Trust IV & V	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders							
Net profit / (loss)	2,525	2,191	1,274	(6)	894	(3,672)	3,207
Other comprehensive income							
Other comprehensive income that may be reclassified to the income statement							
Foreign currency translation, net of tax	335	0	285		(707)	379	293
Financial assets available for sale, net of tax	(22)	(33)	(8)		(18)	6	(73)
Cash flow hedges, net of tax	(805)	109	0		0	29	(666)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(491)	77	277	0	(725)	415	(447)
Other comprehensive income that will not be reclassified to the income statement							
Defined benefit plans, net of tax	(651)	(54)	(59)		(36)	(25)	(824)
Own credit on financial liabilities designated at fair value, net of tax	(115)						(115)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(766)	(54)	(59)	0	(36)	(25)	(939)
Total other comprehensive income	(1,257)	23	218	0	(761)	390	(1,386)
Total comprehensive income attributable to shareholders	1,268	2,214	1,492	(6)	133	(3,282)	1,820
Total comprehensive income attributable to preferred noteholders	349						349
Total comprehensive income attributable to non-controlling interests	0				3		3
Total comprehensive income attributable to UBS Preferred Funding Trust IV & V							0
Total comprehensive income	1,617	2,214	1,492	(6)	137	(3,282)	2,173

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 for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

CHF million As of 31 December 2016	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Assets						
Cash and balances with central banks	40,538	44,528	8,925	13,775	0	107,767
Due from banks	30,008	3,886	3,759	33,420	(57,948)	13,125
Cash collateral on securities borrowed	6,561	6,657	13,173	5,004	(16,284)	15,111
Reverse repurchase agreements	52,782	19,273	14,406	7,507	(27,722)	66,246
Trading portfolio assets	74,172	1,673	4,702	22,729	(6,615)	96,661
of which: assets pledged as collateral that may be sold or repledged by counterparties	*39,596*	*0*	*1,960*	*5,850*	*(17,145)*	*30,260*
Positive replacement values	156,375	5,458	9,496	27,231	(40,149)	158,411
Cash collateral receivables on derivative instruments	22,117	913	2,701	12,068	(11,135)	26,664
Loans	94,506	184,241	50,150	41,199	(63,091)	307,004
Financial assets designated at fair value	35,498	16,416	5,371	11,589	(3,849)	65,024
Financial assets available for sale	8,104	2,046	6,593	3,469	(4,536)	15,676
Financial assets held to maturity	527	8,762	0	0	0	9,289
Investments in subsidiaries and associates	49,904	22	1	27	(48,991)	963
Property, equipment and software	6,961	19	1,075	241	0	8,297
Goodwill and intangible assets	297	0	5,130	1,161	(32)	6,556
Deferred tax assets	1,801	601	9,148	1,595	0	13,144
Other assets	10,645	1,526	9,071	7,241	(3,071)	25,412
Total assets	590,796	296,022	143,702	188,257	(283,424)	935,353
Liabilities						
Due to banks	27,992	13,204	5,288	32,733	(68,572)	10,645
Cash collateral on securities lent	13,193	1,518	2,549	1,841	(16,284)	2,818
Repurchase agreements	16,944	5,385	2,710	9,295	(27,722)	6,612
Trading portfolio liabilities	15,535	154	3,643	9,780	(6,287)	22,825
Negative replacement values	151,274	4,982	9,491	28,213	(40,149)	153,810
Cash collateral payables on derivative instruments	31,585	109	2,409	12,504	(11,135)	35,472
Due to customers	118,934	248,731	85,702	53,474	(56,641)	450,199
Financial liabilities designated at fair value	54,504	0	1	4,559	(4,047)	55,017
Debt issued	70,558	8,330	145	401	(437)	78,998
Provisions	1,483	186	2,168	312	21	4,169
Other liabilities	31,879	2,212	11,100	18,352	(3,099)	60,443
Total liabilities	533,881	284,811	125,206	171,464	(234,353)	881,009
Equity attributable to shareholders	56,273	11,211	18,496	16,754	(49,072)	53,662
Equity attributable to preferred noteholders	642	0	0	0	0	642
Equity attributable to non-controlling interests	0	0	0	40	0	40
Total equity	56,915	11,211	18,496	16,793	(49,072)	54,343
Total liabilities and equity	590,796	296,022	143,702	188,257	(283,424)	935,353

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 for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

CHF million For the year ended 31 December 2016	UBS AG[1]	UBS Switzerland AG[1]	UBS Americas Inc.[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(26,981)	(3,914)	8,979	4,503	(17,413)
Cash flow from / (used in) investing activities					
Purchase of subsidiaries, associates and intangible assets	0	(3)	0	(23)	(26)
Disposal of subsidiaries, associates and intangible assets[2]	93	0	0	0	93
Purchase of property, equipment and software	(1,332)	(16)	(288)	(111)	(1,746)
Disposal of property, equipment and software	175	0	1	32	209
Purchase of financial assets available for sale	(694)	(998)	(2,792)	(2,788)	(7,271)
Disposal and redemption of financial assets available for sale	24,902	21,729	1,694	5,772	54,097
Net (purchase) / redemption of financial assets held to maturity	(527)	(8,468)	0	0	(8,996)
Net cash flow from / (used in) investing activities	22,616	12,245	(1,384)	2,882	36,359
Cash flow from / (used in) financing activities					
Net short-term debt issued / (repaid)	8,229	(7)	(2,975)	193	5,440
Distributions paid on UBS AG shares	(3,434)	0	0	0	(3,434)
Issuance of long-term debt, including financial liabilities designated at fair value	31,484	733	196	1,039	33,453
Repayment of long-term debt, including financial liabilities designated at fair value	(32,279)	(669)	(8)	(1,126)	(34,081)
Dividends paid and repayments of preferred notes	(1,366)	0	0	0	(1,366)
Net changes in non-controlling interests	0	0	0	(5)	(5)
Net activity related to group internal capital transactions and dividends	(1,333)	(2,000)	0	3,333	0
Net cash flow from / (used in) financing activities	1,300	(1,943)	(2,786)	3,435	6
Total cash flow					
Cash and cash equivalents at the beginning of the year	47,902	40,246	7,084	7,731	102,962
Net cash flow from / (used in) operating, investing and financing activities	(3,065)	6,388	4,808	10,821	18,952
Effects of exchange rate differences on cash and cash equivalents	(569)	(4)	0	(234)	(807)
Cash and cash equivalents at the end of the year[3]	44,269	46,629	11,892	18,317	121,107
of which: cash and balances with central banks	*40,486*	*44,528*	*8,925*	*13,775*	*107,715*
of which: due from banks	*2,836*	*2,095*	*2,931*	*4,065*	*11,927*
of which: money market paper[4]	*946*	*7*	*36*	*477*	*1,465*

1 Cash flows generally represent a third-party view from a UBS AG (consolidated) perspective. As a consequence, the non-consolidated UBS Preferred Funding Trusts IV and V are not presented in this table. For the year ended 31 December 2016, these trusts had cash inflows of CHF 1,317 million from operating activities and an equivalent cash outflow for dividends paid to preferred note holders. 2 Includes dividends received from associates. 3 CHF 2,662 million of cash and cash equivalents were restricted. 4 Money market paper is included in the balance sheet under Trading portfolio assets, Financial investments available for sale and Financial assets designated at fair value.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

CHF million For the year ended 31 December 2015	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	UBS Preferred Funding Trust IV & V	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Operating income							
Interest income	9,102	3,039	1,367	63	1,626	(2,020)	13,178
Interest expense	(5,885)	(545)	(501)		(1,410)	1,892	(6,449)
Net interest income	3,218	2,494	866	63	217	(128)	6,729
Credit loss (expense) / recovery	(109)	(12)	0		4	0	(117)
Net interest income after credit loss expense	3,109	2,482	866	63	220	(128)	6,612
Net fee and commission income	2,738	3,001	7,940		3,586	(81)	17,184
Net trading income	5,031	735	355		331	(756)	5,696
Other income	15,371	120	774		89	(15,243)	1,112
Total operating income	26,249	6,338	9,935	63	4,227	(16,208)	30,605
Operating expenses							
Personnel expenses	6,800	1,607	6,281		1,265	0	15,954
General and administrative expenses	5,439	2,621	3,785		2,254	(5,880)	8,219
Depreciation and impairment of property, equipment and software	672	11	159		76	0	918
Amortization and impairment of intangible assets	22	0	73		12	0	107
Total operating expenses	12,934	4,239	10,298		3,607	(5,880)	25,198
Operating profit / (loss) before tax	13,315	2,099	(362)	63	619	(10,327)	5,407
Tax expense / (benefit)	1,136	489	(1,200)		(1,317)	(16)	(908)
Net profit / (loss)	12,180	1,610	837	63	1,936	(10,313)	6,314
Net profit / (loss) attributable to preferred noteholders	77	0	0	31	0	(31)	77
Net profit / (loss) attributable to non-controlling interests	0	0	0		3	0	3
Net profit / (loss) attributable to shareholders	12,103	1,610	837	32	1,933	(10,281)	6,235

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 for legal entities and sub-groups at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

CHF million For the year ended 31 December 2015	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	UBS Americas Inc.[2]	UBS Preferred Funding Trust IV & V	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders							
Net profit / (loss)	12,103	1,610	837	32	1,933	(10,281)	6,235
Other comprehensive income							
Other comprehensive income that may be reclassified to the income statement							
Foreign currency translation, net of tax	(11)	0	121		(843)	467	(266)
Financial assets available for sale, net of tax	(51)	43	(21)		(16)	(19)	(64)
Cash flow hedges, net of tax	(503)	(72)	0		0	57	(518)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(564)	(29)	100	0	(859)	504	(848)
Other comprehensive income that will not be reclassified to the income statement							
Defined benefit plans, net of tax	701	(337)	(71)		27	(15)	304
Total other comprehensive income that will not be reclassified to the income statement, net of tax	701	(337)	(71)	0	27	(15)	304
Total other comprehensive income	136	(366)	29	0	(832)	489	(545)
Total comprehensive income attributable to shareholders	12,239	1,244	866	32	1,101	(9,792)	5,690
Total comprehensive income attributable to preferred noteholders	18	0	0	0	0	0	18
Total comprehensive income attributable to non-controlling interests	0	0	0	0	1	0	1
Total comprehensive income attributable to UBS Preferred Funding Trust IV & V	0	0	0	40	0	(40)	0
Total comprehensive income	12,257	1,244	866	72	1,102	(9,832)	5,709

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 for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Amounts presented in these columns serve as a basis for preparing UBS AG consolidated financial statements in accordance with IFRS.

Note 37 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

CHF million For the year ended 31 December 2015	UBS AG[1]	UBS Switzerland AG[1]	UBS Americas Inc.[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(1,457)	2,681	(525)	1,298	1,997
Cash flow from / (used in) investing activities					
Purchase of subsidiaries, associates and intangible assets	(12)	0	1	0	(13)
Disposal of subsidiaries, associates and intangible assets[2]	464	0	13	0	477
Purchase of property, equipment and software	(1,423)	(5)	(299)	(114)	(1,841)
Disposal of property, equipment and software	503	0	9	35	547
Purchase of financial assets available for sale	(66,659)	(18,686)	(2,722)	(13,123)	(101,189)
Disposal and redemption of financial assets available for sale	51,515	22,501	2,952	16,616	93,584
Net (purchase) / redemption of financial assets held to maturity					
Net cash flow from / (used in) investing activities	(15,613)	3,810	(47)	3,415	(8,434)
Cash flow from / (used in) financing activities					
Net short-term debt issued / (repaid)	(5,603)	24	(826)	0	(6,404)
Distributions paid on UBS AG shares	(2,626)	0	0	0	(2,626)
Issuance of long-term debt, including financial liabilities designated at fair value	46,882	772	7	129	47,790
Repayment of long-term debt, including financial liabilities designated at fair value	(42,415)	(402)	(129)	(1,274)	(44,221)
Dividends paid and repayments of preferred notes	(108)	0	0	0	(108)
Net changes in non-controlling interests	0	0	0	(5)	(5)
Net activity related to group internal capital transactions and dividends[3]	(30,512)	33,293	(114)	(2,666)	0
Net cash flow from / (used in) financing activities	(34,382)	33,687	(1,062)	(3,817)	(5,573)

Total cash flow

Cash and cash equivalents at the beginning of the year	100,662	0	8,960	7,093	116,715
Net cash flow from / (used in) operating, investing and financing activities	(51,451)	40,178	(1,634)	896	(12,010)
Effects of exchange rate differences on cash and cash equivalents	(1,309)	67	(241)	(259)	(1,742)
Cash and cash equivalents at the end of the year[4]	47,902	40,246	7,084	7,731	102,962
of which: cash and balances with central banks	*45,125*	*38,701*	*4,971*	*2,509*	*91,306*
of which: due from banks	*2,072*	*1,438*	*2,009*	*5,213*	*10,732*
of which: money market paper[5]	*704*	*107*	*104*	*9*	*924*

1 Cash flows generally represent a third-party view from a UBS AG (consolidated) perspective. As a consequence, the non-consolidated UBS Preferred Funding Trusts IV and V are not presented in this table. For the year ended 31 December 2015, these trusts had cash inflows of CHF 77 million from operating activities and an equivalent cash outflow for dividends paid to preferred note holders. 2 Includes dividends received from associates. 3 Includes a transfer of cash and cash equivalents from UBS AG to UBS Switzerland AG of CHF 33,283 million. Refer to "Establishment of UBS Switzerland AG" in the "Legal entity financial and regulatory information" section of the UBS Group AG Annual Report 2015 for more information on the business transfer from UBS AG to UBS Switzerland AG. 4 CHF 3,963 million of cash and cash equivalents were restricted. 5 Money market paper is included in the balance sheet under Trading portfolio assets and Financial investments available for sale.

APPENDIX 4 — RISK MANAGEMENT AND CONTROL

The information in this Appendix 4 describes the risk management and control process of UBS AG and references herein to "**UBS**" or the "**Group**" are to UBS AG and its subsidiaries.

The information in this Appendix 4 has been extracted from the Annual Report 2017 as at and for the year ended 31 December 2017. References to page numbers in this Appendix 4 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 4.

Risk management and control

Overview of risks arising from our business activities

The scale of our business activities is dependent on the capital we have available to cover the risks in our business, the size of our on- and off-balance sheet assets through their contribution to our capital, leverage and liquidity ratios, and our risk appetite.

Our overall credit risk profile remained stable over the year and we continued to manage market risks at generally low levels. Operational risk remains a focus.

The table on the next page shows risk-weighted assets (RWA), the leverage ratio denominator (LRD) and risk-based capital (RBC), as well as attributed tangible equity, total assets and operating profit before tax on both a reported and adjusted basis, for our business divisions and Corporate Center units. This illustrates how the activities in our business divisions and Corporate Center units are captured in the risk measures mentioned above the table, and it illustrates their financial performance in the context of these measures.

→ **Refer to the "Capital management" section of this report for more information on risk-weighted assets, leverage ratio denominator and our equity attribution framework**

→ **Refer to "Statistical measures" in this section for more information on risk-based capital**

→ **Refer to the "Performance by business division and Corporate Center unit – reported and adjusted" table in the "Group performance" section of this report for more information**

Key risks, risk measures and performance by business division and Corporate Center unit

Business divisions and Corporate Center units	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio
Key risks arising from business activities	**Credit risk** from lending against securities collateral and mortgages, and a small amount of derivatives trading activity. Minimal contribution to market risk	**Credit risk** from lending against securities collateral and mortgages **Market risk** from municipal securities and taxable fixed income securities	**Credit risk** from retail business, mortgages, secured and unsecured corporate lending, and a small amount of derivatives trading activity. Minimal contribution to market risk	Small amounts of credit and market risk	**Credit risk** from lending (including temporary loan underwriting activities), derivatives trading and securities financing **Market risk** from primary underwriting activities and secondary trading is materially hedged	No material risk exposures	**Credit** and **market risk** arising from management of the Group's balance sheet, capital, profit or loss and liquidity portfolios. Market risk is materially hedged Central management of **liquidity, funding, counterparty credit** and **structural FX risk**	**Credit risk** from remaining lending and derivative exposures **Market risk** is materially hedged

Operational risk is an inevitable consequence of being in business, as losses can result from inadequate or failed internal processes, people and systems, or from external events. It can arise as a result of our past and current business activities across all business divisions and Corporate Center units.

Risk measures and performance

	31.12.17								
CHF billion, as of or for the year ended	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Risk-weighted assets (fully applied)[1]	29.0	25.5	48.0	3.9	74.5	29.2	11.2	16.1	237.5
of which: credit and counterparty credit risk	*15.4*	*10.4*	*44.0*	*1.5*	*42.9*	*1.8*	*8.0*	*4.5*	*128.4*
of which: market risk	*0.0*	*1.6*	*0.0*	*0.0*	*11.7*	*(3.1)[2]*	*0.7*	*1.3*	*12.3*
of which: operational risk	*13.5*	*13.5*	*4.0*	*2.4*	*19.8*	*13.3*	*2.5*	*10.3*	*79.4*
Leverage ratio denominator (fully applied)[1]	128.0	71.8	148.0	2.7	264.1	6.7	249.9	14.9	886.1
Risk-based capital[3]	3.0	1.8	3.2	0.4	6.8	11.0	5.7	2.0	33.9
Average attributed tangible equity[4]	4.8	3.0	6.1	0.3	9.3	18.9	2.7	1.3	46.4
Total assets	123.0	67.1	135.6	14.3	262.9	20.9	245.7	46.2	915.6
Operating profit / (loss) before tax (as reported)	2.3	1.2	1.6	0.6	1.2	(0.9)	(0.3)	(0.4)	5.3
Operating profit / (loss) before tax (adjusted)[5]	2.8	1.3	1.7	0.5	1.5	(0.9)	(0.3)	(0.4)	6.2

	31.12.16								
CHF billion, as of or for the year ended	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Risk-weighted assets (fully applied)[1]	25.8	23.8	41.6	3.9	70.4	27.6	10.6	18.9	222.7
of which: credit and counterparty credit risk	*12.5*	*9.1*	*37.7*	*1.6*	*37.0*	*1.4*	*7.3*	*6.2*	*112.8*
of which: market risk	*0.0*	*1.4*	*0.0*	*0.0*	*14.0*	*(3.2)[2]*	*0.7*	*2.6*	*15.5*
of which: operational risk	*13.2*	*13.2*	*3.9*	*2.3*	*19.5*	*13.1*	*2.5*	*10.1*	*77.8*
Leverage ratio denominator (fully applied)[1]	115.5	68.1	152.2	2.7	231.2	5.8	272.4	22.4	870.5
Risk-based capital[3]	1.5	1.3	2.7	0.3	7.8	12.7	5.2	2.4	33.9
Average attributed tangible equity[4]	2.8	1.9	4.1	0.2	7.6	19.2	4.3	2.1	42.2
Total assets	115.5	65.9	139.9	12.0	242.3	23.7	267.2	68.5	935.0
Operating profit / (loss) before tax (as reported)	1.9	1.1	1.8	0.5	1.0	(0.8)	(0.2)	(1.1)	4.1
Operating profit / (loss) before tax (adjusted)[5]	2.4	1.2	1.8	0.6	1.5	(0.9)	(0.1)	(1.1)	5.3

1 Represents RWA and LRD prior to allocation of RWA and LRD held by Corporate Center – Group ALM that is directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Calculated in accordance with Swiss systemically relevant banks rules. Refer to the "Capital management" section of this report for more information. 2 Corporate Center – Services market risk RWA were negative, as they included the effect of portfolio diversification across businesses. 3 Refer to "Statistical measures" in this section for more information on risk-based capital. 4 Refer to the "Capital management" section of this report for more information on our equity attribution framework. 5 Adjusted results are non-GAAP financial measures as defined by SEC regulations. Refer to the "Performance by business division and Corporate Center unit – reported and adjusted" table in the "Group performance" section of this report for more information.

Risk categories

We categorize the risk exposures of our business divisions and Corporate Center units as outlined in the table below.

Risk definitions

	Risk managed by	Independent oversight by	Captured in our risk appetite framework
Primary risks: the risks that our businesses may take to generate a return			
Audited | ***Credit risk:*** the risk of loss resulting from the failure of a client or counterparty to meet its contractual obligations toward UBS. This includes settlement risk and loan underwriting 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 countervalue *Loan underwriting risk:* the risk of loss arising during the holding period of financing transactions that are intended for further distribution ▲	Business management	Risk Control	●
Audited | ***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, and 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 from changes in fair value resulting from credit-related events affecting an issuer to which we are exposed through tradable securities or derivatives referencing the issuer *Investment risk:* issuer risk associated with positions held as financial investments ▲	Business management CC – Group ALM	Risk Control	●
Country risk: the risk of losses resulting from country-specific events. It includes transfer risk, whereby a country's authorities prevent or restrict the payment of an obligation, as well as systemic risk events arising from country-specific political or macroeconomic developments	Business management	Risk Control	●
Consequential risks: the risks to which our businesses are exposed as a consequence of being in business			
Audited | ***Liquidity risk:*** the risk of being unable to generate sufficient funds from assets to meet payment obligations when they fall due, including in times of stress ▲ Audited | ***Funding risk:*** the risk of higher-than-expected funding costs due to wider-than-expected UBS credit spreads when existing funding positions mature and need to be rolled over or replaced by other, more expensive funding sources. If a shortage of available funding sources is expected in a stress event, funding risk also covers potential additional losses from forced asset sales ▲	Group Treasury	Risk Control	●
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 Swiss francs	CC – Group ALM	Risk Control	●
Operational risk: the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events, including cyber risk. Operational risk includes, among other things, legal risk, conduct risk and compliance risk: *Legal risk:* (i) the financial risk resulting from the non-enforceability of a contract or the failure to assert non-contractual rights, or (ii) the financial or reputational risk resulting from UBS being held liable for a contractual or legal claim, or otherwise being subject to a penalty or liability in a legal action, based on a contractual or other legal claim, violation of law, or regulation, or infringement of intellectual property rights, or failing to manage litigation or other actions appropriately or effectively *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 *Compliance risk:* the financial or reputational risk incurred by us by not adhering to the applicable laws, rules and regulations, local and international best practice (including ethical standards) and our own internal standards *Cyber risk:* the risk of a material impact from an external or internal attack on our information systems with the purpose of data theft, fraud or denial of service. Cyberattacks are manifestations of a cyber threat into an act of aggression or criminal activity causing financial, regulatory or reputational harm or loss *Money laundering risk:* the risk that UBS fails to detect money laundering activities to prevent the financing of illegal activities (including terrorism) and fails to report suspicious activities or respond to anti-money laundering requests from relevant authorities	Business management	Risk Control Legal 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 the 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	Human Resources	Risk Control and Finance	●
Environmental and social risk: the possibility of us suffering reputational or financial harm from transactions, products, services or activities that involve a party associated with environmentally or socially sensitive activities **➔ Refer to the "UBS and Society" section of this report for more information**	Business management	Risk Control	
Business risks: the risks arising from the commercial, strategic and economic environment in which our businesses operate			
Business risks: 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	Business management	Finance	●
Reputational risks			
Reputational risk: the risk of damage to our reputation from the point of view of our stakeholders, such as clients, shareholders, staff and the general public	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 that could significantly affect the Group. Investors should also carefully consider all information set out in the "Risk factors" section of this report, where we discuss these and other material risks we currently consider could impact our ability to execute our strategy and may affect our business activities, financial condition, results of operations and prospects.

- We are exposed to a number of macroeconomic issues as well as general market conditions. As noted in "Market conditions and fluctuations may have a detrimental effect on our profitability, capital strength, liquidity and funding position" and "Performance in the financial services industry is affected by market conditions and the macroeconomic climate" 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.
- 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 "Substantial changes in the regulation of our businesses may adversely affect our business and our ability to execute our strategic plans" 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 "Material legal and regulatory risks arise in the conduct of our business" in the "Risk factors" section of this report. Information on litigation, regulatory and similar matters we currently consider significant is disclosed in "Note 20 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report.
- One of the most critical risks facing the broader industry is the threat of cyberattacks, which continue to evolve and become more powerful. Along with the rest of the industry, we face ongoing threats, such as data theft, disruption of service and cyber fraud, all of which have the potential to significantly impact our business. Additionally, due to the operational complexity of all our businesses, we are continually exposed to operational risks such as process error, failed execution, system failures and fraud. Conduct risks are inherent in our businesses. Moreover, financial crime, including money laundering, terrorist financing, sanctions violation, fraud, bribery and corruption, continues to present risks, as emerging technologies and changing geopolitical risks increase complexity, and continued heightened regulatory attention and expectations result in increased overall risk. Refer to "Operational risk" in this section and "Operational risks affect our business" in the "Risk factors" section of this report for more information.
- Our reputation is critical to achieving our strategic goals and performance targets, and damage to it can have fundamental negative effects on our business and prospects, as described in "Our reputation is critical to the success of our business" in the "Risk factors" section of this report.

Risk governance

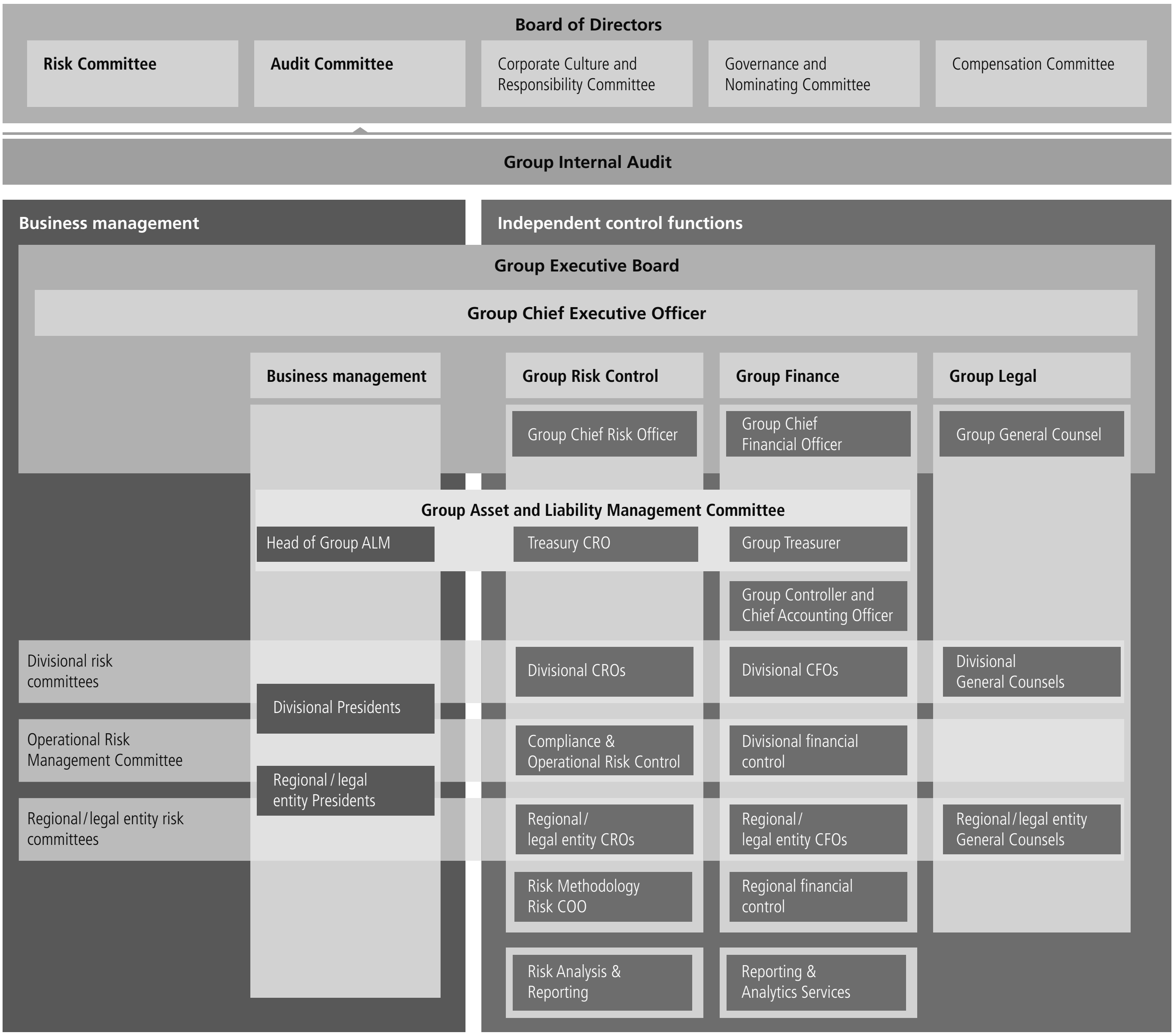
Our risk governance framework operates along three lines of defense. Our first line of defense, business management, owns its risk exposures and is required to maintain effective processes and systems to manage its risks, including robust and comprehensive internal controls and documented procedures. Business management has appropriate supervisory controls and review processes in place designed to identify control weaknesses and inadequate processes.

Our second line of defense is formed by the control functions, which are independent from the business and report directly to the Group CEO. Control functions provide independent oversight of risks, including setting risk limits and protecting against non-compliance with applicable laws and regulations.

Our third line of defense, Group Internal Audit (GIA), reports to the Audit Committee of the Board of Directors and evaluates the overall effectiveness of governance, risk management and the control environment, including the assessment of how the first and second lines of defense meet their objectives.

The key roles and responsibilities for risk management and control are illustrated in the following chart and described on the next pages.

Audited | **Risk governance**



Audited | *The Board of Directors* (BoD) is responsible for determining the risk principles, risk appetite and major portfolio limits of the Group, including their allocation to the business divisions and Corporate Center units. The BoD is supported by the BoD Risk Committee, which monitors and oversees the Group's risk profile and the implementation of the risk framework as approved by the BoD, as well as assesses the Group's key risk measurement methodologies. The Corporate Culture and Responsibility Committee supports the BoD in fulfilling its duty to safeguard and advance the Group's reputation for responsible and sustainable conduct. It reviews and assesses stakeholder concerns and expectations pertaining to UBS's societal performance and corporate culture and recommends appropriate actions to the BoD.

The *Group Executive Board* (GEB) implements the risk framework, controls the Group's risk profile and approves key risk policies.

The *Group Chief Executive Officer* (Group CEO) is responsible for the Group's results, has risk authority over transactions, positions and exposures, and allocates portfolio limits approved by the BoD within the business divisions and Corporate Center units.

The *business division Presidents* are accountable for the results of their business divisions. This includes actively managing their risk exposures, and balancing profit potential, risk, balance sheet and capital usage. The *regional Presidents* facilitate the implementation of UBS's strategy in their region, and have the mandate to escalate activities and issues that may give rise to actual or potentially material regulatory or reputational concerns.

The *Group Chief Risk Officer* (Group CRO) is responsible for Risk Control. Risk Control independently oversees all primary risks and most consequential risks as outlined in "Risk categories" above. This includes establishing methodologies to measure and assess risk, setting risk limits, and developing and operating an appropriate risk control infrastructure. Risk Control is also the central function for model risk management, which includes the validation of models used in the firm. The risk control process is supported by a framework of policies and authorities. *Business division* and *regional Chief Risk Officers* have delegated authority for their respective divisions and regions. Moreover, authorities are delegated to risk officers according to their expertise, experience and responsibilities.

The *Group Chief Financial Officer* (Group CFO) is responsible for assessing and facilitating transparency in the financial performance of the Group and business divisions, and for monitoring whether disclosure of our financial performance meets regulatory requirements and corporate governance standards. The Group CFO manages the Group's and divisional financial control functions, including financial accounting, controlling, forecasting, planning and reporting processes. Further responsibilities include managing UBS's tax affairs, as well as treasury and capital management, including the management of funding and liquidity risk and UBS's regulatory capital ratios.

The *Group General Counsel* (Group GC) manages the Group's legal affairs and is responsible for supporting the Group with effective and timely assessment of legal matters impacting the Group or its businesses and for providing the legal advice required by the Group. The Group GC is further responsible for the management and reporting of all litigation and other significant contentious matters, including all legal proceedings, that involve UBS.

Group Internal Audit (GIA) independently assesses the adherence to our strategy, the effectiveness of governance, risk management and control processes at Group, business division and regional levels, including compliance with legal, regulatory and statutory requirements, as well as with internal policies and contracts. The Head GIA reports to the Chairman of the BoD and, in addition, GIA has a functional reporting line to the Audit Committee.

The above roles and responsibilities are replicated for certain significant legal entities of the Group through the appointment of entity level Presidents, Chief Risk Officers, Chief Financial Officers and General Counsels. ▲

Risk appetite framework

Our risk appetite is defined at the aggregate level and reflects the types of risk that we are willing to accept or intend to avoid. It is established via a complementary set of qualitative and quantitative risk appetite statements defined on a Group-wide level and is embedded throughout our business divisions and legal entities through Group, business division and legal entity policies, limits and authorities. These statements are a critical foundation to maintaining a robust risk culture throughout our organization. The "Risk appetite framework" chart below shows the key elements of this framework, which are described in more detail further below.

Qualitative statements aim to ensure we maintain the desired risk culture. Quantitative risk appetite objectives are designed to enhance the Group's resilience against the impact of potential severe adverse economic or geopolitical events. These risk appetite objectives cover the Group's minimum capital and leverage ratios, solvency, earnings, liquidity and funding, and are subject to periodic review, including as part of the annual business planning process.

These objectives are complemented by operational risk appetite objectives, which are established for each of our operational risk categories, such as market conduct, theft, fraud, data confidentiality and technology risks. Operational risk events that exceed predetermined risk tolerances, expressed as percentages of the Group's operating income, must be escalated to the respective business division President or higher, as appropriate.

The quantitative risk appetite objectives are supported by a comprehensive suite of risk limits set at the portfolio level. These may apply across the Group, within a business division or business unit, at legal entity level, or to an asset class. These additional quantitative controls are typically bottom-up and are designed to monitor specific portfolios and to identify potential risk concentrations.

Risk appetite framework

Risk appetite framework

Risk appetite statements

Risk principles, governance and roles/responsibilities	Risk objectives, measures and controls
– Risk management and control principles – Code of Conduct and Ethics – Total Reward Principles – Organization Regulations/policies – Roles and responsibilities	– Group-wide risk appetite objectives – Operational risk appetite objectives – Risk measurement frameworks – Authorities and limits

Risk reporting and disclosure, including internal, regulatory and external reporting

Risk reports aggregating measures of risk across products and businesses provide insight into the amounts, types, and sensitivities of the various risks in our portfolios and are intended to ensure compliance with defined limits. Risk officers, senior management and the BoD use this information to understand our risk profile and the performance of the portfolios.

The status of risk appetite objectives is evaluated each month and reported to the BoD and the GEB. Our risk appetite may change over time. Therefore, portfolio limits and associated approval authorities are subject to periodic reviews and changes, particularly in the context of our annual business planning process.

Our risk appetite framework is encompassed in a single overarching policy and conforms to the Financial Stability Board's Principles for an Effective Risk Appetite Framework published in 2013.

Risk principles and risk culture

A strong risk culture is a prerequisite for success in today's highly complex operating environment. We are focused on maintaining a strong culture as a source of sustainable competitive advantage. By placing prudent and disciplined risk-taking at the center of every decision, we want to achieve our goals of delivering unrivaled client satisfaction, creating long-term value for stakeholders, and making UBS one of the most attractive companies to work for in the world.

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. Together, these aim to align the decisions we make with the Group's strategy, principles and risk appetite. They help provide a solid foundation for promoting risk awareness, leading to appropriate risk-taking and the establishment of robust risk management and control processes. These principles are supported by a range of initiatives covering employees at all levels. This includes the UBS House View on Leadership, which is a set of explicit expectations for leaders that establishes consistent leadership standards across UBS. These initiatives also include our principles of good supervision, which establish clear expectations of managers and employees with respect to supervisory responsibilities, specifically: to take responsibility, to organize their business, to know their employees and what they do, to know their business, to create a good compliance culture and to respond to and resolve issues.

→ **Refer to the "Our employees" section of this report for more information on our Pillars, Principles and Behaviors**
→ **Refer to "Key principles and policies" in the "UBS and Society" section of this report and to the UBS Code of Conduct and Ethics at *www.ubs.com/code* for more information**

Risk management and control principles

Protection of financial strength	Protection of reputation	Business management accountability	Independent controls	Risk disclosure
Protecting UBS'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	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	Maintaining management accountability, whereby business management, as opposed to Risk Control, owns all risks assumed throughout the Group and is responsible for the continuous and active management of all risk exposures to provide for balanced risk and return	Independent control functions that monitor the effectiveness of the businesses' risk management and oversee risk-taking activities	Disclosure of risks to senior management, the BoD, investors, regulators, credit rating agencies and other stakeholders with an appropriate level of comprehensiveness and transparency

To maintain an environment where staff are comfortable raising concerns, we have whistleblowing policies and procedures in place. These offer multiple channels through 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. Our program is designed to ensure that whistleblowing concerns are investigated and that appropriate and consistent action is taken. We are committed to ongoing awareness training and communication to all staff.

We also have a mandatory training program in place for all employees. The program covers a range of compliance and risk-related topics, including anti-money laundering and operational risk. In addition, specialized training is provided for employees depending on their specific roles and responsibilities, such as credit risk and market risk training for those working in trading areas. Failure to satisfactorily complete mandatory training sessions within the given deadline results in consequences, including disciplinary action. Our operational risk framework, incorporating the conduct risk framework, aims to identify and manage financial, regulatory, and reputational risks, together with risks to clients and to markets.

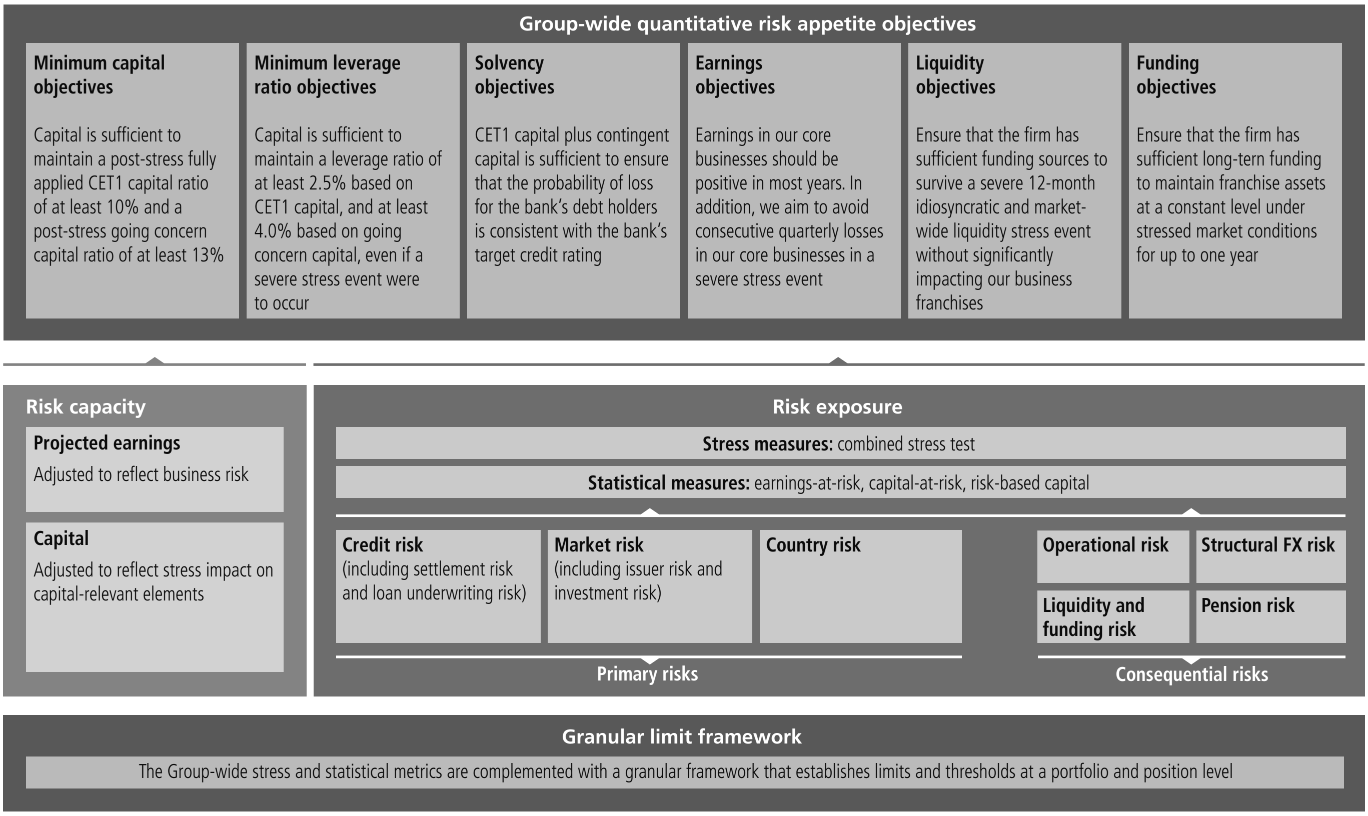
Quantitative risk appetite objectives

Through a set of quantitative risk appetite objectives, we aim to ensure that our aggregate risk exposure remains within our desired risk capacity, based on our capital and business plans. The specific definition of risk capacity for each objective seeks to ensure that we have sufficient capital, earnings, funding and liquidity to protect our business franchises and exceed minimum regulatory requirements under a severe stress event. The risk appetite objectives are evaluated as part of the annual business planning process, and are approved by the BoD. The comparison of risk exposure with risk capacity is a key consideration in management decisions on potential adjustments to the business strategy and the risk profile of the Group.

We make use of both scenario-based stress tests and statistical risk measurement techniques to assess the impact of a severe stress event at a Group-wide level. These complementary frameworks capture exposures to all material primary and consequential risks as well as business risks across our business divisions and Corporate Center units.

→ **Refer to "Risk measurement" in this section for more information on our stress testing and statistical frameworks**

2017 quantitative risk appetite objectives



In determining our risk capacity, we adjust projected earnings from the strategic plan for business risk to reflect lower expected earnings and lower expenses, such as the reversal of variable compensation accruals, in a severe stress event. We also adjust our capital to take into account the impact of stress on deferred tax assets, pension plan assets and liabilities, and accruals for capital returns to shareholders.

The chart on this page provides an overview of our quantitative risk appetite objectives during 2017. For 2018, we have decided to remove the going concern minimum capital and leverage ratio objectives as they would be satisfied when the corresponding CET1 objective is met, given the amount of additional tier 1 (AT1) instruments that have been issued. Our earnings objectives will consider the entire Group instead of only the core businesses going forward, and potential losses under a stress event are compared with historical earnings.

Risk appetite statements at the business division level are derived from the Group-wide objectives. They may also comprise objectives specific to the division, related to the specific activities and risks in that division. Risk appetite objectives are also set for certain legal entities. These must be consistent with the Group-wide risk appetite framework and approved in accordance with the regulations of the legal entity and the Group's 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 the control and oversight responsibilities set out in our risk governance framework and is a requirement of our risk management and control principles. Accordingly, risks are reported at a frequency and to a 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.

On a monthly basis, the Group Risk Report provides a detailed qualitative and quantitative overview of developments in primary and consequential risks for the business divisions and Corporate Center units, along with aggregate views of risks at the Group-wide level, including the status of our risk appetite objectives and results of Group-wide stress testing. The Group Risk Report is distributed internally to the BoD Risk Committee and GEB, and to senior members of Group Risk Control, Group Internal Audit, Finance and Legal. Key extracts from the Group Risk Report, along with extracts from the monthly Group Finance Report and Group Treasury Report, are included in the monthly performance update provided to the GEB and BoD. Granular divisional risk reports are provided to the respective business division Chief Risk Officers and the business division Presidents. This monthly reporting is supplemented with a suite of daily and weekly reports at various levels of granularity, covering market and credit risks for the business divisions and Corporate Center units, to enable risk officers and senior management to monitor and control the Group's risk profile.

Our internal risk reporting, which covers primary and consequential risks, is supported by risk data and measurement systems, which 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 Group Internal Audit following a risk-based audit approach.

Risk measurement

Audited | 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 verification. ▲

Models and methodologies must be approved and are regularly reviewed in accordance with regulatory requirements as well as internal policies to test that models perform as expected, produce results comparable with actual events and values, and reflect best-in-practice approaches and recent academic developments. Our reviews assess whether models are performing satisfactorily, whether additional analysis is required and whether models need to be recalibrated or redeveloped. Results and conclusions are presented to the relevant governance body and, as required, to regulators.

The ongoing process of assessing model quality and performance in the production environment comprises two components: model verification, in which Model Risk Management & Control (MRMC) independently assesses a model's conceptual soundness, and model confirmation, the regular process of confirming the accuracy and appropriateness of the model output and its application, carried out by the model developers and reviewed by MRMC.

→ **Refer to "Credit risk," "Market risk" and "Operational risk" in this section for more information on model confirmation procedures**

Stress testing

We perform stress testing to estimate the loss that could result from extreme, yet plausible macroeconomic and geopolitical stress events. This enables us to identify, better understand and manage our potential vulnerabilities and risk concentrations. Stress testing plays a key role in our limits framework at Group-wide, business division, legal entity and portfolio levels. Stress test results are regularly reported to the BoD, the Risk Committee and the GEB. We also provide detailed stress loss analyses to FINMA and the regulators of our legal entities in accordance with their requirements. As described in "Risk appetite framework" above, stress testing, along with statistical loss measures, plays a central role in our risk appetite and business planning processes.

Our stress testing framework incorporates three pillars: (i) combined stress tests, (ii) a comprehensive range of portfolio- and risk type-specific stress tests and (iii) reverse stress testing.

Our *combined stress test (CST)* framework is scenario based and aims to quantify overall Group-wide losses that could result from a number of potential global systemic events. The framework captures all material primary and consequential risks, as well as business risks, as indicated in "Risk categories" above. Scenarios are forward looking and encompass macroeconomic and geopolitical stress events calibrated to different levels of potential severity. We implement each scenario through the expected evolution of market indicators and economic variables under that scenario. We then assess the resulting effect on our primary, consequential and business risks to estimate the overall loss and capital implications were the scenario to occur. At least once a year, the Risk Committee approves the most relevant scenario, known as the binding scenario, to be used 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. Results are reported to the Risk Committee, BoD, GEB and FINMA on a monthly basis.

The Enterprise-wide Stress Committee (ESC) is responsible for ensuring the consistency and adequacy of the assumptions and scenarios used for our Group-wide stress measures. As part of these responsibilities, the ESC seeks to ensure that the suite of stress scenarios adequately reflects current and potential developments in the macroeconomic and geopolitical environment, our current and planned business activities, and actual or potential risk concentrations and vulnerabilities in our portfolios. The ESC meets at least quarterly and is comprised of Group, business division and legal entity representatives of Risk Control. In executing its responsibilities, the ESC considers input from the Think Tank, a panel of senior representatives from the business divisions, Risk Control and economic research, which meets quarterly to review the current and possible future market environment in order to identify potential stress scenarios that could materially affect the Group's profitability. This results in a range of internal stress scenarios that are developed and evolve over time, separate from the scenarios mandated by FINMA.

Each scenario captures a wide range of macroeconomic variables. These include gross domestic product (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. For example, lower GDP growth and rising interest rates may reduce the income of clients to whom we have lent money, which leads to changes in the credit risk parameters for probability of default, loss given default and exposure at default, and results in higher predicted credit losses within the stress scenario. We also capture the business risk resulting from lower fee, interest and trading income and lower expenses. These effects are measured across all material risk types and all businesses to calculate the aggregate estimated effect of the scenario on profit or loss, other comprehensive income, RWA, LRD and, ultimately, our capital and leverage ratios. The assumed changes in macroeconomic variables are updated periodically to take account of changes in the current and possible future market environment.

Through 2017, the binding scenario for CST was the internal *Global Deflation scenario*, which is characterized by: a crisis in the eurozone, with sovereign defaults in peripheral economies and the abandonment of the monetary union by Greece; a China hard landing, triggered by excessive policy tightening in light of market turbulence, including high real interest rates, insufficient fiscal stimulus, and stringent anti-corruption campaigns; an ineffective direct support of the equity market by governments; and a global recession, with central banks in major developed economies such as the eurozone, US and UK attempting to stimulate growth and restore market confidence by reducing policy rates further into negative territory.

The CST risk exposure was broadly stable over the year with most of the month-on-month variability arising primarily from temporary loan underwriting exposure in the Investment Bank.

As part of the CST framework, we routinely monitored four additional stress scenarios throughout 2017.

– *Failure of a Major Financial Institution scenario* represents renewed financial market turmoil due to the failure of a major global financial institution, leading to prolonged financial deleveraging and dramatically plunging activity around the globe.
– *US Monetary Crisis scenario* represents a loss of confidence in the US, which leads to international portfolio repositioning out of US dollar-denominated assets, sparking an abrupt and substantial US dollar sell-off. The US is pushed back into recession, other industrialized countries replicate this pattern and inflationary concerns lead to an overall higher interest rate level.
– *Global Depression scenario* represents a severe and prolonged eurozone crisis in which several peripheral countries default and exit the eurozone, and advanced economies are pulled into a prolonged period of economic stagnation.
– *Global Interest Rate Steepening scenario* represents a sudden shift in market sentiment causing a disorderly sell-off in long-dated bonds and a rapid steepening of the yield curve, exacerbated by a lack of liquidity in financial markets. This in turn triggers a sovereign crisis in Japan and a global recession.

We have developed a new *Severe Eurozone Crisis scenario* to be used as the binding stress scenario in our combined stress test framework for 2018. In line with the *Global Deflation scenario*, this retains a eurozone crisis at its core, but with greater severity through the inclusion of an additional sovereign debt restructuring as a consequence of the ensuing crisis. A China hard landing remains a feature of the scenario, while the assumption of more severe negative rates in major developed countries has been removed.

Portfolio-specific stress tests are measures that are 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. For example, we derive the expected market movements within 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 regulatory capital ratios) and works backward to identify the economic or financial scenarios 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. The results of reverse stress testing are reported to relevant governance bodies according to the materiality and scope of the exercise.

Additionally, we routinely analyze the effect of increases or decreases in interest rates and changes in the structure of yield curves.

Moreover, Group Treasury performs stress testing to determine the optimum asset and liability structure that allows us to maintain an appropriately balanced liquidity and funding position under various scenarios. These scenarios differ from those outlined above, because they are focused on specific situations that could generate liquidity and funding stress, as opposed to the scenarios used in the CST framework, which focus on the impact on profit or loss and capital.

→ **Refer to "Credit risk" and "Market risk" in this section for more information on stress loss measures**
→ **Refer to the "Treasury management" section of this report for more information on stress testing**
→ **Refer to "Our stated capital returns objective is based, in part, on capital ratios that are subject to regulatory change and may fluctuate significantly" in the "Risk factors" section of this report for more information**

Statistical measures

In addition to our scenario-based CST measure, we employ a statistical stress framework that allows us to calculate and aggregate risks using statistical techniques to derive stress events at chosen confidence levels.

We use this framework to derive a distribution of potential earnings based on historically observed market changes in combination with the firm's actual risk exposures, considering effects on both income and expenses. From this, we determine earnings-at-risk (EaR), which measures the potential shortfall in earnings (i.e., the deviation from forecast earnings) at a 95% confidence level and is 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 by incorporating the effects of gains and losses recognized through other comprehensive income, to derive a distribution of potential effects of stress events on CET1 capital. From this distribution, we derive our capital-at-risk (CaR) buffer measure at a 95% confidence level for the assessment of our capital and leverage ratio risk appetite objectives, and we derive our CaR solvency measure at a 99.9% confidence level for the assessment of our solvency risk appetite objective.

We also use the CaR solvency measure as the basis to derive the contributions of business divisions and Corporate Center units to risk-based capital (RBC), which is a component of our equity attribution framework. RBC measures the potential capital impairment from an extreme stress event at a 99.9% confidence level to estimate the capital required to absorb unexpected loss while remaining able to fully repay creditors.

→ **Refer to the "Capital management" section of this report for more information on the equity attribution framework**

Portfolio and position limits

The Group-wide stress and statistical metrics are complemented by more granular portfolio and position limits, triggers and targets. The combination of these measures provides a comprehensive, granular control framework that is applied to our business divisions and Corporate Center units, as well as the significant legal entities, as relevant to the key risks arising from their business models.

We apply limits to a variety of exposures at the portfolio level, using statistical and stress-based measures, such as value-at-risk, liquidity-adjusted stress, notional loan underwriting limits, economic value sensitivity and portfolio default simulations for our 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 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, such as equity indices, foreign exchange rates and interest rates, and sensitivities to issuer-specific factors, such as changes in an issuer's credit spread or default risk. We monitor a significant number of market risk controls for the Investment Bank and Corporate Center – Group Asset and Liability Management and Corporate Center – Non-core and Legacy Portfolio on a daily basis. Counterparty measures capture the current and potential future exposure to an individual counterparty, taking into account collateral and legally enforceable netting agreements.

→ **Refer to "Credit risk" in this section for more information on counterparty limits**

Risk concentrations

Audited | A risk concentration exists where (i) a position is affected by changes in a group of correlated factors, or a group of positions are affected by changes in the same risk factor or a group of correlated factors, and (ii) the exposure could, in the event of large but plausible adverse developments, result in significant losses. The categories in which risk concentrations may occur include counterparties, industries, legal entities, countries or geographical regions, products and businesses.

The identification of risk concentrations requires judgment, as potential future developments cannot be accurately predicted and may vary from period to period. In determining whether we have a risk concentration, we consider a number of elements, both individually and collectively. These elements include the shared characteristics of the positions and our counterparties, the size of the position or group of positions, the sensitivity of the position or group of positions to changes in risk factors and the volatility and correlations of those factors. Also important in our assessment is the liquidity of the markets where the positions are traded, and the availability and effectiveness of hedges or other potential risk-mitigating factors. The value of a hedging instrument may not always move in line with the position being hedged, and this mismatch is referred to as basis risk.

Risk concentrations are subject to increased oversight by Risk Control and are 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 asset classes, positions and hedges, particularly if the correlations that emerge in a stressed environment differ markedly from those envisaged by our risk models. ▲

→ **Refer to "Credit risk" and "Market risk" in this section for more information on the compositions of our portfolios**

→ **Refer to the "Risk factors" section of this report for more information**

Credit risk

Key developments

Overall, our gross credit risk exposures decreased by CHF 30 billion to CHF 518 billion during 2017. The increase in our gross loan portfolio of CHF 13 billion to CHF 319 billion, mainly driven by an increase in Wealth Management, was more than offset by exposure reductions in balances with central banks, loan commitments and over-the-counter derivatives.

Total net credit loss expense was CHF 128 million compared with CHF 37 million, mainly reflecting CHF 79 million higher expenses in the Investment Bank in the fourth quarter of 2017, primarily related to a margin loan to a single client following a significant decrease in the value of the collateral.

Our Swiss lending portfolios, which account for approximately half of our loan exposure, continued to perform well, although we remain watchful for any signs of deterioration in the Swiss economy that could impact our counterparties and lead to an increase in credit loss expenses from the low levels recently observed.

Volatility was remarkably low in 2017, amid a broad-based acceleration in global growth, strong corporate profits, predictable and still largely supportive monetary policy and expectations of US tax cuts. Tensions around Syria and North Korea, the fallout from natural disasters and political turmoil in the US contributed to intermittent periods of market volatility during the year, although overall the market reaction to geopolitical and other risk events has been largely muted.

In 2017, many counterparties in the energy segments adapted to operating in a lower oil price environment, hence price volatility during the year had very little impact on our portfolio.

Within the loan underwriting business, we continued to see a steady flow of transactions as leveraged loan markets remained relatively strong.

Audited | Main sources of credit risk

– A substantial portion of our lending exposure arises from our Swiss domestic business, which offers corporate loans and mortgage loans mainly secured against residential properties and income-producing real estate, and therefore depends on the performance of the Swiss economy.
– Within the Investment Bank, our credit exposure mainly arises from lending, derivatives trading and securities financing and is predominantly investment grade. Loan underwriting activity can be lower rated and gives rise to concentrated exposure of a temporary nature.
– Our wealth management businesses predominately conduct securities-based lending and mortgage lending.
– Credit risk within Non-core and Legacy Portfolio relates to derivative transactions, predominantly carried out on a cash-collateralized basis, and securitized positions. ▲

Audited | Overview of measurement, monitoring and management techniques

– Credit risk arising from transactions with individual counterparties is measured according to our estimates of probability of default, exposure at default and loss given default. Limits are established for individual counterparties and groups of related counterparties covering banking and traded products as well as settlement amounts. Risk control authorities are approved by the Board of Directors and are delegated to the Group Chief Executive Officer, Group Chief Risk Officer and divisional Chief Risk Officers based on risk exposure amounts and internal credit rating.
– Limits apply not only to the current outstanding amount, but also to contingent commitments and the potential future exposure of traded products.
– For the Investment Bank, our monitoring, measurement and limit framework distinguishes between exposures intended to be held to maturity (take-and-hold exposures) and those that are intended to be held for a short term, pending distribution or risk transfer (temporary exposures).
– We also use models to derive portfolio credit risk measures of expected loss, statistical loss and stress loss at the Group-wide and business division levels and establish portfolio limits at these levels.
– Credit risk concentrations can arise if clients are engaged in similar activities, are located in the same geographical region or have comparable economic characteristics, for example, 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 and / or operational controls that constrain risk concentrations at portfolio and sub-portfolio levels with regard to sector exposure, country risk and specific product exposures. ▲

Credit risk profile of the Group

The exposures detailed in this section are based on our internal management view of credit risk, which differs in certain respects from the measurement requirements of IFRS.

Internally, we categorize credit risk exposures into two broad categories: banking products and traded products. Banking products comprise drawn loans, undrawn guarantees and loan commitments, amounts due from banks and balances with central banks. Traded products comprise over-the-counter (OTC) derivatives, exchange-traded derivatives (ETD) and securities financing transactions (SFTs), comprised of securities borrowing and lending and repurchase and reverse repurchase agreements.

Banking products

The breakdowns of our banking products exposures are shown before and after allowances and provisions for credit losses and related single-name credit hedges. The effect of portfolio hedges, such as index credit default swaps (CDS), is not reflected. Guarantees and loan commitments are shown on a notional basis, without applying credit conversion factors.

Total gross banking products exposure decreased to CHF 474 billion as of 31 December 2017 compared with CHF 497 billion at the end of 2016, mainly due to decreases in balances with central banks in Corporate Center – Group Asset and Liability Management (Group ALM) and in loan commitments in the Investment Bank, partly offset by higher loan balances in Wealth Management.

Banking and traded products exposure by business division and Corporate Center unit

	31.12.17								
CHF million	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Balances with central banks	427	0	0	0	32	0	86,618	0	87,078
Due from banks	1,356	3,357	1,485	570	8,725	356	2,740	0	18,589
Loans[1]	115,180	53,014	131,380	1	12,094	34	7,226	88	319,016
Guarantees	1,982	460	9,551	0	5,040	105	2	2	17,142
Loan commitments	1,861	347	9,160	0	20,619	0	0	0	31,988
Banking products exposure[2]	120,806	57,178	151,576	570	46,510	496	96,585	90	473,813[3]
Banking products exposure, net[4]	120,701	57,153	151,105	570	44,693	496	96,585	61	471,364
Over-the-counter derivatives[5]	5,547	26	1,234	0	11,444				18,250
Securities financing transactions[5]	0	222	0	0	17,842				18,064
Exchange-traded derivatives[5]	963	1,730	76	0	5,444				8,213
Traded products exposure[5]	6,510	1,978	1,310	0	34,729				44,527
Traded products exposure, net[5]	6,510	1,978	1,310	0	33,996				43,794
Credit exposure[5]	127,316	59,156	152,886	570	178,411				518,339
Credit exposure, net[5]	127,211	59,131	152,414	570	175,832				515,158

	31.12.16								
CHF million	Wealth Management	Wealth Management Americas	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Balances with central banks	901	0	0	0	37	0	106,162	0	107,100
Due from banks	915	2,635	2,156	544	9,662	455	2,176	0	18,543
Loans[1]	101,876	52,486	133,861	1	12,022	43	5,962	129	306,379
Guarantees	2,187	558	9,023	0	5,336	111	1	4	17,220
Loan commitments	1,730	375	8,861	0	36,496	0	0	481	47,943
Banking products exposure[2]	107,608	56,054	153,900	545	63,553	610	114,301	614	497,186[3]
Banking products exposure, net[4]	107,546	56,025	153,414	545	57,682	610	114,301	418	490,541
Over-the-counter derivatives[5]	5,359	35	1,420	0	17,540				24,353
Securities financing transactions[5]	0	255	0	0	17,414				17,669
Exchange-traded derivatives[5]	926	1,371	125	0	7,031				9,454
Traded products exposure[5]	6,285	1,661	1,544	0	41,985				51,476
Traded products exposure, net[5]	6,285	1,661	1,544	0	40,833				50,324
Credit exposure[5]	113,894	57,716	155,445	545	221,063				548,662
Credit exposure, net[5]	113,832	57,686	154,958	545	213,843				540,865

1 Does not include reclassified securities and similar acquired securities in our CC – Non-core and Legacy Portfolio. 2 Does not include loans designated at fair value. 3 As of 31 December 2017, total banking products exposure of UBS AG consolidated was CHF 2.1 billion higher than the exposure of UBS Group AG consolidated, related to receivables of UBS AG and UBS Switzerland AG against UBS Group AG (31 December 2016: CHF 0.6 billion). 4 Net of allowances, provisions and hedges. 5 As counterparty risk for traded products is managed at counterparty level, no further split between exposures in the Investment Bank, CC – Non-core and Legacy Portfolio and CC – Group ALM is provided.

Wealth Management

Gross banking products exposure within Wealth Management increased to CHF 121 billion from CHF 108 billion, mainly driven by loan growth in Asia Pacific. Our Wealth Management loan portfolio is mainly secured by securities (Lombard loans) and by residential property. Most of the Lombard loans were of high quality, with 96% rated investment grade based on our internal ratings, and are typically short term in nature with an average duration of three to six months. Moreover, Lombard loans can be canceled immediately if the collateral quality deteriorates or margin calls are not met.

The portfolio of mortgage loans secured by properties outside Switzerland increased to CHF 6.2 billion from CHF 5.5 billion, driven mainly by the UK and Monaco. The overall quality of this portfolio remained high over the year.

Wealth Management Americas

Gross banking products exposure within Wealth Management Americas increased to CHF 57 billion from CHF 56 billion, driven mainly by increased loan origination. This exposure largely relates to loans secured by securities and by residential property. Out of the loans secured by securities, 99% were rated investment grade based on our internal ratings, compared with 96% in 2016, with the increase driven by a model change.

The portfolio of loans secured by residential property consists primarily of residential mortgage loans offered in the US. Gross exposure increased to CHF 11.4 billion from CHF 10.2 billion. The overall quality of this portfolio remained high with an average loan-to-value ratio (LTV) of 58%, unchanged from 2016, and we have experienced negligible credit losses since the inception of the mortgage program in 2009. Natural disasters that occurred in the US during 2017 had a very limited impact on properties within the mortgage loan portfolio. The five largest geographic concentrations in the portfolio were in California (30%), New York (16%), Florida (10%), Texas (4%) and New Jersey (4%).

Wealth Management, Wealth Management Americas and Personal & Corporate Banking loan portfolios, gross[1]

	Wealth Management		Wealth Management Americas		Personal & Corporate Banking	
CHF million	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Secured by residential property	34,644	32,208	11,367	10,239	95,381	95,966
Secured by commercial / industrial property	2,071	1,974	0	0	16,619	17,819
Secured by cash	10,271	14,436	4,276	1,042	1,458	1,884
Secured by securities	59,946	46,194	36,231	40,182	1,868	1,990
Secured by guarantees and other collateral	7,869	6,697	800	716	6,442	6,707
Unsecured loans	379	366	341	307	9,611	9,496
Total loans, gross	115,180	101,876	53,014	52,486	131,380	133,861
Total loans, net of allowances	115,076	101,814	52,989	52,455	130,939	133,419

1 Collateral arrangements generally incorporate a range of collateral, including cash, securities, property and other collateral. In 2017, we further aligned our collateral allocation processes within Wealth Management Americas to prioritize collateral mainly according to its liquidity profile. This change resulted in increases in loans secured by cash and decreases in loans secured by securities of CHF 4.5 billion.

Personal & Corporate Banking

Gross banking products exposure within Personal & Corporate Banking decreased to CHF 152 billion from CHF 154 billion. Net banking products exposure was CHF 151 billion compared with CHF 153 billion, of which approximately 60% was classified as investment grade compared with 61% in the prior year. Around 53% of the exposure is categorized in the lowest loss given default (LGD) bucket of 0% to 25%, compared with 81% in 2016. This significant decrease is due to the introduction of a new LGD framework, leading to higher LGDs mainly for the mortgage business. The size of Personal & Corporate Banking's gross loan portfolio decreased by CHF 2 billion to CHF 131 billion. As of 31 December 2017, 93% of this portfolio was secured by collateral, mainly residential and commercial property. Of the total unsecured amount, 77% related to cash flow-based lending to corporate counterparties and 9% related to lending to public authorities. Based on our internal ratings, 51% of the unsecured loan portfolio was rated investment grade compared with 50% in 2016.

Credit loss expense for this portfolio remained low in 2017. Given the reliance of the Swiss economy on exports, the slight weakening of the Swiss franc may have provided some support to the financials of export-oriented counterparties.

Our Swiss corporate banking products portfolio, which totaled CHF 26.2 billion compared with CHF 25.5 billion, consists of loans, guarantees and loan commitments to multinational and domestic counterparties. The small and medium-sized enterprises portfolio, especially, 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. In addition, the development of the EUR / CHF exchange rate is an important risk factor for Swiss corporates.

The delinquency ratio, being the ratio of past due but not impaired loans to total loans, was 0.6% for the corporate loan portfolio compared with 0.7% at the end of 2016.

→ **Refer to "Credit risk models" in this section for more information on loss given default, rating grades and rating agency mappings**

Swiss mortgage loan portfolio

Our Swiss mortgage loan portfolio secured by residential and commercial real estate in Switzerland continues to be our largest loan portfolio. These mortgage loans totaling CHF 136 billion mainly originate from Personal & Corporate Banking, but also from Wealth Management. CHF 124 billion of these mortgage loans related to residential properties that the borrower was either occupying or renting out, with full recourse to the borrower. Of this CHF 124 billion, CHF 90 billion related to properties occupied by the borrower, with an average LTV ratio of 56% compared with 53% as of 31 December 2016. The average LTV for newly originated loans for this portion was 65%, compared with 62% in 2016. The remaining CHF 34 billion of the Swiss residential mortgage loan portfolio relates to properties rented out by the borrower and the average LTV of this portfolio was 57%, compared with 56% as of 31 December 2016. The average LTV for newly originated Swiss residential mortgage loans for properties rented out by the borrower was 60% compared with 54% in 2016.

As illustrated in the "Swiss mortgages: distribution of net exposure at default (EAD) across exposure segments and loan-to-value (LTV) buckets" table on the next page, over 99% 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 by 20%, and 98% would remain covered by the real estate collateral even if the value assigned to that collateral were to decrease by 30%. In this table, 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% (collateral value of 100) would result in allocations of 30 in the less-than-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.

Personal & Corporate Banking: distribution of banking products exposure across internal UBS ratings and loss given default (LGD) buckets

CHF million, except where indicated	31.12.17						31.12.16	
		LGD buckets						
Internal UBS rating[1]	Exposure	0–25%	26–50%	51–75%	76–100%	Weighted average LGD (%)	Exposure	Weighted average LGD (%)
Investment grade	89,975	53,566	27,950	6,508	1,951	26	94,083	17
Sub-investment grade	61,602	27,210	21,878	10,193	2,321	32	59,817	18
of which: 6–9	*55,730*	*25,234*	*19,036*	*9,358*	*2,101*	*32*	*52,878*	*18*
of which: 10–12	*4,040*	*1,894*	*1,266*	*662*	*217*	*32*	*5,053*	*14*
of which: 13 and defaulted	*1,832*	*82*	*1,575*	*172*	*3*	*39*	*1,886*	*38*
Total exposure before deduction of allowances and provisions	151,576	80,776	49,827	16,701	4,272	28	153,900	17
Less: allowances and provisions	(472)						(486)	
Net banking products exposure	**151,105**						**153,414**	

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.

Personal & Corporate Banking: unsecured loans by industry sector

CHF million	31.12.17		31.12.16	
	CHF million	%	CHF million	%
Construction	127	1.3	140	1.5
Financial institutions	1,162	12.1	1,675	17.6
Hotels and restaurants	83	0.9	96	1.0
Manufacturing	1,779	18.5	1,188	12.5
Private households	1,367	14.2	1,334	14.0
Public authorities	877	9.1	1,221	12.9
Real estate and rentals	181	1.9	143	1.5
Retail and wholesale	1,978	20.6	1,694	17.8
Services	1,821	18.9	1,748	18.4
Other	236	2.5	258	2.7
Net exposure	**9,611**	**100.0**	**9,496**	**100.0**

Swiss mortgages: distribution of net exposure at default (EAD) across exposure segments and loan-to-value (LTV) buckets

CHF billion, except where indicated		31.12.17								31.12.16
		LTV buckets								
Exposure segment		≤30%	31–50%	51–60%	61–70%	71–80%	81–100%	>100%	Total	Total
Residential mortgages	Net EAD	67.3	31.5	9.3	5.0	1.9	0.3	0.0	115.4	114.6
	as a % of row total	58	27	8	4	2	0	0	100	
Income-producing real estate (IPRE)	Net EAD	10.7	4.8	1.4	0.7	0.2	0.0	0.0	17.9	19.1
	as a % of row total	60	27	8	4	1	0	0	100	
Corporates	Net EAD	5.4	2.2	0.6	0.3	0.2	0.1	0.1	8.9	8.7
	as a % of row total	61	25	7	4	2	1	1	100	
Other segments	Net EAD	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.9	1.0
	as a % of row total	65	21	7	5	2	0	0	100	
Mortgage-covered exposure	Net EAD	84.0	38.7	11.3	6.1	2.3	0.5	0.1	143.0	143.5
	as a % of total	59	27	8	4	2	0	0	100	
Mortgage-covered exposure 31.12.16	Net EAD	86.7	38.8	10.7	5.3	1.7	0.3	0.1	143.5	
	as a % of total	60	27	7	4	1	0	0	100	

Asset Management

Gross banking products exposure within Asset Management was less than CHF 1 billion as of 31 December 2017 and 31 December 2016.

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.

During 2017, the gross banking products exposure of the Investment Bank decreased to CHF 47 billion from CHF 64 billion. The decrease was due to lower corporate lending exposure, which also includes temporary loan underwriting activity.

Within the loan underwriting business, we continued to see a steady flow of transactions as leveraged loan markets remained relatively strong. Total temporary underwriting exposure ended 2017 significantly lower than the previous year as our ability to distribute was robust, while a large investment grade merger and acquisition financing commitment, which had exceeded our targeted distribution date, expired unused during the second quarter of 2017. Loan underwriting exposures are classified as held for trading, with fair values reflecting market conditions at the end of 2017.

The Investment Bank actively manages the credit risk of this portfolio and, as of 31 December 2017, held CHF 1.8 billion of single-name CDS hedges against its exposures to corporates and other non-banks, a decrease of CHF 4.1 billion year on year.

Net banking products exposure, excluding balances with central banks and the vast majority of amounts due from banks, and after allowances, provisions and hedges, decreased to CHF 36.6 billion from CHF 49.9 billion, driven by the aforementioned lower level of corporate lending at the end of 2017. Based on our internal ratings, 57% of the Investment Bank's net banking products exposure was classified as investment grade compared with 63% at the end of the prior year. The majority of the Investment Bank's net banking products exposure had an estimated LGD of between 0% and 50%.

Many counterparties in the energy segments adapted in 2017 to operating in a lower oil price environment, hence price volatility during the year had very little impact on our portfolio. Overall, while our exposures remain relatively stable, we continue to actively monitor exposures to this sector.

→ **Refer to "Credit risk models" in this section for more information on loss given default, rating grades and rating agency mappings**

Investment Bank: banking products[1]

CHF million	31.12.17	31.12.16
Total exposure, before deduction of allowances, provisions and hedges	38,439	55,709
Less: allowances, provisions	(42)	(41)
Less: credit protection bought (credit default swaps, notional)[2]	(1,755)	(5,810)
Net exposure after allowances, provisions and hedges	**36,643**	**49,859**

1 Internal risk view, excludes balances with central banks, internal risk adjustments and the vast majority of due from banks exposures. 2 The effects of portfolio hedges, such as index credit default swaps (CDSs), and of loss protection from the subordinated tranches of structured credit protection are not reflected in this table.

Investment Bank: distribution of net banking products exposure across internal UBS ratings and loss given default (LGD) buckets

CHF million, except where indicated	31.12.17						31.12.16	
		LGD buckets						
Internal UBS rating[1]	Exposure	0–25%	26–50%	51–75%	76–100%	Weighted average LGD (%)	Exposure	Weighted average LGD (%)
Investment grade	20,704	5,738	9,708	1,516	3,742	49	31,398	50
Sub-investment grade	15,939	10,435	4,378	669	456	22	18,461	23
of which: 6–9	*10,376*	*8,266*	*1,456*	*653*	*0*	*17*	*12,444*	*21*
of which: 10–12	*5,282*	*1,989*	*2,821*	*15*	*456*	*33*	*5,391*	*29*
of which: 13 and defaulted	*281*	*180*	*101*	*0*	*0*	*19*	*625*	*11*
Net banking products exposure, after application of credit hedges	36,643	16,174	14,087	2,185	4,198	37	49,859	40

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: net banking products exposure by geographical region

	31.12.17		31.12.16	
	CHF million	%	CHF million	%
Asia Pacific	1,424	3.9	1,978	4.0
Latin America	164	0.4	212	0.4
Middle East and Africa	73	0.2	32	0.1
North America	27,087	73.9	37,691	75.6
Switzerland	135	0.4	3,128	6.3
Rest of Europe	7,761	21.2	6,818	13.7
Net exposure	36,643	100.0	49,859	100.0

Investment Bank: net banking products exposure by industry sector

	31.12.17		31.12.16	
	CHF million	%	CHF million	%
Banks	1,399	3.8	3,101	6.2
Chemicals	843	2.3	4,112	8.2
Electricity, gas, water supply	2,425	6.6	2,515	5.0
Financial institutions, excluding banks	13,207	36.0	19,990	40.1
Manufacturing[1]	4,123	11.3	4,195	8.4
Mining[1]	2,755	7.5	2,838	5.7
Public authorities	963	2.6	1,573	3.2
Real estate and construction	3,340	9.1	3,588	7.2
Retail and wholesale	971	2.6	870	1.7
Technology and communications	2,687	7.3	3,153	6.3
Transport and storage[1]	2,798	7.6	3,166	6.3
Other	1,131	3.1	756	1.5
Net exposure[1]	36,643	100.0	49,859	100.0
of which: oil and gas[1]	*4,290*	*11.7*	*5,069*	*10.2*

1 As of 31 December 2017, the CHF 4.3 billion Investment Bank net banking products exposure to the oil and gas sector comprised CHF 2.3 billion related to mining, CHF 1.5 billion related to transport and storage and CHF 0.4 billion related to manufacturing. As of 31 December 2016, the CHF 5.1 billion Investment Bank net banking products exposure to the oil and gas sector comprised CHF 2.2 billion related to mining, CHF 2.0 billion related to transport and storage and CHF 0.9 billion related to manufacturing.

Corporate Center – Group Asset and Liability Management

Gross banking products exposure within Corporate Center – Group Asset and Liability Management (Group ALM), which arises primarily in connection with treasury activities, decreased by CHF 18 billion to CHF 97 billion. This was driven by a decrease in balances with central banks of CHF 20 billion, mainly due to higher consumption by the business divisions, partly offset by net issuances of short-term and long-term debt.

→ **Refer to "Balance sheet assets – Group ALM" in the "Treasury management" section of this report**

Corporate Center – Non-core and Legacy Portfolio

→ **Refer to the "Corporate Center – Non-core and Legacy Portfolio" section under "Financial and operating performance" of this report for more information**

Traded products

Traded products include over-the-counter (OTC) derivatives exposures, as well as securities financing transactions (SFTs) and exchange-traded derivatives (ETD) exposures. Credit risk arising from traded products, after the effects of master netting agreements but excluding credit valuation adjustments and hedges, decreased by CHF 7 billion to CHF 45 billion as of 31 December 2017. OTC derivatives accounted for CHF 18 billion, exposures from SFTs were CHF 18 billion, and ETD exposures amounted to CHF 8 billion. OTC derivatives exposures are generally measured 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.

The majority of the traded products exposures were within the Investment Bank, Non-core and Legacy Portfolio and Group ALM, totaling CHF 35 billion compared with CHF 42 billion as of 31 December 2016. As counterparty risk for traded products is managed at counterparty level, no further split between exposures in the Investment Bank and those in Non-core and Legacy Portfolio and Group ALM is provided. The traded products exposure includes OTC derivatives exposures of CHF 11 billion in the Investment Bank and Non-core and Legacy Portfolio, a decrease of CHF 6 billion from the prior year. During 2017, SFT exposures increased slightly to CHF 18 billion and ETD exposures decreased by CHF 2 billion to CHF 5 billion. The tables below and on the following pages provide more information on the OTC derivatives, SFT and ETD exposures of the Investment Bank, Non-core and Legacy Portfolio and Group ALM.

Investment Bank, Non-core and Legacy Portfolio and Group ALM: traded products exposure

CHF million	OTC derivatives	SFTs	ETD	Total	Total
		31.12.17			31.12.16
Total exposure, before deduction of credit valuation adjustments and hedges	11,442	17,810	5,444	34,696	41,941
Less: credit valuation adjustments and allowances	(297)			(297)	(376)
Less: credit protection bought (credit default swaps, notional)	(436)			(436)	(757)
Net exposure after credit valuation adjustments, allowances and hedges	**10,710**	**17,810**	**5,444**	**33,964**	**40,808**

Investment Bank, Non-core and Legacy Portfolio and Group ALM: distribution of net OTC derivatives and SFT exposure across internal UBS ratings and loss given default (LGD) buckets

CHF million, except where indicated	31.12.17						31.12.16	
		LGD buckets						
Internal UBS rating[1]	Exposure	0–25%	26–50%	51–75%	76–100%	Weighted average LGD (%)	Exposure	Weighted average LGD (%)
Net OTC derivatives exposure								
Investment grade	10,076	304	8,604	1,016	152	45	15,672	30
Sub-investment grade	633	56	437	73	67	41	723	34
of which: 6–9	*226*	*43*	*52*	*69*	*62*	*62*	*294*	*46*
of which: 10–12	*59*	*0*	*50*	*4*	*5*	*41*	*85*	*34*
of which: 13 and defaulted	*349*	*13*	*335*	*0*	*0*	*27*	*344*	*24*
Total net OTC derivatives exposure, after credit valuation adjustments and hedges	**10,710**	**361**	**9,041**	**1,088**	**220**	**45**	**16,395**	**30**
Net SFT exposure								
Investment grade	17,302	14	14,530	2,303	455	44	16,877	28
Sub-investment grade	508	1	156	53	297	72	504	58
Total net SFT exposure	**17,810**	**14**	**14,686**	**2,357**	**752**	**44**	**17,381**	**28**

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 Portfolio and Group ALM: net OTC derivatives and SFT exposure by geographical region

	Net OTC derivatives				Net SFTs			
	31.12.17		31.12.16		31.12.17		31.12.16	
	CHF million	%	CHF million	%	CHF million	%	CHF million	%
Asia Pacific	1,154	10.8	2,904	17.7	3,624	20.3	3,410	19.6
Latin America	59	0.5	83	0.5	144	0.8	114	0.7
Middle East and Africa	143	1.3	149	0.9	622	3.5	1,126	6.5
North America	3,420	31.9	4,931	30.1	4,241	23.8	4,548	26.2
Switzerland	292	2.7	453	2.8	771	4.3	825	4.7
Rest of Europe	5,642	52.7	7,876	48.0	8,407	47.2	7,358	42.3
Net exposure	10,710	100.0	16,395	100.0	17,810	100.0	17,381	100.0

Investment Bank, Non-core and Legacy Portfolio and Group ALM: net OTC derivatives and SFT exposure by industry

	Net OTC derivatives				Net SFTs			
	31.12.17		31.12.16		31.12.17		31.12.16	
	CHF million	%	CHF million	%	CHF million	%	CHF million	%
Banks	4,559	42.6	6,242	38.1	5,288	29.7	4,095	23.6
Chemicals	11	0.1	17	0.1				
Electricity, gas, water supply	166	1.5	231	1.4				
Financial institutions, excluding banks	3,600	33.6	6,778	41.3	10,983	61.7	11,932	68.6
Manufacturing	139	1.3	428	2.6				
Mining	7	0.1	108	0.7				
Public authorities	1,513	14.1	1,834	11.2	1,500	8.4	1,350	7.8
Retail and wholesale	9	0.1	19	0.1	3	0.0	2	0.0
Transport, storage and communication	289	2.7	265	1.6				
Other	417	3.9	473	2.9	35	0.2	2	0.0
Net exposure	10,710	100.0	16,395	100.0	17,810	100.0	17,381	100.0

Credit risk mitigation

Audited I We actively manage the credit risk in our portfolios by taking collateral against exposures and by utilizing credit hedging. ▲

Lending secured by real estate

Audited I We use a scoring model as part of a standardized front-to-back process to support credit decisions for the origination or modification of Swiss mortgage loans. The two key factors within this model are an affordability calculation relative to gross income and the loan-to-value (LTV) ratio. ▲

The calculation of affordability takes into account interest payments, minimum amortization requirements, potential property maintenance costs and, in the case of properties expected to be rented out, the level of rental income. Interest payments are estimated using a predefined framework, which takes into account the potential for significant increases in interest rates during the lifetime of the loan. The interest rate is floored at 5% per annum.

For residential properties occupied by the borrower, the maximum LTV allowed within the standard approval process is 80%. This is reduced to 60% in the case of vacation properties and luxury real estate. For other properties, the maximum LTV allowed within the standard approval process ranges from 30% to 80%, depending on the type of property, the age of the property and the amount of renovation work required.

Audited I The value assigned by UBS to each property is based on the lowest value determined from internally calculated valuations, the purchase price and, in some cases, an additional external valuation. ▲

We use two separate models provided by a market-leading external vendor to derive property valuations for owner-occupied residential properties (ORP) and income-producing real estate. For ORP, we estimate the current value of properties by using a regression model (hedonic model) to compare detailed characteristics for each property against a database of property transactions. In addition to the model-derived values, valuations for ORP are updated quarterly throughout the lifetime of the loan by using region-specific real estate price indices. The price indices are sourced from an external vendor and are subject to internal validation and benchmarking against two other external vendors. On a quarterly basis, we use these valuations to compute indexed LTV for all ORP and consider these together with other risk measures (e.g., rating migration and behavioral information) to identify higher-risk loans, which are then reviewed individually by client advisors and credit officers, with actions taken where they are considered necessary.

For income-producing real estate, the capitalization 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 as well as 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). Rental income from properties is reviewed at a minimum once every three years, but indications of significant changes in the amount of rental income or in the vacancy rate can trigger an interim reappraisal.

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 for our internally developed models.

Audited | We similarly apply underwriting guidelines for our Wealth Management Americas mortgage loan portfolio taking into account affordability of the loans and sufficiency of collateral. The maximum LTV within the standard approval process for any type of mortgage is 80%. A stratification of LTVs exists for the various mortgage types, such as residential mortgage or investment property, based on associated risk factors, such as property types, loan size and loan purpose. Maximum LTVs go as low as 45%. Additionally, other credit risk metrics are applied, based upon property and borrower characteristics, such as debt-to-income ratios, FICO credit scores and required client reserves.

A risk limit framework is applied to the Wealth Management Americas mortgage portfolio. Limits have been established 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, established to govern the real estate lending activities. Quality assurance and quality control programs are in place to monitor compliance with mortgage underwriting and documentation requirements. ▲

→ **Refer to "Swiss mortgage loan portfolio" in this section for more information on loan-to-value in our Swiss mortgage portfolio**

→ **Refer to "Wealth Management Americas" in this section for more information on loan-to-value in our Wealth Management Americas mortgage portfolio**

Lombard lending

Audited | Lombard loans are secured by a pledge of marketable securities, guarantees and other forms of collateral. Eligible financial securities primarily include transferable securities (such as bonds and equities), that are liquid and actively traded, and other transferable securities such as approved structured products for which regular prices are available and for which the issuer of the security provides a market. To a lesser degree, less liquid collateral is also financed.

We apply discounts (haircuts) to reflect the collateral's risk and to derive the lending value. Haircuts for marketable securities are calculated to cover the possible change in the market value over a given close-out period and confidence level; the haircut applied will vary depending on the view of the counterparty's creditworthiness. Less liquid or more volatile collateral will typically attract larger haircuts. For less liquid instruments, such as structured products, some bonds, and products with long redemption periods, the assumed close-out period may be much longer than that for highly liquid instruments, or an assessment is made as to the expected recovery on the asset in the event of the counterparty's default, resulting in a larger haircut. For cash, life insurance policies, guarantees and letters of credit, haircuts are determined on a product- or client-specific basis.

We also consider concentration and correlation risks across collateral posted on a counterparty level as well as at a divisional level across counterparties. Additionally, we perform targeted Group-wide reviews of concentrations. A 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 values are monitored on a daily basis with the intention of ensuring that the credit exposure continues to be within the established risk appetite. A shortfall occurs when the lending value drops below the exposure. If a shortfall 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 the exposure in line with the agreed lending value of the collateral. If the shortfall increases, or 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.

We also conduct stress testing of collateralized exposures to simulate market events that increase the risk of collateral shortfalls and unsecured exposures by significantly reducing the value of the collateral, increasing the exposure of traded products, or both. For certain classes of counterparties, limits on such calculated stress exposures are applied and controlled on a counterparty level. In addition, there are portfolio limits applied across certain businesses or collateral types.

→ **Refer to "Stress loss" in this section for more information on our stress testing**

Counterparty credit risk

Audited | Counterparty credit risk arising from traded products, which include OTC derivatives, ETD exposures and SFTs originating in the Investment Bank, Non-core and Legacy Portfolio and Corporate Center – Group ALM, is generally managed on a close-out basis. This takes into account the effect of market movements on the exposure and any associated collateral over the potential time it would take to close out our positions. In the Investment Bank, limits are applied to the potential future exposure per counterparty, with the size of the limit driven by the view of the creditworthiness of the counterparty as determined by Credit Risk Control. Limit frameworks are also applied to control overall exposure to specific classes or categories of collateral on a portfolio level. Such portfolio limits are monitored and reported to senior management.

Trading in OTC derivatives is conducted through central counterparties (CCPs) where practicable. Where CCPs 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 (ISDA) or similar master netting agreements, which generally allow for the close-out and netting of transactions in the event of default subject to applicable law. For most major market participant counterparties, we employ two-way collateral agreements under which either party can be required to provide collateral in the form of cash or marketable securities when the exposure exceeds specified levels. This collateral typically consists of well-rated government debt or other collateral permitted by applicable regulations. 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 the market value of transactions. Regulations governing the margining of uncleared OTC derivatives continue to evolve. These generally expand the scope of bilateral derivatives activity subject to margining. In addition, they will result in greater amounts of initial margin received from, and posted to, certain bilateral trading counterparties than had been required in the past. These changes should result in lower close-out risk over time. ▲

→ **Refer to "Note 12 Derivative instruments and hedge accounting" in the "Consolidated financial statements" section of this report for more information on our over-the-counter derivatives settled through central counterparties**

→ **Refer to "Note 24 Offsetting financial assets and financial liabilities" in the "Consolidated financial statements" section of this report for more information on the effect of netting and collateral arrangements on our derivative exposures**

Credit hedging

Audited | We utilize single-name CDSs, credit index CDSs, bespoke protection, and other instruments to actively manage credit risk in the Investment Bank and Non-core and Legacy Portfolio. This is aimed at reducing concentrations of risk from specific counterparties, sectors or portfolios and, in the case of counterparty credit risk, the profit or loss impact arising from changes in credit valuation adjustments (CVA).

We maintain strict guidelines for taking credit hedges into account for credit risk mitigation purposes. For example, when monitoring exposures against counterparty limits, we do not usually recognize credit risk mitigants such as proxy hedges (credit protection on a correlated but different name) or credit index CDSs. Buying credit protection also creates credit exposure against the protection provider. We monitor and limit our exposures to credit protection providers and the effectiveness of credit hedges as part of our overall credit exposures to the relevant counterparties. Trading with such counterparties is typically collateralized. For credit protection purchased to hedge the lending portfolio, this includes monitoring mismatches between the maturity of the 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 deemed necessary. ▲

→ **Refer to "Note 12 Derivative instruments and hedge accounting" in the "Consolidated financial statements" section of this report for more information**

Mitigation of settlement risk

To mitigate settlement risk, we reduce our actual settlement volumes through the use of multilateral and bilateral agreements with counterparties, including payment netting.

Our most significant source of settlement risk is foreign exchange transactions. We are a member of Continuous Linked Settlement (CLS), an industry utility that provides a multilateral framework to settle transactions on a delivery-versus-payment basis, thereby significantly reducing foreign exchange-related settlement risk relative to the volume of business. However, the mitigation of settlement risk through CLS and other means does not fully eliminate our 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

Audited | We have developed tools and models in order to estimate future credit losses that may be implicit in our current portfolio.

Exposures to individual counterparties are measured on the basis of three generally accepted parameters: probability of default (PD), loss given default (LGD) and exposure at default (EAD). For a given credit facility, the product of these three parameters results in the expected loss. These parameters are the basis for the majority of our internal measures of credit risk, and are key inputs for the regulatory capital calculation under the advanced internal ratings-based approach of the Basel III framework governing international convergence of capital. We also use models to derive the portfolio credit risk measures of expected loss, statistical loss and stress loss. ▲

The "Key features of our main credit risk models" table on the next page shows the number and key features of the models that we use to derive PD, LGD and EAD for our main portfolios and asset classes, and is followed by more detailed explanations of these models and parameters.

→ **Refer to the 31 December 2017 Pillar 3 report – Group and significant regulated subsidiaries and sub-groups under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on the regulatory capital calculation under the advanced internal ratings-based approach**

Key features of our main credit risk models

	Portfolio in scope	Asset class	Model approach	Number of main models	Main drivers	Number of years loss data[1]
Probability of default	Sovereigns and central banks	Central governments and central banks	Score card	1	Political, institutional and economic indicators	10
	Owner-occupied mortgages in Switzerland and the US	Retail: residential mortgages	Score card	2	Behavioral data, affordability relative to income, property type, loan-to-value. Separate models for mortgages in Switzerland and the US	23
	Income-producing real estate mortgages	Retail: residential mortgages, Corporates: specialized lending	Score card	1	Loan-to-value, debt service coverage, financial data (for large corporates only), behavioral data; weights of risk drivers differ between corporate and private clients	23
	Lombard lending	Retail: other	Merton type	1	Loan-to-value, historical asset returns, behavioral data	5–10
	Small and medium-sized enterprises	Corporates: other lending	Score card	1	Financial data including balance sheet ratios and profit and loss, behavioral data. Weights of risk drivers differ depending on the corporate client sub-segment	23
	Banks	Banks and securities dealers	Score card	4	Financial data including balance sheet ratios and profit and loss. Separate models for banks – developed markets, banks – emerging markets, broker-dealers and investment banks, private banks	10
	Commodity traders	Corporates: specialized lending	Rating template	1	Financial data including balance sheet ratios and profit and loss, as well as non-financial criteria	19
	Aircraft financing	Corporates: other lending	Rating template	1	Financial structure of the transaction	7
	Large corporates	Corporates: other lending	Score card / market data	4	Financial data including balance sheet ratios and profit and loss, and market data. Separate models for corporates with publicly traded and highly liquid stocks (Market Intelligence Tool), private corporates, leveraged corporates and corporates in construction and real estate business	10
	Other portfolios	Corporates: other lending, Public sector entities and multilateral development banks	Score card / pooled rating approach / rating template	13	Financial data and / or historical portfolio performance for pooled ratings. Separate models for hedge funds, managed funds, insurance companies, retail aggregators, commercial real estate loans, mortgage originators, Australian protected lending clients, ETD-only clients and sub-sovereigns / public-sector entities	10
Loss given default	Owner-occupied mortgages in Switzerland and the US	Retail: residential mortgages	Statistical model	2	Loan-to-value, time since last valuation. Separate models for mortgages in Switzerland and the US	11
	Income-producing real estate mortgages	Retail: residential mortgages, Corporates: specialized lending	Statistical model	1	Loan-to-value, time since last valuation, property type, location indicator	11
	Lombard lending	Retail: other	Statistical model, simulation	1	Historical observed loss rates	10–15
	Small and medium-sized enterprises	Corporates: other lending	Statistical model	2	Separate models for mortgage and non-mortgage LGDs. Mortgage models: loan-to-value, time since last valuation, property type, location indicator. Non-mortgage models: historical observed loss rates	11–17
	Investment Bank – all counterparties	Across the asset classes	Statistical model	1	Counterparty- and facility-specific drivers, including industry segment, collateral, seniority, legal environment and bankruptcy procedures	5–10
Exposure at default	Banking products	Across the asset classes	Statistical model	3	Separate models based on exposure type (committed credit lines, revocable credit lines, contingent products)	>10
	Traded products	Across the asset classes	Statistical model	2	Product-specific market drivers, e.g., interest rates. Separate models for OTC Derivatives, ETDs and SFTs that generate the simulation of risk factors used for the credit exposure measure	n/a

1 For sovereign and Investment Bank PD models, the length of internal portfolio history is shown in "Number of years loss data."

Audited |

Internal UBS rating scale and mapping of external ratings

Internal UBS rating	*1-year PD range in %*	*Description*	*Moody's Investors Service mapping*	*Standard & Poor's 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*		Caa	CCC	CCC
13	*>17*		Ca to C	CC to C	CC to C
Counterparty is in default	*Default*	*Defaulted*		D	D

▲

Risk, treasury and capital management

Probability of default

The probability of default (PD) is an estimate of the likelihood of a counterparty defaulting on its contractual obligations over the next 12 months. PD ratings are used for credit risk measurement and are an important input for determining credit risk approval authorities. For the calculation of RWA, a 3-basis-points PD floor is applied to Banks, Corporates and Retail exposures as required under the Basel III framework. Additionally, for the Swiss owner-occupied mortgages we apply an 8-basis-point PD floor and for the Lombard loans a 4-basis-point PD floor.

PD is assessed using rating tools tailored to the various categories of counterparties. Statistically developed score cards, based on key attributes of the obligor, are used to determine PD for many of our corporate clients and for loans secured by real estate. Where available, market data may also be used to derive the PD for large corporate counterparties. For low default portfolios, where available, we take into account relevant external default data in the rating tool development. For Lombard loans, Merton-type historical return-based model simulations taking into account potential changes in the value of securities collateral are used in our rating approach. These categories are also calibrated to our internal credit rating scale (masterscale), which is designed to ensure a consistent assessment of default probabilities across counterparties. Our masterscale expresses one-year default probabilities that we determine through our various rating tools by means of distinct classes, whereby each class incorporates a range of default probabilities. Counterparties migrate between rating classes as our assessment of their PD changes.

The ratings of the major credit rating agencies, and their mapping to our internal rating masterscale and internal PD bands, are shown in the "Internal UBS rating scale and mapping of external ratings" table above. The mapping is based on the long-term average of one-year default rates available from the rating agencies. For each external rating category, the average default rate is compared with our internal PD bands to derive a mapping to our internal rating scale. Our internal rating of a counterparty may therefore diverge from one or more of the correlated external ratings shown in the table. Observed defaults by rating agencies may vary through economic cycles, and we do not necessarily expect the actual number of defaults in our equivalent rating band to equal the rating agencies' average in any given period. We periodically assess the long-term average default rates of credit rating agencies' grades, and we adjust their mapping to our masterscale as necessary to reflect any material changes.

Loss given default

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 (such as workout costs, including the cost of carrying an impaired position during the workout process) less recovered amounts. We determine LGD based on the likely recovery rate of claims against defaulted counterparties, which depends on the type of counterparty and any credit mitigation by way of collateral or guarantees. Our estimates are supported by our internal loss data and external information where available. Where we hold collateral, such as marketable securities or a mortgage on a property, loan-to-value ratios typically are a key parameter in determining LGD. For low default portfolios, where available, we take into account relevant external default data in the rating tool development. In the RWA calculation, the regulatory LGD floor of 10% is applied for exposures secured by residential properties. Additionally, we applied a 30% LGD floor for Lombard loans in Wealth Management and a 25% LGD floor for Lombard loans in Wealth Management Americas. All other LGDs are subject to a 5% floor.

Exposure at default

Exposure at default (EAD) represents the amount we expect to be owed by a counterparty at the time of a possible default. We derive EAD from our current exposure to the counterparty and the possible future development of that exposure.

The EAD of a loan is the drawn or face value of the loan. For loan commitments and guarantees, the EAD includes the amount drawn as well as potential future amounts that may be drawn, which are estimated using credit conversion factors (CCFs) based on historical observations. To comply with regulatory guidance, we floor individual observed CCF values at zero in the CCF model, i.e., we assume that the drawn exposure at default will be no less than the drawn amount one year prior to default.

For traded products, we derive the EAD by modeling the range of possible exposure outcomes at various points in time using scenario and statistical techniques. We assess the net amount that may be owed to us or that we may owe to others, taking into account the effect of market moves over the potential time it would take to close out our positions. For exchange-traded derivatives, our calculation of EAD takes into account collateral margin calls. When measuring individual counterparty exposure against credit limits, we consider the maximum likely exposure measured to a high level of confidence. However, when aggregating exposures to different counterparties for portfolio risk measurement purposes, we use the expected exposure to each counterparty at a given time period (usually one year) generated by the same model.

We assess our 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 our traded products exposure (wrong-way risk), and we have established specific controls to mitigate these risks.

Expected loss

Credit losses are an inherent cost of doing business and the occurrence and amount of credit losses can be erratic. In order to quantify future credit losses that may be implicit in our current portfolio, we use the concept of expected loss.

Expected loss is a statistical measure used to estimate the average annual costs we expect to experience from positions that become impaired. The expected loss for a given credit facility is a product of the three components described above: PD, EAD and LGD. We aggregate the expected loss for individual counterparties to derive our expected portfolio credit losses.

Expected loss is the basis for quantifying credit risk in all our portfolios. It is also the starting point for the measurement of our portfolio statistical loss and stress loss.

We use a statistical modeling approach to estimate the loss profile of each of our credit portfolios over a one-year period to a specified level of confidence. The mean value of this loss distribution is the expected loss. The loss estimates deviate from the mean value due to statistical uncertainty on the defaulting counterparties and to systematic default relationships among counterparties within and between segments. The statistical measure is sensitive to concentration risks on individual counterparties and groups of counterparties. The outcome provides an indication of the level of risk in our portfolio and the way it may develop over time.

→ **Refer to "IFRS 9, *Financial Instruments*" in the "Significant accounting and financial reporting changes in 2018" section of this report for more information on future requirements of the expected credit loss methodology under IFRS 9**

Stress loss

We complement our statistical modeling approach with scenario-based stress loss measures. Stress tests are run on a regular basis to monitor the potential impact 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 the nature of the portfolios, ranging from regionally focused to global systemic events, and varying in time horizon. For example, for our loan underwriting portfolio, we apply a global market event under which, simultaneously, the market for loan syndication freezes, market conditions significantly worsen, and credit quality deteriorates. Similarly, for Lombard lending, we apply a range of scenarios representing instantaneous market shocks to all collateral and exposure positions, taking into consideration their liquidity and potential concentrations. The portfolio-specific stress test for our mortgage lending business in Switzerland reflects a multi-year event, and the overarching stress test for global wholesale and counterparty credit risk to corporates uses a one-year global stress event and takes into account exposure concentrations to single counterparties.

→ **Refer to "Stress testing" in this section for more information on our stress testing framework**

Credit risk model confirmation

Our approach to model confirmation involves both quantitative methods, including monitoring compositional changes in the portfolios and the results of backtesting, and qualitative assessments, including feedback from users on the model output as a practical indicator of the performance and reliability of the model.

Material changes in a portfolio composition may invalidate the conceptual soundness of the model. We therefore perform regular analysis of the evolution of portfolios to identify such changes in the structure and credit quality of portfolios. This includes analysis of changes in key attributes, changes in portfolio concentration measures, as well as changes in RWA.

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

Main credit models backtesting by regulatory asset class

	Length of time series used for the calibration (in years)	Actual rates in %			Estimated average rates at the start of 2017 in %
		Average of last 5 years[1]	Min. of last 5 years[2]	Max. of last 5 years[2]	
Probability of default[3]					
Central governments and central banks	> 10[4]	0.00	0.00	0.00	0.35
Banks and securities dealers	> 10	0.17	0.00	0.53	0.71
Public sector entities, multilateral development banks	> 10	0.06	0.00	0.19	0.20
Corporates: specialized lending	> 10	0.25	0.15	0.39	0.98
Corporates: other lending	> 10	0.23	0.21	0.26	0.49
Retail: residential mortgages	> 20	0.17	0.12	0.28	0.57
Retail: other	> 10	0.01	0.00	0.02	0.15
Loss given default					
Central governments and central banks	> 10				40.42
Banks and securities dealers	> 10	0.00			42.09
Public sector entities, multilateral development banks	> 10				21.44
Corporates: specialized lending	> 10	8.02	0.00	20.48	15.72
Corporates: other lending	> 10	24.65	14.41	28.86	22.61
Retail: residential mortgages	> 20	1.48	0.26	2.63	7.28
Retail: other	> 10	13.43	8.48	65.26	20.00
Credit conversion factors					
Corporates	>10	24.09	6.87	44.32	37.97

1 Average of all observations over the last five years. 2 Minimum / maximum annual average of observations in any single year from the last five years. Yearly averages are only calculated where five or more observations occurred during that year. 3 Average PD estimation is based on all rated clients in the portfolio. 4 Sovereign PD model is calibrated to UBS masterscale, length of time series shows span of internal history for this portfolio.

Backtesting

We monitor the performance of our models by backtesting and benchmarking them, whereby model outcomes are compared with actual results, based on our internal experience as well as externally observed results. To assess the predictive power of our credit exposure models for traded products such as OTC derivatives and ETD products, we statistically compare the predicted future exposure distributions at different forecast horizons with the realized values.

For PD, we use statistical modeling to derive a predicted distribution of the number of defaults. The observed number of defaults is then compared with this distribution, allowing us to derive a statistical level of confidence in the model conservativeness. In addition, we derive a lower and upper bound for the average default rate. If the portfolio average PD lies outside the derived interval, the rating tool is, as a general rule, recalibrated.

For LGD, the backtesting statistically tests whether the mean difference between the observed and predicted LGD is zero. If the test fails, then there is evidence that our predicted LGD is too low. In such cases, models are recalibrated where these differences are outside expectations.

Credit conversion factors (CCFs), used for the calculation of EAD for undrawn facilities with corporate counterparties, are dependent on several contractual dimensions of the credit facility. We compare the predicted amount drawn with observed historical utilization of such facilities for defaulted counterparties. If any statistically significant deviation is observed, the relevant CCFs are redefined.

The "Main credit models backtesting by regulatory asset class" table on the previous page compares the current model calibration for PD, LGD and CCFs with historical observed values over the last five years.

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 the course of 2017.

Within Personal & Corporate Banking and Wealth Management, we updated the PD model for income-producing real estate mortgages from a transaction rating approach to a counterparty-based rating approach where financial and behavioral data of the client is now taken into account. Additionally, we enhanced the PD model for Swiss owner-occupied mortgages to include behavioral information via a vendor credit score. New LGD models were implemented for most of the portfolios in Personal & Corporate Banking and the mortgage portfolios in Wealth Management. The RWA impact of the new LGD model and the new PD model for the Swiss owner-occupied mortgages will be phased in over the years 2018 and 2019.

→ **Refer to "Risk-weighted assets" in the "Capital management" section of this report for more information on the impact of the changes to models and model parameters on credit risk RWA**

For the Lombard portfolio, we globally implemented redeveloped PD and LGD models. These models reflect a Monte Carlo-based historical simulation approach, taking into account the individual client's loan-to-value and historical securities return data including the financial crisis of 2007-2009.

Within the Investment Bank, we have recalibrated the rating tool for residential real estate mortgage finance originators, bringing resulting PDs to a more conservative level.

With respect to the LGD model used for sovereigns, multinationals and financial institutions (mainly counterparties of the Investment Bank and Corporate Center – Group ALM), the model was recalibrated, which impacted mainly banks and non-leveraged managed funds. Other corporates and sovereigns were impacted to a lesser extent.

With regard to the EAD, we implemented revised credit conversion factors for contingent products and construction loans in Personal & Corporate Banking and for unutilized Lombard loan facilities in our wealth management businesses.

As part of a review of our internal rating models, we transferred our unsecured lending portfolio of private clients and account overdrafts from the internal ratings-based approach to the standardized approach for the RWA calculation.

Where required, changes to models and model parameters were approved by the Swiss Financial Market Supervisory Authority (FINMA) prior to implementation.

Future credit risk-related regulatory capital developments

In December 2017, the Basel Committee on Banking Supervision published the final Basel III framework to be implemented until 1 January 2022. The updated framework has made a number of revisions to the internal ratings-based (IRB) approaches, namely: (i) removing the possibility to use the advanced IRB (A-IRB) approach for certain asset classes (including large and medium-sized corporates, banks and other financial institutions); (ii) placing floors on certain model inputs under the IRB approach, such as for PD and LGD; and (iii) introducing various requirements to reduce RWA variability, for example, for LGD.

The published framework has a number of requirements that are subject to national discretion. In addition, revisions to the credit valuation adjustment (CVA) framework were published, including the removal of the advanced CVA (A-CVA) approach. UBS maintains a close dialog with FINMA to discuss in more detail the implementation objectives and to ensure a smooth transition of the capital regime for credit risk.

→ **Refer to "Capital management objectives, planning and activities" in the "Capital management" section of this report for more information on the development of RWA**
→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**
→ **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Policies for past due, non-performing and impaired claims

The diagram "Exposure categorization" on the next page illustrates how we categorize banking products and SFTs as performing, non-performing and / or impaired.

Audited | For products accounted for on a fair value basis, such as OTC derivatives, credit deterioration is recognized through a credit valuation adjustment (CVA), and these products are therefore not subject to the impairment framework.

We consider a claim held at amortized cost (loans and SFTs) and certain off-balance sheet commitments to be past due when a contractual payment has not been received by its contractual due date, or in case of account overdrafts, i.e., where the credit limit is exceeded. Past due claims are not considered impaired where we otherwise expect to collect all amounts due under the contractual terms of the claims.

A past due claim is considered non-performing when (i) the payment of interest, principal or fees is past due by more than 90 days, or more than 180 days for certain specified retail portfolios. Claims are also classified as non-performing when (ii) the counterparty is subject to bankruptcy, or insolvency proceedings or enforced liquidation have commenced or (iii) obligations have been restructured on preferential terms, such as preferential interest rates, extension of maturity, modifying the schedule of repayments or subordination.

Claims are classified as impaired if, following an individual impairment assessment, an allowance or provision for credit losses is established. Accordingly, both performing and non-performing loans may be classified as impaired.

When a financial asset has become non-performing, individually impaired or otherwise has defaulted, the counterparty is rated as in default according to our UBS internal rating scale. ▲

Restructured claims

Audited | Under imminent payment default or where default has already occurred, we sometimes restructure claims by providing concessions that we would otherwise not consider and that are outside our normal risk appetite, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt/equity swap and subordination. When a credit restructuring takes place, each case is considered individually and the exposure is classified as defaulted and assessed for impairment. It will remain so, until the loan is collected or written off, non-preferential conditions are granted that supersede the preferential conditions or until the counterparty has recovered and the preferential conditions no longer exceed our risk appetite.

Contractual adjustments when there is no evidence of imminent payment default, or where changes to terms and conditions are within our usual risk appetite, are not considered to be a credit restructuring. ▲

Individual and collective impairment assessments

Audited | Claims are assessed individually for impairment where there are indicators that an impairment may exist. Otherwise, portfolios of claims with similar credit risk characteristics are included in a collective impairment assessment. ▲

Individual impairment assessment

Audited | Non-performing status is considered an indicator that a loan may be impaired and therefore non-performing claims are assessed individually for impairment. However, an impairment analysis would be carried out irrespective of non-performing status if other objective evidence indicates that a loan may be impaired. Any event that impacts current and future cash flows may be an indication of impairment and trigger an assessment by the risk officer. Such events may be (i) significant collateral shortfalls due to a fall in lending values (securities and real estate), (ii) increase in loan exposure, (iii) significant financial difficulties of a client and (iv) high probability of the client's bankruptcy, debt moratorium or financial reorganization.

Individual claims are assessed for impairment based on the borrower's overall financial condition, resources and payment record, the prospects of support from contractual guarantors and, where applicable, the realizable value of any collateral. The recoverable amount is determined from all relevant cash flows, and where this is lower than the carrying amount of the claim, the claim is considered impaired.

We have established processes to determine the carrying values of impaired claims in compliance with IFRS requirements. Our credit controls applied to valuation processes and workout agreements are the same for credit products measured at amortized cost and fair value. Our workout strategy and estimation of recoverable amounts are independently approved in accordance with our credit authorities. ▲

Collective impairment assessment

Audited | We assess our portfolios of claims carried at amortized cost with similar credit risk characteristics for collective impairment in order to consider if these portfolios contain impaired claims that cannot yet be individually identified. To cover the time lag between the occurrence of an impairment event and its identification based on the policies above, we establish collective loan loss allowances based on the estimated loss for the portfolio over the average period between trigger events and the identification of any individual impairment. These portfolios are not considered impaired loans in the tables shown in this section.

Additionally, for all of our portfolios we assess whether there have been any developments that might result in event-driven impairments that are not immediately observable. These events could be stress situations, such as a natural disaster or a country crisis, or they could result from significant changes in the legal or regulatory environment. To determine whether a collective impairment exists, we regularly use a set of global economic drivers to assess the most vulnerable countries and review the impact of any potential impairment event. ▲

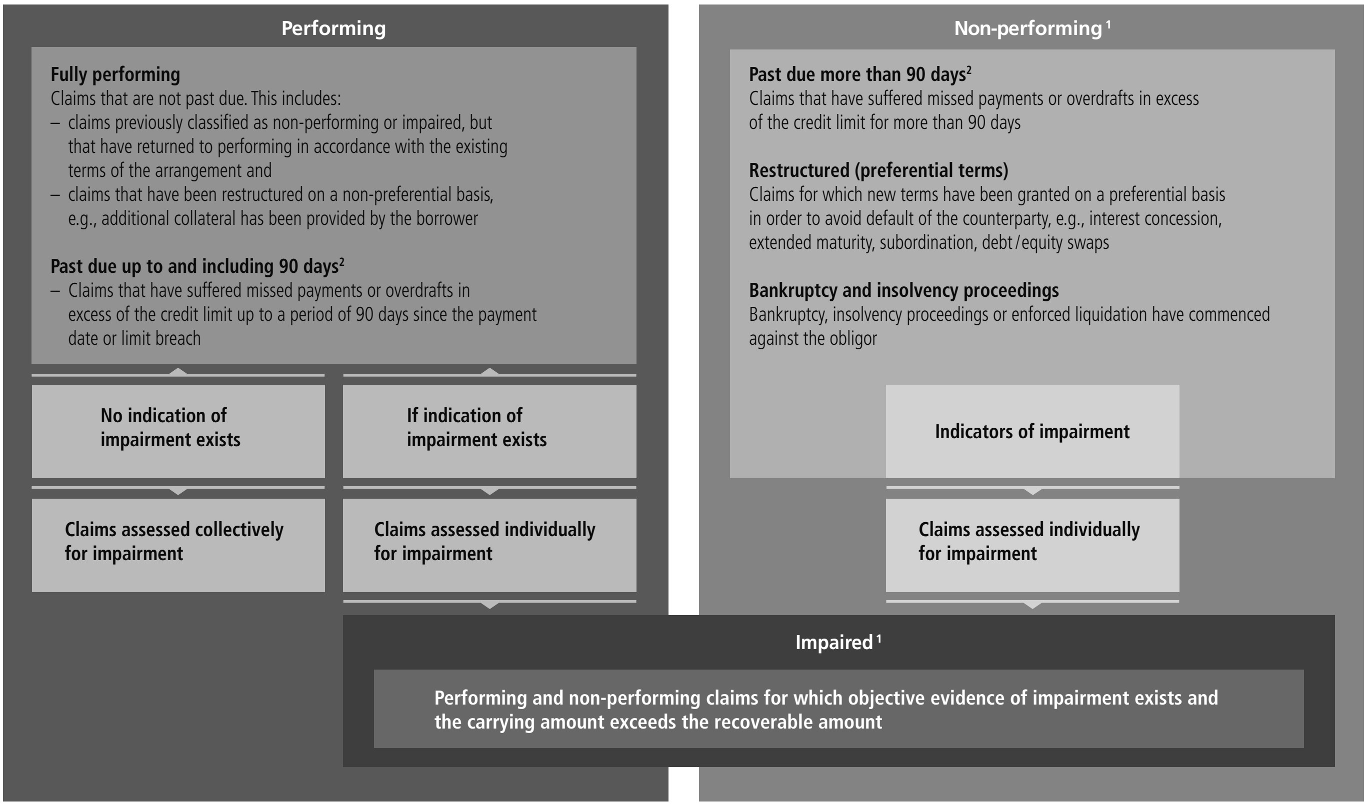
Recognition of impairment

Audited | The recognition of impairment in our financial statements depends on the accounting treatment of the claim. For claims carried at amortized cost, impairment is recognized through the creation of an allowance, or in the case of off-balance sheet items such as financial guarantees and certain loan commitments through a provision, both charged to the income statement as a credit loss expense.

For claims measured at fair value, a deterioration of the credit quality is recognized as a CVA in the income statement in *Net trading income*. ▲

→ **Refer to "Note 1 Summary of significant accounting policies," "Note 11 Allowances and provisions for credit losses" and "Note 22d Valuation adjustments" in the "Consolidated financial statements" section of this report for more information**

Exposure categorization



1 Claims rated as in default. All such claims are excluded from collective impairment assessment. 2 180 days for certain specified retail portfolios.

Impaired financial instruments

Audited | The following tables show impaired financial instruments, comprising loans, guarantees and loan commitments, and SFTs. As of 31 December 2017, gross impaired financial instruments stood at CHF 1.3 billion compared with CHF 1.2 billion as of 31 December 2016. After deducting the estimated liquidation proceeds of collateral and specific allowances and provisions, net impaired financial instruments were CHF 0.3 billion compared with CHF 0.4 billion. ▲

→ **Refer to the "Investment Bank, Non-core and Legacy Portfolio and Group ALM: distribution of net OTC derivatives and SFT exposure across internal UBS ratings and loss given default (LGD) buckets" table in this section for OTC derivative exposures in the Investment Bank and Corporate Center – Non-core and Legacy Portfolio that are rated at level 13 or in default according to our internal rating scale**

→ **Refer to "Note 11 Allowances and provisions for credit losses" in the "Consolidated financial statements" section of this report for more information on movements in allowances and provisions**

Impaired loans

During 2017, gross impaired loans (including amounts due from banks) increased to CHF 1,076 million from CHF 975 million. The majority of this exposure relates to loans in our Swiss domestic business. The ratio of impaired loans to total loans remained at 0.3%.

Audited | Collateral held against our impaired loan exposure mainly consisted of real estate and securities. It is our policy to dispose of foreclosed real estate as soon as practicable. The carrying amount of foreclosed property recorded in our balance sheet at the end of 2017 and 2016 amounted to CHF 60 million and CHF 51 million, respectively. We seek to liquidate collateral held in the form of financial assets expeditiously and at prices considered fair. This may require us to purchase assets for our own account, where permitted by law, pending orderly liquidation. ▲

Specific and collective allowances and provisions for credit losses increased by CHF 41 million to CHF 694 million as of 31 December 2017. This includes collective loan loss allowances of CHF 13 million, broadly unchanged from the prior year.

The "Loss history statistics" table below provides a five-year history of our credit loss experience for loans (including due from banks) relative to our impaired and non-performing loans.

→ **Refer to "Policies for past due, non-performing and impaired claims" in this section, and to "Note 10 Due from banks and loans (held at amortized cost)" and "Note 11 Allowances and provisions for credit losses" in the "Consolidated financial statements" section of this report for more information**

Audited |

Impaired financial instruments by type

CHF million	Gross impaired financial instruments		Allowances and provisions		Estimated liquidation proceeds of collateral[1]		Net impaired financial instruments	
	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Loans (including amounts due from banks)	1,076	975	(661)	(599)	(206)	(161)	210	215
Guarantees and loan commitments	199	260	(33)	(54)	(5)	(10)	161	195
Total impaired financial instruments	1,275[2]	1,235	(694)[2]	(653)	(210)	(171)	371	411

1 Does not include oil and gas reserves related to reserve-based lending. 2 Includes CHF 13 million in collective loan loss allowances (31 December 2016: CHF 12 million). Does not include exposures within Other assets of CHF 352 million, with associated allowances of CHF 19 million.

▲

Loss history statistics

CHF million, except where indicated	31.12.17	31.12.16	31.12.15	31.12.14	31.12.13
Due from banks and loans (gross)	333,967	320,080	324,594	329,800	301,601
Impaired loans (including due from banks)	1,076	975	1,226	1,204	1,241
Non-performing loans (including due from banks)	2,095	2,399	1,630	1,602	1,582
Allowances and provisions for credit losses[1,2]	694	653	727	735	750
of which: allowances for due from banks and loans[1]	*661*	*599*	*692*	*708*	*686*
Net write-offs[3]	98	123	116	124	83
of which: net write-offs for due from banks and loans	*98*	*123*	*116*	*124*	*83*
Credit loss (expense) / recovery[4]	(128)	(37)	(117)	(78)	(50)
Ratios					
Impaired loans as a percentage of due from banks and loans (gross)	0.3	0.3	0.4	0.4	0.4
Non-performing loans as a percentage of due from banks and loans (gross)	0.6	0.7	0.5	0.5	0.5
Allowances as a percentage of due from banks and loans (gross)	0.2	0.2	0.2	0.2	0.2
Net write-offs as a percentage of average due from banks and loans (gross) outstanding during the period	0.0	0.0	0.0	0.0	0.0

1 Includes collective loan loss allowances. Does not include allowances for other receivables for an amount of CHF 19 million (31 December 2016: CHF 0 million, 31 December 2015: CHF 0 million, 31 December 2014: CHF 0 million, 31 December 2013: CHF 0 million). 2 Includes provisions for loan commitments and allowances for securities financing transactions. 3 Includes net write-offs for loan commitments and securities financing transactions. 4 Includes credit loss (expense) / recovery for loan commitments, guarantees and securities financing transactions.

Allowances and provisions for credit losses

	IFRS exposure, gross[1]		Impaired exposure, gross		Estimated liquidation proceeds of collateral[2]		Allowances and provisions for credit losses[3]		Impairment ratio (%)	
CHF million, except where indicated	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Group										
Balances with central banks	87,078	107,100								
Due from banks	13,741	13,159	3	3			3	3	0.0	0.0
Loans	320,225	306,921	1,074	972	206	161	658	596	0.3	0.3
Guarantees	18,854	16,711	168	202	4	7	13	8	0.9	1.2
Loan commitments	39,069	54,430	31	58	1	3	20	47	0.1	0.1
Total	478,967[4,5]	498,322	1,275	1,235	210	171	694[5]	653	0.3	0.2
Wealth Management										
Balances with central banks	427	901								
Due from banks	1,356	915								
Loans	115,180	101,876	160[6]	77	45	13	104[6]	61	0.1	0.1
Guarantees	1,982	2,187					1	1		
Loan commitments	1,861	1,730								
Total	120,806	107,608	160[6]	77	45	13	105[6]	62	0.1	0.1
Wealth Management Americas										
Balances with central banks	0	0								
Due from banks	3,357	2,635								
Loans	53,014	52,486	22	27			26	29	0.0	0.1
Guarantees	460	558								
Loan commitments	347	375								
Total	57,178	56,054	22	27	0	0	26	29	0.0	0.0
Personal & Corporate Banking										
Balances with central banks	0	0								
Due from banks	1,485	2,156	3	3			3	3	0.2	0.1
Loans	131,380	133,861	733	756	113	121	441	443	0.6	0.6
Guarantees	9,551	9,023	158	202	4	7	12	7	1.7	2.2
Loan commitments	9,160	8,861	12	35	1	3	16	34	0.1	0.4
Total	151,576	153,900	906	995	118	131	472	486	0.6	0.6
Asset Management										
Total	570	545	0	0	0	0	0	0	0.0	0.0
Investment Bank										
Balances with central banks	32	37								
Due from banks	3,855	4,234								
Loans	11,165	10,086	110	95	47	27	57	48	1.0	0.9
Guarantees	6,739	4,790	10	0					0.1	0.0
Loan commitments	27,700	42,937	19	23			4	13	0.1	0.1
Total	49,491[5]	62,085	139	118	47	27	61[5]	61	0.3	0.2
CC – Services										
Total	496	610	0	0	0	0	0	0	0.0	0.0
CC – Group ALM										
Balances with central banks	86,618	106,162								
Due from banks	2,740	2,176								
Loans	7,226	5,962								
Guarantees	2	1								
Loan commitments	0	0								
Total	96,585	114,301	0	0	0	0	0	0	0.0	0.0
CC – Non-core and Legacy Portfolio										
Balances with central banks	0	0								
Due from banks	22	43								
Loans	2,226	2,606	48	17			29	15	2.1	0.6
Guarantees	16	41								
Loan commitments	0	527								
Total	2,264[5]	3,218	48	17	0	0	29[5]	15	2.1	0.5

1 The measurement requirements of IFRS differ in certain respects from our internal management view of credit risk. 2 Does not include oil and gas reserves related to reserve-based lending. 3 Includes CHF 13 million (31 December 2016: CHF 12 million) in collective loan loss allowances for credit losses. 4 As of 31 December 2017, total IFRS exposure of UBS AG consolidated was CHF 2.1 billion higher than the exposure of UBS Group AG consolidated, related to receivables of UBS AG and UBS Switzerland AG against UBS Group AG (31 December 2016: CHF 0.6 billion). 5 Does not include exposures within Other assets of CHF 352 million, of which CHF 347 million were in Corporate Center – Non-core and Legacy Portfolio and CHF 5 million were in the Investment Bank, with associated allowances of CHF 19 million, of which CHF 14 million were in Corporate Center – Non-core and Legacy Portfolio and CHF 5 million were in the Investment Bank. 6 The increase in impaired exposure and allowances relates mainly to a margin loan to a single client originated by Wealth Management and risk-managed by the Investment Bank.

Development of individually impaired loans (including due from banks)

	For the year ended	
CHF million	31.12.17	31.12.16
Balance at the beginning of the year	975	1,226
New impaired loans	448	356
Increase in existing impaired loans	102	140
Repayments / sales / upgrades	(328)	(605)
Write-offs	(115)[1]	(143)[1]
Foreign currency translations effects	(5)	1
Balance at the end of the year	1,076	975

1 Does not include CHF 2 million in write-offs charged directly to collective loan loss allowances (31 December 2016: CHF 2 million).

Past due but not impaired loans

The table below shows a breakdown of total loan balances where payments have been missed, but that we do not consider impaired because we otherwise expect to collect all amounts due under the contractual terms of the loans or the equivalent value from liquidation of collateral. The loan balances in the table arise predominantly within Personal & Corporate Banking and, to a lesser extent, Wealth Management.

The amount of past due but not impaired mortgage loans was not significant compared with the overall size of the mortgage portfolio.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on our impairment policies**

Audited |

Past due but not impaired loans

CHF million	31.12.17	31.12.16
1–10 days	126	54
11–30 days	108	113
31–60 days	126	68
61–90 days	192	10
>90 days	507	641
of which: mortgage loans	*336*[1]	*542*[1]
Total	1,059	887

1 Total mortgage loans IFRS carrying value was CHF 153,729 million (31 December 2016: CHF 153,006 million).

▲

Market risk

Key developments

We continued to manage market risk to low levels during 2017. Average 1-day, 95% confidence level, management value-at-risk (VaR) was unchanged at CHF 11 million. With VaR at such low levels, we continue to see some volatility in the measure driven by positions arising from client facilitation as well as option expiries. The number of backtesting exceptions within a 250-business-day window decreased to one from seven by the end of the year. Accordingly, the FINMA VaR multiplier used to compute regulatory and stressed VaR RWA decreased to 3.00 from 3.65 as of 31 December 2017.

Audited | Main sources of market risk

- Market risks arise from both our trading and non-trading business activities.
- Trading market risks arise mainly in connection with primary debt and equity underwriting, securities and derivatives trading for market-making and client facilitation within our Investment Bank, as well as the remaining positions within Non-core and Legacy Portfolio and our municipal securities trading business within Wealth Management Americas.
- Non-trading market risk arises predominantly in the form of interest rate and foreign exchange risks in connection with personal banking and lending in our wealth management businesses, our personal and corporate banking business in Switzerland and the Investment Bank's lending business, in addition to treasury activities.
- Corporate Center – Asset and Liability Management (Group ALM) assumes market risks in the process of managing interest rate risk, structural foreign exchange risk and the liquidity and funding profile (including high-quality liquid assets) of the Group.
- Equity and debt investments can also give rise to market risks, as can some aspects of our employee benefits, such as defined benefit pension schemes. ▲

Audited | Overview of measurement, monitoring and management techniques

- Management VaR measures exposures under the market risk framework. This includes trading market risks and parts of non-trading market risks. Non-trading market risks not included in VaR are covered in the risks controlled by Treasury Risk Control as set out further below.
- Market risk limits are set for the Group, the business divisions and Corporate Center units and at granular levels within the various business lines, reflecting the nature and magnitude of the market risks.
- Our primary portfolio measures of market risk are liquidity-adjusted stress (LAS) loss and value-at-risk (VaR). Both are common to all our business divisions and subject to limits that are approved by the Board of Directors (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. These limits take into account the extent of market liquidity and volatility, available operational capacity, valuation uncertainty and, for our single-name exposures, the credit quality of issuers.
- Trading market risks are managed on an integrated basis at a 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. Accordingly, in the trading portfolio, we do not generally seek to distinguish 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 our maximum default exposure (the loss in the case of a default event assuming zero recovery).
- Non-trading foreign exchange risks are managed under market risk limits, with the exception of Corporate Center – Group ALM's management of consolidated capital activity.

Our Treasury Risk Control function applies a holistic risk framework, which sets the appetite for treasury-related risk-taking activities across the Group. A key element of the framework is an overarching economic value sensitivity limit, set by the BoD. This limit is linked to the level of Basel III common equity tier 1 (CET1) capital and takes into account risks arising from interest rates, foreign exchange and credit spreads. In addition, the sensitivity of net interest income to changes in interest rates is monitored against targets set by the Group Chief Executive Officer, in order to analyze the outlook and volatility of net interest income based on market-expected interest rates. Limits are also set by the BoD to balance the impact of foreign exchange movements on our CET1 capital and CET1 capital ratio. Non-trading interest rate and foreign exchange risks are included in our Group-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 our Group-wide statistical and stress testing metrics, which flow into our risk appetite framework. ▲

→ **Refer to the "Treasury management" section of this report for more information on Corporate Center – Group ALM's management of foreign exchange risks**

→ **Refer to the "Capital management" section of this report for more information on the sensitivity of our CET1 capital and CET1 capital ratio to currency movements**

Market risk stress loss

In addition to VaR, which is discussed below, we measure and manage our market risks through a comprehensive framework of non-statistical measures and related limits. This includes an extensive series of stress tests and scenario analyses, which we continuously evaluate with the intention of ensuring that any losses resulting from an extreme, yet plausible event do not exceed our risk appetite.

Liquidity-adjusted stress

Our primary measure of stress loss for Group-wide market risk is LAS. The LAS framework is designed to capture the economic losses that could arise under specified stress scenarios. This is in part achieved by replacing the standard one-day and 10-day holding period assumptions used for management and regulatory VaR with liquidity-adjusted holding periods, as explained below. Shocks are then applied to positions based on the expected market movements over the liquidity-adjusted holding periods resulting from the specified scenario.

The holding periods used in LAS are calibrated to reflect the amount of time it would take to reduce or hedge the risk of positions in each major risk factor in a stressed environment, assuming maximum utilization of the relevant position limits. We also apply minimum holding periods, regardless of observed liquidity levels, reflecting the fact that identification of and reaction to a crisis may not always be immediate.

The expected market movements are derived using a combination of historical market behavior, based on an analysis of historical events, and forward-looking analysis that includes consideration of defined scenarios that have not occurred historically.

LAS-based limits are applied at a number of levels: Group, business division and Corporate Center unit, business area and sub-portfolio. In addition, LAS forms the core market risk component of our combined stress test framework and is 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 on our stress testing framework**

Value-at-risk

VaR definition

Audited | VaR is a statistical measure of market risk, representing the market risk losses that could potentially be realized over a set time horizon (holding period) at an established level of confidence. The measure assumes no change in the Group's trading positions over the set time horizon.

We calculate VaR on a daily basis. The profit or loss distribution from which VaR is derived is constructed by our internally developed VaR model. The VaR model simulates returns over the holding period of those risk factors to which our trading positions are sensitive, and subsequently quantifies the profit or loss impact of these risk factor returns on the trading positions. Risk factor returns associated with the risk factor classes of general interest rates, foreign exchange and commodities are based on a pure historical simulation approach, taking into account a five-year look-back window. Risk factor returns for selected issuer-based risk factors, such as equity price and credit spreads, are decomposed into systematic and residual, issuer-specific components using a factor model approach. Systematic returns are based on historical simulation, and residual returns are based on a Monte Carlo simulation. The VaR model profit and loss distribution is derived from the sum of the systematic and the residual returns in such a way that we consistently capture systematic and residual risk. Correlations among risk factors are implicitly captured via the historical simulation approach. In modeling the 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 risk factor class, we choose to model the risk factor returns using absolute returns or logarithmic returns. The risk factor return distributions are updated on a fortnightly basis.

Although our VaR model does not have full revaluation capability, we source full revaluation grids and sensitivities from our front-office systems, enabling us to capture material non-linear profit or loss effects.

We use a single VaR model for both internal management purposes and determining market risk regulatory capital requirements, although we consider different confidence levels and time horizons. For internal management purposes, we establish risk limits and measure exposures using VaR at the 95% confidence level with a one-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 requires a measure equivalent to a 99% confidence level using a 10-day holding period. In the calculation of a 10-day holding period VaR, we employ 10-day risk factor returns, whereby all observations are equally weighted.

Additionally, the population of the portfolio within management and regulatory VaR is slightly different. The population within regulatory VaR meets regulatory requirements for inclusion in regulatory VaR. Management VaR includes a broader population of positions. For example, regulatory VaR excludes the 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 regulatory capital. SVaR adopts broadly the same methodology as regulatory VaR and is calculated using the same population, holding period (10-day) and confidence level (99%). However, unlike regulatory VaR, the historical data set for SVaR is not limited to five years, but spans the time period from 1 January 2007 to the present. In deriving SVaR, we search for the largest 10-day holding period VaR for the current portfolio of the Group across all one-year look-back windows that fall into the interval from 1 January 2007 to the present. SVaR is computed weekly. ▲

→ **Refer to the 31 December 2017 Pillar 3 report – Group and significant regulated subsidiaries and sub-groups under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on the regulatory capital calculation under the advanced internal ratings-based approach**

Management VaR for the period

The tables below show minimum, maximum, average and period-end management VaR by business division and Corporate Center unit, and by general market risk type. We continued to manage management VaR at low levels with average VaR remaining stable compared with year-end 2016.

Audited |

Management value-at-risk (1-day, 95% confidence, 5 years of historical data) by business division and Corporate Center unit and general market risk type[1]

	For the year ended 31.12.17								
CHF million					Equity	Interest rates	Credit spreads	Foreign exchange	Commodities
	Min.				1	6	4	1	0
		Max.			14	12	8	5	6
			Average		6	9	6	2	2
				31.12.17	4	8	8	3	2
Total management VaR, Group	5	18	11	10	*Average (per business division and risk type)*				
Wealth Management	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Wealth Management Americas	0	1	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	4	17	9	8	*6*	*7*	*5*	*2*	*2*
CC – Services	0	0	0	0	*0*	*0*	*0*	*0*	*0*
CC – Group ALM	3	8	6	4	*0*	*5*	*2*	*1*	*0*
CC – Non-core and Legacy Portfolio	3	5	3	3	*1*	*2*	*2*	*0*	*0*
Diversification effect[2,3]			(8)	(6)	*(1)*	*(6)*	*(4)*	*(1)*	*0*

	For the year ended 31.12.16								
CHF million					Equity	Interest rates	Credit spreads	Foreign exchange	Commodities
	Min.				1	9	3	1	0
		Max.			15	15	6	5	2
			Average		5	11	4	3	1
				31.12.16	4	11	5	2	1
Total management VaR, Group	8	18	11	11	*Average (per business division and risk type)*				
Wealth Management	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Wealth Management Americas	0	1	0	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	5	18	9	8	*5*	*8*	*3*	*3*	*1*
CC – Services	0	0	0	0	*0*	*0*	*0*	*0*	*0*
CC – Group ALM	5	9	7	6	*0*	*7*	*1*	*1*	*0*
CC – Non-core and Legacy Portfolio	3	5	4	4	*0*	*4*	*2*	*1*	*0*
Diversification effect[2,3]			(10)	(8)	*0*	*(9)*	*(3)*	*(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 well occur on different days, and likewise, the 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 Difference between the sum of the standalone VaR for the business divisions and Corporate Center units and the VaR for the Group as a whole. 3 As the minimum and maximum occur on different days for different business divisions and Corporate Center, it is not meaningful to calculate a portfolio diversification effect.

▲

VaR limitations

Audited | Actual realized market risk losses may differ from those implied by our VaR for a variety of reasons.

- The VaR measure is calibrated to a specified level of confidence and may not indicate potential losses beyond this confidence level.
- The one-day time horizon used for VaR for internal management purposes, or 10-day in the case of the regulatory VaR measure, may not fully capture the market risk of positions that cannot be closed out or hedged within the specified period.
- In certain cases, VaR calculations approximate the impact of changes in risk factors on the values of positions and portfolios. This may happen because the number of risk factors included in the VaR model is necessarily limited.
- The effect of extreme market movements is subject to estimation errors, which may result from non-linear risk sensitivities, as well as the potential for actual volatility and correlation levels to differ from assumptions implicit in the VaR calculations.
- The use of a five-year window means that sudden increases in market volatility will tend not to increase VaR as quickly as the use of shorter historical observation periods, but the increase will affect our VaR for a longer period of time. Similarly, following a period 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 same limitations as noted for VaR above, but the use of one-year data sets avoids the smoothing effect of the five-year data set used for VaR, and the absence of the five-year window provides for a longer history of potential loss events. Therefore, although the significant period of stress during the financial crisis of 2007–2009 is no longer contained in the historical five-year period used for management and regulatory VaR, SVaR will continue to use this data. This approach is intended to reduce the procyclicality of the regulatory capital requirements for market risks.

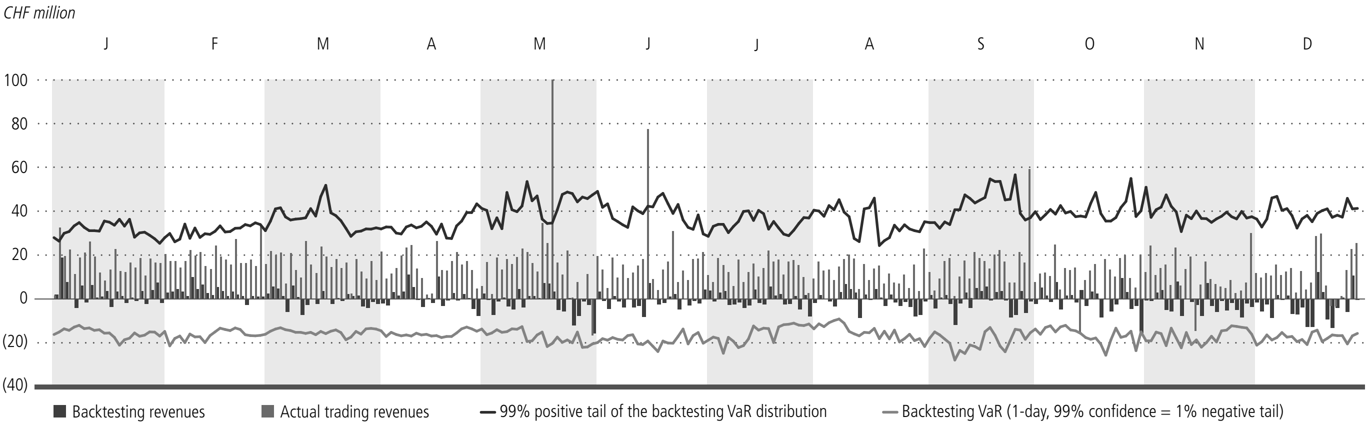
We recognize that no single measure may encompass the entirety of risks associated with a position or portfolio. Consequently, we employ a suite of various metrics with both overlapping and complementary characteristics in order to create a holistic framework that seeks to ensure material completeness of risk identification and measurement. As a statistical aggregate risk measure, VaR supplements our liquidity-adjusted stress and comprehensive stress testing frameworks.

In the fourth quarter of 2017, we went live with a new framework to identify and quantify potential risks that are not fully captured by our VaR model. We refer to these risks as risks-not-in-VaR. This framework is used to underpin these potential risks with regulatory capital, calculated as a multiple of regulatory VaR and stressed VaR.▲

Backtesting of VaR

For backtesting purposes, we compute backtesting VaR using a 99% confidence level and one-day holding period for the population included within regulatory VaR. The backtesting process compares backtesting VaR calculated on positions at the close of each business day with the revenues generated by those positions on the following business day. Backtesting revenues exclude non-trading revenues, such as fees and commissions and revenues from intraday trading, to provide for a like-for-like comparison. A backtesting exception occurs when backtesting revenues are negative and the absolute value of those revenues is greater than the previous day's backtesting VaR.

Group: development of backtesting revenues[1] and actual trading revenues[2] against backtesting VaR[3] (1-day, 99% confidence)



1 Excludes non-trading revenues, such as commissions and fees, and revenues from intraday trading. 2 Includes backtesting revenues and revenues from intraday trading. 3 Based on Basel III regulatory VaR, excludes CVA positions and their eligible hedges, which are subject to the new standalone CVA charge.

Statistically, given the confidence level of 99%, two or three backtesting exceptions per year can be expected. More exceptions than this could indicate that the VaR model is not performing appropriately, as could too few exceptions over a prolonged period of time. However, as noted in the VaR limitations above, a sudden increase or decrease in market volatility relative to the five-year window could lead to a higher or lower number of exceptions, respectively. Accordingly, Group-level backtesting exceptions are investigated, as are exceptional positive backtesting revenues, with results being reported to senior business management, the Group Chief Risk Officer and the divisional Chief Risk Officers. Backtesting exceptions are also reported to internal and external auditors and to the relevant regulators.

The "Group: development of backtesting revenues and actual trading revenues against backtesting VaR" chart on the previous page shows the 12-month development of backtesting VaR against the Group's backtesting revenues and actual trading revenues for 2017. The chart shows both the negative and positive tails of the backtesting VaR distribution at 99% confidence intervals representing, respectively, the losses and gains that could potentially be realized over a one-day period at that level of confidence. The asymmetry between the negative and positive tails is due to the long gamma risk profile that has been run historically in the Investment Bank. This long gamma position profits from increases in volatility, which therefore benefits the positive tail of the VaR simulated profit or loss distribution.

The actual trading revenues include, in addition to backtesting revenues, intraday revenues.

The number of negative backtesting exceptions within a 250-business-day window decreased to one from seven by the end of the year. Accordingly, the FINMA VaR multiplier used to compute regulatory and stressed VaR RWA decreased to 3.00 from 3.65 as of 31 December 2017.

VaR model confirmation

In addition to model backtesting performed for regulatory purposes as described above, we also conduct extended backtesting for our internal model confirmation purposes. This includes observing model performance across the entire profit or loss distribution, not just the tails, and at multiple levels within the business division and Corporate Center unit hierarchies.

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

VaR model developments in 2017

Audited | We have not made any material changes to the VaR model in 2017.▲

Future market risk-related regulatory capital developments

In December 2017, the Basel Committee on Banking Supervision extended the implementation date of the revised minimum capital requirements for market risk to 1 January 2022. The extension aligns implementation with the Basel III revisions to credit risk and operational risk and recognizes that some of the market risk-related rules are still being finalized by the Basel Committee.

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 trading book and banking book. UBS maintains a close dialog with FINMA to discuss in more detail the implementation objectives and to ensure a smooth transition of the capital regime for market risk.

→ **Refer to "Capital management objectives, planning and activities" in the "Capital management" section of this report for more information on the development of RWA**

→ **Refer to "Risk measurement" in this section for more information on 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 | Interest rate risk in the banking book arises from balance sheet positions such as *Loans, Due from customers, Debt issued, Financial assets available for sale, Financial assets held to maturity,* certain *Financial assets* and *liabilities designated at fair value,* derivatives measured at fair value, including derivatives used for cash flow hedge accounting purposes, as well as related funding transactions. These positions may impact *Other comprehensive income* (OCI) or the income statement, depending on their accounting treatment.

Our largest banking book interest rate exposures arise from client deposits and lending products in our wealth management businesses and Personal & Corporate Banking. For Wealth Management and Personal & Corporate Banking, the inherent interest rate risks are transferred either by means of back-to-back transactions or, in the case of products with no contractual maturity date or direct market-linked rate, by replicating portfolios from the originating business into Corporate Center – Group ALM, which manages the risks on an integrated basis, allowing for netting interest rate risks across different sources. Any residual interest rate risks in our wealth management businesses and Personal & Corporate Banking that are not transferred to Corporate Center – Group ALM are managed locally and are subject to independent monitoring and control by local risk control units as well as centrally by Market Risk Control. To manage the interest rate risk centrally, Corporate Center – Group ALM uses derivative instruments, most of which are in designated hedge accounting relationships. A significant amount of interest rate risk also arises from Corporate Center – Group ALM financing and investing activities, such as the investment and refinancing of non-monetary corporate balance sheet items with indefinite maturities, including equity, goodwill and real estate. For these items, senior management has defined specific target durations as a basis for our funding and investment activities, as applicable. These targets are defined by replication portfolios, which establish rolling benchmarks to execute against. As of 31 December 2017, the target replication portfolios for equity, goodwill and real estate were defined as follows: in Swiss francs with an average duration of approximately two years and fair value sensitivity of CHF 5 million per basis point; in US dollars with an average duration of approximately five years and a sensitivity of CHF 11 million per basis point. Corporate Center – Group ALM also maintains a portfolio of debt investments to meet the Group's liquidity needs.

Interest rate risk within Wealth Management Americas arises from the business division's portfolio of available-for-sale assets, in addition to its lending and deposit products offered to clients. This interest rate risk is closely measured, monitored and managed within approved risk limits and controls, taking into account Wealth Management Americas' balance sheet items that mutually offset interest rate risk.

Banking book interest rate exposure in the Investment Bank arises predominantly from the business of Corporate Client Solutions, where transactions are subject to approval on a case-by-case basis.

Corporate Center – Non-core and Legacy Portfolio assets that are classified as loans and receivables, and certain other debt securities held as loans and receivables, also give rise to non-trading interest rate risk. ▲

Effect of interest rate changes on shareholders' equity and CET1 capital

The "Accounting and capital effect of changes in interest rates" table below illustrates the accounting and CET1 capital treatment of gains and losses resulting from changes in interest rates. For instruments held at fair value, a change in interest rates results in an immediate fair value gain or loss recognized either in the income statement or through OCI. For assets and liabilities held at amortized cost, including financial assets held to maturity, a change in interest rates does not result in a change in the carrying amount of the instruments, but could affect the amount of interest income or expense recognized over time in the income statement.

Typically, increases in interest rates would lead to an immediate reduction in the value of our longer-term assets held at fair value, but we would expect this to be offset over time through higher net interest income (NII) on our core banking products.

In addition to the differing accounting treatments, our banking book positions have different sensitivities to different points on yield curves. For example, our portfolios of debt securities, whether accounted for as instruments designated at fair value, as assets held to maturity or as assets available for sale, and interest rate swaps designated as cash flow hedges, on the whole, are more sensitive to changes in longer-duration interest rates, whereas our deposits and a significant portion of our loans contributing to net interest income are more sensitive to short-term rates. These factors are important as yield curves may not shift on a parallel basis and could, for example, exhibit an initial steepening, followed by a flattening over time.

By virtue of the accounting treatment and yield curve sensitivities outlined above, in a steepening yield curve scenario we would expect to recognize an initial decrease in shareholders' equity as a result of fair value losses recognized in OCI. This would be compensated over time by increased NII once increases in interest rates affect the shorter end of the yield curve in particular. The effect on CET1 capital would be less pronounced, as gains and losses on interest rate swaps designated as cash flow hedges are not recognized for regulatory capital purposes. Fair value losses on instruments designated at fair value are expected to be offset by economic hedges.

We subject the interest rate-sensitive banking book exposures to a suite of interest rate scenarios in order to assess the effect on expected NII over both a one-year and a three-year time horizon assuming constant business volumes. We also consider the effect of the interest rate movements in each scenario on the fair value recognized in OCI of financial assets available for sale and cash flow hedges managed by Corporate Center – Group ALM. The scenario assessment also includes the estimated effect through OCI on shareholders' equity and CET1 capital from pension fund assets and liabilities. While certain standard scenarios, such as a parallel rise in all yield curves of 100 basis points, are retained and regularly used, other scenarios are adopted as a function of changing market conditions.

Accounting and capital effect of changes in interest rates[1]

	Recognition		Shareholders' equity		CET1 capital	
	Timing	Income statement / OCI	Gains	Losses	Gains	Losses
Financial assets available for sale	Immediate	OCI	●	●		●
Derivatives transacted as economic hedges	Immediate	Income statement	●	●	●	●
Derivatives designated as cash flow hedges	Immediate	OCI[2]	●	●		
Loans and deposits at amortized costs[3]	Gradual	Income statement	●	●	●	●
Financial assets designated at fair value	Immediate	Income statement	●	●	●	●
Financial assets held to maturity[3]	Gradual	Income statement	●	●	●	●

1 Refer to the "Reconciliation of IFRS equity to Swiss SRB common equity tier 1 capital" table in the "Capital management" section of this report for more information on the differences between shareholders' equity and CET1 capital. 2 Excluding hedge ineffectiveness that is recognized in the income statement in accordance with IFRS. 3 For fixed-rate financial instruments, changes in interest rates impact the income statement when these instruments roll over and reprice.

At the end of 2017, the following scenarios were analyzed in detail:

- Negative Interest Rates (NIR) then Recovery: Yield curves drop 50 basis points in parallel with no zero-floor applied and therefore can become negative, or more negative. Thereafter, all rates recover according to market-implied forward rates.
- NIR then Constant: Same assumptions as the NIR then Recovery scenario, but after the initial shock, rates do not recover but remain at the then-prevailing levels until the end of the simulated time horizon.
- Global Interest Rate Steepener: Represents a sudden shift in market sentiment causing a disorderly sell-off in long-dated bonds and a rapid steepening of the yield curve, exacerbated by the lack of liquidity in financial markets. This corresponds to the general interest rate movements contained in the corresponding CST scenario described in "Stress testing" in this section.
- Parallel +100 basis points: All yield curves rise 100 basis points in parallel.
- Severe Eurozone Crisis: This scenario assumes a eurozone crisis at its core and includes sovereign debt restructuring as a consequence of the ensuing crisis. A China hard landing is also a feature of the scenario. This corresponds to the general interest rate movements contained in the binding stress scenario in our CST framework for 2018 described in "Stress testing" in this section.
- Inverted Steepener: Yield curves across all currencies undergo a sharp rise for short tenors, with only a modest rise in the long end of the yield curve: +200 basis points for tenors up to 1 year, +100 basis points for the 5-year tenor and +20 basis points for 8-year to 10-year tenors.
- Constant Rates: All rates stay at current levels.

The results are compared with a baseline NII, which is calculated assuming that interest rates in all currencies develop according to their market-implied forward rates and under the assumption of constant business volumes and no specific management actions. The calculated effects on baseline NII range between a deterioration of approximately 6% and 9% over a one-year and three-year horizon, respectively, and an improvement of approximately 27% and 52% over a one-year and a three-year horizon, respectively. The most adverse scenario is the Negative Interest Rates then Constant over both a one-year horizon and three-year horizon. The most beneficial scenario is the Inverted Steepener over a one-year horizon and the Global Interest Rate Steepener over a three-year horizon.

In addition to the above scenario analysis, we also monitor the sensitivity of the NII to immediate parallel shocks of –200 and +200 basis points compared with baseline NII, under the assumption of a constant balance sheet volume and structure. Any resulting reduction in first-year NII relative to the baseline NII is subject to predefined threshold levels to monitor the extent to which the NII is exposed to an adverse movement in market rates. As of 31 December 2017, the baseline NII would have been approximately 17% less under a parallel shock of –200 basis points, whereas under a parallel +200-basis-point shock, the baseline NII would have been approximately 29% higher.

To shelter the level of our NII from the persistently low and negative interest rate environment in Swiss francs in particular, we rely on self-funding of our lending businesses through our deposit base in Wealth Management and Personal & Corporate Banking, along with appropriate additional adjustments to our interest rate-linked product pricing. Should we lose this equilibrium on the balance sheet, for example, due to unattractive pricing relative to our peers for either our mortgages or deposits, this could lead to a decrease in our NII in a persistently low and negative interest rate environment. As we assume constant business volumes, these risks do not appear in the aforementioned interest rate scenarios.

Moreover, should the low and negative interest rate environment persist or worsen, this could lead to additional pressure on our NII and we could face additional costs for holding our Swiss franc high-quality liquid asset portfolio. A reduction of the Swiss National Bank's deposit exemption threshold for banks would also lead to increased costs that we might not be able to offset, for example, by passing on some of the costs to our depositors. Should euro interest rates also decline significantly further into negative territory, this could likewise increase our liquidity costs and put our NII generated from euro-denominated loans and deposits at risk of volume imbalances. Depending on the overall economic and market environment, sustained and significant negative rates could also lead to our Wealth Management and Personal & Corporate Banking clients paying down their loans together with reducing any excess cash they hold with us as deposits. This would reduce the underlying business volume and lower our NII accordingly.

A net decrease in deposits would require replacement funding at a potential relative cost increase that would depend on various factors, including the term and nature of the replacement funding, whether such funding is raised in the wholesale markets or from swapping with available funding denominated in another currency. On the other hand, imbalances leading to an excess deposit position could require additional investments at negative yields, which we might not be able to compensate for sufficiently as a result of our excess deposit balance charging mechanisms.

Interest rate risk sensitivity to parallel shifts in yield curves

Audited | Interest rate risk in the banking book is not underpinned for capital purposes, but is subject to a regulatory threshold. As of 31 December 2017, the economic-value effect of an adverse parallel shift in interest rates of ±200 basis points on our banking book interest rate risk exposures was significantly below the threshold of 20% of eligible capital recommended by regulators.

The interest rate risk sensitivity figures presented in the "Interest rate sensitivity – banking book" table on the next page represent the effect of +1, ±100 and ±200-basis-point parallel moves in yield curves on present values of future cash flows, irrespective of accounting treatment. For some portfolios, the +1-basis-point sensitivity has been estimated by dividing the +100-basis-point sensitivity by 100. In the prevailing negative interest rate environment for the Swiss franc in particular, and to a lesser extent for the euro and the Japanese yen, interest rates for Wealth Management and Personal & Corporate Banking client transactions are generally being floored at non-negative levels. Accordingly, for the purposes of this disclosure table, downward moves of 100 / 200 basis points are floored to ensure that the resulting shocked interest rates do not turn negative. The flooring results in non-linear sensitivity behavior.

The sensitivity of the banking book to rising rates was approximately nil compared with negative CHF 3.1 million per basis point at prior year-end. This was mainly due to increased sensitivity in Corporate Center – Group ALM, reduced negative sensitivity in Wealth Management Americas and, to a lesser extent, a change in the sensitivity in Corporate Center – Non-core and Legacy Portfolio from negative CHF 0.1 million per basis point to positive CHF 0.5 million per basis point. The increased sensitivity in Corporate Center – Group ALM was mainly due to adjustments leading to more-positive sensitivity to interest rates in Swiss francs and a reduction of negative sensitivity in US dollar interest rates. The reduction in negative interest rate sensitivity within Wealth Management Americas was primarily due to the introduction of a new deposit pricing approach, which resulted in higher deposit interest rate sensitivity, thus providing a larger offset to asset sensitivity. The change in Corporate Center – Non-core and Legacy Portfolio was due to improved capture of risk sensitivities of auction rate securities and auction preferred securities.

The sensitivity of the banking book to rising rates includes the interest rate sensitivities arising from debt investments classified as *Financial assets available for sale* and their associated hedges. The sensitivity of these positions (excluding hedges and excluding investments in funds accounted for as available for sale) to a 1-basis-point parallel increase in the yields of the respective instruments is approximately negative CHF 2 million, which would be recorded in OCI if such a change occurred. This sensitivity is around CHF 1 million per basis point less than as of 31 December 2016, mainly due to a further reduction in available-for-sale debt securities held in Corporate Center – Group ALM with an associated buildup of debt securities designated at fair value.

The sensitivity of the banking book to rising interest rates also includes interest rate sensitivities arising from interest rate swaps designated in cash flow hedges. Fair value gains or losses associated with the effective portion of these hedges are recognized initially in *Equity*. When the hedged forecast cash flows affect profit or loss, the associated gains or losses on the hedging derivatives are reclassified from *Equity* to profit or loss. These swaps are predominantly denominated in US dollars, euros, Swiss francs and British pounds. A 1-basis-point increase of underlying LIBOR curves would have decreased equity by approximately CHF 20 million, excluding adjustments for tax. ▲

→ **Refer to "Note 13 Financial assets available for sale and held to maturity" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to the "Group performance" section of this report for more information on sensitivity to interest rate movements**

Audited |

Interest rate sensitivity – banking book[1]

	31.12.17				
CHF million	–200 bps	–100 bps	+1 bp	+100 bps	+200 bps
CHF	(31.8)	(31.8)	1.0	97.7	191.2
EUR	(142.0)	(90.5)	0.2	15.2	31.1
GBP	(57.6)	(55.4)	0.1	11.2	21.3
USD	26.6	14.4	(1.3)	(135.1)	(280.6)
Other	4.4	0.8	0.0	5.0	10.3
Total effect on fair value of interest rate-sensitive banking book positions	(200.4)	(162.5)	0.0	(6.0)	(26.7)
of which: Wealth Management Americas	*144.8*	*59.1*	*(1.8)*	*(175.5)*	*(362.3)*
of which: Investment Bank	*32.9*	*18.3*	*(0.2)*	*(15.4)*	*(30.8)*
of which: CC – Group ALM	*(272.4)*	*(188.1)*	*1.4*	*138.6*	*279.8*
of which: CC – Non-core and Legacy Portfolio	*(106.2)*	*(52.1)*	*0.5*	*46.6*	*87.3*

	31.12.16				
CHF million	–200 bps	–100 bps	+1 bp	+100 bps	+200 bps
CHF	(13.0)	(13.0)	0.5	44.8	89.3
EUR	(109.0)	(91.9)	0.0	(2.5)	(2.6)
GBP	(184.5)	(103.0)	(0.1)	(9.9)	(27.7)
USD	823.2	358.9	(3.4)	(347.2)	(704.3)
Other	0.5	(1.7)	0.0	(3.3)	(6.3)
Total effect on fair value of interest rate-sensitive banking book positions	517.1	149.4	(3.1)	(318.1)	(651.6)
of which: Wealth Management Americas	*730.5*	*325.8*	*(2.9)*	*(286.4)*	*(583.8)*
of which: Investment Bank	*26.3*	*14.3*	*(0.1)*	*(12.7)*	*(25.9)*
of which: CC – Group ALM	*(238.8)*	*(192.3)*	*0.0*	*(10.6)*	*(24.2)*
of which: CC – Non-core and Legacy Portfolio	*(1.2)*	*1.2*	*(0.1)*	*(7.3)*	*(15.6)*

1 Does not include interest rate sensitivities for credit valuation adjustments on monoline credit protection, US and non-US reference-linked notes.

▲

Other market risk exposures

Own credit

We are exposed to changes in UBS's own credit that are reflected in the valuation of financial liabilities designated at fair value when UBS's own credit risk would be considered by market participants. We also estimate debit valuation adjustments (DVA) to incorporate own credit in the valuation of derivatives.

→ **Refer to "Note 22 Fair value measurement" in the "Consolidated financial statements" section of this report for more information on own credit**

Structural foreign exchange risk

Upon consolidation, assets and liabilities held in foreign operations are translated into Swiss francs at the closing foreign exchange rate on the balance sheet date. Value changes (in Swiss francs) of non-Swiss franc assets or liabilities due to foreign exchange movements are recognized in OCI and therefore affect shareholders' equity and CET1 capital.

Corporate Center – Group ALM employs strategies to manage this foreign currency exposure, including matched funding of assets and liabilities and net investment hedging.

→ **Refer to the "Treasury management" section of this report for more information on our exposure to and management of structural foreign exchange risk**

→ **Refer to "Note 12 Derivative instruments and hedge accounting" in the "Consolidated financial statements" section of this report for more information on our hedges of net investments in foreign operations**

Equity investments

Audited | Under International Financial Reporting Standards (IFRS) effective on 31 December 2017, equity investments not in the trading book may be classified as *Financial assets available for sale*, *Financial assets designated at fair value* or *Investments in associates*.

We make direct investments in a variety of entities and buy equity holdings in both listed and unlisted companies for a variety of purposes. This includes investments such as exchange and clearing house memberships held to support our business activities. 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 lockup agreements. For these reasons, we generally do not control these exposures by using the 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 Group-wide statistical and stress testing metrics, which flow into our risk appetite framework.

As of 31 December 2017, we held equity investments totaling CHF 1.6 billion, of which CHF 0.5 billion were classified as *Financial assets available for sale* and CHF 1.0 billion as *Investments in associates*. This was broadly unchanged from the prior year. ▲

→ **Refer to "Note 13 Financial assets available for sale and held to maturity" and "Note 28 Interests in subsidiaries and other entities" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to the "Significant accounting and financial reporting changes in 2018" section of this report for more information on the classification of financial instruments under IFRS 9**

Debt investments

Audited | Debt investments classified as *Financial assets available for sale* as of 31 December 2017 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 available for sale* 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 Group-wide statistical and stress testing metrics, which flow into our risk appetite framework.

Debt instruments classified as *Financial assets available for sale* had a fair value of CHF 8.1 billion as of 31 December 2017 compared with CHF 15.0 billion as of 31 December 2016.▲

→ **Refer to "Note 13 Financial assets available for sale and held to maturity" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to "Interest rate risk sensitivity to parallel shifts in yield curves" in this section for more information**

→ **Refer to the "Treasury management" section of this report for more information**

→ **Refer to the "Significant accounting and financial reporting changes in 2018" section of this report for more information on the classification and measurement of financial instruments under IFRS 9**

Pension risk

We provide a number of pension plans for past and current employees, some of which are classified as defined benefit pension plans under IFRS. These defined benefit plans can have a material effect on our IFRS equity and CET1 capital.

In order to meet the expected future benefit payments, the plans invest employee and employer contributions in various asset classes. The funded status of the plan is the difference between the fair value of these assets and the present value of the expected future benefit payments to plan members, i.e., the defined benefit obligation.

Pension risk is the risk that the funded status of defined benefit plans might decrease, negatively affecting our IFRS equity and / or our CET1 capital. This can arise from a fall in the plan assets' value or in the investment returns, an increase in defined benefit obligations, or a combination of these.

Important risk factors affecting the fair value of the plan assets are, among other things, equity market returns, interest rates, bond yields and real estate prices. Important risk factors affecting the present value of the expected future benefit payments include high-grade bond yields, interest rates, inflation rates and life expectancy.

Pension risk is included in our Group-wide statistical and stress testing metrics, which flow into our risk appetite framework. The potential effects are thus captured in the calculation of our post-stress fully applied CET1 capital ratio.

→ **Refer to "Note 1a item 7 Pension and other post-employment benefit plans," "Note 26 Pension and other post-employment benefit plans" and "Note 35 Events after the reporting period" in the "Consolidated financial statements" section of this report for more information on defined benefit plans and on changes to the pension fund of UBS in Switzerland to support its long-term financial stability**

UBS own share exposure

Group Treasury holds UBS Group AG shares to hedge future share delivery obligations related to employee share-based compensation and participation plans. In addition, the Investment Bank holds a very limited number of UBS Group AG shares, primarily in its capacity as a market-maker in UBS Group AG shares and related derivatives and to hedge certain issued structured debt instruments.

The Group has announced a share repurchase program under which it may acquire up to CHF 2 billion of UBS Group AG shares over the next three years, of which up to CHF 550 million may be acquired in 2018. Shares acquired through the share repurchase program are intended for cancelation. Until the shareholders of UBS Group AG approve cancelation of the shares, shares acquired in the repurchase program will be held in Group Treasury.

→ **Refer to "UBS shares" in the "Capital management" section of this report for more information**

Country risk

Country risk framework

Country risk includes all country-specific events that occur within a sovereign's jurisdiction and may lead to an impairment of UBS's exposures. Country risk may take the form of sovereign risk, which refers to the ability and willingness of a government to honor its financial commitments; transfer risk, which would arise if an issuer or counterparty could not acquire foreign currencies following a moratorium of a central bank on foreign exchange transfers; or "other" country risk. "Other" country risk may manifest itself through increased and multiple counterparty and issuer default risk (systemic risk) on the one hand, and on the other hand through events that may affect the standing of a country, such as adverse shocks affecting political stability or the institutional and legal framework. We maintain a well-established risk control framework, through which we assess the risk profile of all countries where we have exposure.

We attribute to each foreign country a sovereign rating, which expresses the probability of the sovereign defaulting on its own financial obligations in foreign currency. Our ratings are expressed by statistically derived default probabilities as described in the "Probability of default" section. Based on this internal analysis, we also define the probability of a transfer event occurring and establish rules as to how the aspects of "other" country risk should be incorporated into the analysis of the counterparty rating of entities that are domiciled in the respective country.

Our risk exposure to foreign countries considers the credit ratings assigned to those countries. A country risk ceiling (i.e., maximum aggregate exposure) applies to our exposures to counterparties or issuers of securities and financial investments in the respective foreign country. We may limit the extension of credit, transactions in traded products or positions in securities based on a country risk ceiling, even if our exposure to a counterparty is otherwise acceptable.

For internal measurement and control of country risk, we also consider the financial impact 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 the currency. We use stress testing to assess the potential financial impact of a severe country or sovereign crisis. This involves the development 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.

Our exposures to market risks are also subject to regular stress tests that cover major global scenarios, which are used for combined stress testing as well, whereby we apply market shock factors to equity indices, interest rates and currency rates in all relevant countries and consider the potential liquidity of the instruments.

Country risk exposure

Country risk exposure measure
The presentation of country risk follows our internal risk view, whereby the basis for measurement of exposures depends on the product category into which we have classified our exposures. In addition to the classification of exposures into banking products and traded products as defined in the "Credit risk profile of the Group" section, within trading inventory we classify issuer risk on securities such as bonds and equities, as well as the risk relating to the underlying reference assets for derivative positions, including those linked to credit protection we buy or sell, loan or security underwriting commitments pending distribution and single-stock margin loans for syndication.

As we manage the trading inventory on a net basis, we net the value of long positions against short positions with the same underlying issuer. Net exposures are, however, floored at zero per issuer in the figures presented in the following tables. We therefore do not recognize the potentially offsetting benefit of certain hedges and short positions across issuers.

We do not recognize any expected recovery values when reporting country exposures as exposure before hedges, except for the risk-reducing effects of master netting agreements and collateral held in the form of either cash or portfolios of diversified marketable securities, which we deduct from the basic positive exposure values. Within banking products and traded products, the risk-reducing effect of any credit protection is taken into account on a notional basis when determining the net of hedges 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 that issuer.

This is the case, for example, with legal entities incorporated in financial offshore centers, which have their main assets and revenue streams outside the country of domicile. The same principle applies to exposures for which we hold third-party guarantees or collateral, where we report the exposure against the country of domicile of either the guarantor or the issuer of the underlying security, or against the country where pledged physical assets are located.

We apply a specific approach for banking products exposures to branches of financial institutions 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 in which the branch is located.

In the case of derivatives, we show the counterparty risk associated with the positive replacement value (PRV) against the country of domicile of the counterparty (presented within traded products). In addition, the risk associated with the instantaneous fall in value of the underlying reference asset to zero (assuming no recovery) is shown against the country of domicile of the issuer of the reference asset (presented within trading inventory). This approach allows us to capture both the 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.

As a basic example: if CDS protection for a notional value of 100 bought from a counterparty domiciled in country X referencing debt of an issuer domiciled in country Y has a PRV of 20, we record (i) the fair value of the CDS (20) against country X (within traded products) and (ii) the hedge benefit (notional minus fair value) of the CDS (100 – 20 = 80) against country Y (within trading inventory). In the example of protection bought, the 80 hedge benefit would offset any exposure arising from securities held and issued by the same entity as the reference asset, floored at zero per issuer. In the case of protection sold, this would be reflected as a risk exposure of 80 in addition to any exposure arising from securities held and issued by the same entity as the reference asset. In the case of derivatives referencing a basket of assets, the issuer risk against each reference entity is calculated as the expected change in fair value of the derivative given an instantaneous fall in value to zero of the corresponding reference asset (or assets) issued by that entity. Exposures are then aggregated by country across issuers, floored at zero per issuer.

Exposures to selected eurozone countries
Our exposure to peripheral European countries remains limited, but we nevertheless remain watchful regarding the potential broader implications of adverse developments in the eurozone. As noted in "Stress testing" in this section, a eurozone crisis remains a core part of the new binding Severe Eurozone Crisis scenario for combined stress test purposes, making it central to the regular monitoring of risk exposure against the minimum capital, earnings and leverage ratio objectives in our risk appetite framework.

The "Exposures to eurozone countries rated lower than AAA / Aaa by at least one major rating agency" table on the next page provides an overview of our exposures to such rated countries as of 31 December 2017.

CDSs are primarily bought and sold in relation to our trading businesses, but are also used to hedge parts of our risk exposure, including that related to certain eurozone countries. As of 31 December 2017, and not taking into account the risk-reducing effect of master netting agreements, we had purchased approximately CHF 12 billion gross notional of single name CDS protection on issuers domiciled in Greece, Italy, Ireland, Portugal and Spain (GIIPS) and had sold CHF 11 billion gross notional of single-name CDS protection for these same countries. On a net basis, taking into account the risk-reducing effect of master netting agreements, this equates to approximately CHF 3 billion notional purchased and CHF 2 billion notional sold. All gross protection purchased was from investment grade counterparties (based on our internal ratings) and on a collateralized basis. The vast majority of this was from financial institutions domiciled outside the eurozone. The gross protection purchased from counterparties domiciled in a GIIPS country was CHF 66 million, with only CHF 18 million from counterparties domiciled in the same country as the reference entity.

Exposures to eurozone countries rated lower than AAA / Aaa by at least one major rating agency

CHF million	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)
31.12.17		Net of hedges[1]	Exposure before hedges	Net of hedges[1]	*of which: unfunded*	Exposure before hedges	Net of hedges	Net long per issuer
Austria	1,001	896	94	94	*46*	137	32	770
Sovereign, agencies and central bank	621	516	5	5		114	9	502
Local governments								
Banks	354	354	74	74		15	15	264
Other[2]	26	26	15	15		8	8	3
Belgium	408	408	88	88	*5*	85	85	235
Sovereign, agencies and central bank	221	221						221
Local governments								
Banks	83	83	71	71		10	10	2
Other[2]	104	104	16	16		76	76	12
Finland	93	77	49	34	*2*	6	6	37
Sovereign, agencies and central bank	30	30						30
Local governments	2	2				2	2	
Banks	9	9	6	6		2	2	1
Other[2]	52	37	43	28		2	2	7
France	7,843	7,744	722	716	*490*	1,018	926	6,102
Sovereign, agencies and central bank	6,292	6,199	3	3		315	223	5,974
Local governments	0	0						0
Banks	477	477	235	235		241	241	1
Other[2]	1,074	1,068	485	479		462	462	127
Greece	14	14	2	2	*1*	0	0	11
Sovereign, agencies and central bank								
Local governments								
Banks	2	2	2	2		0	0	0
Other[2]	11	11	0	0				11
Ireland[3]	1,114	1,114	193	193	*44*	803	803	118
Sovereign, agencies and central bank	1	1						1
Local governments								
Banks	99	99	82	82		12	12	5
Other[2]	1,014	1,014	111	111		792	792	112
Italy	1,507	1,114	1,212	859	*756*	207	166	89
Sovereign, agencies and central bank	45	5				45	4	1
Local governments	69	69				63	63	6
Banks	271	271	245	245		17	17	9
Other[2]	1,122	769	967	614		82	82	74
Portugal	31	31	17	17	*15*	1	1	12
Sovereign, agencies and central bank	0	0						0
Local governments								
Banks	18	18	17	17		0	0	0
Other[2]	13	13				1	1	12
Spain	749	614	594	460	*369*	40	40	114
Sovereign, agencies and central bank	48	48	12	12				36
Local governments	2	2						2
Banks	143	143	119	119		24	24	1
Other[2]	555	421	464	329		17	17	75
Other[4]	465	465	413	413	*8*	1	1	50

1 Not deducted from the "Net of hedges" exposures are total allowances and provisions for credit losses of CHF 48 million (of which: Malta CHF 36 million, Ireland CHF 6 million and France CHF 4 million). 2 Includes corporates, insurance companies and funds. 3 The majority of the Ireland exposure relates to funds and foreign bank subsidiaries. 4 Represents aggregate exposures to Andorra, Cyprus, Estonia, Latvia, Lithuania, Malta, Monaco, Montenegro, San Marino, Slovakia and Slovenia.

Exposure from single-name credit default swaps referencing Greece, Italy, Ireland, Portugal or Spain (GIIPS)

CHF million	Protection bought						Protection sold		Net position (after application of counterparty master netting agreements)			
			of which: counterparty domiciled in GIIPS country		*of which: counterparty domicile is the same as the reference entity domicile*							
31.12.17	Notional	RV	Notional	RV	Notional	RV	Notional	RV	Buy notional	Sell notional	PRV	NRV
Greece	31	(3)	0	0	0	0	(26)	2	19	(14)	0	(2)
Italy	9,718	(31)	4	0	4	0	(9,430)	(35)	1,669	(1,381)	34	(100)
Ireland	535	(18)	14	(1)	14	(1)	(448)	11	264	(177)	2	(9)
Portugal	392	(10)	0	0	0	0	(396)	8	175	(179)	4	(6)
Spain	1,265	(32)	49	(1)	0	0	(957)	27	622	(315)	11	(16)
Total	11,941	(94)	66	(2)	18	(1)	(11,258)	12	2,749	(2,066)	50	(132)

Holding CDSs for credit default protection does not necessarily protect the buyer of protection against losses, as the contracts will only pay out under certain scenarios. The effectiveness of our CDS protection as a hedge of default risk is influenced by a number of factors, including the contractual terms under which the CDS was written. Generally, only the occurrence of a credit event as defined by the CDS terms (which may include, among other events, failure to pay, restructuring or bankruptcy) results in a payment 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 (comprised of various ISDA member firms) based on the terms of the CDS and the facts and circumstances surrounding the event.

Exposure to emerging market countries

The "Emerging market net exposure by major geographical region and product type" table on the following page shows the five largest emerging market country exposures in each major geographical area by product type as of 31 December 2017 compared with 31 December 2016. Based on the sovereign rating categories, as of 31 December 2017, 79% of our emerging market country exposure was rated investment grade, compared with 83% as of 31 December 2016.

Our direct net exposure to China was CHF 5 billion, down CHF 0.1 billion from the prior year. Trading inventory, which is measured at fair value, continues to account for the majority of our exposure to China.

Emerging markets net exposure[1] by internal UBS country rating category

CHF million	31.12.17	31.12.16
Investment grade	14,021	13,833
Sub-investment grade	3,772	2,787
Total	17,794	16,620

1 Net of credit hedges (for banking products and for traded products); net long per issuer (for trading inventory). Total allowances and provisions of CHF 74 million are not deducted (31 December 2016: CHF 79 million).

Emerging market net exposures by major geographical region and product type

CHF million	**Total** Net of hedges[1]		**Banking products** (loans, guarantees, loan commitments) Net of hedges[1]		**Traded products** (counterparty risk from derivatives and securities financing) after master netting agreements and net of collateral Net of hedges		**Trading inventory** (securities and potential benefits / remaining exposure from derivatives) Net long per issuer	
	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16	31.12.17	31.12.16
Emerging America	1,405	1,426	400	493	267	321	738	612
Brazil	813	968	131	199	225	263	457	506
Mexico	355	247	148	147	20	49	188	52
Argentina	79	27	22	14	0		57	13
Chile	51	24	28	16	14	2	9	7
Colombia	30	62	18	49	4	4	8	9
Other	76	98	53	69	5	3	19	26
Emerging Asia	12,085	10,799	3,955	3,838	1,705	1,676	6,425	5,285
China	5,020	5,141	706	868	330	394	3,984	3,880
Hong Kong	2,534	1,715	1,445	1,113	403	282	685	320
South Korea	1,453	1,058	527	348	607	469	319	241
India	857	1,047	467	661	165	251	225	135
Thailand	789	443	136	131	8	2	645	310
Other	1,432	1,395	674	717	192	278	566	400
Emerging Europe	1,625	1,467	1,124	1,007	93	106	408	353
Russia	608	532	206	181	51	41	351	311
Turkey	552	467	507	438	21	25	23	4
Azerbaijan	218	145	211	117	1	28	5	
Poland	63	61	43	50	8	7	12	4
Ukraine	60	32	56	23			4	10
Other	126	229	100	199	12	5	13	25
Middle East and Africa	2,678	2,929	1,321	1,029	807	1,373	551	527
South Africa	886	681	345	34	123	239	418	408
United Arab Emirates	533	556	251	391	279	163	3	2
Saudi Arabia	279	577	136	124	143	453		
Kuwait	216	490	19	31	197	459		
Israel	200	225	53	61	35	49	113	115
Other	565	401	518	388	30	10	17	3
Total	17,794	16,620	6,800	6,367	2,872	3,475	8,121	6,778

1 Not deducted are total allowances and provisions for credit losses of CHF 74 million (31 December 2016: CHF 79 million).

Operational risk

Key developments

The pervasive consequential risk themes that continue to challenge UBS and the financial industry are operational resilience, conduct and financial crime.

Operational resilience remains critical, as the cyber threat landscape continues to evolve while other disaster scenarios remain an ever-present threat. In 2017, many organizations were affected by two prominent global malware attacks. Throughout 2017, data theft continued to be the most prevalent threat with a number of serious breaches at high-profile organizations. UBS continues to invest in both preventive measures and measures to detect and recover from cyberattacks. We have implemented cyber recovery playbooks for various scenarios, as well as regular cyber crisis exercises up to the Group Executive Board and Board of Directors level.

As a global firm, UBS was affected by extreme weather events in the US and India in 2017, in each case triggering business continuity procedures, which allowed us to monitor the safety of staff and for operations to continue with minimal disruption.

Achieving fair outcomes for our clients, upholding market integrity and cultivating the highest standards of employee conduct are of critical importance to the firm. Management of conduct risks is an integral part of our operational risk framework. In managing conduct risk, we continue to focus on embedding this framework, enhancing the management information and maintaining momentum on addressing culture. Conduct-related management information is reviewed at the business and regional governance level, providing metrics on employee conduct, clients and markets, with employee conduct being a central consideration in the annual compensation process. Our incentive schemes distinguish clearly between quantitative performance and conduct-related behaviors, so that achievement against financial targets is not the primary determinant of our employees' performance assessment. Furthermore, we continue to deliver on behavioral initiatives, such as the "Principles of Good Supervision," and provide mandatory compliance and risk training.

Suitability risk, product selection, cross-divisional service offerings, quality of advice and price transparency also remain areas of heightened focus for UBS and for the industry as a whole, as low interest rates and major legislative change programs, such as the Markets in Financial Instruments Directive II (MiFID II) in the EU, continue. We regularly monitor our suitability, product and conflicts of interest control frameworks to assess whether they are reasonably designed to facilitate our adherence to applicable laws and regulatory expectations.

Financial crime, including money laundering, terrorist financing, sanctions violations, fraud, bribery and corruption, continues to present risks, as technological innovation and geopolitical developments have increased the complexity of operating an effective program to prevent and detect financial crime. Regulators and other governmental authorities have heightened expectations for financial crime compliance programs and have significantly increased their focus in this area over the last several years. Given the profile of our wealth management businesses as well as heightened regulatory expectations, maintaining effective programs for prevention and detection of money laundering and for sanctions compliance is a high priority for us. We are investing to improve our detection and monitoring capabilities, including in automation of our processes. Money laundering and fraud techniques are becoming increasingly sophisticated, while geopolitical volatility makes the sanctions landscape more complex. We continue to invest in improving our anti-money laundering (AML), terrorist financing prevention, sanctions and fraud control capabilities to meet the evolving challenge and heightened regulatory expectations.

We also continue to invest heavily in our detection capabilities and core systems as part of our financial crime prevention program. We have been exploring new technologies to combat financial crime, and implementing rule-based monitoring by applying self-learning systems to identify suspicious transactions. Furthermore, we are actively participating in AML public-private partnerships with public-sector stakeholders, including law enforcement, to improve information sharing and better detect financial crimes.

Cross-border risk remains an area of regulatory attention for global financial institutions, with a strong focus on fiscal transparency and increased legislation, such as the automatic exchange of information. We continue to adapt our cross-border control framework to adhere to the regulatory expectations and facilitate compliant client-driven cross-border business.

As the overall regulatory environment continues to undergo major change with the introduction of new regulation, international collaboration among regulators, and increased focus on individual liability and industry operating models, it is important that we maintain strong relationships with our industry's regulatory bodies and demonstrate observable progress in achieving and sustaining corrective actions.

→ **Refer to the "Risk factors" section of this report for more information**

Operational risk framework

Operational risk is an inherent part of our business. Losses can result from inadequate or flawed internal processes, decisions and systems, or from external events. We provide a Group-wide framework that supports identifying, assessing and mitigating material operational risks and their potential concentrations, to achieve a suitable balance between risk and return. The divisional Presidents and the Corporate Center function heads are ultimately accountable for the effectiveness of operational risk management and for implementing the operational risk framework. Responsibility for the front-to-back control environment and risk management is held by the Chief Operating Officers. Management in all functions is responsible for establishing a robust operational risk management environment, including establishing and maintaining internal controls, effective supervision and a strong risk culture. In 2017, we further improved our operational risk framework, streamlined administrative processes, strengthened our abilities to detect and mitigate operational risk and better embedded the framework as a key tool used by the business to manage its risks day-to-day.

Compliance & Operational Risk Control (C&ORC) is responsible for providing an independent and objective view of the adequacy of operational risk management across the Group, and aims to ensure that all our operational risks, including compliance and conduct risk, are understood, owned and managed to the firm's risk appetite. C&ORC is governed by the C&ORC Management Committee, which is chaired by the Global Head of C&ORC, who reports to the Group Chief Risk Officer and is a member of the Risk Executive Committee.

The operational risk framework establishes general requirements for managing and controlling operational risks, including compliance and conduct risk at UBS. It is built on the following pillars:

– classifying inherent risks through the operational risk taxonomy
– assessing the design and operating effectiveness of controls through the internal control assessment process
– assessing residual risk through the risk assessment processes with remediation to address identified deficiencies that are outside accepted levels of residual risk
– defining operational risk appetite, identifying levels of operational risk that exceed defined thresholds and taking appropriate measures to bring residual risk back within the defined appetite

The operational risk taxonomy provides a clear and logical classification of our inherent operational risks, across all divisions. Throughout the organizational hierarchy, a level of risk appetite must be agreed for each of the taxonomy categories, together with a minimum set of internal controls and associated performance thresholds considered necessary to keep risk exposure within acceptable levels.

All functions within our firm are required to assess internal controls periodically, whereby they evaluate and evidence the design and operating effectiveness of their key controls. This also forms the basis for the assessment and testing of internal controls over financial reporting as required by the Sarbanes-Oxley Act, section 404 (SOX 404). The framework facilitates the identification of SOX 404-relevant controls for independent testing, functional assessments, management affirmation and, where control weaknesses are identified, remediation tracking. We employ a consistent global framework to assess the aggregated impact of control deficiencies and the adequacy of remediation efforts.

The UBS risk assessment approach covers all business activities and internal as well as external identified or known factors posing a threat to the UBS Group. Aggregated with any identified or known weaknesses in the control environment, the risk assessment articulates the current operational risk exposure against the firm's risk appetite.

Key control deficiencies that surface during the internal control and risk assessment processes are required to be reported in the operational risk inventory, and sustainable remediation must be defined and executed. These issues are assigned to owners at the senior management level and must be reflected in the respective manager's annual performance measurement and management objectives. To assist with prioritizing the known operational risk issues, irrespective of origin, a common rating methodology is adopted by all internal control functions and both internal and external audit. Group Internal Audit conducts an issue assurance process after a risk issue has been closed to maintain rigorous management discipline in the sustainable mitigation and control of operational risk issues.

Advanced measurement approach model

The operational risk framework detailed above is aligned with and underpins the calculation of regulatory capital for operational risk, which in turn allows us to quantify operational risk and to define effective management incentives.

We measure operational risk exposure and calculate operational risk regulatory capital by using the advanced measurement approach (AMA) in accordance with FINMA requirements.

For regulated subsidiaries, the basic indicator or standardized approaches are adopted in agreement with local regulators. For certain UBS entities, the Group AMA methodology is leveraged to meet local regulatory requirements. An entity-specific AMA model has been applied for UBS Switzerland AG, while the Group AMA model is leveraged for UBS Limited, supporting the local Internal Capital Adequacy Assessment Process, and for UBS Bank USA's Dodd-Frank Act stress tests submissions.

Currently, the model includes 15 AMA Units of Measures (UoMs), all aligned with our operational risk taxonomy. For each of the model's UoMs, a frequency and severity parameter is calibrated. The modeled distribution functions for both frequency and severity are then leveraged to generate the annual loss distribution. The resulting 99.9% quantile of the overall annual operational risk loss distribution across all UoMs determines the required regulatory capital. Currently, we do not reflect mitigation through insurance or any other risk transfer mechanism in our AMA model.

A key assumption when calibrating the base or data-driven frequency and severity distributions is that historical loss patterns and exposures form a reasonable proxy for future events. However, it is important to note that our approach not only models historical internal losses, but also includes external industry losses. A statistical mechanism aims to ensure that only those industry losses that are fairly consistent with the internal UBS loss profile are used in modeling.

AMA model calibration and review

To account for fast-changing external developments such as new regulations, geopolitical change, and volatile market and economic conditions, as well as internal factors including changes in business strategy and internal control framework enhancements, the modeling of historical internal and external losses is further enriched to more effectively forecast potential future losses. To refine the loss forecast, qualitative information on both the external business environment and the internal control framework is summarized and an overall rating is determined to structure and facilitate the Subject Matter Expert (SME) inputs. The purpose of the SME reviews is to account for important qualitative elements in calibrating the AMA model, but also to consider expert knowledge and insights that the SMEs can provide into the calibration process.

To maintain risk sensitivity, our model has to be regularly recalibrated. Therefore, the SME reviews are conducted at least annually, and encompass all UoMs. Change recommendations are presented to FINMA for approval prior to their utilization for disclosure purposes. In addition to the annual reviews, a high-level semiannual review accounts for any material developments between annual calibrations to be reflected in the model outputs. Following regulatory approval, these changes become effective for the subsequent disclosures accordingly.

AMA model confirmation

The Group AMA model is subject to an annual quantitative and qualitative review so that model parameters are plausible and reflect the developing operational risk profile of the firm. This review is independently verified and confirmed by Model Risk Management & Control and supplemented with additional sensitivity and benchmarking analysis by the model owner.

Future operational risk-related regulatory capital developments

In December 2017, the Basel Committee on Banking Supervision published the final Basel III framework. Based on the published framework, the regulatory capital requirements on operational risks will be determined by the standardized measurement approach (SMA), which will replace the AMA capital regime.

The SMA is mainly based on two components: a business indicator component, which is basically utilized as a size proxy for the banks in the SMA context, and a historical loss experience component. With regard to the loss experience component, the published framework has a number of parameters that are subject to national discretion. UBS maintains a close dialog with FINMA to discuss in more detail the implementation objectives and to provide for a smooth transition of the capital regime for operational risks.

→ **Refer to "Capital management objectives, planning and activities" in the "Capital management" section of this report for more information on the development of RWA**

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

→ **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

APPENDIX 5 — OPERATING ENVIRONMENT AND STRATEGY

The information in this Appendix 5 describes the operating environment and strategy of UBS AG and references herein to "**UBS**" or the "**Group**" are to UBS AG and its subsidiaries.

The information in this Appendix 5 has been extracted from the Annual Report 2017 as at and for the year ended 31 December 2017. References to page numbers in this Appendix 5 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 5.

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. Because a broad-based international financial services firm such as UBS is inherently exposed to multiple risks, many of which become apparent only with the benefit of hindsight, risks of which we are not presently aware or which we currently do not consider to be material could also adversely affect us. The order of presentation of the risk factors below does not indicate the likelihood of their occurrence or the potential magnitude of their consequences.

Market conditions and fluctuations may have a detrimental effect on our profitability, capital strength, liquidity and funding position

Low and negative interest rates in Switzerland and the eurozone have negatively affected our net interest income: A continuing low or negative interest rate environment may further erode interest margins and adversely affect the net interest income generated by our Personal & Corporate Banking and Global Wealth Management businesses. Our performance is also affected by the cost of maintaining the high-quality liquid assets (HQLA) required to cover regulatory outflow assumptions embedded in the liquidity coverage ratio (LCR).

The Swiss National Bank permits Swiss banks to make deposits up to a threshold at zero interest. Any reduction in or limitations on the use of this exemption from the otherwise applicable negative interest rates could exacerbate the effect of negative interest rates in Switzerland. Low and negative interest rates may also affect customer behavior and hence our overall balance sheet structure. Mitigating actions that we have taken, or may take in the future, such as the introduction of selective deposit fees or minimum lending rates, have resulted and may further result in the loss of customer deposits, a key source of our funding, net new money outflows and / or a declining market share in our domestic lending business.

Our equity and capital are also affected by changes in interest rates. In particular, the calculation of our Swiss pension plan net defined benefit assets and liabilities is sensitive to the discount rate applied. Any further reduction in interest rates may lower the discount rates and result in pension plan deficits due to the long duration of corresponding liabilities. This would lead to a corresponding reduction in our equity and fully applied common equity tier 1 (CET1) capital.

We are subject to risk from currency fluctuations: We prepare our consolidated financial statements in Swiss francs. However, a substantial portion of our assets, liabilities, invested assets, revenues and expenses, equity of foreign operations and risk-weighted assets (RWA) are denominated in US dollars, euros, British pounds and in other foreign currencies. Accordingly, changes in foreign exchange rates may adversely affect our profits, balance sheet, including deferred tax assets, and capital, leverage and liquidity ratios. In particular, the portion of our operating income denominated in non-Swiss franc currencies is greater than the portion of operating expenses denominated in non-Swiss franc currencies. Therefore, the appreciation of the Swiss franc against other currencies generally has an adverse effect on our profits, in the absence of any mitigating actions.

In order to hedge our CET1 capital ratio, CET1 capital needs to have foreign currency exposure, leading to currency sensitivity of CET1 capital. As a consequence, it is not possible to simultaneously fully hedge both the amount of capital and the capital ratio. As the proportion of RWA denominated in non-Swiss franc currencies outweighs the capital in these currencies, a significant appreciation of the Swiss franc against these currencies could benefit our capital ratios, while a significant depreciation of the Swiss franc against these currencies could adversely affect our capital ratios.

→ **Refer to the "Current market climate and industry trends" section of this report for more information**

Substantial changes in the regulation of our businesses may adversely affect our business and our ability to execute our strategic plans

Fundamental changes in the laws and regulations affecting financial institutions can have a material and adverse effect on our business. Following the 2007–2009 financial crisis, regulators and legislators have adopted a wide range of changes to the laws, regulations and supervisory frameworks applicable to banks intended to address the perceived causes of the crisis and to limit the systemic risks posed by major financial institutions. These changes have caused us to make significant changes in our businesses and strategy and to move significant operations into subsidiaries to improve our resolvability or meet regulatory requirements, resulting in substantial implementation costs, increased our capital and funding costs and reduced operational flexibility. Although many of the regulatory changes have been completed, a number of these changes are being phased in over time or require further rulemaking or guidance for implementation. Certain changes are still under consideration. There remains significant uncertainty regarding a number of the measures referred to above.

Notwithstanding attempts by regulators to align their efforts, the measures adopted or proposed differ significantly across the major jurisdictions, making it increasingly difficult to manage a global institution like UBS. Swiss regulatory changes with regard to such matters as capital and liquidity have often proceeded more quickly than those in other major jurisdictions, and the requirements for Swiss major international banks are among the strictest of the major financial centers. This could put Swiss banks such as UBS at a disadvantage when they compete with peer financial institutions subject to more lenient regulation or with unregulated non-bank competitors.

Higher capital and total loss-absorbing capacity requirements increase our costs: As an internationally active Swiss systemically relevant bank (SRB), we are subject to capital and total loss-absorbing capacity (TLAC) requirements that are among the most stringent in the world. New Swiss SRB capital requirements impose significantly higher requirements based on RWA and a significantly higher leverage ratio requirement. In addition, we are required to maintain minimum levels of TLAC measured based on both our RWA and the leverage ratio denominator.

We expect increases in our RWA from changes in methodology, add-ons in the calculation of RWA and other changes in 2018 and 2019. Changes to international capital standards for banks recently adopted by the Basel Committee on Banking Supervision are expected to further increase our RWA when the standards are scheduled to become effective in 2022. We also expect that we will incur significant costs to implement the proposed changes.

Liquidity and funding: The requirements to maintain an LCR of HQLA to estimated stressed short-term net cash outflows, the proposed requirement to maintain a net stable funding ratio (NSFR), and other similar liquidity and funding requirements we are subject to, oblige us to maintain high levels of overall liquidity, limit our efforts to optimize interest income and expense, make certain lines of business less attractive and reduce our overall ability to generate profits. Both the LCR and NSFR 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, and the relevant calculations make assumptions about the relative likelihood and amount of outflows of funding and available sources of additional funding in market- and firm-specific stress situations. There can be no assurance that in an actual stress situation our funding outflows would not exceed the assumed amounts. 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 them. These funds are available to meet funding and collateral needs in the relevant jurisdictions, but are generally not readily available for use by the Group as a whole.

Banking structure and activity limitations: We have made significant changes in our legal and operational structure to meet legal and regulatory requirements and expectations. For example, we have transferred all of our US subsidiaries under a US intermediate holding company to meet US regulatory requirements and substantially all the operations of Personal & Corporate Banking and Wealth Management booked in Switzerland to UBS Switzerland AG to improve our resolvability. These changes, particularly the transfer of operations to subsidiaries, such as our US intermediate holding company and UBS Switzerland AG, require significant time and resources to implement and create operational, capital, liquidity, funding and tax inefficiencies. In addition, they may increase our aggregate credit exposure to counterparties as they transact with multiple entities within the UBS Group. 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.

In the US, we have incurred substantial costs for implementing our compliance and monitoring framework in connection with the Volcker Rule under the Dodd-Frank Act. We have also been required to modify our business activities both inside and outside the US to conform to the Volcker Rule's activity limitations. The Volcker Rule may also have a substantial impact on market liquidity and the economics of market-making activities. We may incur additional costs in the short term if aspects of the Volcker Rule are repealed or modified. We may become subject to other similar regulations substantively limiting the types of activities in which we may engage or the way we conduct our operations. If adopted as proposed, the rule on single counterparty risk proposed by the US Federal Reserve Board may affect how we conduct our operations in the US, including our use of other financial firms for payments and securities clearing services and as transactional counterparties.

Resolvability and resolution and recovery planning: 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 the Swiss TBTF 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 the event of a significant adverse event or to wind down the Group or the operations in a host country through resolution or insolvency proceedings. We have made changes to the legal structure of the Group to improve the viability of our recovery and resolution plans and may be required in the future to make further changes to our legal structure, operations, or liquidity and funding plans to enable our recovery and resolution plans to meet regulatory expectations. If a recovery or resolution plan that we are required to produce in a jurisdiction 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, 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 Swiss Banking Act and implementing ordinances provide FINMA with significant powers to intervene in order to prevent a failure of, or to resolve, a failing financial institution. FINMA has considerable discretion in determining whether, when, or in what manner to exercise such powers. In case of a threatened insolvency, FINMA may impose more onerous requirements on us, including restrictions on the payment of dividends and interest. FINMA could also require us, directly or indirectly, for example, to alter our legal structure, including by separating lines of business into dedicated entities, with limitations on intra-Group funding and certain guarantees, or to further reduce business risk levels in some manner. FINMA also has the ability to write down or convert into common equity the capital instruments and other liabilities of UBS Group AG, UBS AG and UBS Switzerland AG in connection with a resolution. Refer to "*If we experience financial difficulties, FINMA has the power to open resolution 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*" below.

Substantial changes in market regulation have affected and will continue to affect how we conduct our business: The revised Markets in Financial Instruments Directive and the associated Regulation (MiFID II / MiFIR) took effect on 3 January 2018. MiFID II, among other things, introduces substantial new regulation of exchanges and trading venues, including new pre-trade and post-trade transparency requirements, a ban on the practice of using commissions on transactions to compensate for research services and substantial new conduct requirements for financial services firms when dealing with clients. Implementation by the G20 countries of the commitment to require all standardized over-the-counter (OTC) derivative contracts to be traded on exchanges or trading facilities and cleared through central counterparties has had and will continue to have a significant effect on our OTC derivatives business, which is conducted primarily in the Investment Bank. These market changes are likely to reduce the revenue potential of certain lines of business for market participants generally, and we may be adversely affected. For example, we expect that, as a rule, the shift of OTC derivatives trading to a central clearing model will tend to reduce profit margins in these products and the changes introduced by MiFID II may result in a reduction in commission rates and trading margins. Also, these laws may have a material impact on the market infrastructure that we use, available platforms, collateral management and the way we interact with clients, and may cause us to incur material implementation costs. Margin requirements for non-cleared OTC derivatives have required significant changes to collateral agreements with counterparties and our clients' operational processes. In some jurisdictions implementation of these changes is ongoing, while rulemaking and implementation are delayed in others. This may result in market dislocation, disruption of cross-border trading, and concentration of counterparty trading. It also affects our ability to implement the required changes and may limit our ability to transact with clients.

Some of the regulations applicable to UBS AG as a registered swap dealer with the Commodity Futures Trading Commission (CFTC) in the US, and certain regulations that will be applicable when UBS AG registers as a security-based swap dealer with the SEC, apply to UBS AG globally, including those relating to swap data reporting, record-keeping, compliance and supervision. As a result, in some cases US rules will likely duplicate or conflict with legal requirements applicable to us elsewhere, including in Switzerland, and may place us at a competitive disadvantage to firms that are not required to register in the US with the SEC or CFTC.

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 could limit our access to the market in those jurisdictions and may negatively influence our ability to act as a global firm. In addition, as such determinations are typically applied on a jurisdictional level rather than on an entity level, we will generally need to rely on jurisdictions' willingness to collaborate.

→ **Refer to the "Regulation and supervision" and "Regulatory and legal developments" sections of this report for more information**

If we are unable to maintain our capital strength, this may adversely affect our ability to execute our strategy, our client franchise and our competitive position

Maintaining our capital strength is a key component of our strategy. It enables us to support the growth of our businesses as well as to meet potential regulatory changes in capital requirements. It reassures our stakeholders, forms the basis for our capital return policy and contributes to our credit ratings. Our capital ratios are determined primarily by RWA, eligible capital and leverage ratio denominator (LRD), all of which may fluctuate based on a number of factors, some of which are outside our control.

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 certain reductions in the ratings of securitization exposures, acquisitions and divestments changing the level of goodwill, 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, which is a major driver of our value-at-risk, adverse currency movements, increased counterparty risk, deterioration in the economic environment or increased operational risk could result in a rise in RWA. We have significantly reduced our market risk and credit risk RWA in recent years. However, increases in operational risk RWA, particularly those arising from litigation, regulatory and similar matters, and regulatory changes in the calculation of RWA and regulatory add-ons to RWA have offset a substantial portion of this reduction. Changes in the calculation of RWA or, as discussed above, the imposition of additional supplemental RWA charges or multipliers applied to certain exposures and other methodology changes, as well as the implementation of the recently adopted changes to international capital standards for banks, could substantially increase our RWA. In addition, we may not be successful in our plans to further reduce RWA, either because we are unable to carry out fully the actions we have planned or because other business or regulatory developments or actions counteract the effects of our actions.

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 activities 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 and other market factors. Many of these factors are wholly or partially outside our control.

→ **Refer to the "Regulatory and legal developments" section of this report for more information**

We may not be successful in the ongoing execution of our strategic plans

Over the last six years, we have transformed our business to focus on our wealth management businesses and our universal bank in Switzerland, complemented by Asset Management and a significantly smaller Investment Bank; substantially reduced the RWA and LRD usage in our Corporate Center – Non-core and Legacy Portfolio; and made significant cost reductions. We have recently provided an update on the execution of our strategy and updated our performance targets and provided guidance on capital and resources. Risk remains that we may not succeed in executing our strategy or achieve our performance targets, or may be delayed in doing so. Market events or other factors may adversely affect our ability to achieve our objectives. Macroeconomic conditions, geopolitical uncertainty, changes to regulatory requirements and the continuing costs of meeting these requirements have prompted us to adapt our targets in the past and we may need to do so again in the future.

As part of our strategic plans, we expect to continue to make significant expenditures on technology and infrastructure to improve our client experience, improve and further enable digital offerings and increase efficiency. There is a risk that our investments in new technology will not fully achieve our objectives or improve our ability to attract and retain customers. In addition, we may face competition in providing digitally enabled offerings from both existing competitors and new financial service providers in various portions of the value chain. Our ability to develop and implement competitive digitally enabled offerings and processes will be an important factor in our ability to compete.

Moreover, the continued illiquidity and complexity of many of our legacy risk positions remaining in Corporate Center – Non-core and Legacy Portfolio could make it difficult to sell or otherwise exit these positions and there remains a risk that we could incur significant losses in doing so.

As part of our strategy, we also have programs under way that seek to improve our operating efficiency, in part by controlling our costs. A number of factors could negatively affect our plans. We may not be able to identify feasible cost reduction opportunities that are also consistent with our business goals, and cost reductions may be realized later or may be less than we anticipate. Higher temporary and permanent regulatory costs and higher business demand than we had originally anticipated have partly offset our cost reductions and delayed the achievement of our cost reduction targets in the past, and we could continue to be challenged in the execution of our ongoing plans.

Changes in our workforce as a result of outsourcing, nearshoring or offshoring or staff reductions may introduce new operational risks that, if not effectively addressed, could affect our ability to recognize the desired cost and other benefits from such changes or could result in operational losses. Such changes can also lead to expenses recognized in the income statement well in advance of the cost savings intended to be achieved through such workforce strategy, for example, if provisions for real estate lease contracts need to be recognized or when, in connection with the closure or disposal of non-profitable operations, foreign currency translation losses previously recorded in other comprehensive income are reclassified to the income statement.

As we implement our effectiveness and efficiency programs, we may also experience unintended consequences, such as the loss or degradation of capabilities that we need in order to maintain our competitive position, achieve our targeted returns or meet existing or new regulatory requirements and expectations.

→ **Refer to the "Our strategy" section of this report for more information**

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, and we are subject to extensive regulatory oversight and 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. 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. Resolution of regulatory proceedings may require 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 consequences for us.

Our settlements with governmental authorities in connection with foreign exchange, LIBOR and 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 antitrust authorities in a number of jurisdictions, including the US and Switzerland.

Ever since our material losses arising from the 2007–2009 financial crisis, we have been subject to a very high level of regulatory scrutiny and to certain regulatory measures that constrain our strategic flexibility. While we believe that we have remediated the deficiencies that led to those losses as well as to the unauthorized trading incident announced in September 2011, the effects on our reputation and relationships with regulatory authorities of the LIBOR-related settlements of 2012 and settlements with some regulators of matters related to our foreign exchange and precious metals business have resulted in continued scrutiny. We are also subject to significant new regulatory requirements, including recovery and resolution planning, US enhanced prudential standards and Comprehensive Capital Analysis and Review (CCAR). Our implementation of additional regulatory requirements and changes in supervisory standards will likely receive heightened scrutiny from supervisors. If we do not meet supervisory expectations in relation to these or other matters, or have additional supervisory or regulatory issues, we would likely be subject to continued regulatory scrutiny as well as measures that might further constrain our strategic flexibility. We are in active dialog with our regulators concerning the actions that we are taking to improve our operational risk management, 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.

→ **Refer to "Note 20 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report for more information**

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. 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 loss from the unauthorized trading incident announced in September 2011.

We and other financial services firms have 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 destroy data, including through the introduction of viruses or malware, 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. We may not be able to anticipate, detect or recognize threats to our systems or data or that our preventative measures may not be effective to prevent an attack or a security breach. In the event a security breach occurs notwithstanding our preventative measures, we may not immediately detect a particular breach or attack. Once a particular attack is detected time may be required to investigate and assess the nature and extent of the attack. A successful breach or circumvention of security of our systems or data could have significant negative consequences for us, including disruption of our operations, misappropriation of confidential information concerning us or our customers, damage to our systems, financial losses for us or our customers, violations of data privacy and similar laws, litigation exposure and damage to our reputation.

A major focus of US and other countries' governmental policies relating to financial institutions in recent years has been 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. 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. 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.

As a result of new and changed regulatory requirements and the changes we have made in our legal structure to meet regulatory requirements and improve our resolvability, the volume, frequency and complexity of our regulatory and other reporting have significantly increased. Regulators have also significantly increased expectations for our internal reporting and data aggregation. We have incurred and continue to incur significant costs to implement infrastructure to meet these requirements. Failure to timely and accurately meet external reporting requirements or to meet regulatory expectations for internal reporting could result in enforcement action or other adverse consequences for us.

Certain types of operational control weaknesses and failures could also adversely affect our ability to prepare and publish accurate and timely financial reports.

In addition, despite the contingency plans 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 are located. This may include a disruption due to natural disasters, pandemics, civil unrest, war or terrorism and involve electrical, communications, transportation or other services used by us or third parties with whom we conduct business.

Our reputation is critical to the success of our business

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. 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, and contributed to our loss of and difficulty in attracting staff in the past. Any further reputational damage could have a material adverse effect on our operational results and financial condition and on our ability to achieve our strategic goals and financial targets.

Performance in the financial services industry is affected by market conditions and the macroeconomic climate

Our businesses are materially affected by market and economic conditions. 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.

A market downturn and weak macroeconomic conditions can be precipitated by a number of factors, including geopolitical events, changes in monetary or fiscal policy, trade imbalances, natural disasters, pandemics, civil unrest, acts of violence, war or terrorism. Macroeconomic and political developments can have unpredictable and destabilizing effects and, because financial markets are global and highly interconnected, even local and regional events can have widespread impact well beyond the countries in which they occur. Moreover, if individual countries impose restrictions on cross-border payments or other exchange or capital controls, or change their currency (for example, if one or more countries should leave the eurozone), we could suffer losses from enforced default by counterparties, be unable to access our own assets, and / or be impeded in, or prevented from, managing our risks.

We could be materially affected if a crisis develops, regionally or globally, as a result of disruptions in emerging markets or developed markets that are susceptible to macroeconomic and political developments, or as a result of 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. The binding scenario we use in our combined stress test framework reflects these aspects, and assumes a hard landing in China, leading to severe contagion of Asian and emerging markets economies and at the same time multiple debt restructurings in Europe, related direct losses for European banks and fear of a eurozone breakup severely affecting developed markets such as Switzerland, the UK and the US.

→ **Refer to “Risk measurement” in the “Risk management and control” section of this report for more information on our stress testing framework**

We have material exposures to a number of markets, and the regional balance of our business mix also exposes us to risk. Our Investment Bank’s Equities business, for example, is more heavily weighted to Europe and Asia, and within this business our derivatives business is more heavily weighted to structured products for wealth management clients, in particular with European and Asian underlyings. Turbulence in these markets can therefore affect us more than other financial service providers.

A decrease in business and client activity and market volumes, for example, as a result of significant market volatility, adversely affects transaction fees, commissions and margins, particularly in our wealth management businesses and in the Investment Bank, as we experienced in 2016. A market downturn is likely to reduce the volume and valuations of assets that we manage on behalf of clients, reducing our asset and performance-based fees, and could also cause a decline in the value of assets that we own and account for as investments or trading positions. On the other hand, reduced market liquidity or volatility limits trading opportunities and impedes our ability to manage risks, impacting trading income, and may reduce institutional client activity and therefore transaction and performance-based fees.

Credit risk is an integral part of many of our activities, including lending, underwriting and derivatives activities. Worsening economic conditions and adverse market developments could lead to impairments and defaults on credit exposures and on our trading and investment positions. Losses may be exacerbated by declines in the value of collateral we hold. We are exposed to credit risk in activities such as our prime brokerage, reverse repurchase and Lombard lending, as the value or liquidity of the assets against which we provide financing may decline rapidly. Macroeconomic developments, such as the strength of the Swiss franc and its effect on Swiss exports, the adoption of negative interest rates by the Swiss National Bank or other central banks or any return of crisis conditions within the eurozone or the EU, and the potential implications of the decision in Switzerland to reinstate immigration quotas for EU and European Economic Area citizens, could also adversely affect the Swiss economy, our business in Switzerland in general and, in particular, our Swiss mortgage and corporate loan portfolios.

The aforementioned developments have in the past affected, and could materially affect, the financial performance of business divisions and of UBS as a whole, including through impairment of goodwill and the adjustment of deferred tax asset levels. Refer to “*Our financial results may be negatively affected by changes to assumptions and valuations, as well as changes to accounting standards*” and “*The effect of taxes on our financial results is significantly influenced by tax law changes and reassessments of our deferred tax assets*” below.

→ **Refer to the “Current market climate and industry trends” section of this report for more information**

UK withdrawal from the EU

In December 2017, the UK and the remaining EU member states reached an agreement on the separation issues under Phase I of the negotiations for the UK’s withdrawal from the EU. As a result, the European Council agreed that “sufficient progress” had been made to allow the negotiations to move to Phase II on transitional arrangements and the future EU-UK relationship. The UK is still expected to leave the EU in March 2019, subject to a possible transition period.

The nature of the UK's future relationship with the EU remains unclear. Any future limitations on providing financial services into the EU from our UK operations could require us to make potentially significant changes to our operations in the UK and the EU, and to our legal structure. In the absence of adequate transition relief being agreed and passed into law by the United Kingdom and the European Union, we currently expect to merge UBS Limited into UBS Europe SE, our German headquartered European bank, prior to the United Kingdom leaving the European Union on 29 March 2019. Clients and other counterparties of UBS Limited would become counterparties of UBS Europe SE through the planned merger of the two entities. However, we anticipate that clients of UBS Limited who can be serviced by UBS AG, London Branch would generally be migrated to UBS AG, London Branch prior to this merger. We further anticipate that some staff would be relocated as a result; the exact number of staff and roles would be determined in due course. The timing and extent of the actions we take may vary considerably depending on regulatory requirements and the nature of any transition or successor agreements with the EU.

We may not be successful in implementing changes in our wealth management businesses to meet changing market, regulatory and other conditions

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, the US Department of Labor has adopted a rule expanding the definition of "fiduciary" under the Employee Retirement Income Security Act (ERISA), which requires us to comply with fiduciary standards under ERISA when dealing with certain retirement plans. We will likely be required to materially change business processes, policies and the terms on which we interact with these clients in order to comply with these rules when they become fully effective. In addition, MiFID II imposes new requirements on us when providing advisory services to clients in the EU, including new requirements for agreements with clients.

We have 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 we have implemented in response to these changes. Further changes in local tax laws or regulations and their enforcement, the implementation of 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 result in additional cross-border outflows.

In recent years, our Wealth Management net new money inflows have come predominantly from clients in Asia Pacific and in the ultra high net worth segment globally. Over time, inflows from these lower-margin segments and markets have been replacing outflows from higher-margin segments and markets, in particular cross-border clients. This dynamic, combined with changes in client product preferences as a result of which low-margin products account for a larger share of our revenues than in the past, has put downward pressure on our Wealth Management's margins.

As the discussion above indicates, we are exposed to possible outflows of client assets in our asset-gathering businesses and to changes affecting the profitability of our wealth management businesses. Initiatives that we may implement to overcome the effects of changes in the business environment on our profitability, balance sheet and capital positions may not succeed in counteracting those effects and may cause net new money outflows and reductions in client deposits, as happened with our balance sheet and capital optimization program in 2015. There is no assurance that we will be successful in our efforts to offset the adverse effect of these or similar trends and developments.

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. 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 them by devising and implementing adequate business strategies, adequately developing or updating our technology, particularly in trading businesses, and our digital channels and tools, or are unable to attract or retain the qualified people needed to carry them out.

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 recent years, 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 those of other stakeholders, we have made changes to the terms of compensation awards. Among other things, we have introduced individual caps on the proportion of fixed to variable pay for the GEB members, as well as certain other employees. 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.

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. The loss of key staff and the inability to attract qualified replacements, depending on which and how many roles are affected, could seriously compromise our ability to execute our strategy and to successfully improve our operating and control environment and may affect our business performance.

Swiss law requires that shareholders approve the compensation of the Board of Directors (BoD) and the Group Executive Board (GEB) each year. If our shareholders fail to approve the compensation for the GEB or the BoD, this could have an adverse effect on our ability to retain experienced directors and our senior management.

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 we generate. We must, therefore, 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.

As seen during the financial crisis of 2007–2009, we are not always able to prevent serious losses arising from extreme or sudden market events that are not anticipated by our risk measures and systems. The deterioration of financial markets since the beginning of the crisis was extremely severe by historical standards. Value-at-risk, a statistical measure for market risk, is derived from historical market data, and thus by definition could not have anticipated the losses suffered in the stressed conditions of the crisis. Moreover, stress loss and concentration controls and the dimensions in which we aggregated risk to identify potentially highly correlated exposures proved to be inadequate. As a result, we recorded substantial losses on fixed income trading positions, particularly in 2008 and 2009. Notwithstanding the steps we have taken to strengthen our risk management and control framework, 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;
- 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 for our own account are severely affected by events not anticipated by our models, and accordingly we suffer defaults and impairments beyond the level implied by our risk assessment; or
- collateral or other security provided by our counterparties proves inadequate to cover their obligations at the time of their default.

We hold positions related to real estate in various countries, and could suffer losses on these positions. These positions include a substantial Swiss mortgage portfolio. Although management believes that this portfolio is prudently managed, we could nevertheless be exposed to losses if the concerns expressed by the Swiss National Bank and others about unsustainable price escalation in the Swiss real estate market come to fruition. In addition, we continue to hold substantial legacy risk positions, primarily in Corporate Center – Non-core and Legacy Portfolio. They remain illiquid in many cases, and we continue to be exposed to the risk that they may again deteriorate in value.

We also manage risk on behalf of our clients in our asset and wealth management businesses. The performance of assets we hold for our clients in these activities could be adversely affected by the same factors mentioned above. 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. They are subject to a distinct control framework. Deteriorations in the fair value of these positions would have a negative effect on our earnings.

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. The volume of our funding sources has generally been stable, but could change in the future due to, 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.

Moreover, more stringent capital and liquidity and funding requirements will likely lead to increased competition for both secured funding and deposits as a stable source of funding, and to higher funding costs. The addition of loss-absorbing debt as a component of capital requirements, the regulatory requirements to maintain minimum TLAC at holding company level and / or at subsidiaries level, as well as the power of resolution authorities to bail in TLAC and other debt obligations, and uncertainty as to how such powers will be exercised, will increase our cost of funding and could potentially increase the total amount of funding required absent 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 can affect the availability of certain kinds of funding. In addition, as we experienced in connection with Moody's downgrade of our long-term rating in June 2012, rating downgrades can require us to post additional collateral or make additional cash payments under master trading agreements relating to our derivatives businesses. 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.

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, or the assessment of the impairment of goodwill. 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. Moreover, 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 our 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, we adopted IFRS 9 effective on 1 January 2018, which required us to change the accounting treatment of certain instruments, requires us to record loans at inception net of expected credit losses instead of recording credit losses on an incurred loss basis and is generally expected to result in an increase in recognized credit loss allowances. In addition, the expected credit loss (ECL) provisions of IFRS 9 may result in greater volatility in credit loss expense as ECL changes in response to developments in the credit cycle and composition of our loan portfolio. The effect may be more pronounced in a deteriorating economic environment.

→ **Refer to the "Critical accounting estimates and judgments" section and "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information**

The effect of taxes on our financial results is significantly influenced by tax law changes and reassessments of our deferred tax assets

Our effective tax rate is highly sensitive to our performance, our expectation of future profitability and statutory tax rates. Based on prior years' tax losses, we have recognized deferred tax assets (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. This would have the effect of increasing our effective tax rate in the year in which any write-downs are taken. Conversely, if our performance is expected to improve, particularly in the US or the UK, we could potentially recognize additional DTAs as a result of that assessment. The effect of doing so would be to significantly 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 and Switzerland, 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. For example, the reduction in the US federal corporate tax rate to 21% from 35% introduced by the US Tax Cuts and Jobs Act (TCJA) resulted in a CHF 2.9 billion net write-down in the Group's DTAs in the fourth quarter of 2017. Changes in tax law may materially affect our effective tax rate and in some cases may substantially affect the profitability of certain activities. For example, the TCJA introduced a new minimum tax regime referred to as the base erosion and anti-abuse tax (BEAT) that potentially subjects otherwise deductible payments made from our US businesses to non-US affiliated parties to a minimum tax. We currently expect that BEAT could increase our current tax expense by up to CHF 60 million in 2018. The actual effects could be materially higher as the amount of payments subject to BEAT will increase with higher interest rates and business activity and as a result of interpretative uncertainty relating to BEAT. It may also be lower if we are able to successfully mitigate our payments subject to BEAT.

We generally revalue our DTAs in the second half of the financial year based on a reassessment of future profitability taking into account updated business plan forecasts. 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 in the forecast period used for recognizing 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 recent periods have demonstrated that changes in the recognition of DTAs can have a very significant effect on our reported results. The enactment of the TCJA, and the narrowing of the window between the end of the forecast period and the expiry of our US net operating losses, may also lead us to review our approach to periodically remeasuring our US DTAs and the timing for recognizing deferred tax in our income statement. Any change in the manner in which we remeasure DTAs could impact the effective tax rate, particularly in the year in which the change is made.

Our full-year effective tax rate could also change if aggregate tax expenses in respect of profits from branches and subsidiaries without loss coverage differ from what is expected, or in case of changes to the forecast period used for DTA recognition purposes as part of the aforementioned reassessment of future profitability. Moreover, tax laws or the tax authorities in countries where we have undertaken legal structure changes 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 could be written down through the income statement.

In addition, statutory and regulatory changes, as well as changes to the way in which courts and tax authorities interpret tax laws, could cause the amount of taxes ultimately paid by us to materially differ from the amount accrued.

Our stated capital returns objective is based, in part, on capital ratios that are subject to regulatory change and may fluctuate significantly

We plan to operate with a fully applied CET1 capital ratio of around 13% and a fully applied CET1 leverage ratio of around 3.7%. Our ability to maintain these ratios is subject to numerous risks, including the financial results of our businesses, the effect of changes to capital standards, methodologies and interpretation that may adversely affect the calculation of our fully applied CET1 capital ratio, the imposition of risk add-ons or capital buffers, and the application of additional capital, liquidity and similar requirements to subsidiaries. These risks could prevent or delay our ability to achieve our capital returns policy of a progressive cash dividend coupled with a share repurchase program.

As UBS Group AG is a holding company, its operating results, financial condition and ability to pay dividends and other distributions and / or to pay its obligations in the future depend on funding, dividends and other distributions received directly or indirectly from its subsidiaries, which may be subject to restrictions

UBS Group AG's ability to pay dividends and other distributions and to pay its obligations in the future will depend on the level of funding, dividends and other distributions, if any, received from UBS AG and other subsidiaries. The ability of such subsidiaries to make loans or distributions, directly or indirectly, to UBS Group 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 Group AG's direct and indirect subsidiaries, including UBS AG, UBS Switzerland AG, UBS Limited and UBS Americas Holding LLC, are subject to laws and regulations that restrict dividend payments, authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to UBS Group AG, or could impact their ability to repay any loans made to, or other investments in, such subsidiary by UBS Group AG or another member of the Group. For example, the US CCAR process requires that our US intermediate holding company demonstrate that it can continue to meet minimum capital standards over a nine-quarter hypothetical severely adverse economic scenario. If it fails to meet the quantitative capital requirements, or the Federal Reserve Board's qualitative assessment of the capital planning process is adverse, our US intermediate holding company will be prohibited from paying dividends or making distributions. Restrictions and regulatory actions of this kind could impede access to funds that UBS Group AG may need to meet its obligations or to pay dividends to shareholders. In addition, UBS Group 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.

Our capital instruments may contractually prevent UBS Group AG from proposing the distribution of dividends to shareholders, other than in the form of shares, if we do not pay interest on these instruments.

Furthermore, UBS Group AG may guarantee some of the payment obligations of certain of the Group's subsidiaries from time to time. These guarantees may require UBS Group AG to provide substantial funds or assets to subsidiaries or their creditors or counterparties at a time when UBS Group AG is in need of liquidity to fund its own obligations.

The credit ratings of UBS Group AG or its subsidiaries used for funding purposes could be lower than the ratings of the Group's operating subsidiaries, which may adversely affect the market value of the securities and other obligations of UBS Group AG or those subsidiaries on a standalone basis.

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 AG, UBS Group AG and UBS Switzerland AG, if there is justified concern that the entity is overindebted, 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 our shareholders and creditors or may prevent UBS Group AG, UBS AG or UBS Switzerland AG from paying dividends or making payments on debt obligations.

Protective measures may include, but are not limited to, certain measures that could require or result in a moratorium on, or the deferment of, payments. We would have limited ability to challenge any such protective measures, and creditors would have no right 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 the termination of, or the exercise of rights to terminate, netting rights, rights to enforce or dispose of certain types of collateral or 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, if such equity capital is fully written down, convert into equity or write down the capital and 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 of the debt 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 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 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, and such conversion would also dilute the ownership of existing shareholders. In addition, creditors receiving equity would be effectively subordinated to all creditors in the event of a subsequent winding up, liquidation or dissolution of the entity subject to restructuring proceedings, which would increase the risk that investors would lose all or some of their investment.

FINMA has broad powers and 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 or junior to such obligations are not written down or converted.

Moreover, FINMA has expressed its preference for a "single-point-of-entry" resolution strategy for global systemically important financial groups, led by the bank's home supervisory and resolution authorities and focused on the top-level group company. This would mean that, if UBS AG or one of UBS Group AG's other subsidiaries faces substantial losses, FINMA could open restructuring proceedings with respect to UBS Group AG only and order a bail-in of its liabilities if there is a justified concern that in the near future such losses could impact UBS Group AG. In that case, it is possible that the obligations of UBS AG or any other subsidiary of UBS Group AG would remain unaffected and outstanding, while the equity capital and the capital and other debt instruments of UBS Group AG would be written down and / or converted into equity of UBS Group AG in order to recapitalize UBS AG or such other subsidiary.

APPENDIX 6 — A BRIEF GUIDE TO CREDIT RATINGS

Information set out in this Appendix 6 is based on, extracted or reproduced from the website of S&P at https://www.spratings.com/en_US/home 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 6 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 6 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 major rating categories.

Please refer to http://www.spratings.com/en_US/understanding-ratings#firstPage for further details.

Moody's long-term ratings definitions

Aaa

Obligations rated Aaa are judged to be of the highest quality, subject to the lowest level of credit 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 judged to be upper-medium grade and are subject to low credit risk.

Baa

Obligations rated Baa are judged to be medium-grade and subject to moderate credit risk and as such may possess certain 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://www.moodys.com/Pages/amr002002.aspx for further details.

Rating Outlooks

A rating outlook indicates the potential direction of a long-term credit rating over the intermediate term (for example, this is typically six months to two years for S&P). A rating outlook issued by S&P or Moody's will usually indicate whether the potential 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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