

## Supplemental Listing Document

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

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

### **15,000,000 European Style Index Call Warrants relating to the Hang Seng Index**

**UBS AG**  
**(Incorporated with limited liability in Switzerland)**  
**acting through its London Branch**

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**Issue Price: S\$0.209 per Warrant**

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This document is published for the purpose of obtaining a listing of all the above warrants (the “**Warrants**”) to be issued by UBS AG (the “**Issuer**”) acting through its London branch, and is supplemental to and should be read in conjunction with a base listing document dated 29 June 2018 (the “**Base Listing Document**”), including its supplements and addenda as executed from time to time, for the purpose of giving information with regard to the Issuer and the Warrants. Information relating to the Hang Seng Index (the “**Index**”) is contained in this document.

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

Investors are warned that the price of the Warrants may fall in value as rapidly as it may rise and holders may sustain a total loss of their investment.

The Warrants are classified as capital markets products other than prescribed capital markets products<sup>1</sup> and Specified Investment Products (SIPs)<sup>2</sup>, and may only be sold to retail investors with

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

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

enhanced safeguards, including an assessment of such investors' investment knowledge or experience.

Prospective purchasers should therefore ensure that they understand the nature of the Warrants and carefully study the risk factors set out in the Base Listing Document and pages 18 to 21 of this document before they invest in the Warrants.

Application has been made to the SGX-ST for permission to deal in and for quotation of the Warrants and the SGX-ST has agreed in principle to grant permission to deal in and for quotation of the Warrants. It is expected that dealings in the Warrants will commence on or about 20 June 2019.

As at the date hereof, the Issuer's long term credit rating by S&P Global Ratings Europe Limited is A+, by Moody's Deutschland GmbH is Aa3, by Fitch Ratings Limited is AA- and by Scope Ratings GmbH is AA-.

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

19 June 2019

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

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

This document does not constitute an offer by, or an invitation on behalf of, the Issuer to purchase or subscribe for any of the Warrants. The distribution of this document and the offering of the Warrants may, in certain jurisdictions, be restricted by law. The Issuer requires persons into whose possession this document comes to inform themselves of and observe all such restrictions. In particular, the Warrants have not been and will not be registered under the United States Securities Act of 1933, as amended (the "**Securities Act**") and may not be offered or sold within the United States or to, or for the account or benefit of, U.S. persons (as defined in Regulation S under the Securities Act) unless the Warrants are registered under the Securities Act or any exemption from registration is available. Subject to certain exemptions, Warrants, or interests therein, may not at any time be offered, sold, resold or delivered within the United States or to, or for the account or benefit of, U.S. persons. A further description of certain restrictions on offering and sale of the Warrants and distribution of this document is given in the section headed "Placing and Sale" contained herein.

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

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

References in this document to the "**Conditions**" shall mean references to the Terms and Conditions of the European Style Index Call Warrants contained in the Base Listing Document. Terms not defined herein shall have the meanings ascribed thereto in the Conditions.

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## TERMS AND CONDITIONS OF THE WARRANTS

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

The Conditions are set out in the section headed “Terms and Conditions of the European Style Index Call Warrants” in the Base Listing Document. For the purposes of the Conditions, the following terms shall have the following meanings:

Warrants:	15,000,000 European Style Index Call Warrants relating to the Hang Seng Index (“ <b>Index</b> ”)
Index:	Hang Seng Index (Reuters Instrument Code: .HSI)
Index Sponsor:	Hang Seng Indexes Company Limited
Conversion Ratio (number of Index units per Warrant):	0.001 (i.e. every 1,000 Warrants initially relate to one Index unit)
Reference Level <sup>3</sup> and Source:	27,789.05 (out of the money) (Reuters)
Strike Level:	31,000
Gearing <sup>3</sup> :	7.87x
Premium <sup>3</sup> :	15.88%
Volatility <sup>3</sup> :	Implied: 29.00% Historical: 20.00%
Launch Date:	12 June 2019
Closing Date:	19 June 2019
Dealing Commencement Date:	20 June 2019
Last Trading Date:	The fifth Business Day immediately preceding the Expiry Date, currently being 20 December 2019
Expiry Date:	30 December 2019 (if the Expiry Date is not a Business Day, then the Expiry Date shall fall on the immediately preceding Business Day)
Board Lot:	100 Warrants

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<sup>3</sup> These figures are calculated as at, and based on information available to the Issuer on or about, the date of the termsheet in respect of the Warrants. The Issuer is not obliged, and undertakes no responsibility to any person, to update or inform any person of any changes to the figures after the date of the termsheet in respect of the Warrants.

Valuation Date:	The Expiry Date, or if such day is not a Relevant Stock Exchange Business Day, the immediately preceding Relevant Stock Exchange Business Day
Exercise:	Warrantheolders shall not be required to deliver an exercise notice. Exercise of Warrants shall be determined by the Closing Level of the Index. If the Closing Level of the Index is greater than the Strike Level and the Cash Settlement Amount (less any Exercise Expenses) is positive, all Warrants shall be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Warrants shall be paid in the manner set out in Condition 4(c) of the Warrants. In the event the Closing Level of the Index is less than or equal to the Strike Level and the Cash Settlement Amount (less any Exercise Expenses) is zero or negative, all Warrants shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Warrantheolders shall not be entitled to receive any payment from the Issuer in respect of the Warrants.
Index Currency Amount:	HK\$1.00
Cash Settlement Amount:	In respect of each Warrant, is the amount (if positive) calculated as follows:  $[(\text{Closing Level} - \text{Strike Level}) \times \text{Conversion Ratio} \times \text{Index Currency Amount}] \div \text{Exchange Rate}$
Closing Level:	The average of quotations of the Index compiled, computed and disseminated by the Index Sponsor taken at (i) five minute intervals from five minutes after the start of, and up to five minutes before the end of, the continuous trading session of The Stock Exchange of Hong Kong Limited (" <b>HKEX</b> "), and (ii) the close of trading on HKEX on the Valuation Date, rounded down to the nearest whole number, subject to the Issuer's right to determine the closing level in good faith upon the occurrence of a Market Disruption Event on the Valuation Date, as described further in Condition 4(c) of the Warrants.
Exchange Rate:	The rate of exchange between the Reference Currency and the Settlement Currency (expressed as the number of units of the Reference Currency per one unit of the Settlement Currency) on the Expiry Date (if it is not a Relevant Stock Exchange Business Day, the next following day which is a Business Day and a Relevant Stock Exchange Business Day) at or about 5:00 p.m. (Singapore time), as determined by the Issuer by reference to such source(s) as the Issuer may reasonably determine to be appropriate at such time.

Reference Currency:	Hong Kong dollars
Settlement Currency:	Singapore dollars
Exercise Expenses:	Holders of Warrants will be required to pay all charges which are incurred in respect of the exercise of the Warrants.
Relevant Stock Exchange:	HKEX
Relevant Stock Exchange Business Day:	A day (other than a Saturday, Sunday, or public holiday) on which the Relevant Stock Exchange is open for dealings in Hong Kong during its normal trading hours and banks are open for business in Hong Kong
Exchange Business Day:	A day (excluding Saturdays, Sundays and public holidays) on which the Singapore Exchange Securities Trading Limited (" <b>SGX-ST</b> ") and HKEX are open for dealings during its normal trading hours and banks are open for business in Singapore and Hong Kong
Warrant Agent:	The Central Depository (Pte) Limited (" <b>CDP</b> ")
Clearing System:	CDP
Fees and Charges:	Normal transaction and brokerage fees shall apply to the trading of the Warrants on the SGX-ST. Investors should note that they may be required to pay stamp taxes or other documentary charges in accordance with the laws and practices of the country where the Warrants are transferred. Investors who are in any doubt as to their tax position should consult their own independent tax advisers. In addition, investors should be aware that tax regulations and their application by the relevant taxation authorities change from time to time. Accordingly, it is not possible to predict the precise tax treatment which will apply at any given time.

The Conditions set out in the section headed “Terms and Conditions of the European Style Index Call Warrants” in the Base Listing Document are set out below. This section is qualified in its entirety by reference to the detailed information appearing elsewhere in this document which shall, to the extent so specified or to the extent inconsistent with the relevant Conditions set out below, replace or modify the relevant Conditions for the purpose of the Warrants.

## TERMS AND CONDITIONS OF THE EUROPEAN STYLE INDEX CALL WARRANTS

### 1. Form, Status, Transfer and Title

- (a) *Form.* The Warrants (which expression shall, unless the context otherwise requires, include any further warrants issued pursuant to Condition 10) are issued subject to and with the benefit of:-
- (i) an instrument by way of deed poll (the “**Instrument**”) dated the Closing Date, made by UBS AG (the “**Issuer**”) acting through its London Branch; and
  - (ii) a warrant agent agreement (the “**Master Warrant Agent Agreement**” or “**Warrant Agent Agreement**”) dated any time on or before the Closing Date, made between the Issuer and the Warrant Agent for the Warrants.

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

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 and the Master Warrant Agent Agreement or Warrant Agent Agreement.

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



notwithstanding any notice to the contrary. The expression "**Warrantholder**" shall be construed accordingly.

## 2. Warrant Rights and Exercise Expenses

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

The "**Cash Settlement Amount**", in respect of each Warrant, shall be an amount (if positive) payable in the Settlement Currency equal to (1) multiplied by (2) MULTIPLIED by (3), where:

(1) is the Index Currency Amount;

(2) is equal to (i) the Closing Level LESS (ii) the Strike Level; and

(3) is the Conversion Ratio.

"**Closing Level**" means, means the level specified as such in the relevant Supplemental Listing Document subject to any adjustment in accordance with Condition 6.

"**Conversion Ratio**" means the ratio (expressed as the number of Index units to which one Warrant relates) specified by the Issuer, subject to adjustments in accordance with these Conditions.

- (b) *Exercise Expenses.* Warrantholders will be required to pay all charges which are incurred in respect of the exercise of the Warrants (the "**Exercise Expenses**"). An amount equivalent to the Exercise Expenses will be deducted by the Issuer from the Cash Settlement Amount in accordance with Condition 4. Notwithstanding the foregoing, the Warrantholders shall account to the Issuer on demand for any Exercise Expenses to the extent that they were not or could not be deducted from the Cash Settlement Amount prior to the date of payment of the Cash Settlement Amount to the Warrantholders in accordance with Condition 4.

## 3. Expiry Date

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

## 4. Exercise of Warrants

- (a) *Exercise.* Warrants may only be exercised on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, in accordance with Condition 4(b).
- (b) *Automatic Exercise.* Warrantholders shall not be required to deliver an exercise notice. Exercise of Warrants shall be determined by the Closing Level of the Index. If

the Closing Level of the Index is greater than the Strike Level and the Cash Settlement Amount (less any Exercise Expenses) is positive, all Warrants shall be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Warrants shall be paid in the manner set out in Condition 4(c) below. In the event the Closing Level of the Index is less than or equal to the Strike Level and the Cash Settlement Amount (less any Exercise Expenses) is zero or negative, all Warrants shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Warranholders shall not be entitled to receive any payment from the Issuer in respect of the Warrants.

- (c) *Settlement.* In respect of Warrants which are automatically exercised in accordance with Condition 4(b), the Issuer will pay to the Warrant Agent who will then pay to the relevant Warranholder the Cash Settlement Amount (if any) in the Settlement Currency. The aggregate Cash Settlement Amount (less any Exercise Expenses) shall be dispatched by the Warrant Agent as soon as practicable and no later than five Business Days following the Valuation Date by way of crossed cheque or other payment in immediately available funds drawn in favour of the Warranholder only (or, in the case of joint Warranholders, the first-named Warranholder) appearing in the records maintained by CDP. Any payment made pursuant to this Condition 4(c) shall be delivered at the risk and expense of the Warranholder and posted to the Warranholder's address appearing in the records maintained by CDP (or, in the case of joint Warranholders, to the address of the first-named Warranholder appearing in the records maintained by CDP). If the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

If the Issuer determines, in its sole discretion, that on the Valuation Date a Market Disruption Event has occurred, 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.

**"Market Disruption Event"** means:

- (i) the occurrence or existence, on a Valuation Date, at any time during the half hour period that ends at the time by reference to which the Issuer determines the value of the Index, of any of:-
  - (A) the suspension or limitation of the trading of a material number of securities/commodities from time to time comprising the Index; or
  - (B) the suspension or limitation of the trading of securities/commodities (1) on the SGX-ST or the Relevant Stock Exchange or (2) generally; or

- (C) the suspension or limitation of the trading of (1) options or futures relating to the Index on any options or futures exchanges or (2) options or futures generally on any options and/or futures exchanges on which options or futures relating to the Index are traded; or
  - (D) the imposition of any exchange controls in respect of any currencies involved in determining the Cash Settlement Amount.
- (ii) a limitation or closure of the SGX-ST or the Relevant Stock Exchange due to any unforeseen circumstances.

For the purposes of this definition, (aa) the limitation on 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 exchange, and (bb) a limitation imposed on trading (including but not limited to unforeseen circumstances such as by reason of the movements in price exceeding the levels permitted by any relevant exchange or any act of God, war, riot, public disorder, explosion, terrorism or otherwise due to any unforeseen circumstances) on the relevant exchange will constitute a Market Disruption Event.

“**Valuation Date**” means, the date on which the Closing Level is determined or such other date as may be specified in the relevant Supplemental Listing Document.

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

- (d) *CDP not liable.* CDP shall not be liable to any Warrantholder with respect to any action taken or omitted to be taken by the Issuer or the Warrant Agent in connection with the exercise of the Warrants or otherwise pursuant to or in connection with these Conditions.
- (e) *Business Day.* In these Conditions, a “**Business Day**” shall be a day (excluding Saturdays, Sundays and public holidays) on which the SGX-ST is open for dealings in Singapore during its normal trading hours and banks are open for business in Singapore and an “**Index Business Day**” shall be a day on which the Index is published by the Index Sponsor or, as the case may be, the Successor Index Sponsor and where the Index closes at the normal trading hours.

## 5. Warrant Agent

- (a) *Warrant Agent.* The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the Warrant Agent and to appoint another Warrant Agent provided that it will at all times maintain a Warrant Agent which, so long as the Warrants are listed on the SGX-ST, shall be in Singapore. Notice of any such termination or appointment and of any change in the specified office of the Warrant Agent will be given to the Warrantholders in accordance with Condition 9.

- (b) *Agent of Issuer.* The Warrant Agent will be acting as agent of the Issuer and will not assume any obligation or duty to or any relationship of agency or trust for the Warrantheolders. All determinations and calculations by the Warrant Agent under these Conditions shall (save in the case of manifest error) be final and binding on the Issuer and the Warrantheolders.

## 6. Adjustments to the Index

- (a) *Successor Sponsor Calculates and Reports Index.* If the Index is (i) not calculated and announced by the Index Sponsor but is calculated and published by a successor to the Index Sponsor (the “**Successor Index Sponsor**”) 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 Sponsor 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 Sponsor or (if applicable) the Successor Index Sponsor 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 stocks, contracts or commodities and other routine events); or
- (ii) on a Valuation Date the Index Sponsor or (if applicable) the Successor Index Sponsor 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 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/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.* Except as provided in this Condition 6, adjustments will not be made in any other circumstances, subject to the right reserved by the Issuer (such right to be exercised in the Issuer’s sole and unfettered discretion and without any obligation whatsoever) to make such adjustments and amendments as it believes appropriate in circumstances where an event or events (including the events as contemplated in Conditions 6(a) to 6(b)) occur which it believes in its sole discretion and irrespective of, in substitution for, or in addition to the provisions contemplated in Conditions 6(a) to 6(b) should, in the context of the issue of the Warrants and the obligations of the Issuer, give rise to such adjustment or as the case may be, amendment provided that such adjustment or as the case may be, amendment is considered by the Issuer (i) not to be materially prejudicial to the Warrantheolders generally (without considering the circumstances of any individual Warrantheolder or the tax or other consequences of such adjustment or amendment in any particular

jurisdiction); or (ii) is otherwise considered by the Issuer to be appropriate and such adjustment or amendment is approved by SGX-ST.

- (d) *Notice of Determinations.* All determinations made by the Issuer pursuant hereto will be conclusive and binding on the Warranholders. The Issuer will give, or procure that there is given, notice as soon as practicable of any determinations in accordance with Condition 9.

## 7. Purchases

The Issuer or its related corporations 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.

## 8. Meetings of Warranholders; Modification

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

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

Such a meeting may be convened by the Issuer or by Warranholders holding not less than ten 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 Warranholders 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 Warranholders who, being entitled to do so, vote in person or by proxy.

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

- (b) *Modification.* The Issuer may, without the consent of the Warranholders, effect (i) any modification of the provisions of the Warrants or the Instrument which is not materially prejudicial to the interests of the Warranholders or (ii) any modification of the provisions of the Warrants or the Instrument which is of a formal, minor or technical nature, which is made to correct an obvious error or which is necessary in order to comply with mandatory provisions of Singapore law or (iii) considered by the Issuer to be appropriate and such modification is approved by SGX-ST. Any such

modification shall be binding on the Warranholders and shall be notified to them by the Warrant Agent before the date such modification becomes effective or as soon as practicable thereafter in accordance with Condition 9.

## 9. Notices

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

## 10. Further Issues

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

## 11. Illegality

The Issuer shall have the right to terminate the Warrants if it shall have determined in its absolute discretion that for reasons beyond its control its performance thereunder shall have become unlawful in whole or in part under any applicable present or future law, rule, regulation, judgment, order or directive of any governmental, administrative, legislative or judicial authority or power ("**Applicable Law**"). In such circumstances the Issuer will, however, if and to the extent permitted by the Applicable Law, pay to each Warranholder in respect of each Warrant held by such Warranholder an amount calculated by it as the fair market value of the Warrant immediately prior to such termination (ignoring such illegality) less the cost to the Issuer of unwinding any related hedging arrangements. Payment will be made to the Warranholder in such manner as shall be notified to the Warranholder in accordance with Condition 9.

## 12. Governing Law

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

**13. Prescription**

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

**14. Contracts (Rights of Third Parties) Act, Chapter 53B of Singapore**

Unless otherwise expressly provided in the Global Warrant, the Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement, a person who is not a party to any contracts made pursuant to the Global Warrant, the Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement has no rights under the Contracts (Rights of Third Parties) Act, Chapter 53B of Singapore to enforce any terms of such contracts. Except as expressly provided herein, the consent of any third party is not required for any subsequent agreement by the parties hereto to amend or vary (including any release or compromise of any liability) or terminate such contracts.

## SUMMARY OF THE ISSUE

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

Issuer:	UBS AG, acting through its London Branch
Index:	Hang Seng Index
The Warrants:	European Style Index Call Warrants
Number:	15,000,000 Warrants
Form:	The Warrants will be issued subject to, and with the benefit of, an instrument by way of deed poll dated 19 June 2019 (the “ <b>Instrument</b> ”) and executed by the Issuer and a master warrant agent agreement dated 27 February 2008 (the “ <b>Master Warrant Agent Agreement</b> ”) and made between the Issuer and the Warrant Agent.
Conversion Ratio (number of Index units per Warrant):	0.001 (i.e. every 1,000 Warrants initially relate to one Index unit)
Board Lot:	100 Warrants
Cash Settlement Amount:	In respect of each Warrant, is the amount (if positive) calculated as follows:  $\frac{[(\text{Closing Level} - \text{Strike Level}) \times \text{Conversion Ratio} \times \text{Index Currency Amount}] \div \text{Exchange Rate}}$
Denominations:	Warrants are represented by a global warrant in respect of all the Warrants
Exercise:	Warrantholders shall not be required to deliver an exercise notice. Exercise of Warrants shall be determined by the Closing Level of the Index. If the Closing Level of the Index is greater than the Strike Level and the Cash Settlement Amount (less any Exercise Expenses) is positive, all Warrants shall be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Warrants shall be paid in the manner set out in Condition 4(c) of the Warrants. In the event the Closing Level of the Index is less than or equal to the Strike Level and the Cash Settlement Amount (less any Exercise Expenses) is zero or negative, all Warrants shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Warrantholders shall not be entitled to



receive any payment from the Issuer in respect of the Warrants.

Exercise and Trading Currency:	Singapore dollars
Transfers of Warrants:	Warrants may only be transferred in Board Lots (or integral multiples thereof). All transfers in Warrants, in the open market or otherwise, must be effected through a securities account with CDP. Title will pass upon registration of the transfer in the records of CDP.
Listing:	Application has been made to the SGX-ST for permission to deal in and for quotation of the Warrants and the SGX-ST has agreed in principle to grant permission to deal in and for quotation of the Warrants. Issue of the Warrants is conditional on such listing being granted. It is expected that dealings in the Warrants on the SGX-ST will commence on or about 20 June 2019.
Governing Law:	The laws of Singapore
Warrant Agent:	The Central Depository (Pte) Limited 11 North Buona Vista Drive #06-07 The Metropolis Tower 2 Singapore 138589
Further Issues:	Further issues which will form a single series with the Warrants will be permitted.

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

## RISK FACTORS

The following risk factors are relevant to the Warrants:-

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

a particular series will either have to sell their Warrants or purchase additional Warrants, incurring transactions costs in each case, in order to realise their investment;

- (g) if, whilst any of the Warrants remain unexercised, trading of options or futures relating to the relevant Index on any options or futures exchanges is suspended, or options or futures generally on any options and/or futures exchanges on which options or futures relating to the relevant Index are traded is suspended, or if the relevant Index for whatever reason is not calculated, trading in the relevant Warrants may be suspended for a similar period;
- (h) investors should note that the Issuer's obligations to pay amounts in accordance with the terms thereof as set forth herein shall be discharged by delivery of the aggregate Cash Settlement Amount (if positive) to all Warranholders in accordance with the agreement with the Warrant Agent;
- (i) certain events relating to Index permit the Issuer to make certain determinations in respect of the Index and thus, permit the Issuer to make certain adjustments or amendments to the Conditions;
- (j) a level for the Index may be published by the Index Sponsor at a time when one or more shares comprised in the Index are not trading. If this occurs on a Valuation Date and there is no Market Disruption Event under the terms of the relevant Warrants then the value of such shares may not be included in the closing 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) permits the Issuer to determine the level of the Index on the basis of the formula or method last in effect prior to such change of formula;
- (k) a Warrant is only exercisable on its respective expiry date and may not be exercised by Warranholders prior to such expiry date. Accordingly, if on such expiry date the Cash Settlement Amount (where applicable) is zero or negative, a Warranholder will lose the value of his investment;
- (l) investors should note that there may be an exchange rate risk where the Cash Settlement Amount may be converted from a foreign currency into Singapore dollars. Exchange rates between currencies are determined by forces of supply and demand in the foreign exchange markets. These forces are, in turn, affected by factors such as international balances of payments and other economic and financial conditions, government intervention in currency markets and currency trading speculation. Fluctuations in foreign exchange rates, foreign political and economic developments, and the imposition of exchange controls or other foreign governmental laws or restrictions applicable to such investments may affect the foreign currency market price and the exchange rate-adjusted equivalent price of the Warrants. Fluctuations in the exchange rate of any one currency may be offset by fluctuations in the exchange rate of other relevant currencies;
- (m) investors should note that it is not possible to predict the price at which the Warrants will trade in the secondary market or whether such market will be liquid or illiquid. To the extent Warrants of a particular issue are exercised, the number of Warrants of such issue outstanding will decrease, resulting in a diminished liquidity for the remaining Warrants of such issue. A decrease in the liquidity of an issue of Warrants may cause, in turn, an increase in the volatility associated with the price of such issue of Warrants. The Issuer may, but is not obligated to, at any time, purchase Warrants at any price in the open market or by

tender or private agreement. Any Warrants so purchased may be held or resold or surrendered for cancellation. To the extent that an issue of Warrants becomes illiquid, an investor may have to exercise such Warrants to realise value;

- (n) two or more risk factors may simultaneously have an effect on the value of a Warrant such that the effect of any individual risk factor may not be predicted. No assurance can be given as to the effect any combination of risk factors may have on the value of a Warrant;
- (o) investors should note that they may be required to pay stamp taxes or other documentary charges in accordance with the laws and practices of the country where the Warrants are transferred. Investors who are in any doubt as to their tax position should consult their own independent tax advisers. In addition, investors should be aware that tax regulations and their application by the relevant taxation authorities change from time to time. Accordingly, it is not possible to predict the precise tax treatment which will apply at any given time. Investors should refer to the Taxation Section in pages 234 to 237 of the Base Listing Document;
- (p) investors should note that the Issuer may enter into discount, commission or fee arrangements with brokers and/or any of its subsidiaries or affiliates with respect to the primary or secondary market in the Warrants. The arrangements may result in the benefit to investors in Warrants buying and selling Warrants through nominated brokers by reducing or eliminating the commission payable by such Warranholders. In the event that the commission payable by Warranholders is eliminated, fee arrangements between the Issuer and brokers and/or any of its subsidiaries or affiliates will continue to apply. Investors in the Warrants should note that any brokers with whom the Issuer has a commission arrangement does not, and cannot be expected to, deal exclusively in the Warrants, therefore any broker and/or any of its subsidiaries or affiliates may from time to time engage in transactions involving the shares comprising the Index and/or structured products of other issuers over the same underlying Index as the Warrants for their proprietary accounts and/or accounts of their clients. The fact that the same broker may deal simultaneously for different clients in competing products in the market place may affect the value of the Warrants and present certain conflicts of interests;
- (q) various potential and actual conflicts of interest may arise from the overall activities of the Issuer and any of its subsidiaries and affiliates.

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

engage in any such activities without regard to the issue of Warrants by the Issuer or the effect that such activities may directly or indirectly have on any Warrant;

- (r) in the ordinary course of their business, including without limitation in connection with the Issuer or its appointed designated market maker's market making activities, the Issuer and any of its respective subsidiaries and affiliates may effect transactions for their own account or for the account of their customers and hold long or short positions in the shares comprising the Index and/or related derivatives. In addition, in connection with the offering of any Warrants, the Issuer and any of its respective subsidiaries and affiliates may enter into one or more hedging transactions with respect to the shares comprising the Index and/or related derivatives. In connection with such hedging or market-making activities or with respect to proprietary or other trading activities by the Issuer and any of its respective subsidiaries and its affiliates, the Issuer and any of its respective subsidiaries and affiliates may enter into transactions in the shares comprising the Index and/or related derivatives which may affect the market price, liquidity or value of the Warrants and which may affect the interests of Warrantheolders;
- (s) certain risks relating to the Issuer's operating environment and strategy, including those as set out in the Base Listing Document, may impact the Issuer's ability to execute its strategy and directly affect its business activities, financial condition, results of operations and prospects. As a broad-based international financial services firm, the Issuer is inherently exposed to risks that become apparent only with the benefit of hindsight, risks of which it is not presently aware or which it currently does not consider to be material could also materially affect its business activities, financial condition, results of operations and prospects. The sequence in which the risk factors are set out in the Base Listing Document is not indicative of their likelihood of occurrence or the potential magnitude of their financial consequences; and
- (t) as the Warrants are represented by a global warrant certificate which will be deposited with The Central Depository (Pte) Limited ("CDP"):
  - (i) investors should note that no definitive certificate will be issued in relation to the Warrants;
  - (ii) there will be no register of Warrantheolders and each person who is for the time being shown in the records maintained by CDP as entitled to a particular number of Warrants by way of interest (to the extent of such number) in the global warrant certificate in respect of those Warrants represented thereby shall be treated as the holder of such number of Warrants;
  - (iii) investors will need to rely on any statements received from their brokers/custodians as evidence of their interest in the Warrants; and
  - (iv) notices to such Warrantheolders will be published on the website of the SGX-ST. Investors will need to check the website of the SGX-ST regularly and/or rely on their brokers/custodians to obtain such notices.

## INFORMATION RELATING TO THE INDEX

All information contained in this document regarding the Index is derived from publicly available information. The Issuer has not independently verified any of such information which appears on the website of Hang Seng Indexes Company Limited at [www.hsi.com.hk](http://www.hsi.com.hk).

### Description of the Index

The Hang Seng Index (“**HSI**”) was launched on 24 November 1969 and is one of the earliest stock market indexes in Hong Kong. Also known as the Hong Kong Blue Chip Index, the HSI measures the performance of largest and most liquid companies listed in Hong Kong.

The HSI is managed and compiled by Hang Seng Indexes Company Limited (the “**Index Sponsor**”) (formerly HSI Services Limited), which is a wholly-owned subsidiary of Hang Seng Bank.

### Constituent Stocks

To better reflect the price movements of the major sectors of the market, four sub-indexes were introduced in 1985. The constituent stocks are grouped under Finance, Utilities, Properties, and Commerce and Industry sub-indexes, and are as follows (effective 17 June 2019):

#### *Finance*

<b>Company Name</b>	<b>Stock Code</b>
AIA Group Limited	1299
Bank of China Limited	3988
Bank of Communications Co., Ltd.	3328
BOC Hong Kong (Holdings) Limited	2388
China Construction Bank Corporation	939
China Life Insurance Company Limited	2628
Hang Seng Bank, Limited	11
Hong Kong Exchanges and Clearing Limited	388
HSBC Holdings plc	5
Industrial and Commercial Bank of China Limited	1398
Ping An Insurance (Group) Company of China, Ltd.	2318

#### *Utilities*

<b>Company Name</b>	<b>Stock Code</b>
Cheung Kong Infrastructure Holdings Ltd.	1038
CLP Holdings Limited	2
Power Assets Holdings Limited	6
The Hong Kong and China Gas Company Limited	3

#### *Properties*

<b>Company Name</b>	<b>Stock Code</b>
Cheung Kong Property Holdings Limited	1113
China Overseas Land & Investment Limited	688

China Resources Land Limited	1109
Country Garden Holdings Co. Ltd.	2007
Hang Lung Properties Limited	101
Henderson Land Development Company Limited	12
New World Development Company Limited	17
Sino Land Company Limited	83
Sun Hung Kai Properties Limited	16
The Link Real Estate Investment Trust	823
Wharf Real Estate Investment Company Limited	1997

*Commerce and Industry*

<b>Company Name</b>	<b>Stock Code</b>
AAC Technologies Holdings Inc.	2018
China Mengniu Dairy Co. Ltd.	2319
China Mobile Limited	941
China Petroleum & Chemical Corporation	386
China Shenhua Energy Company Limited	1088
China Unicom Limited	762
CITIC Limited	267
CK Hutchison Holdings Limited	1
CNOOC Limited	883
CSPC Pharmaceutical Group Ltd.	1093
Galaxy Entertainment Group Ltd.	27
Geely Automobile Holdings Ltd.	175
Hengan International Group Company Limited	1044
MTR Corporation Limited	66
PetroChina Company Limited	857
Sands China Ltd.	1928
Shenzhou International Group Holdings Ltd.	2313
Sino Biopharmaceutical Ltd.	1177
Sunny Optical Technology (Group) Co. Ltd.	2382
Swire Pacific Limited 'A'	19
Techtronic Industries Co. Ltd.	669
Tencent Holdings Limited	700
Want Want China Holdings Ltd.	151
WH Group Ltd.	288

**Eligibility and Selection Criteria**

Constituent stocks of the HSI are selected by a rigorous process of detailed analysis. Only companies with a primary listing on the Main Board of the Stock Exchange of Hong Kong Limited (“SEHK”) are eligible potential constituents. Mainland China enterprises that have H-share listing in Hong Kong will be eligible for inclusion in the HSI if they meet any one of the following conditions:

1. the H-share company has 100% of its ordinary share capital in the form of H shares which are listed on the SEHK;
2. the H-share company has completed the process of Share Reform, with the result that there is no unlisted share capital in the company; or

- for new H-share IPOs, the company has no unlisted share capital.

To be eligible for selection, a company in the Universe:

- must be among those companies that constitute the top 90% of the total market capitalisation of all primary listed shares on the SEHK (market capitalisation is expressed as an average of the past 12 months);
- must be among those companies that constitute the top 90% of the total turnover of all primary listed shares on the SEHK (turnover is aggregated and individually assessed for eight quarterly sub-periods for the past 24 months); and
- should normally have a listing history of 24 months on the SEHK or meet the requirements of the below Guidelines for Handling Large-cap Stocks Listed for Less Than 24 Months.

From the many eligible candidates, final selections are based on the following:

- the market capitalisation and turnover ranking of the company;
- the representation of the relevant sub-sector within the HSI directly reflecting that of the market; and
- the financial performance of the company.

The HSI is reviewed quarterly.

**Guidelines for Handling Large-cap Stocks Listed for Less Than 24 Months:**

For a newly listed large-cap stock, the minimum listing history required for inclusion in the universe for the HSI review is as follows:

AVERAGE MARKET CAPITALISATION RANKING AT TIME OF REVIEW	MINIMUM LISTING HISTORY
Top 5	3 Months
6-15	6 Months
16-20	12 Months
21-25	18 Months
Below 25	24 Months

**Calculation Methodology**

The HSI adopts freefloat-adjusted market capitalisation weighted methodology with a 10% cap on each constituent weighting.

$$\text{Current Index} = \frac{\sum(P_t \times IS \times FAF \times CF)}{\sum(P_{t-1} \times IS \times FAF \times CF)} \times \text{Yesterday's Closing Index}$$



- $P_t$  : Current Price at Day  $t$   
 $P_{t-1}$  : Closing Price at Day  $t-1$   
 IS : Number of Issued Shares  
 (In case of H-share constituents, only H-share portion is taken into calculation)  
 FAF : Freefloat-adjusted Factor, which is between 0 and 1  
 CF : Cap Factor, which is between 0 and 1

### **Freefloat Adjustment**

Shares held by any entities (excluding custodians, trustees, mutual funds and investment companies) which control more than 5% of the shareholdings would be considered as non-freefloat and are excluded from index calculation:

1. **Strategic holdings** – Governments and affiliated entities or any other entities which hold substantial shares in the Company would be considered as non-freefloat unless otherwise proved;
2. **Directors' and management holdings** – Directors, members of the board committee, principal officers or founding members;
3. **Corporate cross holdings** – Publicly traded companies or private firms / institutions; and
4. **Lock-up shares**<sup>4</sup> – Shareholdings with a publicly disclosed lock-up arrangement.

Data used for the freefloat adjustment are taken from publicly available sources, including financial reports, IPO prospectuses, company announcements, the Disclosure of Interests Notification History Reports from the Hong Kong Stock Exchange, FactSet and / or other research databases.

The freefloat-adjusted factor (“**FAF**”), representing the proportion of shares that is freefloated as a percentage of the issued shares, is rounded up to the nearest 1% for FAFs below 10% and otherwise to the nearest 5% for index calculation. FAFs are reviewed quarterly. For companies with more than one class of shares, FAF will be calculated separately for each class of shares.

### **Cap Adjustment**

A cap factor (“**CF**”) is calculated quarterly, such that no individual constituent in an Index will have a weighting exceeding a predetermined cap level on the index capping date.

### **Further information on the HSI and its constituent stocks**

If investors in the Warrants would like to obtain any other information on the HSI, they may consider taking the following steps:

- (i) to consult with their financial advisers; or
- (ii) to visit the website of the Index Sponsor (if there is one) which at the date of this document is [www.hsi.com.hk](http://www.hsi.com.hk). The Index Sponsor may not always maintain a website and may change or

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<sup>4</sup> Any A shares with trading restriction will be classified as non-freefloat, regardless of the shareholding percentage.

add a new website. Intending investors should conduct their own web searches to ensure that they are viewing the most up to date version of the Index Sponsor's website. The Issuer takes no responsibility for the contents of the Index Sponsor's website and makes no representation as to its accuracy or completeness and expressly disclaims any liability whatsoever for any loss howsoever arising from or in reliance upon the whole or any part of the contents of the Index Sponsor's website.

### **Index Disclaimer**

The Hang Seng Index (the "**Index**") is published and compiled by Hang Seng Indexes Company Limited pursuant to a licence from Hang Seng Data Services Limited. The mark and name "Hang Seng Index" are proprietary to Hang Seng Data Services Limited. Hang Seng Indexes Company Limited and Hang Seng Data Services Limited have agreed to the use of, and reference to, the Index by the Issuer in connection with the Warrants (the "**Product**"), **BUT NEITHER HANG SENG INDEXES COMPANY LIMITED NOR HANG SENG DATA SERVICES LIMITED WARRANTS OR REPRESENTS OR GUARANTEES TO ANY BROKER OR HOLDER OF THE PRODUCT OR ANY OTHER PERSON (i) THE ACCURACY OR COMPLETENESS OF THE INDEX AND ITS COMPUTATION OR ANY INFORMATION RELATED THERETO; OR (ii) THE FITNESS OR SUITABILITY FOR ANY PURPOSE OF THE INDEX OR ANY COMPONENT OR DATA COMPRISED IN IT; OR (iii) THE RESULTS WHICH MAY BE OBTAINED BY ANY PERSON FROM THE USE OF THE INDEX OR ANY COMPONENT OR DATA COMPRISED IN IT FOR ANY PURPOSE, AND NO WARRANTY OR REPRESENTATION OR GUARANTEE OF ANY KIND WHATSOEVER RELATING TO THE INDEX IS GIVEN OR MAY BE IMPLIED.** The process and basis of computation and compilation of the Index and any of the related formula or formulae, constituent stocks and factors may at any time be changed or altered by Hang Seng Indexes Company Limited without notice. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, NO RESPONSIBILITY OR LIABILITY IS ACCEPTED BY HANG SENG INDEXES COMPANY LIMITED OR HANG SENG DATA SERVICES LIMITED (i) IN RESPECT OF THE USE OF AND/OR REFERENCE TO THE INDEX BY THE ISSUER IN CONNECTION WITH THE PRODUCT; OR (ii) FOR ANY INACCURACIES, OMISSIONS, MISTAKES OR ERRORS OF HANG SENG INDEXES COMPANY LIMITED IN THE COMPUTATION OF THE INDEX; OR (iii) FOR ANY INACCURACIES, OMISSIONS, MISTAKES, ERRORS OR INCOMPLETENESS OF ANY INFORMATION USED IN CONNECTION WITH THE COMPUTATION OF THE INDEX WHICH IS SUPPLIED BY ANY OTHER PERSON; OR (iv) FOR ANY ECONOMIC OR OTHER LOSS WHICH MAY BE DIRECTLY OR INDIRECTLY SUSTAINED BY ANY BROKER OR HOLDER OF THE PRODUCT OR ANY OTHER PERSON DEALING WITH THE PRODUCT AS A RESULT OF ANY OF THE AFORESAID, AND NO CLAIMS, ACTIONS OR LEGAL PROCEEDINGS MAY BE BROUGHT AGAINST HANG SENG INDEXES COMPANY LIMITED AND/OR HANG SENG DATA SERVICES LIMITED** in connection with the Product in any manner whatsoever by any broker, holder or other person dealing with the Product. Any broker, holder or other person dealing with the Product does so therefore in full knowledge of this disclaimer and can place no reliance whatsoever on Hang Seng Indexes Company Limited and Hang Seng Data Services Limited. For the avoidance of doubt, this disclaimer does not create any contractual or quasi-contractual relationship between any broker, holder or other person and Hang Seng Indexes Company Limited and/or Hang Seng Data Services Limited and must not be construed to have created such relationship.

### INFORMATION RELATING TO THE DESIGNATED MARKET MAKER

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

- (a) Maximum bid and offer spread : 25 times the minimum permitted price movement in the Warrants in accordance with the rules of the SGX-ST
- (b) Minimum quantity subject to bid and offer spread : 100 Board Lots Warrants
- (c) Last Trading Day for Market Making : The date falling five Exchange Business Days immediately preceding the Expiry Date

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

- (i) during the pre-market opening and five minutes following the opening of the Relevant Stock Exchange on any trading day;
- (ii) before the Relevant Stock Exchange has opened and after the Relevant Stock Exchange has closed on any trading day and trading in the securities constituting the Index has ceased for such trading day;
- (iii) when the Warrants are suspended from trading for any reason;
- (iv) if a Market Disruption Event occurs;
- (v) if the Warrant is valueless (where the Issuer’s bid price is below the minimum bid size for such securities as prescribed by the SGX-ST), the DMM will not provide the bid price. In such an instance, the DMM will provide the offer price only;
- (vi) when trading in the shares or securities relating to or constituting the Index is suspended or limited in a material way for any reason, for the avoidance of doubt, the DMM is not obliged to provide quotations for the Warrants at any time when the shares or securities relating to or constituting the Index are not traded for any reason;
- (vii) when the Issuer or the DMM faces technical problems affecting the ability of the DMM to provide the bid and offer prices;
- (viii) when the ability of the Issuer to source a hedge or unwind an existing hedge, as determined by the Issuer in good faith, is materially affected by the prevailing market conditions. The Issuer will inform the SGX-ST of its inability to do so as soon as practicable;
- (ix) in cases where the Issuer has no Warrants to sell, the DMM will only provide the bid price. Warrants held by Issuer or any of Issuer’s affiliates in a fiduciary or agency capacity are not Warrants available for market making;
- (x) when the stock market experiences exceptional price movements and volatility; and

- (xi) when it is a public holiday in Hong Kong and/or Singapore and/or HKEX and/or the SGX-ST are not open for dealings.

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

## PLACING AND SALE

### General

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

### United Kingdom

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

(a) No deposit-taking: in relation to any Warrants 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 Warrants other than to persons:

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

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

where the issue of the Warrants would otherwise constitute a contravention of section 19 of the Financial Services and Markets Act 2000 (the “**FSMA**”) by the Issuer;

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

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

### United States of America

The Warrants have not been, and will not be, registered under the Securities Act. Subject to certain exceptions, Warrants, or interests therein, may not at any time be offered, sold, resold or delivered, directly or indirectly, in the United States or to, or for the account or benefit of, any U.S. person or to others for offering, sale or resale in the United States or to any such U.S. person. Offers and sales of Warrants, or interests therein, in the United States or to U.S. persons would constitute a violation of United States securities laws unless made in compliance with registration requirements of the Securities Act or pursuant to an exemption therefrom. The Warrants will not be offered, sold or

delivered within the United States or to U.S. persons. As used herein, “**United States**” means the United States of America (including the States and the District of Columbia), its territories, its possessions and other areas subject to its jurisdiction; and “**U.S. person**” means any citizen or resident of the United States, including any corporation, partnership or other entity created or organised in or under the laws of the United States or of any political subdivision thereof, 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.

### **Prohibition of Sales to European Economic Area Retail Investors**

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

- (a) the expression “retail investor” means a person who is one (or more) of the following:
  - (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, “**MiFID II**”);
  - (ii) a customer within the meaning of Directive 2002/92/EC (as amended), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; and
- (b) the expression an “offer” includes the communication in any form and by any means of sufficient information on the terms of the offer and the Warrants to be offered so as to enable an investor to decide to purchase or subscribe the Warrants.

If the Supplemental Listing Document in respect of any Warrants specifies “Prohibition of Sales to European Economic Area Retail Investors” as “Not Applicable”, in relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “**Relevant Member State**”), the Issuer has represented, warranted and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the “**Relevant Implementation Date**”) it has not made and will not make an offer of Warrants which are the subject of the offering contemplated by the Base Listing Document as completed by the Supplemental Listing Document in relation thereto to the public in that Relevant Member State except that it may, with effect from and including the Relevant Implementation Date, make an offer of such Warrants to the public in that Relevant Member State:

- (a) Approved listing document: if the Supplemental Listing Document in relation to the Warrants specifies that an offer of those Warrants may be made other than pursuant to Article 3(2) of the Prospectus Directive in that Relevant Member State (a “**Non-exempt Offer**”), following the date of publication of a listing document in relation to such Warrants which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, provided that any such listing document has subsequently been completed by the Supplemental Listing Document contemplating such Non-exempt Offer, in accordance with the Prospectus Directive,

in the period beginning and ending on the dates specified in such listing document or Supplemental Listing Document, as applicable and the Issuer has consented in writing to its use for the purpose of that Non-exempt Offer;

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

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

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

provided that no such offer of Warrants referred to in (b) to (d) above shall require the Issuer to publish a listing document pursuant to Article 3 of the Prospectus Directive or supplement a listing document pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an “**offer of Warrants to the public**” in relation to any Warrants in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the Warrants to be offered so as to enable an investor to decide to purchase or subscribe the Warrants, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “**Prospectus Directive**” means Directive 2003/71/EC (as amended, including by Directive 2010/73/EU), and includes any relevant implementing measure in the Relevant Member State.

## **Singapore**

This document has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this document and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of Warrants may not be circulated or distributed, nor may Warrants be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than pursuant to, and in accordance with the conditions of, any applicable provision of the Securities and Futures Act, Chapter 289 of Singapore.

## **Hong Kong**

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

**SUPPLEMENTAL INFORMATION RELATING TO THE ISSUER**

The information set out in Appendix I of this document relates to the recent developments in the Issuer's business.

The information set out in Appendix II of this document is an extract of the audited consolidated financial statements of UBS AG and its subsidiaries for the full year ended 31 December 2018.

The information set out in Appendix III of this document relates to the risk factors relating to the operating environment and strategy of UBS AG.

The information set out in Appendix IV of this document is an extract of the unaudited consolidated financial statements of UBS AG and its subsidiaries for the first quarter ended 31 March 2019.

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

Queries regarding the Warrants may be directed to +852 2971 6668 or [OL-HKWarrants@ubs.com](mailto:OL-HKWarrants@ubs.com).



**SUPPLEMENTAL GENERAL INFORMATION**

The information set out herein is supplemental to, and should be read in conjunction with, the information set out on page 241 of the Base Listing Document.

1. Save as disclosed in the Base Listing Document and herein, there is no litigation, arbitration or administrative proceedings relating to claims or amounts which are material in the context of the issue of the Warrants to which the Issuer is a party nor, to the best of its knowledge and belief, is there any threatened litigation, arbitration or administrative proceedings relating to claims or amounts which are material in the context of the issue of the Warrants which would in either case jeopardise its ability to discharge its obligations in respect of the Warrants.
2. UBS AG, Singapore Branch at One Raffles Quay, #50-01 North Tower, Singapore 048583, has been authorised to accept, on behalf of the Issuer, service of process and any other notices required to be served on the Issuer. Any notices required to be served on the Issuer should be sent to UBS AG, Singapore Branch at the above address for the attention of Han-Kiat Tan, Legal & Compliance.
3. Settlement of trades done on a normal "ready basis" on the SGX-ST generally take place on the third Business Day following the transaction. Dealing in the Warrants will take place in board lots of 100 Warrants in Singapore dollars. For further details on the transfer of Warrants and their exercise, please refer to the section headed "Summary of the Issue" above.
4. It is not the current intention of the Issuer to apply for a listing of the Warrants on any stock exchange other than the SGX-ST.
5. There has been no adverse change, material in the context of the issue of the Warrants, in the financial position of the Issuer since 31 March 2019.
6. The following contracts, relating to the issue of the Warrants, have been or will be entered into by the Issuer and may be material to the issue of the Warrants:
  - (a) the Instrument; and
  - (b) the Warrant Agent Agreement.

None of the directors of the Issuer has any direct or indirect interest in any of the above contracts.

7. The Issuer has appropriate risk management capabilities to manage the issue of the Warrants.
8. Copies of the following documents may be inspected during usual business hours on any weekday (Saturdays, Sundays and holidays excepted) at the office of Allen & Gledhill LLP at One Marina Boulevard #28-00, Singapore 018989, during the period of 14 days from the date of this document:
  - (a) the articles of association of the Issuer;

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

## APPENDIX I

### RECENT DEVELOPMENTS IN THE ISSUER'S BUSINESS

*This section supersedes in its entirety the section in the Base Listing Document entitled "Information Relating to UBS AG".*

#### 1. Overview

UBS AG ("**Issuer**") 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 four business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank. UBS's strategy is centered on its leading global wealth management business and its premier personal and corporate banking business in Switzerland, complemented by its focused investment bank and global asset manager. UBS concentrates on capital-efficient businesses in its targeted markets, where UBS has a strong competitive position and an attractive long-term growth or profitability outlook.

On 31 March 2019, UBS Group's common equity tier1 ("**CET1**") capital ratio was 13.0%, the CET1 leverage ratio was 3.80%, the total loss-absorbing capacity ratio was 32.7%, and the total loss-absorbing capacity leverage ratio was 9.6%.<sup>1</sup> On the same date, invested assets stood at USD 3,318 billion, equity attributable to shareholders was USD 53,667 million and market capitalisation<sup>2</sup> was USD 45,009 million. On the same date, UBS employed 67,481 people<sup>3</sup>.

On 31 March 2019, UBS AG consolidated CET1 capital ratio was 13.1%, the CET1 leverage ratio was 3.83%, the total loss-absorbing capacity ratio was 32.2%, and the total loss-absorbing capacity leverage ratio was 9.4%.<sup>1</sup> On the same date, invested assets stood at USD 3,318 billion and equity attributable to UBS AG shareholders was USD 53,216 million. On the same date, UBS AG Group employed 47,773 people<sup>3</sup>.

The rating agencies S&P Global Ratings Europe Limited ("**Standard & Poor's**"), Moody's Deutschland GmbH ("**Moody's**"), Fitch Ratings Limited ("**Fitch Ratings**"), and Scope Ratings GmbH ("**Scope Ratings**") have published solicited credit ratings reflecting their assessment of the creditworthiness of UBS AG, i.e. its ability to fulfil in a timely manner payment obligations, such as principal or interest payments on long-term loans, also known as debt servicing. The ratings from Fitch Ratings, Standard & Poor's and Scope Ratings may be attributed a plus or minus sign, and those from Moody's a number. These supplementary attributes indicate the relative position within the respective rating class. UBS AG has a long-term counterparty credit rating of A+ (outlook: stable) from Standard & Poor's, long-term senior debt rating of Aa3 (outlook: stable) from Moody's, long-term

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<sup>1</sup> All figures based on the Swiss systemically relevant bank framework as of 1 January 2020. Refer to the "Capital management" section of the Annual Report 2018 and of the First Quarter 2019 Report, as defined herein, for more information.

<sup>2</sup> The calculation of market capitalization has been amended to reflect total shares outstanding multiplied by the share price at the end of the period. The calculation was previously based on total shares issued multiplied by the share price at the end of the period.

<sup>3</sup> Full-time equivalents.

issuer default rating of AA- (outlook: stable) from Fitch Ratings and issuer rating of AA- (outlook: stable) from Scope Ratings.

An explanation of the significance of ratings may be obtained from the rating agencies. Generally, rating agencies base their ratings on such material and information, and such of their own investigations, studies and assumptions, as they deem appropriate. The ratings of UBS AG should be evaluated independently from similar ratings of other entities, and from the rating, if any, of its securities. A credit rating is not a recommendation to buy, sell or hold securities issued or guaranteed by the rated entity and may be subject to review, revision, suspension, reduction or withdrawal at any time by the assigning rating agency. All the above-mentioned rating agencies are registered as credit rating agencies under Regulation (EC) No 1060/2009 as amended by Regulation (EU) No 513/2011.

No profit forecasts or estimates are included in this document.

No recent events particular to the Issuer have occurred, which are to a material extent relevant to the evaluation of the Issuer's solvency.

Any statements regarding the competitive position of UBS AG, UBS AG Group or the Group contained in this document are made on the basis of the opinion of UBS AG or the Group.

## 2. Corporate Information

The legal and commercial name of the Issuer 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 26 April 2018 ("**Articles of Association**"), 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. Business Overview

#### 3.1 Organisational Structure of the Issuer

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. In 2016, UBS Americas Holding LLC was designated as the intermediate holding company for UBS's US subsidiaries and UBS merged its wealth management subsidiaries in various European countries into UBS Europe SE, UBS's German-headquartered European subsidiary. Additionally, UBS transferred the majority of Asset Management's operating subsidiaries to UBS Asset Management AG.

UBS Business Solutions AG, a wholly owned 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. 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.

In March 2019, UBS Limited, UBS's UK headquartered subsidiary, was merged into UBS Europe SE prior to the UK's scheduled departure from the EU. Former clients and other counterparties of UBS Limited who can be serviced by UBS AG's London Branch were migrated to UBS AG's London Branch prior to the merger.

UBS continues to consider further changes to the Group's legal structure in response to regulatory requirements and other external developments. 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 2018, including interests in significant subsidiaries, are discussed in "*Note 31 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 2018 published on 15 March 2019 ("**Annual Report 2018**").

UBS AG's interests in subsidiaries and other entities as of 31 December 2018, including interests in significant subsidiaries, are discussed in "*Note 31 Interests in subsidiaries and other entities*" to the UBS AG's consolidated financial statements included in the Annual Report 2018.

UBS AG is the parent company of, and conducts a significant portion of its operations through, its subsidiaries. UBS AG has contributed a significant portion of its capital and provides substantial liquidity to subsidiaries. In addition, UBS Business Solutions AG provides substantial services to

group companies including UBS AG and its subsidiaries. To this extent, UBS AG is dependent on certain of the entities of the UBS AG Group and of the UBS Group.

## **3.2 Business Divisions and Corporate Center**

UBS operates as a group with four business divisions (Global Wealth Management, Personal & Corporate Banking, Asset Management, and the Investment Bank) and a Corporate Center. Each of the business divisions and the Corporate Center are described below. A description of the Group's strategy can be found under "*Our strategy*" in the "*Our strategy, business model and environment*" section of the Annual Report 2018; a description of the businesses, strategies, clients, organisational structures, products and services of the business divisions and the Corporate Center can also be found in the "*Our strategy, business model and environment*" section of the Annual Report 2018.

### *3.2.1 Global Wealth Management*

Global Wealth Management provides investment advice and solutions to private clients, in particular in the ultra high net worth and high net worth segments. Clients benefit from Global Wealth Management's comprehensive set of capabilities, including wealth planning, investing, lending, asset protection, philanthropy, corporate and banking services as well as family office services in collaboration with the Investment Bank and Asset Management. Global Wealth Management has a global footprint, with the US representing its largest market. Clients are served through local offices and dedicated advisors. The ultra high net worth business is managed globally across the regions.

### *3.2.2 Personal & Corporate Banking*

Personal & Corporate Banking provides comprehensive financial products and services to private, corporate and institutional clients and operates in Switzerland in the private and corporate loan market. Personal & Corporate Banking is central to UBS's universal bank model in Switzerland and it 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. While Personal & Corporate Banking operates primarily in its home market of Switzerland, it also provides capabilities to support the growth of the international business activities of UBS's corporate and institutional clients through local hubs in Frankfurt, New York, Hong Kong and Singapore. The business is divided into Personal Banking and Corporate & Institutional Clients (CIC).

### *3.2.3 Asset Management*

Asset Management is a large-scale and diversified global asset manager. It offers investment capabilities and styles across all major traditional and alternative asset classes, as well as platform solutions and advisory support to institutions, wholesale intermediaries and Global Wealth Management clients around the world. Asset Management offers clients a wide range of investment products and services in different asset classes in the form of segregated, pooled or advisory mandates as well as registered investment funds in various jurisdictions. It covers the main asset management markets globally, with a presence in 23 countries grouped in four regions: the Americas; Europe, Middle East and Africa; Switzerland; and Asia Pacific.

### *3.2.4 Investment Bank*

The Investment Bank provides a range of services to institutional, corporate and wealth management clients to help them raise capital, grow their businesses, invest and manage risks. It is focused on its

traditional strengths in advisory, capital markets, equities and foreign exchange, complemented by a targeted rates and credit platform. The Investment Bank uses its research and technology capabilities to support its clients as they adapt to the evolving market structures and changes in the regulatory, technological, economic and competitive landscape. The Investment Bank delivers solutions to corporate, institutional and wealth management clients, using its intellectual capital and electronic platforms. It also provides services to Global Wealth Management, Personal & Corporate Banking and Asset Management. It has a global reach, with a presence in 33 countries and principal offices in all major financial hubs.

### *3.2.5 Corporate Center*

Corporate Center provides services to the Group through the Corporate Center – Services and Group Treasury units. Corporate Center also includes the Non-core and Legacy Portfolio unit. Corporate Center – Services consists of the Group Chief Operating Officer area (Group Technology, Group Corporate Services, Group Human Resources, Group Operations and Group Sourcing), Group Finance (excluding Group Treasury), Group Legal, Group Risk Control, Communications & Branding, Group Compliance, Regulatory & Governance, and UBS in society. Group Treasury manages the structural risk of UBS's balance sheet, including interest rate risk, structural foreign exchange risk and collateral risk, as well as the risks associated with the Group's liquidity and funding portfolios. Group Treasury also seeks to optimize financial performance by matching assets and liabilities. Group Treasury serves all business divisions and the other Corporate Center units through three main risk management areas, and its risk management is fully integrated into the Group's risk governance framework. Non-core and Legacy Portfolio manages legacy positions from businesses exited by the Investment Bank. It is overseen by a committee chaired by the Group Chief Risk Officer.

Beginning with the first quarter 2019 report, UBS provides results for total Corporate Center only and does not separately report Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, UBS has operationally combined Group Treasury with Group ALM and calls this combined function Group Treasury. Refer to "Changes in Corporate Center segment reporting" under "Accounting, regulatory and legal developments" below for more information.

## **3.3 Competition**

The financial services industry is characterized by intense competition, continuous innovation, restrictive, detailed, and sometimes fragmented regulation and ongoing consolidation. UBS faces competition at the level of local markets and individual business lines, and from global financial institutions that are comparable to UBS in their size and breadth. Barriers to entry in individual markets and pricing levels are being eroded by new technology. UBS expects these trends to continue and competition to increase.

## **3.4 Recent Developments**

### *3.4.1 UBS AG consolidated key figures*

Selected consolidated financial information

UBS AG derived the selected consolidated financial information included in the table below for the years ended 31 December 2018, 2017 and 2016 from the Annual Report 2018, which contains the audited consolidated financial statements of UBS AG, as well as additional unaudited consolidated financial information, for the year ended 31 December 2018 and comparative figures for the years

ended 31 December 2017 and 2016. The selected consolidated financial information included in the table below for the quarter ended 31 March 2019 and 31 March 2018 was derived from the UBS AG First Quarter 2019 Report, which contains the UBS AG interim consolidated financial statements (unaudited), as well as additional unaudited consolidated financial information, for the quarter ended 31 March 2019 and comparative figures for the quarter ended 31 March 2018.

The consolidated financial statements were prepared in accordance with International Financial Reporting Standards (“IFRS”) issued by the International Accounting Standards Board and are stated in US dollars. Effective from 1 October 2018, the functional currency of UBS Group AG and UBS AG’s Head Office in Switzerland changed from Swiss francs to US dollars and that of UBS AG’s London Branch from British pounds to US dollars, in compliance with the requirements of International Accounting Standard (IAS) 21, *The Effects of Changes in Foreign Exchange Rates*. The presentation currency of UBS AG’s consolidated financial statements has changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. Prior periods have been restated for this presentation currency change. Assets, liabilities and total equity were translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses were translated at the respective average rates prevailing for the relevant periods.

Information for the years ended 31 December 2018, 2017 and 2016 which is indicated as being unaudited in the table below was included in the Annual Report 2018, but has not been audited on the basis that the respective disclosures are not required under IFRS, and therefore are not part of the audited financial statements. Prospective investors should read the whole of this document, the Annual Report 2018 and the UBS AG First Quarter 2019 Report and should not rely solely on the summarized information set out below:

	As of or for the quarter ended		As of or for the year ended		
<i>USD million, except where indicated</i>	31.3.19	31.3.18	31.12.18	31.12.17	31.12.16
	<i>unaudited</i>		<i>audited, except where indicated</i>		

### Results

Operating income	7,343	8,301	30,642	30,044	28,831
Operating expenses	5,890	6,404	25,184	24,969	24,643
Operating profit / (loss) before tax	1,454	1,897	5,458	5,076	4,188
Net profit / (loss) attributable to shareholders	1,069	1,412	4,107	758	3,351

### Profitability and growth

Return on equity (%) <sup>1</sup>	8.1	10.7	7.9*	1.4*	6.0*
Return on tangible equity (%) <sup>2</sup>	9.3	12.3	9.1*	1.6*	6.9*
Return on common equity tier 1 capital (%) <sup>3</sup>	12.3	16.3	11.9*	2.3*	10.2*
Return on risk-weighted assets, gross (%) <sup>4</sup>	11.1	13.1	12.0*	12.8*	13.1*
Return on leverage ratio denominator, gross (%) <sup>5</sup>	3.2	3.6	3.4*	3.4*	3.2*
Cost / income ratio (%) <sup>6</sup>	80.0	76.9	81.9*	82.7*	85.4*
Net profit growth (%) <sup>7</sup>	(24.3)	16.4	441.9*	(77.4)*	(48.5)*



## Resources

Total assets	956,737	965,224	958,055	940,020	919,236
Equity attributable to shareholders	53,216	53,185	52,256	51,987	52,957
Common equity tier 1 capital <sup>8,9</sup>	34,933	35,060	34,608	34,100*	31,879*
Risk-weighted assets <sup>8</sup>	266,581	266,202	262,840*	242,725*	219,330*
Common equity tier 1 capital ratio (%) <sup>8</sup>	13.1	13.2	13.2*	14.0*	14.5*
Going concern capital ratio (%) <sup>8</sup>	17.0	15.9	16.1*	15.6*	16.3*
Total loss-absorbing capacity ratio (%) <sup>8</sup>	32.2	30.7	31.3*	31.4*	29.6*
Leverage ratio denominator <sup>8</sup>	911,410	926,914	904,458*	910,133*	855,718*
Common equity tier 1 leverage ratio (%) <sup>8</sup>	3.83	3.78	3.83*	3.75*	3.73*
Going concern leverage ratio (%) <sup>8</sup>	5.0	4.6	4.7*	4.2*	4.2*
Total loss-absorbing capacity leverage ratio (%) <sup>8</sup>	9.4	8.8	9.1*	8.4*	7.6*

## Other

Invested assets (USD billion) <sup>10</sup>	3,318	3,309	3,101	3,262	2,761
Personnel (full-time equivalents)	47,773	46,433	47,643*	46,009*	56,208*

\* unaudited

1 Calculated as net profit attributable to shareholders (annualized as applicable) / average equity attributable to shareholders. This measure provides information on the profitability of the business in relation to equity.

2 Calculated as net profit attributable to shareholders (annualized as applicable) / average equity attributable to shareholders less average goodwill and intangible assets. The definition of the numerator for return on tangible equity has been revised to align with numerators for return on equity and return on CET1 capital; i.e., it is no longer adjusted for amortization and impairment of goodwill and intangible assets. Prior periods have been restated. This measure provides information on the profitability of the business in relation to tangible equity.

3 Calculated as net profit attributable to shareholders (annualized as applicable) / average common equity tier 1 capital. This measure provides information on the profitability of the business in relation to common equity tier 1 capital.

4 Calculated as operating income before credit loss expense or recovery (annualized as applicable) / average risk-weighted assets. This measure provides information on the revenues of the business in relation to risk-weighted assets.

5 Calculated as operating income before credit loss expense or recovery (annualized as applicable) / average leverage ratio denominator. This measure provides information on the revenues of the business in relation to leverage ratio denominator.

6 Calculated as operating expenses / operating income before credit loss expense or recovery. This measure provides information on the efficiency of the business by comparing operating expenses with gross income.

7 Calculated as change in net profit attributable to shareholders from continuing operations between current and comparison periods / net profit attributable to shareholders from continuing operations of comparison period. This measure provides information on profit growth in comparison with the prior-year period.

8 Based on the Swiss systemically relevant bank framework as of 1 January 2020.

9 The information as published in Swiss francs in the Annual Report 2017 for the period ended on 31 December 2017 (CHF 33,240 million) and in the UBS Group AG and UBS AG annual report 2016 for the period ended on 31 December 2016 (CHF 32,447 million) was audited.

10 Includes invested assets for Global Wealth Management, Asset Management and Personal & Corporate Banking.

### 3.4.2 Accounting, regulatory and legal developments

#### Revised gone concern capital requirements in Switzerland

In April 2019, the Swiss Federal Department of Finance issued a revised Capital Adequacy Ordinance for consultation. Among other items, the proposal introduces gone concern capital requirements for Swiss-based legal entities of global systemically important banks. Under the proposal, UBS AG would

be subject to a gone concern capital requirement on its third-party exposure on a standalone basis, as well as to an additional gone concern capital buffer requirement on its consolidated exposure. UBS Switzerland AG would continue to be required to maintain gone concern capital. These gone concern requirements would become effective on 1 January 2020 and the buffer would be phased in in full between 1 January 2021 and 1 January 2024.

The proposal also caps the maximum gone concern rebate relevant for UBS Group AG consolidated and UBS AG at 1.25% of total exposure, compared with a maximum rebate level of 2.0% under the current regime.

Finally, the eligibility of bail-in bonds with a remaining maturity between one and two years would increase, from 50% under the current regime to 100% effective 1 January 2020; however, their share in total gone concern capital would be capped at 20%.

Based on its initial assessment, UBS would expect that when fully phased in on 1 January 2024, it would be required to maintain a gone concern leverage ratio of around 100 basis points higher than otherwise needed to meet the Group requirements.

### UK withdrawal from the EU

The previously announced combined UK business transfer and cross-border merger of UBS Limited into UBS Europe SE became legally effective on 1 March 2019. As a result, UBS is able to continue to serve its clients and access relevant markets in any political Brexit scenario, including a scenario in which the UK leaves the EU without a binding withdrawal agreement (a "no-deal scenario").

The cross-border merger of UBS Limited into UBS Europe SE resulted in a combined balance sheet of EUR 57 billion. Following the merger, UBS Europe SE is subject to direct supervision by the European Central Bank and is considered a significant regulated subsidiary. Effective from the first quarter of 2019, UBS includes financial and regulatory information of UBS Europe SE in its quarterly and annual Group reporting.

The UK's Prudential Regulation Authority and Financial Conduct Authority have opened registration for the Temporary Permissions Regime ("TPR"). This regime will allow firms and funds domiciled in the European Economic Area ("EEA") that currently are passported into the UK to continue operating within the scope of their existing permissions for a limited period after the UK's withdrawal. UBS has provided TPR notifications for UBS subsidiaries in the EEA that currently passport into the UK, in order to ensure the continuity of UK regulatory permissions in the event of a no-deal scenario.

In addition, the European Securities and Markets Authority ("ESMA") has taken measures to mitigate potential disruptions in a no-deal scenario. It agreed to recognize the three UK-authorized central counterparties ("CCPs"): LCH Limited, ICE Clear Europe Ltd and LME Clear Limited. This will allow them to continue to provide clearing services in the EU for a limited period in a no-deal scenario and will avoid the need to migrate UBS Europe SE's current derivatives exposures from a UK CCP to an EU CCP ahead of the exit date. ESMA has also announced a recognition decision for the UK-authorized Central Securities Depository – Euroclear UK & Ireland Limited – for a limited period. This will make possible the continued use of the Euroclear UK & Ireland securities depository to settle Irish securities for as long as they are recognized by ESMA. These ESMA decisions will be effective from 31 October 2019 unless there is a change in circumstances.

### Tailoring of regulation for foreign banks in the US

In April 2019, the US Federal banking agencies released two proposals that would tailor how certain capital and liquidity requirements and enhanced prudential standards ("EPS") apply to foreign banking organizations ("FBO") with significant US operations. Under the proposal, FBOs with USD 100 billion or more, over USD 250 billion and over USD 700 billion or more in combined US assets and their US intermediate holding companies ("IHC") would be assigned to categories based on their size in total assets and scores for four other risk-based indicators: non-bank assets, a weighted measure of short-term wholesale funding, off-balance sheet exposure and cross-jurisdictional activity. The category

determined based on calculations at the organizational level of an FBO's IHC, would determine capital requirements and capital-related EPS applicable to the FBO's IHC and, in some cases, a US depository institution subsidiary. The category, determined based on calculations at the organizational level of an FBO's combined US operations ("**CUSO**"), would determine liquidity requirements, liquidity-related EPS and other EPS applicable to the FBO's CUSO, IHC or certain US depository institution subsidiaries. The Federal Reserve Board has estimated that UBS would be a category III firm. In this category, among other things, UBS Americas Holding LLC would continue to be subject to annual assessments of its capital plan through the Comprehensive Capital Analysis and Review process, the supplementary leverage ratio, the newly applicable liquidity coverage ratio requirements and the proposed net stable funding ratio requirements. UBS is evaluating the proposal's implications.

#### IFRS 16, Leases

UBS has adopted IFRS 16, *Leases*, effective 1 January 2019, fundamentally changing how it accounts for operating leases when acting as a lessee. Upon adoption, assets and liabilities increased by USD 3.5 billion, with a corresponding increase in risk-weighted assets ("**RWA**") and leverage ratio denominator ("**LRD**").

In the income statement, the adoption of the new standard has resulted in increases in *Depreciation and impairment of property, equipment and software* and *Interest expense*, which have been partly offset by a decrease in *General and administrative expenses*. In the first quarter of 2019, this resulted in a net decrease in operating profit or loss of USD 12 million. For the full year 2019, IFRS 16 is expected to result in a total net decrease in operating profit or loss of approximately USD 60 million, with this effect reversing over the tenor of the leases. As permitted by IFRS 16, UBS elected not to restate prior-period information.

#### Presentation of dividend income and expense from financial instruments measured at fair value through profit or loss

Effective from 1 January 2019, UBS refined the presentation of dividend income and expense, reclassifying dividends from financial instruments measured at fair value through profit or loss from *Net interest income* to *Other net income from financial instruments measured at fair value through profit or loss* (prior to 1 January 2019: *Other net income from fair value changes on financial instruments*), in order to align the presentation of dividends with other associated fair value changes. There is no effect on *Total operating income* or *Net profit / (loss)*. The change reduces the significant volatility in *Net interest income* that previously arose on a quarterly basis.

Prior periods have been restated for this presentation change. For the financial year 2018, this resulted in a decrease of USD 976 million in *Net interest income* and a corresponding increase in *Other net income from financial instruments measured at fair value through profit or loss*.

#### Changes in Corporate Center cost and resource allocation to business divisions

In order to further align Group and divisional performance, UBS has adjusted its methodology for the allocation of Corporate Center funding costs and expenses to the business divisions. At the same time, UBS updated its funds transfer pricing framework to better reflect the sources and usage of funding. All of these changes were effective as of 1 January 2019. Prior periods have been restated.

Together, for the full year 2018, these changes reduced the business divisions' operating results and thereby increased their adjusted cost / income ratios by approximately 1–2 percentage points, while Corporate Center's 2018 operating loss before tax decreased by USD 0.7 billion.

In Corporate Center, UBS retain funding costs for deferred tax assets, costs relating to its legal entity transformation program and other costs not attributable to, or representative of the performance of, the business divisions.

Alongside the updates to cost allocations and to its funds transfer pricing framework, UBS increased the allocation of balance sheet resources from Corporate Center to the business divisions. For 2018,

the restatement resulted in USD 26 billion of additional RWA and USD 93 billion of additional LRD allocated from Corporate Center to the business divisions.

The additional USD 3.5 billion RWA and LRD that resulted from the adoption of IFRS 16, *Leases*, have been fully allocated to the business divisions.

#### Changes in equity attribution

The aforementioned changes in resource allocation from Corporate Center to the business divisions are reflected in the equity attribution to the business divisions. Furthermore, UBS has updated its equity attribution framework, revising the capital ratio for RWA from 11% to 12.5% and incrementally allocating to business divisions USD 2 billion of attributed equity that is related to certain CET1 deduction items previously held centrally. In aggregate, UBS allocated USD 7 billion of additional attributed equity to the business divisions. The remaining attributed equity retained in Corporate Center primarily relates to deferred tax assets, dividend accruals and the Non-core and Legacy Portfolio. Prior periods have been restated.

For the full year 2018, the combined effect from the changes in equity attribution and the aforementioned changes in cost and resource allocation to the business divisions led to a 3–7 percentage point reduction in their respective return on attributed equity.

#### Changes in Corporate Center segment reporting

Beginning with the First Quarter 2019 Report and in compliance with IFRS 8, *Operating Segments*, UBS provides results for total Corporate Center only and does not separately report Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, UBS operationally combined Group Treasury with Group ALM and calls this combined function Group Treasury. Commentary on the performance of this function is included in the Corporate Center management discussion and analysis in UBS's quarterly and annual reporting, with total revenue information for this function presented under *Net treasury income* as a separate line item. Prior-period information has been restated. In addition, UBS provides in separate line items information on net operating income and operating expenses after allocations related to Non-core and Legacy Portfolio.

Refer to the "*Recent developments*" section of the UBS Group First Quarter 2019 Report, as well as to the "*Regulatory and legal developments*" in the "*Our strategy, business model and environment*" section of the Annual Report 2018 for further information on key accounting, regulatory and legal developments.

### **3.5 Trend Information**

As indicated in the UBS Group First Quarter 2019 Report, the overall pace of growth has decreased as a result of a synchronized global slowdown. Economic growth and markets are expected to continue to recover and stabilize at different speeds across regions and asset classes. UBS is likely to benefit from this environment as a result of its regional and business diversification. Higher invested assets are expected to lead to an increase in recurring revenues in Global Wealth Management and Asset Management, compared with the first quarter of 2019. Further momentum would require a sustained improvement in market activity and client sentiment across our businesses. UBS will continue to execute its strategy with discipline, focusing on balancing efficiency and investments for growth, to deliver on its capital return objectives and to create sustainable long-term value for UBS shareholders.

Refer to "*Our environment*" and "*Risk factors*" in the "*Our strategy, business model and environment*" section of the Annual Report 2018 for more information.

#### 4. Administrative, Management and Supervisory Bodies of the Issuer

UBS AG complies with all relevant Swiss legal and regulatory corporate governance requirements. As a foreign private issuer with debt securities listed on the NYSE, UBS AG also complies with the relevant NYSE corporate governance standards applicable to foreign private issuers.

UBS AG operates under a strict dual board structure, as mandated by Swiss banking law. The Board of Directors (“**BoD**”) exercises the ultimate supervision over management, whereas the Executive Board (“**EB**”), headed by the President of the Executive Board (“**President of the EB**”), has executive management responsibility. The functions of Chairman of the BoD and President of the EB are assigned to two different people, ensuring a separation of power. This structure establishes checks and balances and preserves the institutional independence of the BoD from the day-to-day management of UBS AG, for which responsibility is delegated to the EB under the leadership of the President of the EB. No member of one board may simultaneously be a member of the other.

Supervision and control of the EB remain with the BoD. The authorities and responsibilities of the two bodies are governed by the Articles of Association and the Organization Regulations of UBS AG with their annexes.

##### 4.1 Board of Directors

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.

##### 4.1.1 Members of the Board of Directors

Member	Title	Term of office	Current principal positions outside UBS AG
Axel A. Weber	Chairman	2020	Chairman of the Board of Directors of UBS Group AG; board member of the Swiss Bankers Association; Trustees Board member 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; member of the European Financial Services Round Table; member of the European Banking Group; member of the International Advisory Panel, Monetary Authority of Singapore; member of the Group of Thirty, Washington, D.C.; Chairman of the Board of Trustees of DIW Berlin; Advisory Board member of the Department of Economics, University of Zurich; member of the Trilateral Commission.
David Sidwell	Independent Vice Chairman	2020	Senior Independent Director and Independent Vice Chairman 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.
Jeremy Anderson	Member	2020	Member of the Board of Directors of UBS Group AG; trustee of the UK's Productivity Leadership Group; trustee of Kingham Hill Trust; trustee of St. Helen Bishopsgate.
William C. Dudley	Member	2020	Member of the Board of Directors of UBS Group AG; senior research scholar at the Griswold Center for Economic Policy Studies at Princeton University; member of the Group of Thirty; member of the Council on Foreign Relations.
Reto Francioni	Member	2020	Member of the Board of Directors of UBS Group AG; professor at the University of Basel; board member of Coca-Cola HBC AG (Senior Independent Non-Executive Director); Chairman of the board of Swiss

			International Air Lines AG; board member of Francioni AG; board member of MedTech Innovation Partners AG.
Fred Hu	Member	2020	Member of the Board of Directors of UBS Group AG; non-executive chairman of the board of Yum China Holdings; board member of ICBC; board member of Hong Kong Exchanges and Clearing Ltd.; founder and chairman of Primavera Capital Group; board member of China Asset Management; board member of Minsheng Financial Leasing Co.; trustee of the China Medical Board; Governor of the Chinese International School; co-chairman of the Nature Conservancy's Asia Pacific Council; director and member of the Executive Committee of China Venture Capital and Private Equity Association Ltd.; Global Advisory Board member of the Council on Foreign Relations.
Julie G. Richardson	Member	2020	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	2020	Member of the Board of Directors of UBS Group AG; partner and board member at Froriep Legal AG; 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.
Robert W. Scully	Member	2020	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 Inc.; board member of Teach For All.
Beatrice Weder di Mauro	Member	2020	Member of the Board of Directors of UBS Group AG; Research Professor and Distinguished Fellow at INSEAD in Singapore; Supervisory Board member of Robert Bosch GmbH; board member of Bombardier Inc.; member of the ETH Zurich Foundation Board of Trustees.
Dieter Wemmer	Member	2020	Member of the Board of Directors of UBS Group AG; board member of Ørsted A/S; member of the Berlin Center of Corporate Governance; senior advisor Texas Pacific Group.
Jeanette Wong	Member	2020	Member of the Board of Directors of UBS Group AG; board member of Essilor International and EssilorLuxottica; board member of Jurong Town Corporation; board member of PSA International; board member of FFMC Holdings Pte. Ltd.; board member of Fullerton Fund Management Company Ltd.; member of the NUS Business School Management Advisory Board; member of the Global Advisory Board, Asia, for the University of Chicago Booth School of Business; member of the Securities Industry Council.

#### 4.1.2 Organisational principles and structure

Following each AGM, the BoD meets to appoint one or more Vice Chairmen, BoD committee members, and their respective Chairpersons. At the same meeting, the BoD appoints a Company Secretary, who acts as secretary to the BoD and its committees.

The BoD committees comprise the Audit Committee, the Compensation Committee and the Risk Committee. The BoD may set up other committees, including so-called ad hoc committees, if it deems such other committees appropriate or necessary.

#### 4.1.3 Audit Committee

The Audit Committee (“**AC**”) consists of five BoD members, all of whom were determined by the BoD to be fully independent. As a group, members of the Audit Committee must have the necessary qualifications and skills to perform all of their duties and together must possess financial literacy and experience in banking and risk management.

The AC itself does not perform audits, but monitors the work of the external auditors who in turn are responsible for auditing UBS AG's consolidated and standalone annual financial statements and for reviewing the quarterly financial statements.

The function of the AC is to serve as an independent and objective body with oversight of: (i) UBS AG's accounting policies, financial reporting and disclosure controls and procedures, (ii) the quality, adequacy and scope of external audit, (iii) UBS AG's compliance with financial reporting requirements, (iv) the executives' approach to internal controls with respect to the production and integrity of the financial statements and disclosure of the financial performance, and (v) the performance of Internal Audit in conjunction with the Chairman of the BoD.

Together with the external auditors and Internal Audit, the AC in particular reviews the annual financial statements of UBS AG and, where applicable, the quarterly financial statements as well as the consolidated annual and quarterly financial statements and consolidated annual report of UBS AG, as proposed by management, in order to recommend their approval to the BoD or propose any adjustments the AC considers appropriate.

Periodically, and at least annually, the AC assesses the qualifications, expertise, effectiveness, independence and performance of the external auditors and their lead audit partner, in order to support the BoD in reaching a decision in relation to the appointment or dismissal of the external auditors and to the rotation of the lead audit partner. The BoD then submits these proposals to the shareholders for approval at the AGM.

The members of the AC are Jeremy Anderson (Chairperson), Isabelle Romy, Beatrice Weder di Mauro, Dieter Wemmer and Jeanette Wong.

## 4.2 Executive Board ("EB")

Under the leadership of the President of the EB, the EB has executive management responsibility for UBS AG and its business. All EB members (with the exception of the President of the EB) are proposed by the President of the EB. The appointments are made by the BoD.

### 4.2.1 Members of the Executive Board

Member and business address	Function	Current principal positions outside UBS AG
Sergio P. Ermotti  UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	President of the Executive Board	Member of the Group Executive Board and Group Chief Executive Officer of UBS Group AG; board member of UBS Switzerland AG; Chairman of the UBS Optimus Foundation board; Chairman of the Fondazione Ermotti, Lugano; Chairman and President of the board of the Swiss-American Chamber of Commerce; board member of the Global Apprenticeship Network; member of the Institut International D'Etudes Bancaires; member of the Saïd Business School Global Leadership Council, University of Oxford.
Martin Blessing  UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	co-President Global Wealth Management	Member of the Group Executive Board and co-President Global Wealth Management of UBS Group AG; member of the Executive Board of Baden-Baden Entrepreneur Talks.
Christian Bluhm  UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	Chief Risk Officer	Member of the Group Executive Board and Group Chief Risk Officer of UBS Group AG; board member of UBS Switzerland AG; chairman of the Foundation Board – International Financial Risk Institute.
Markus U. Diethelm	General Counsel	Member of the Group Executive Board and Group General Counsel of UBS Group AG; chairman of the Swiss-American

UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich		Chamber of Commerce's legal committee; Chairman of the Swiss Advisory Council of the American Swiss Foundation; member of the Foundation Council of the UBS International Center of Economics in Society; member of the Professional Ethics Commission of the Association of Swiss Corporate Lawyers; member of the Supervisory Board of the Fonds de Dotation LUMA / Arles.
Kirt Gardner UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	Chief Financial Officer	Member of the Group Executive Board and Group Chief Financial Officer of UBS Group AG; board member of UBS Business Solutions AG.
Robert Karofsky UBS AG, 1285 Avenue Of The Americas, New York, NY 10019, USA	Co-President Investment Bank	Member of the Group Executive Board and co-President Investment Bank of UBS Group AG; president and board member of UBS Securities LLC; trustee of the UBS Americas Inc. Political Action Committee.
Sabine Keller-Busse UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	Chief Operating Officer	Member of the Group Executive Board and Group Chief Operating Officer of UBS Group AG; board member of UBS Business Solutions AG; vice-chairman of the Board of Directors of SIX Group (Chairman of the nomination & compensation committee); Foundation Board member of the UBS Pension Fund; Foundation Board member of the University Hospital Zurich.
Edmund Koh UBS AG, One Raffles Quay North Tower, Singapore 048583	President UBS Asia Pacific	Member of the Group Executive Board of UBS Group AG and President UBS Asia Pacific; member of the Wealth Management Institute at Nanyang Technological University Singapore; member of the Ministry of Finance's Committee on the Future Economy Sub-Committees; member of the Board of Next50 Limited; trustee of the Cultural Matching Fund; member of the Board of Medico Suites (S) Pte Ltd; member of the Board of Medico Republic (S) Pte Ltd.
Ulrich Körner UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	President Asset Management and President UBS Europe, Middle East and Africa	Member of the Group Executive Board, President Asset Management and President UBS Europe, Middle East and Africa at UBS Group AG; member of the Supervisory Board of UBS Europe SE; Chairman of the Foundation Board of the UBS Pension Fund; member of the UBS Optimus Foundation Board; Vice President of the board of Lyceum Alpinum Zuoz; member of the Financial Service Chapter Board of the Swiss-American Chamber of Commerce; Advisory Board member of the Department of Banking and Finance at the University of Zurich; member of the business advisory council of the Laureus Foundation Switzerland.
Tom Naratil UBS AG, 1285 Avenue Of The Americas, New York, NY 10019 USA	Co-President Global Wealth Management and President UBS Americas	Member of the Group Executive Board and co-President Global Wealth Management and President UBS Americas of UBS Group AG; CEO and board member of UBS Americas Holding LLC; board member of the American Swiss Foundation; member of the Board of Consultors for the College of Nursing at Villanova University.
Piero Novelli UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	Co-President Investment Bank	Member of the Group Executive Board and co-President Investment Bank at UBS Group AG.
Markus Ronner UBS AG, Bahnhofstrasse 45, CH- 8001 Zurich	Chief Compliance and Governance Officer	Member of the Group Executive Board and Group Chief Compliance and Governance Officer at UBS Group AG.

#### 4.3 Potential Conflicts of Interest

Members of the BoD and the EB may act as directors or executive officers of other companies (for current principal positions outside UBS AG, if any, of BoD and EB members, please see sections 4.1.1 and 4.2.1 above, respectively) and may have economic or other private interests that differ from



those of UBS AG. Conflicts of interest may potentially arise from these positions or interests. For example, it cannot be excluded that a member of the BoD or EB has or will have a function within a company, the shares of which are or will be traded by UBS AG or which has or will have a business relationship with UBS AG. UBS AG is confident that its internal corporate governance practices and its compliance with relevant legal and regulatory provisions reasonably ensure that any conflicts of interest of the type described above are appropriately managed, including through disclosure when appropriate.

## 5. Auditors

Based on article 31 of the Articles of Association, UBS AG shareholders elect the auditors for a term of office of one year. At the AGMs of 2 March 2017, 26 April 2018 and 18 April 2019, Ernst & Young Ltd, Aeschengraben 9, CH-4002 Basel ("**Ernst & Young**") was elected as auditor for the consolidated and standalone financial statements of UBS AG for a one-year term.

Ernst & Young is a member of EXPERTsuisse, the Swiss Expert Association for Audit, Tax and Fiduciary.

## 6. Major Shareholders of the Issuer

UBS Group AG owns 100% of the outstanding shares of UBS AG.

## 7. Financial Information concerning the Issuer's Assets and Liabilities, Financial Position and Profits and Losses

### 7.1 Historical Annual Financial Information

Detailed information about UBS AG consolidated and UBS AG assets and liabilities, financial position and profits and losses for financial year 2018 is available in the section "*UBS AG consolidated financial statements*" of the Annual Report 2018 and in the UBS AG's standalone financial statements for the year ended 31 December 2018 (the "**Standalone Financial Statements 2018**"), respectively; and for financial year 2017 it is available in the "*Consolidated financial statements*" section of the UBS Group AG and UBS AG annual report 2017, published on 9 March 2018 ("**Annual Report 2017**") and in the UBS AG's standalone financial statements for the year ended 31 December 2017 (the "**Standalone Financial Statements 2017**"). The consolidated and standalone financial accounts are closed on 31 December of each year.

With respect to the financial year 2018, reference is made to:

- (i) the following parts of the Annual Report 2018: the UBS AG consolidated financial statements, in particular to the Income statement on page 524, the Balance sheet on page 527, the Statement of changes in equity on pages 528-531 (inclusive), the Statement of cash flows on pages 533-534 (inclusive) and the Notes to the consolidated financial statements on pages 535-722 (inclusive); and
- (ii) the following parts of the Standalone Financial Statements 2018: the Income statement on page 1, the Balance sheet on pages 2-3 (inclusive), the Statement of appropriation of total profit / (loss) carried forward on page 5, and the Notes to the UBS AG standalone financial statements on pages 6-28 (inclusive).

With respect to the financial year 2017, reference is made to:

- (i) the following parts of the Annual Report 2017: the UBS AG consolidated financial statements, in particular to the Income statement on page 470, the Balance sheet on page 473, the Statement of changes in equity on pages 474-477 (inclusive), the Statement of cash flows on pages 479-480 (inclusive) and the Notes to the consolidated financial statements on pages 481-622 (inclusive); and
- (ii) the following parts of the Standalone Financial Statements 2017: the Income statement on page 1, the Balance sheet on pages 2-3, the Statement of appropriation of retained earnings and proposed dividend distribution on page 4, and the Notes to the UBS AG standalone financial statements on pages 5-22 (inclusive).

The annual financial reports form an essential part of UBS AG's reporting. They include the audited consolidated financial statements of UBS AG, prepared in accordance with International Financial Reporting Standards, as issued by the International Accounting Standards Board. The annual reports also include discussions and analysis of the consolidated financial and business results of UBS, its business divisions and the Corporate Center. In addition, UBS AG prepares and publishes standalone financial statements in accordance with Swiss GAAP, as well as certain additional disclosures required under US Securities and Exchange Commission regulations.

## **7.2 Auditing of Historical Annual Financial Information**

The consolidated financial statements and the standalone financial statements of UBS AG for financial years 2018 and 2017 were audited by Ernst & Young. The reports of the auditors on the consolidated financial statements can be found on pages 514-523 (inclusive) of the Annual Report 2018 and on pages 464-469 (inclusive) of the Annual Report 2017. The reports of the auditors on the standalone financial statements of UBS AG can be found on pages 29-33 (inclusive) of the Standalone Financial Statements 2018 and on pages 23-26 (inclusive) of the Standalone Financial Statements 2017.

There are no qualifications in the auditors' reports on the consolidated financial statements of UBS AG and the standalone financial statements of UBS AG for the years ended on 31 December 2018 and 31 December 2017.

## **7.3 Interim Financial Information**

Reference is also made to the UBS Group AG first quarter 2019 report published on 25 April 2019 ("**UBS Group First Quarter 2019 Report**"), and the UBS AG first quarter 2019 report published on 30 April 2019 ("**UBS AG First Quarter 2019 Report**"), which contain information on the financial condition and results of operations, including the interim financial statements, of UBS Group AG consolidated and UBS AG consolidated, respectively, as of and for the period ended 31 March 2019. The interim consolidated financial statements are not audited.

## **7.4 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 section 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. Developments relating to a matter that occur after the relevant reporting period, but prior to the issuance of financial statements, which affect management's assessment of the provision for such matter (because, for example, the developments provide evidence of conditions that existed at the end of the reporting period), are adjusting events after the reporting period under IAS 10 and must be recognized in the financial statements for the reporting period.

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

In the case of certain matters below, UBS states that it has established a provision, and for the other matters, it makes no such statement. When UBS makes this statement and it expects disclosure of the amount of a provision to prejudice seriously its position with other parties in the matter because it would reveal what UBS believes to be the probable and reliably estimable outflow, UBS does not disclose that amount. In some cases UBS is subject to confidentiality obligations that preclude such disclosure. With respect to the matters for which UBS does not state whether it has established a provision, either (a) it has not established a provision, in which case the matter is treated as a contingent liability under the applicable accounting standard; or (b) it has established a provision but expects disclosure of that fact to prejudice seriously its 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 UBS has established provisions, UBS is able to estimate the expected timing of outflows. However, the aggregate amount of the expected outflows for those matters for which it is able to estimate expected timing is immaterial relative to its 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 "*Note 15a Provisions*" of the UBS AG's interim consolidated financial statements included in the

UBS AG First Quarter 2019 Report. It is not practicable to provide an aggregate estimate of liability for UBS's litigation, regulatory and similar matters as a class of contingent liabilities. Doing so would require UBS to provide speculative legal assessments as to claims and proceedings that involve unique fact patterns or novel legal theories, that have not yet been initiated or are at early stages of adjudication, or as to which alleged damages have not been quantified by the claimants. Although it therefore cannot provide a numerical estimate of the future losses that could arise from litigation, regulatory and similar matters, UBS believes that the aggregate amount of possible future losses from this class that are more than remote substantially exceeds the level of current provisions. Litigation, regulatory and similar matters may also result in non-monetary penalties and consequences. For example, the non-prosecution agreement (“NPA”) described in item 5 of this section, which UBS entered into with the US Department of Justice (“DOJ”), Criminal Division, Fraud Section in connection with UBS's 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 UBS 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 UBS to obtain waivers of regulatory disqualifications to maintain certain operations, may entitle regulatory authorities to limit, suspend or terminate licenses and regulatory authorizations and may permit financial market utilities to limit, suspend or terminate UBS's participation in such utilities. Failure to obtain such waivers, or any limitation, suspension or termination of licenses, authorizations or participations, could have material consequences for UBS.

The risk of loss associated with litigation, regulatory and similar matters is a component of operational risk for purposes of determining UBS's capital requirements. Information concerning UBS's capital requirements and the calculation of operational risk for this purpose is included in the “*Capital management*” section of the UBS Group First Quarter 2019 Report.

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**Provisions for litigation, regulatory and similar matters by business division and in Corporate Center <sup>1</sup>**

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<i>USD million</i>	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center	UBS
<b>Balance as of 31 December 2018</b>	1,003	117	0	269	1,438	2,827
Increase in provisions recognized in the income statement	14	0	0	2	0	<b>16</b>
Release of provisions recognized in the income statement	(13)	0	0	(2)	(2)	<b>(17)</b>
Provisions used in conformity with designated purpose	(49)	(1)	0	(66)	(18)	<b>(134)</b>
Foreign currency translation / unwind of discount	(12)	(2)	0	(2)	1	<b>(15)</b>
<b>Balance as of 31 March 2019</b>	<b>943</b>	<b>114</b>	<b>0</b>	<b>201</b>	<b>1,419</b>	<b>2,677</b>

<sup>1</sup> Provisions, if any, for the matters described in this section are recorded in Global Wealth Management (item 3 and item 4) and Corporate Center (item 2). Provisions, if any, for the matters described in items 1 and 6 of this section are allocated between Global Wealth Management and Personal & Corporate Banking, and provisions, if any, for the matters described in this section in item 5 are allocated between the Investment Bank and Corporate Center.

### 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. On 30 July 2018, the Swiss Federal Administrative Court granted UBS’s appeal by holding the French administrative assistance request inadmissible. The FTA filed a final appeal with the Swiss Federal Supreme Court.

Since 2013, UBS (France) S.A., UBS AG and certain former employees have been under investigation in France for alleged complicity in having illicitly solicited clients on French territory, regarding the laundering of proceeds of tax fraud, and 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.

A trial in the court of first instance took place from 8 October 2018 until 15 November 2018. On 20 February 2019, the court announced a verdict finding UBS AG guilty of illicitly soliciting clients on French territory and aggravated laundering of the proceeds of tax fraud, and UBS France S.A. guilty of aiding and abetting unlawful solicitation and laundering the proceeds of tax fraud. The court imposed fines aggregating EUR 3.7 billion on UBS AG and UBS France S.A. and awarded EUR 800 million of civil damages to the French state. UBS has appealed the decision. Under French law, the judgment is suspended while the appeal is pending. The Court of Appeal will retry the case *de novo* as to both the law and the facts, and the fines and penalties can be greater than or less than those imposed by the court of first instance. A subsequent appeal to the Cour de Cassation, France’s highest court, is possible with respect to questions of law.

UBS believes that based on both the law and the facts the judgment of the court of first instance should be reversed. UBS believes it followed its obligations under Swiss and French law as well as the European Savings Tax Directive. Even assuming liability, which it contests, UBS believes the penalties and damage amounts awarded greatly exceed the amounts that could be supported by the law and the facts. In particular, UBS believes the court incorrectly based the penalty on the total regularized assets rather than on any unpaid taxes on those assets for which a fraud has been characterized, and further incorrectly awarded damages based on costs that were not proven by the civil party. Notwithstanding that UBS believes it should be acquitted, its balance sheet at 31 March 2019 reflected provisions with respect to this matter in an amount of USD 516 million. The wide range of possible outcomes in this case contributes to a high degree of estimation uncertainty. The provision reflected on UBS’s balance sheet at 31 March 2019 reflects its best estimate of possible financial implications, although it is reasonably possible that actual penalties and civil damages could exceed the provision amount.

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, of banking and financial solicitation by

unauthorized persons, and of serious tax fraud. In 2018, tax authorities and a prosecutor's office in Italy asserted that UBS is potentially liable for taxes and penalties as a result of its activities in Italy from 2012 to 2017.

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.

UBS's balance sheet at 31 March 2019 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 UBS has 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 UBS has 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 totalled 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 in the US District Court for the Southern District of New York seeking to enforce UBS RESI's obligation to repurchase loans in the collateral pools for three RMBS securitizations issued and underwritten by UBS with an original principal balance of approximately USD 2 billion. In July 2018, UBS and the trustee entered into an agreement under which UBS will pay USD 850 million to resolve this matter. A significant portion of this amount will be borne by other parties that indemnified UBS. The settlement remains subject to court approval and proceedings to determine how the settlement funds will be distributed to RMBS holders. After giving effect to this settlement, 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:* Since 2014, the US Attorney's Office for the Eastern District of New York has sought information from UBS pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 ("**FIRREA**"), related to UBS's RMBS business from 2005 through 2007. On 8 November 2018, the DOJ filed a civil complaint in the District Court for the Eastern District of New York. The complaint seeks unspecified civil monetary penalties under FIRREA related to UBS's issuance, underwriting and sale of 40 RMBS transactions in 2006 and 2007. UBS moved to dismiss the civil complaint on 6 February 2019.

UBS's balance sheet at 31 March 2019 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 UBS has 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 UBS has 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. 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 totalling 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**").

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 approximately USD 125 million of payments alleged to be fraudulent conveyances and preference payments. In 2016, the bankruptcy court dismissed these claims against the UBS entities. The BMIS Trustee appealed. In February 2019, the Court of Appeals reversed the dismissal of the BMIS Trustee's remaining claims and remanded the case to the bankruptcy court for further proceedings. The defendants, including UBS, filed a petition for rehearing in March 2019.

#### 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 2.9 billion, of which claims with aggregate claimed damages of USD 1.9 billion have been resolved through settlements, arbitration or withdrawal of the claim. The claims have been 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 and a request for permission to appeal that ruling was denied by 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. Following denial of the plaintiffs’ motion for class certification, the case was dismissed in October 2018.

In 2014 and 2015, UBS entered into settlements with the Office of the Commissioner of Financial Institutions for the Commonwealth of Puerto Rico, the US Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority in relation to their examinations of UBS’s operations.

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 2015, and continuing through 2017, certain agencies and public corporations of the Commonwealth of Puerto Rico (“**Commonwealth**”) defaulted on certain interest payments on Puerto Rico bonds. 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 has imposed a stay on the exercise of certain creditors’ rights. In 2017, the oversight board placed certain of the bonds into a bankruptcy-like proceeding under the supervision of a Federal District Judge. These events, further defaults or 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.

UBS’s balance sheet at 31 March 2019 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 UBS has 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 UBS has recognized.

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

*Foreign exchange-related regulatory matters:* Beginning in 2013, numerous authorities commenced investigations concerning possible manipulation of foreign exchange markets and precious metals prices. 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 2015, the DOJ's Criminal Division terminated the 2012 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. UBS has ongoing obligations to cooperate with these authorities and to undertake certain remediation measures. UBS has also been granted conditional immunity by the Antitrust Division of the DOJ and by authorities in other jurisdictions in connection with potential competition law violations relating to foreign exchange and precious metals businesses. Investigations relating to foreign exchange 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. UBS has resolved US federal court class actions relating to foreign currency transactions with the defendant banks and persons who transacted in foreign exchange futures contracts and options on such futures under a settlement agreement that provides for UBS to pay an aggregate of USD 141 million and provide cooperation to the settlement classes. Certain class members have excluded themselves from that settlement and have filed individual actions in US and English courts against UBS and other banks, alleging violations of US and European competition laws and unjust enrichment.

In 2015, a putative class action was filed in federal court against UBS and numerous other banks on behalf of persons and businesses in the US who directly purchased foreign currency from the defendants and alleged co-conspirators for their own end use. In 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 March 2018, the court denied the defendants' motions to dismiss the amended complaint.

In 2017, two putative class actions were filed in federal court in New York against UBS and numerous other banks on behalf of persons and entities who had indirectly purchased foreign exchange instruments from a defendant or co-conspirator in the US, and a consolidated complaint was filed in June 2017. In March 2018, the court dismissed the consolidated complaint. In October 2018, the court granted plaintiffs' motion seeking leave to file an amended complaint.

*LIBOR and other benchmark-related regulatory matters:* Numerous government agencies, including the SEC, the CFTC, the DOJ, the FCA, the UK Serious Fraud Office, the Monetary Authority of Singapore, the Hong Kong Monetary Authority, 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 UK Financial Services Authority, 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 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 UBS has reached resolutions and to undertake certain remediation measures with respect to benchmark interest rate submissions. In December 2018, UBS entered into a settlement agreement with the New York and other state attorneys general under which it will pay USD 68 million to resolve claims by the attorneys general related to LIBOR. 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.

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

*USD LIBOR class and individual actions in the US:* In 2013 and 2015, the district court in the USD LIBOR actions dismissed, in whole or in part, certain plaintiffs' antitrust claims, federal racketeering claims, CEA claims, and state common law claims. Although the Second Circuit vacated the district court's judgment dismissing antitrust claims, the district court again dismissed antitrust claims against UBS in 2016. Certain plaintiffs have appealed that decision to the Second Circuit. Separately, in 2018, the Second Circuit reversed in part the district court's 2015 decision dismissing certain individual plaintiffs' claims. UBS entered into an agreement in 2016 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. In 2018, the district court denied plaintiffs' motions for class certification in the USD class actions for claims pending against UBS, and plaintiffs sought permission to appeal that ruling to the Second Circuit. In July 2018, the Second Circuit denied the petition to appeal of the class of USD lenders and in November 2018 denied the petition of the USD exchange class. In January 2019, a putative class action was filed in the District Court for the Southern District of New York against UBS and numerous other banks on behalf of US residents who, since 1 February 2014, directly transacted with a defendant bank in USD LIBOR instruments. The complaint asserts antitrust and unjust enrichment claims.

*Other benchmark class actions in the US:* In 2014, the court in one of the Euroyen TIBOR lawsuits dismissed certain of the plaintiffs' claims, including a federal antitrust claim, for lack of standing. In 2015, this court dismissed the plaintiffs' federal racketeering claims on the same basis and affirmed its previous dismissal of the plaintiffs' antitrust claims against UBS. In 2017, this 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 lawsuit dismissed the cases as to UBS and certain other foreign defendants for lack of personal jurisdiction. In October 2018, the court in the SIBOR / SOR action dismissed all but one of plaintiffs' claims against UBS. Plaintiffs in the CHF LIBOR and SIBOR / SOR actions have filed amended complaints following the dismissals, which UBS and other defendants have moved to dismiss. In November 2018, the court in the BBSW lawsuit dismissed the case as to UBS and certain other foreign defendants for lack of personal jurisdiction. Following that dismissal, plaintiffs in the BBSW action moved in January 2019 to file an amended complaint seeking to re-name UBS and certain other banks as defendants. UBS and other defendants also moved to dismiss the GBP LIBOR action in December 2016, but that motion was denied as to UBS in December 2018. UBS moved for reconsideration of that decision in January 2019.

*Government bonds:* Putative class actions have been filed since 2015 in US federal courts against UBS and other banks on behalf of persons who participated in markets for US Treasury securities since 2007. A consolidated complaint was filed in 2017 in the US District Court for the Southern District of New York alleging that the banks colluded with respect to, and manipulated prices of, US Treasury securities sold at auction and in the secondary market and asserting claims under the antitrust laws and for unjust enrichment. Defendants' motions to dismiss the consolidated complaint are pending.

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, UBS's balance sheet at 31 March 2019 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 UBS has 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 UBS has 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.

UBS's balance sheet at 31 March 2019 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 UBS has 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 UBS has recognized.

The specific litigation, regulatory and other matters described above under items (1) to (6) include 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 as described in the "Note 15 Provisions and contingent liabilities" to UBS AG's interim consolidated financial statements included in the UBS AG First Quarter 2019 Report. The proceedings indicated below are matters that have recently been considered material, but are not currently considered material, by UBS. Besides the proceedings described above and below, there are no governmental, legal or arbitration proceedings (including any such proceedings which are pending or threatened, of which UBS AG is aware) that may have, or have had in the recent past, significant effects on UBS AG Group's and/or UBS AG's financial position or profitability and are or have been pending during the last twelve months until the date of this document.

*ERISA class action:* 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 exchange transactional services or authorized or permitted the execution of any foreign currency exchange transactional services involving such plan's assets. The complaint asserts claims under ERISA. In July 2018, the Second Circuit affirmed the dismissal of the case with prejudice.

*ISDAFIX class action:* In 2017, UBS agreed to pay USD 14 million to resolve putative class actions filed in federal court in New York and New Jersey against UBS and other financial institutions on behalf of parties who entered into interest rate derivative transactions linked to ISDAFIX. The final settlement was approved in June 2018.

*Precious metals civil litigation:* Putative class actions were filed against UBS and 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 asserted claims under the antitrust laws and the Commodity Exchange Act, and other claims. In July 2018, the court in New York granted UBS's motions to dismiss amended complaints in the putative class actions relating to gold and silver. In 2017, the court granted UBS's motion to dismiss the platinum and palladium action. Plaintiffs in the platinum and palladium action subsequently filed an amended complaint that did not allege claims against UBS.

*Hong Kong initial public offerings ("**IPOs**"):* 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. On 13 March 2019, UBS Securities Hong Kong Limited and UBS AG entered into a settlement agreement with the SFC resolving all of the SFC's pending investigations related to sponsorship of IPOs by UBS. The agreement provides for a fine of HKD 375 million (USD 48 million)

and the suspension of UBS Securities Hong Kong Limited's ability to act as a sponsor for Hong Kong-listed IPOs for one year

## **7.5 Material Contracts**

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

## **7.6 Significant Changes in the Financial or Trading Position; Material Adverse Change in Prospects**

There has been no significant change in the financial or trading position of UBS AG or UBS AG Group since 31 March 2019, which is the end of the last financial period for which financial information has been published.

There has been no material adverse change in the prospects of UBS AG or UBS AG Group since 31 December 2018.

## **8. Share Capital**

As reflected in its Articles of Association most recently registered with the Commercial Register of Zurich and the Commercial Register of Basel-City, UBS AG has (i) fully paid and issued share capital of CHF 385,840,846.60, divided into 3,858,408,466 registered shares with a par value of CHF 0.10 each (article 4), and (ii) conditional capital in the amount of CHF 38,000,000, comprising 380,000,000 registered shares with a par value of CHF 0.10 each that can be issued upon the voluntary or mandatory exercise of conversion rights and/or warrants (article 4a).

## **9. Documents on Display**

- The full annual report of UBS Group AG and UBS AG as of 31 December 2017;
- The UBS AG standalone financial statements and regulatory information for the year ended 31 December 2017 (including the "Report of the statutory auditor on the financial statements");
- The full annual report of UBS Group AG and UBS AG as of 31 December 2018;
- The UBS AG standalone financial statements and regulatory information for the year ended 31 December 2018 (including the "Report of the statutory auditor on the financial statements");
- The UBS Group First Quarter 2019 Report and the UBS AG First Quarter 2019 Report; and
- The Articles of Association of UBS AG,

shall be maintained in printed format, for free distribution, at the offices of the Issuer for a period of twelve months after the publication of this document. In addition, the annual and quarterly reports, as well as quarterly result materials of UBS Group AG and UBS AG are published on UBS's website, at

[www.ubs.com/investors](http://www.ubs.com/investors) or a successor address. The Articles of Association of UBS AG are also available on UBS's Corporate Governance website, at [www.ubs.com/governance](http://www.ubs.com/governance).

**APPENDIX II**

**EXTRACT OF  
THE AUDITED CONSOLIDATED FINANCIAL STATEMENTS OF  
UBS AG AND ITS SUBSIDIARIES  
FOR THE FULL YEAR ENDED 31 DECEMBER 2018**



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## Report of Independent Registered Public Accounting Firm

### To the Shareholders and the Board of Directors of UBS AG

#### Opinion on Internal Control over Financial Reporting

We have audited UBS AG and subsidiaries' internal control over financial reporting as of 31 December 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). In our opinion, UBS AG and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of 31 December 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of UBS AG and subsidiaries as of 31 December 2018, 31 December 2017 and 1 January 2017, 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 2018, and the related notes and our report dated 14 March 2019 expresses an unqualified opinion thereon.

#### Basis for Opinion

UBS AG's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on UBS AG's internal control over financial reporting based on our audit. 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 U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

#### Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

*Ernst & Young Ltd*

Ernst & Young Ltd

Basel, 14 March 2019





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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 2018, 31 December 2017 and 1 January 2017, 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 2018, 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 31 December 2018, 31 December 2017 and 1 January 2017, and the consolidated results of their operations and their cash flows for each of the three years in the period ended 31 December 2018, in conformity with International Financial Reporting Standards, as issued by the International Accounting Standards Board.

#### Adoption of IFRS 9 *Financial Instruments*

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for the classification, measurement and impairment of financial instruments in 2018 due to the adoption of IFRS 9 *Financial Instruments*.

#### Changes to functional and presentation currencies

As discussed in Note 1 to the consolidated financial statements, the functional currencies of UBS AG's Head office in Switzerland changed from Swiss francs to U.S. dollars and UBS AG's London Branch changed from British pounds to U.S. dollars in compliance with the requirements of IAS 21 *The Effects of Changes in Foreign Exchange Rates*. The Company elected to change the presentation currency of UBS AG's consolidated financial statements from Swiss francs to U.S. dollars to align with these functional currency changes.

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 2018, 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 14 March 2019, 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 U.S. 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 included 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

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

Basel, 14 March 2019



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To the General Meeting of  
UBS AG, Zurich and Basel

Basel, 14 March 2019

## 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 2018, 31 December 2017 and 1 January 2017, 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 2018, 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 2018, 31 December 2017 and 1 January 2017 and the consolidated results of its operations and its cash flows for each of the three years in the period ended 31 December 2018 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 International Ethics Standards Board for Accountants' *Code of Ethics for Professional Accountants* ("IESBA Code"), and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

We have fulfilled the responsibilities described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the consolidated financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying consolidated financial statements.

### Deferred tax asset valuation

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**Area of focus** We identified the valuation of the deferred tax assets (“DTAs”) in the Americas as a key audit matter. We focused on this area because there is significant judgment exercised when determining the valuation of DTAs given the significant amount of tax net operating loss carryforwards (net operating losses or “NOLs”) the Group has available and the changing facts and circumstances that has lead the Group to execute selected tax planning strategies and revise its approach to valuing the DTA. 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 profits is based on the legal entity strategic plans and is sensitive to the assumptions made in estimating future taxable income.

See note 8 to the financial statements.

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**Our audit response** We obtained an understanding of the revised DTA valuation approach and executed tax planning strategies. We evaluated the design and tested the operational effectiveness of the Group’s key controls over accounting for the revised DTA valuation approach, the assumptions used in developing the legal entity strategic plans and estimating future taxable income, and tax planning strategies. We assessed the impact that the revised DTA valuation approach and tax planning strategies had on deferred taxes and the Group’s disclosures in note 8.

We assessed the completeness and accuracy of the data used for the estimations of future taxable income. This included auditing 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 legal entity strategic plans. We compared key inputs used to forecast future taxable income to externally available data, historical data and performance and assessed the sensitivity of the outcomes to reasonably possible changes in assumptions.

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).

### Legal provision & contingencies

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**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 21 to the financial statements.

<b>Our audit response</b>	<p>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.</p> <p>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 assess the information provided by the Group and followed up directly with external counsel as deemed necessary.</p> <p>We also assessed the Group's provisions and contingent liabilities disclosure (within note 21).</p>
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#### **IT Controls relevant to financial reporting**

<b>Area of focus</b>	<p>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.</p> <p>The Group also implemented a new consolidation system in 2018. IT implementations are complex by nature and impose risks related to the migration of data and the design and operating effectiveness of key controls that could have a significant impact on the financial statements.</p>
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<b>Our audit response</b>	<p>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 logical access, change management and IT automated controls.</p> <p>Our audit procedures related to logical access included testing of user access management, privileged user access, periodic access right recertifications and user authentication controls. Our audit procedures related to change management included testing of management's program change test approach, approval of change requests as well as segregation of duties.</p> <p>Our audit procedures also included testing the completeness and accuracy of the new consolidation system conversion, including those related to data migration. We also evaluated the design and tested the operating effectiveness of the system conversion as well as key IT General Controls and IT automated controls of the newly implemented system. We also tested the completeness and accuracy of post conversion system generated reports.</p>
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### **Valuation of complex or illiquid financial assets and liabilities at fair value held for trading, derivative financial instruments, financial assets and liabilities at fair value not held for trading, and debt issued at fair value**

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**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 focused 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 24 to the financial statements.

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**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 calculated 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 24).

### **IFRS 9 *Financial Instruments* – Transition to IFRS 9**

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**Area of focus** We focused on IFRS 9 *Financial Instruments*, which replaced IAS 39 *Financial Instruments: Recognition and Measurement* as the new standard represents a fundamental change of how financial instruments are classified, measured and assessed for impairment. Specifically, the classification of financial instruments as at amortized cost is now contingent on passing a business model assessment and a solely payment of principal and interest test. Further, financial instruments at amortized cost, debt instruments at fair value through other comprehensive income and loan commitments are subject to a new impairment model whereby credit loss allowances are recognized on an expected credit loss (ECL) basis. The new accounting policies and the transition impacts are discussed within note 1(a)(3)(b), note 1(a)(3)(g), note 1(a)(3)(n), note 1(a)(3)(o) and note 1(c) of the financial statements.

We focused on the IFRS 9 transition adjustment at 1 January 2018, including classification and measurement changes and the recognition of expected credit losses (ECL).

We also focused on the allowance for ECL. Specifically, management's choice of, and the probability weightings assigned to, the forward-looking economic scenarios used in measuring ECL. Auditing management's choice of, and the probability weightings assigned to, the forward-looking economic scenarios is complex due to the inherent uncertainty of future events and their relevance for the exposures of the bank.

Further, we focused on the allowance for ECL due to the complexity of statistical credit risk models used in the estimate. This included probability of default models due to their influence on both staging (determination whether a 12 month or a lifetime ECL needs to be estimated) as well as overall ECL (probability of default is a factor in the ECL calculation formula).

We also focused on the high complexity and high degree of judgment in the measurement of individual ECL credit allowances for defaulted exposures ("Stage 3"). This was complex due to the high degree of management judgements involved in the loss given default assumptions, which are based on assessments of the expected future cash flows, either from the debtor's continuing operations or from the liquidation of collaterals.

See notes 10 and 23 to the financial statements.

**Our audit response**

Regarding the transition to IFRS 9, we have assessed:

- the reasonableness of key accounting policy decisions including the judgements and elections made by management;
- the classification decisions made including the business model assessments and the solely payments of principal and interest tests; and
- the disclosures made in response to the transitional requirements in the context of IFRS 9.

For these elements, we have obtained an understanding, evaluated the design and tested the operating effectiveness of key controls related to the transition impact adjustments. We have evaluated whether financial instruments classified as amortized cost or fair value through other comprehensive income passed the business model assessment and the solely payment of principal and interest test.

We obtained an understanding, evaluated the design and tested the operating effectiveness of key controls over all aspects of the ECL estimate, including management's choice of, and the probability weightings assigned to, the forward-looking economic scenarios used in measuring ECL. We evaluated Management's governance controls for periodic review of the scenarios and probabilities. We evaluated the methodologies underlying the development of the scenarios and the probability weightings assigned to them. We verified that the base case scenario used was consistent with the base case used in other areas of the Group, such as goodwill impairment tests and the valuation of deferred tax assets. We engaged macroeconomic specialists to assist in the evaluation of economic scenarios from a variety of external sources, as well as internally developed forecasts. This included assessing the key macroeconomic variables forecasted, such as GDP, unemployment, interest rates and house price indexes. We performed an overall analytical assessment of the ECL provision levels to determine if they were reasonable considering the Group's portfolio, risk profile, credit risk management and the macroeconomic environment.

Regarding the statistical credit risk models used in the ECL estimate, we have obtained an understanding, evaluated the design and tested the operating effectiveness of key controls over the bank's process to design, build, test, validate, and approve the models. Our control testing included controls over the completeness and accuracy of input data for these models, the proper implementation of the model's calculation logic in the bank's IT landscape and the transfer of the output data into the overall ECL calculation. To assist in these audit procedures, we engaged model specialists to evaluate whether the models were fit for purpose and did not contain any undue bias. We also tested the model calibrations and outcomes.

For the measurement of individual ECL credit allowances for defaulted exposures ("Stage 3"), we have obtained an understanding, evaluated the design and tested the operating effectiveness of key controls over the bank's work out process which includes the assessments made by management regarding the future cash flows from the debtor's continuing operations and/or the liquidation of collaterals. We tested collateral or exit values, cash flow assumptions and exit strategies and re-performed the discounted cash flow calculations.

We also assessed the Group's disclosure (within note 1(a)(3)(b), note 1(a)(3)(g) note 1(c), note 10 and note 23).

#### **Changes to functional and presentation currencies**

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**Area of focus** We focused on this area because the cumulative changes to the legal structure, business activities and change to the structural currency management strategy of UBS AG's Head Office in Switzerland resulted in a change in functional currency from Swiss francs to US dollars as of 1 October 2018. A similar change to the legal structure, business activities and change to the structural currency management strategy of UBS AG's London Branch resulted in a change in functional currency from British pounds to US dollars as of 1 October 2018. In line with these changes, the presentation currency of UBS AG changed from Swiss francs to US dollars, with prior periods restated.

We focused on the functional currency change because of the judgement involved in the determination of a change in functional currency in accordance with International Accounting Standard 21, *The Effects of Changes in Foreign Exchange Rates*.

We focused on the presentation currency change as the accounting for the retrospective application of the change in presentation currency is complex. The complexity is due to the number of entities within the Group that have a functional currency that differs from the presentation currency of UBS AG, the magnitude of changes to equity components, including other comprehensive income, treasury shares, share capital, share premium, and retained earnings, and the operational complexity involved in calculating the impact of the change of presentation currency.

See note 1(a)(13) and note 1(b)(1) to the financial statements.

**Our audit response**

We obtained an understanding, evaluated the design and tested the operating effectiveness of the Group's key controls over Management's completeness assessment of the entities impacted by the cumulative changes in the Group's legal structure, business activities and change to the Group's structural currency management strategy. We assessed the completeness and accuracy of the data used in the functional currency assessment. We evaluated Management's analysis of the currency composition of total operating income and total operating expenses of the impacted entities in accordance with International Accounting Standard 21, *The Effects of Changes in Foreign Exchange Rates*. We evaluated the design and tested the operating effectiveness of the Group's key controls over the implementation of the change in functional currency of impacted entities to US dollars.

We obtained an understanding, evaluated the design and tested the operating effectiveness of the Group's key controls over the retrospective application of the change in presentation currency of UBS AG. We performed procedures to evaluate the impact of the application of the change, we recalculated the impact of historical foreign exchange transactions of non-US dollar functional currency entities and evaluated the presentation of equity components under the presentation currency USD, including other comprehensive income, treasury shares, share capital, share premium and retained earnings. We assessed the completeness and accuracy of the data used in the calculation for retrospective presentation in US dollars.

We have also assessed the Group's disclosure regarding the changes to functional and presentation currencies (see note 1(a)(13) and note 1(b)(1)).

**Subsequent Event – French cross-border wealth management business**

**Area of focus** As the Group noted in note 21 to the financial statements, on 20 February 2019, the 32nd Chamber of the First Instance Court in France (the "Court") found UBS AG guilty of illicit solicitation for 2004-2011 and aggravated laundering of the proceeds of tax fraud for 2004-2012, and assessed a penalty of EUR 3.7 billion. In addition, the Court found UBS (France) SA ("UBS France") guilty of aiding and abetting illicit solicitation for 2004-2009 and for aiding and abetting the laundering of the proceeds of tax fraud for 2004-2008 and assessed a penalty of EUR 15 million. The Court also awarded civil damages of EUR 800 million jointly for UBS AG, UBS France and three individuals. UBS AG, UBS France and the three individuals are appealing the decision.

We focused on this area because of the complexity and judgements over the accounting for this litigation contingency. This litigation contingency is subject to many uncertainties and the ultimate outcome is difficult to predict. These uncertainties inherently affect the amount and timing of any potential outflow with respect to the ultimate resolution of this matter.



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**Our audit response**

We obtained an understanding, evaluated the design and tested the operational effectiveness of the Group's key controls over this litigation contingency.

We assessed the methodology on which the provision was based, recalculated the provision and tested the completeness and accuracy of the underlying information. We read the legal analyses supporting the judgmental aspects impacted by legal interpretations and obtained correspondence directly from external legal counsel to assess the information provided by the Group and followed up directly with external counsel as deemed necessary. We involved EY specialists to assist in the understanding of the judgement and the evaluation of the responses from external counsel.

We also assessed the Group's disclosure for this litigation contingency in note 21.

**Other information included 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 282, 287-288, and 301), 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.

**Responsibilities 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**

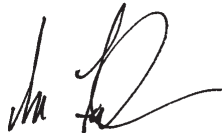
In accordance with article 728a paragraph 1 item 3 CO and the Swiss Auditing Standard 890, we confirm that an internal control system exists, which has been designed for the preparation of consolidated financial statements in accordance with the instructions of the Board of Directors.

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

Ernst & Young Ltd



Marie-Laure Delarue  
Licensed Audit Expert  
(Auditor in Charge)



Ira S. Fitlin  
Certified Public Accountant (U.S.)

# UBS AG consolidated financial statements

## Primary financial statements

Audited I

### Income statement

USD million	Note	For the year ended		
		31.12.18	31.12.17	31.12.16
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3	10,121	10,437	10,375
Interest expense from financial instruments measured at amortized cost	3	(6,494)	(5,468)	(5,002)
Interest income from financial instruments measured at fair value through profit or loss	3	6,974	4,056	3,579
Interest expense from financial instruments measured at fair value through profit or loss	3	(4,653)	(2,418)	(2,495)
Net interest income	3	5,949	6,607	6,457
Other net income from fair value changes on financial instruments	3	5,977	5,067	5,018
Credit loss (expense) / recovery	23	(117)	(131)	(38)
Fee and commission income	4	19,632	19,390	18,425
Fee and commission expense	4	(1,703)	(1,840)	(1,781)
Net fee and commission income	4	17,930	17,550	16,644
Other income	5	905	952	749
Total operating income		30,642	30,044	28,831
Personnel expenses	6	13,992	14,952	15,782
General and administrative expenses	7	10,075	9,001	7,776
Depreciation and impairment of property, equipment and software	15	1,052	945	992
Amortization and impairment of intangible assets	16	65	71	93
Total operating expenses		25,184	24,969	24,643
Operating profit / (loss) before tax		5,458	5,076	4,188
Tax expense / (benefit)	8	1,345	4,242	753
Net profit / (loss)		4,113	834	3,435
Net profit / (loss) attributable to preferred noteholders			73	80
Net profit / (loss) attributable to non-controlling interests		7	4	4
<b>Net profit / (loss) attributable to shareholders</b>		<b>4,107</b>	<b>758</b>	<b>3,351</b>

## Statement of comprehensive income

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Comprehensive income attributable to shareholders</b>			
Net profit / (loss)	4,107	758	3,351
<b>Other comprehensive income that may be reclassified to the income statement</b>			
<b>Foreign currency translation</b>			
Foreign currency translation movements related to net assets of foreign operations, before tax	(701)	1,553	(835)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax	181	(55)	356
Foreign currency translation differences on foreign operations reclassified to the income statement	4	32	77
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement	2	(6)	(5)
Income tax relating to foreign currency translations, including the effect of net investment hedges	(2)	(2)	2
Subtotal foreign currency translation, net of tax	(515)	1,522	(404)
<b>Financial assets measured at fair value through other comprehensive income</b>			
Net unrealized gains / (losses), before tax	(56)	96	261
Impairment charges reclassified to the income statement from equity	0	15	5
Realized gains reclassified to the income statement from equity	0	(209)	(376)
Realized losses reclassified to the income statement from equity	0	14	26
Income tax relating to net unrealized gains / (losses)	12	(6)	26
Subtotal financial assets measured at fair value through other comprehensive income, net of tax	(45)	(91)	(58)
<b>Cash flow hedges of interest rate risk</b>			
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	(42)	45	234
Net (gains) / losses reclassified to the income statement from equity	(294)	(843)	(1,094)
Income tax relating to cash flow hedges	67	163	176
Subtotal cash flow hedges, net of tax	(269)	(635)	(684)
<b>Total other comprehensive income that may be reclassified to the income statement, net of tax</b>	<b>(829)</b>	<b>797</b>	<b>(1,146)</b>
<b>Other comprehensive income that will not be reclassified to the income statement</b>			
<b>Defined benefit plans</b>			
Gains / (losses) on defined benefit plans, before tax	(70)	308	(880)
Income tax relating to defined benefit plans	245	6	51
Subtotal defined benefit plans, net of tax	175	314	(829)
<b>Own credit on financial liabilities designated at fair value</b>			
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	517	(315)	(134)
Income tax relating to own credit on financial liabilities designated at fair value	(8)	(2)	4
Subtotal own credit on financial liabilities designated at fair value, net of tax	509	(317)	(130)
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>684</b>	<b>(3)</b>	<b>(959)</b>
<b>Total other comprehensive income</b>	<b>(145)</b>	<b>794</b>	<b>(2,105)</b>
<b>Total comprehensive income attributable to shareholders</b>	<b>3,961</b>	<b>1,552</b>	<b>1,246</b>

Table continues on the next page.

## Statement of comprehensive income (continued)

Table continued from previous page.

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Comprehensive income attributable to preferred noteholders</b>			
Net profit / (loss)	0	73	80
<b>Other comprehensive income that will not be reclassified to the income statement</b>			
Foreign currency translation movements, before tax	0	247	(21)
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	0	247	(21)
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>0</b>	<b>247</b>	<b>(21)</b>
<b>Total comprehensive income attributable to preferred noteholders</b>	<b>0</b>	<b>320</b>	<b>59</b>
<b>Comprehensive income attributable to non-controlling interests</b>			
Net profit / (loss)	7	4	4
<b>Other comprehensive income that will not be reclassified to the income statement</b>			
Foreign currency translation movements, before tax	(1)	2	(1)
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	(1)	2	(1)
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>(1)</b>	<b>2</b>	<b>(1)</b>
<b>Total comprehensive income attributable to non-controlling interests</b>	<b>5</b>	<b>6</b>	<b>3</b>
<b>Total comprehensive income</b>			
Net profit / (loss)	4,113	834	3,435
<b>Other comprehensive income</b>	<b>(147)</b>	<b>1,044</b>	<b>(2,127)</b>
<i>of which: other comprehensive income that may be reclassified to the income statement</i>	<i>(829)</i>	<i>797</i>	<i>(1,146)</i>
<i>of which: other comprehensive income that will not be reclassified to the income statement</i>	<i>682</i>	<i>247</i>	<i>(981)</i>
<b>Total comprehensive income</b>	<b>3,967</b>	<b>1,878</b>	<b>1,308</b>

## Balance sheet

USD million	Note	31.12.18	31.12.17	1.1.17
<b>Assets</b>				
Cash and balances at central banks		108,370	90,045	105,883
Loans and advances to banks	10	16,642	14,047	12,896
Receivables from securities financing transactions	10, 25	95,349	91,951	79,936
Cash collateral receivables on derivative instruments	10, 25	23,603	24,040	26,198
Loans and advances to customers	10	321,482	328,952	300,678
Other financial assets measured at amortized cost	10, 17a	22,637	37,890	27,130
<b>Total financial assets measured at amortized cost</b>		<b>588,084</b>	586,925	552,721
Financial assets at fair value held for trading	12, 24	104,513	129,509	90,501
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>		<i>32,121</i>	<i>36,277</i>	<i>29,731</i>
Derivative financial instruments	11, 24, 25	126,212	121,286	155,642
Brokerage receivables	24	16,840		
Financial assets at fair value not held for trading	13, 24	82,387	60,070	63,888
<b>Total financial assets measured at fair value through profit or loss</b>		<b>329,953</b>	310,865	310,031
<b>Financial assets measured at fair value through other comprehensive income</b>	14, 24	<b>6,667</b>	8,889	15,402
Investments in associates	31b	1,099	1,045	947
Property, equipment and software	15	8,479	8,191	8,152
Goodwill and intangible assets	16	6,647	6,563	6,442
Deferred tax assets	8	10,066	9,993	13,147
Other non-financial assets	17b	7,062	7,548	12,395
<b>Total assets</b>		<b>958,055</b>	940,020	919,236
<b>Liabilities</b>				
Amounts due to banks	18a	10,962	7,728	10,459
Payables from securities financing transactions	25	10,296	17,485	9,266
Cash collateral payables on derivative instruments	25	28,906	31,029	34,852
Customer deposits	18a	421,986	423,058	418,129
Funding from UBS Group AG and its subsidiaries	18b	41,202	35,648	24,201
Debt issued measured at amortized cost	20	91,245	107,458	77,617
Other financial liabilities measured at amortized cost	22a	7,576	38,092	38,361
<b>Total financial liabilities measured at amortized cost</b>		<b>612,174</b>	660,498	612,884
Financial liabilities at fair value held for trading	12, 24	28,949	31,251	22,426
Derivative financial instruments	11, 24, 25	125,723	119,138	151,121
Brokerage payables designated at fair value	24	38,420		
Debt issued designated at fair value	19, 24	57,031	50,782	49,057
Other financial liabilities designated at fair value	22b, 24	33,594	16,643	14,122
<b>Total financial liabilities measured at fair value through profit or loss</b>		<b>283,717</b>	217,814	236,727
Provisions	21a	3,457	3,164	4,097
Other non-financial liabilities	22c	6,275	6,499	11,902
<b>Total liabilities</b>		<b>905,624</b>	887,974	865,610
<b>Equity</b>				
Share capital		338	338	338
Share premium		24,655	24,633	27,154
Retained earnings		23,317	22,189	21,480
Other comprehensive income recognized directly in equity, net of tax		3,946	4,828	3,985
<b>Equity attributable to shareholders</b>		<b>52,256</b>	51,987	52,957
Equity attributable to preferred noteholders				631
Equity attributable to non-controlling interests		176	59	39
<b>Total equity</b>		<b>52,432</b>	52,046	53,627
<b>Total liabilities and equity</b>		<b>958,055</b>	940,020	919,236

## Statement of changes in equity

<i>USD million</i>	Share capital	Share premium	Retained earnings
<b>Balance as of 1 January 2016</b>	<b>338</b>	<b>27,126</b>	<b>22,664</b>
Issuance of share capital			
Premium on shares issued and warrants exercised		4	
Tax (expense) / benefit		26	
Dividends			(3,589)
Preferred notes			
Translation effects recognized directly in retained earnings			13
New consolidations / (deconsolidations) and other increases / (decreases)		(2)	
Total comprehensive income for the year			2,392
<i>of which: net profit / (loss)</i>			<i>3,351</i>
<i>of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax</i>			
<i>of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans</i>			<i>(829)</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – own credit</i>			<i>(130)</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation</i>			
<b>Balance as of 31 December 2016</b>	<b>338</b>	<b>27,154</b>	<b>21,480</b>
Issuance of share capital			
Premium on shares issued and warrants exercised		6	
Tax (expense) / benefit		16	
Dividends		(2,219)	
Preferred notes			
Translation effects recognized directly in retained earnings			(46)
New consolidations / (deconsolidations) and other increases / (decreases)		(324)	
Total comprehensive income for the year			755
<i>of which: net profit / (loss)</i>			<i>758</i>
<i>of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax</i>			
<i>of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans</i>			<i>314</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – own credit</i>			<i>(317)</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation</i>			
<b>Balance as of 31 December 2017</b>	<b>338</b>	<b>24,633</b>	<b>22,189</b>

Other comprehensive income recognized directly in equity, net of tax <sup>1</sup>	<i>of which: foreign currency translation</i>	<i>of which: at fair value through other comprehensive income</i>	<i>of which: cash flow hedges</i>	Total equity attributable to shareholders	Preferred noteholders	Non-controlling interests	Total equity
<b>5,144</b>	<i>3,337</i>	<i>171</i>	<i>1,635</i>	<b>55,272</b>	<b>1,951</b>	<b>41</b>	<b>57,264</b>
				0			0
				4			4
				26			26
				(3,589)	(80)	(5)	(3,674)
				0	(1,299)		(1,299)
(13)		(17)	4	0			0
				(2)		0	(2)
(1,146)	(404)	(58)	(684)	1,246	59	3	1,308
				3,351	80	4	3,435
(1,146)	(404)	(58)	(684)	(1,146)			(1,146)
				(829)			(829)
				(130)			(130)
				0	(21)	(1)	(22)
<b>3,985</b>	<i>2,933</i>	<i>96</i>	<i>955</i>	<b>52,957</b>	<b>631</b>	<b>39</b>	<b>53,627</b>
				0			0
				6			6
				16			16
				(2,219)	(73)	(4)	(2,297)
				0	(878)		(878)
46		7	39	0			0
				(324)		18	(306)
797	1,522	(91)	(635)	1,552	320	6	1,878
				758	73	4	834
797	1,522	(91)	(635)	797			797
				314			314
				(317)			(317)
				0	247	2	250
<b>4,828</b>	<i>4,455</i>	<i>13</i>	<i>360</i>	<b>51,987</b>	<b>0</b>	<b>59</b>	<b>52,046</b>



### Statement of changes in equity (continued)

<i>USD million</i>	Share capital	Share premium	Retained earnings
<b>Balance as of 31 December 2017</b>	<b>338</b>	<b>24,633</b>	<b>22,189</b>
Effect of adoption of IFRS 9			(518)
Effect of adoption of IFRS 15			(25)
<b>Balance as of 1 January 2018 after the adoption of IFRS 9 and IFRS 15</b>	<b>338</b>	<b>24,633</b>	<b>21,646</b>
Issuance of share capital			
Premium on shares issued and warrants exercised		34	
Tax (expense) / benefit		(5)	
Dividends			(3,098)
Translation effects recognized directly in retained earnings			(21)
New consolidations / (deconsolidations) and other increases / (decreases)		(7)	
Total comprehensive income for the year			4,790
<i>of which: net profit / (loss)</i>			4,107
<i>of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax</i>			
<i>of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans</i>			175
<i>of which: OCI that will not be reclassified to the income statement, net of tax – own credit</i>			509
<i>of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation</i>			
<b>Balance as of 31 December 2018</b>	<b>338</b>	<b>24,655</b>	<b>23,317</b>

<sup>1</sup> Excludes defined benefit plans and own credit that are recorded directly in Retained earnings.

Other comprehensive income recognized directly in equity, net of tax <sup>1</sup>	<i>of which: foreign currency translation</i>	<i>of which: financial assets at fair value through other comprehensive income</i>	<i>of which: cash flow hedges</i>	Total equity attributable to shareholders	Preferred noteholders	Non-controlling interests	Total equity
4,828	4,455	13	360	51,987	0	59	52,046
(74)		(74)		(591)			(591)
				(25)			(25)
4,754	4,455	(61)	360	51,370	0	59	51,429
				0			0
				34			34
				(5)			(5)
				(3,098)		(10)	(3,108)
21		3	18				0
				(7)		122	115
(829)	(515)	(45)	(269)	3,961	0	5	3,967
				4,107		7	4,113
(829)	(515)	(45)	(269)	(829)			(829)
				175			175
				509			509
				0		(1)	(1)
3,946	3,940	(103)	109	52,256	0	176	52,432

### **UBS AG shares issued**

As of 31 December 2018, shares issued by UBS AG totaled 3,858,408,466 (31 December 2017: 3,858,408,466 shares) and were entirely held by UBS Group AG.

### **Conditional share capital**

Conditional capital up to a maximum number of 380,000,000 shares was available as of 31 December 2018 for conversion rights and warrants granted in connection with the issuance of bonds or similar financial instruments.

## Statement of cash flows<sup>1</sup>

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Cash flow from / (used in) operating activities</b>			
Net profit / (loss)	4,113	834	3,435
<b>Non-cash items included in net profit and other adjustments:</b>			
Depreciation and impairment of property, equipment and software	1,052	945	992
Amortization and impairment of intangible assets	65	71	93
Credit loss expense / (recovery)	117	131	38
Share of net profits of associates / joint ventures and impairment of associates	(528)	(69)	(109)
Deferred tax expense / (benefit)	374	3,398	(35)
Net loss / (gain) from investing activities	(49)	(198)	(1,223)
Net loss / (gain) from financing activities	(4,829)	2,763	9,627
Other net adjustments	(1,092)	(1,077)	384
<b>Net change in operating assets and liabilities:</b>			
Loans and advances to banks / amounts due to banks	3,504	(3,236)	(1,289)
Securities financing transactions	(11,230)	(111)	945
Cash collateral on derivative instruments	(1,449)	(2,454)	(4,182)
Loans and advances to customers	(4,152)	(15,661)	3,736
Customer deposits	7,931	(12,073)	33,402
Financial assets and liabilities at FV held for trading and derivative financial instruments	11,093	(23,560)	8,453
Brokerage receivables and payables	11,432		
Financial assets at fair value not held for trading, other financial assets and liabilities	10,902	(1,801)	(77,035)
Provisions, other non-financial assets and liabilities	1,377	(29)	4,236
Income taxes paid, net of refunds	(888)	(1,021)	(638)
<b>Net cash flow from / (used in) operating activities</b>	<b>27,744</b>	<b>(53,147)</b>	<b>(19,172)</b>
<b>Cash flow from / (used in) investing activities</b>			
Purchase of subsidiaries, associates and intangible assets	(287)	(106)	(27)
Disposal of subsidiaries, associates and intangible assets <sup>2</sup>	137	339	95
Purchase of property, equipment and software	(1,473)	(1,532)	(1,782)
Disposal of property, equipment and software	114	210	182
Purchase of financial assets measured at fair value through other comprehensive income	(1,999)	(8,626)	(7,022)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	1,361	15,250	54,433
Net (purchase) / redemption of debt securities measured at amortized cost	(3,770)		
Net (purchase) / redemption of financial assets held to maturity		(91)	(9,224)
<b>Net cash flow from / (used in) investing activities</b>	<b>(5,918)</b>	<b>5,444</b>	<b>36,655</b>

Table continues on the next page.

## Statement of cash flows (continued)

Table continued from previous page.

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Cash flow from / (used in) financing activities</b>			
Net short-term debt issued / (repaid)	(12,245)	24,500	5,474
Distributions paid on UBS AG shares	(3,098)	(2,219)	(3,589)
Issuance of long-term debt, including debt issued designated at fair value	54,726	40,270	19,786
Repayment of long-term debt, including debt issued designated at fair value	(44,344)	(45,187)	(33,902)
Funding from UBS Group AG and its subsidiaries	5,956	11,180	13,917
Dividends paid and repayments of preferred notes		(782)	(1,382)
Net changes in non-controlling interests	(31)	(5)	(5)
<b>Net cash flow from / (used in) financing activities</b>	<b>963</b>	<b>27,758</b>	<b>299</b>
<b>Total cash flow</b>			
Cash and cash equivalents at the beginning of the year	104,787	118,984	102,797
Net cash flow from / (used in) operating, investing and financing activities	22,789	(19,944)	17,783
Effects of exchange rate differences on cash and cash equivalents	(1,722)	5,749	(1,596)
<b>Cash and cash equivalents at the end of the year<sup>3</sup></b>	<b>125,853</b>	<b>104,787</b>	<b>118,984</b>
<i>of which: cash and balances at central banks</i>	<b>108,268</b>	89,968	105,832
<i>of which: loans and advances to banks</i>	<b>15,452</b>	12,726	11,719
<i>of which: money market paper<sup>4</sup></i>	<b>2,133</b>	2,093	1,433

### Additional information

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

Interest received in cash	7,720	7,635	7,907
Interest paid in cash	4,719	3,977	3,581
Dividends on equity investments, investment funds and associates received in cash <sup>5</sup>	2,322	1,828	1,618

<sup>1</sup> Upon adoption of IFRS 9 on 1 January 2018, cash flows from certain financial assets previously classified as available-for-sale assets have been reclassified from investing to operating activities as the assets are accounted for at fair value through profit or loss effective 1 January 2018. Refer to Note 1c for more information. <sup>2</sup> Includes dividends received from associates. <sup>3</sup> USD 5,245 million, USD 2,497 million and USD 2,615 million of cash and cash equivalents (mainly reflected in Loans and advances to banks) were restricted as of 31 December 2018, 31 December 2017 and 31 December 2016, respectively. Refer to Note 26 for more information. <sup>4</sup> Money market paper is included in the balance sheet under Financial assets at fair value held for trading (31 December 2018: USD 366 million; 31 December 2017: USD 135 million; 31 December 2016: USD 74 million). Financial assets measured at fair value through other comprehensive income (31 December 2018: USD 8 million; 31 December 2017: USD 17 million; 31 December 2016: USD 416 million). Financial assets at fair value not held for trading and Other financial assets measured at amortized cost (31 December 2018: USD 1,760 million; 31 December 2017: USD 1,941 million; 31 December 2016: USD 942 million). <sup>5</sup> Includes dividends received from associates (2018: USD 42 million; 2017: USD 53 million; 2016: USD 50 million) reported within Cash flow from / (used in) investing activities.

### Changes in liabilities arising from financing activities

USD million	Debt issued measured at amortized cost	of which: short-term	of which: long-term	Debt issued designated at fair value	Over-the-counter (OTC) debt instruments <sup>2</sup>	Funding from UBS Group AG and its subsidiaries <sup>3</sup>	Total
<b>Balance as of 1 January 2017</b>	77,617	25,720	51,897	49,057	4,581	24,201	155,456
Cash flows	25,631	24,500	1,131	(5,625)	(422)	11,180	30,765
Non-cash changes	4,210	2,050	2,159	7,350	269	267	12,095
<i>of which: foreign currency translation</i>	4,523	2,050	2,473	3,085	173	399	8,180
<i>of which: fair value changes</i>				4,265	95		4,360
<i>of which: other</i>	(313)	0	(314) <sup>1</sup>	0		(133) <sup>1</sup>	(446)
<b>Balance as of 31 December 2017</b>	107,458	52,270	55,187	50,782	4,428	35,648	198,316
Cash flows	(13,358)	(12,245)	(1,113)	13,332	(1,838)	5,956	4,092
Non-cash changes	(2,855)	(1,000)	(1,854)	(7,083)	(140)	(402)	(10,481)
<i>of which: foreign currency translation</i>	(2,624)	(1,000)	(1,623)	309	(59)	(289)	(2,663)
<i>of which: fair value changes</i>	0		0	(7,392)	(82)		(7,475)
<i>of which: other</i>	(231)		(231) <sup>1</sup>			(113) <sup>1</sup>	(344)
<b>Balance as of 31 December 2018</b>	<b>91,245</b>	<b>39,025</b>	<b>52,220</b>	<b>57,031</b>	<b>2,450</b>	<b>41,202</b>	<b>191,928</b>

<sup>1</sup> Includes the effect of fair value hedges on long-term debt issued. Refer to Note 1a item j and Note 20 for more information. <sup>2</sup> Included in balance sheet line Other financial liabilities designated at fair value. <sup>3</sup> 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

The following table provides an overview of information included in this Note.

536	<b>a) Significant accounting policies</b>	557	4) Fee and commission income and expenses
536	Basis of accounting	559	5) Cash and cash equivalents
536	1) Consolidation	559	6) Share-based and other deferred compensation plans
536	a. Consolidation principles	560	7) Pension and other post-employment benefit plans
537	b. Structured entities	560	8) Income taxes
538	2) Segment reporting	561	9) Investments, in associates
538	3) Financial instruments	562	10) Property, equipment and software
538	a. Recognition	562	11) Goodwill and intangible assets
539	b. Classification, measurement and presentation	563	12) Provisions and contingent liabilities
545	c. Interest income and expense	564	13) Foreign currency translation
545	d. Derecognition	565	14) Non-controlling interests and preferred noteholders
546	e. Securities borrowing / lending and repurchase / reverse repurchase transactions	565	15) Leasing
546	f. Fair value of financial instruments	566	<b>b) Changes in accounting policies, comparability and other adjustments, excluding the effects of adoption of IFRS 9, Financial Instruments</b>
547	g. Allowances and provisions for expected credit losses	571	<b>c) Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9, Financial Instruments</b>
553	h. Restructured and modified financial assets	583	<b>d) International Financial Reporting Standards and Interpretations to be adopted in 2019 and later and other changes</b>
554	i. Netting		
554	j. Hedge accounting		
555	k. Embedded derivatives		
556	l. Financial liabilities		
556	m. Own credit		
556	n. Loan commitments		
556	o. Financial guarantee contracts		
557	p. Other net income from fair value changes on financial instruments		

### Accounting policies applicable prior to 1 January 2018

The accounting policies described in Note 1a have been applied consistently in all years presented unless otherwise stated in Note 1b. In addition, effective from 1 January 2018, the Group applies IFRS 9, *Financial Instruments*, which substantially changes the accounting for financial assets, and IFRS 15, *Revenue from Contracts with Customers*, which affects UBS AG's revenue recognition, measurement and presentation.

Within Note 1a, policies for prior periods that differ from those applied to the financial year ended 31 December 2018 are identified with a **Comparative policy** signpost. A triangle symbol – ▲ – indicates the end of these comparative policy sections.

## Note 1 Summary of significant accounting policies (continued)

### 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"). On 14 March 2019, 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 US dollars (USD), which is also the functional currency of UBS AG's Head Office, UBS AG's London Branch and UBS AG's US-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. In addition, effective from 1 January 2018, UBS AG applies IFRS 9, *Financial Instruments*, which substantially changes the accounting for financial assets, and IFRS 15, *Revenue from Contracts with Customers*, which affects the Group's revenue recognition, measurement and presentation. Within this note, policies for prior periods that differ from those applied to the financial year ended 31 December 2018 are identified as "Comparative policy."

#### 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, updating them as necessary. Changes in those estimates and assumptions may have a significant effect on the Financial Statements. Further, actual results may differ significantly from UBS AG's estimates, which could result in significant losses to UBS AG, beyond what was anticipated or provided for.

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

- fair value of financial instruments (refer to item 3f in this Note and to Note 24)
- allowances and provisions for expected credit losses (refer to item 3g in this Note and to Note 23)
- assessment of the business model and certain contractual features when classifying financial instruments (refer to item 3b in this Note)
- pension and other post-employment benefit plans (refer to item 7 in this Note and to Note 29)
- income taxes (refer to item 8 in this Note and to Note 8)
- goodwill (refer to item 11 in this Note and to Note 16)
- provisions and contingent liabilities (refer to item 12 in this Note and to Note 21)
- consolidation of structured entities (refer to item 1 in this Note and to Note 31)
- determination of the functional currency and assessing the earliest date from which it is practical to perform a restatement following a change in presentational currency (refer to item 13 in this Note and to Note 1b)

### 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 exposes it to 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 31 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. When carrying out the consolidation assessment, judgment is exercised considering all the relevant facts and circumstances, including the nature and activities of the investee, as well as the substance of voting and similar rights.

→ Refer to Note 31 for more information



## Note 1 Summary of significant accounting policies (continued)

### 2) Segment reporting

Prior to the first quarter 2018, 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 qualified as reportable segments for the purpose of segment reporting and, together with Corporate Center, reflected the management structure of UBS. AG Corporate Center – Non-core and Legacy Portfolio was managed and reported as a separate reportable unit 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) was presented separately in internal reporting to management.

Effective from the first quarter of 2018, UBS AG combined its Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division. Global Wealth Management is managed on an integrated basis, with a single set of performance targets and an integrated operating plan and management structure. Consistent with this, the operating results of Global Wealth Management are presented and assessed on an integrated basis in internal management reports. Consequently, from 2018, Global Wealth Management qualifies as an operating and reportable segment for the purposes of segment reporting and is presented in these Financial Statements alongside Personal & Corporate Banking, Asset Management, the Investment Bank and Corporate Center (with its units Services, Group ALM and Non-core and Legacy Portfolio). Following the change in the composition of UBS AG's operating segments and corresponding reportable segments, previously reported segment information has been restated. This change has no material effect on the former segments, including recognized goodwill.

→ Refer to item 11 in this Note and Note 16 for more information

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. Interest income earned from managing UBS AG's consolidated equity is allocated to the reportable segments based on average attributed equity and currency composition. Assets and liabilities of the reportable segments are funded through and invested with 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 operating 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 12 months after the reporting date, excluding financial instruments, deferred tax assets and post-employment benefits.

→ Refer to Notes 1b 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 instrument 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.

## Note 1 Summary of significant accounting policies (continued)

### b. Classification, measurement and presentation

All financial instruments are initially measured at fair value. In the case of financial instruments subsequently measured at amortized cost or fair value through other comprehensive income (FVOCI), the initial fair value is adjusted for directly attributable transaction costs.

#### *Policy applicable from 1 January 2018<sup>1</sup>*

On initial recognition, financial assets are classified as measured at amortized cost, FVOCI, or fair value through profit or loss (FVTPL).

A debt instrument is measured at amortized cost if it meets the following conditions:

- it is held within a business model that has an objective to hold financial assets to collect contractual cash flows; and
- the contractual terms of the financial asset result in cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

A debt instrument is measured at FVOCI if it meets both of the following conditions:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- the contractual terms of the financial asset result in cash flows that are SPPI on the principal amount outstanding.

All other financial assets are measured at FVTPL and consist of held for trading assets, assets mandatorily measured on a fair value basis and derivatives, except to the extent that they are designated in a hedging relationship, in which case the IAS 39 hedge accounting requirements continue to apply.

#### *Business model assessment*

UBS AG determines the nature of the business model, for example if the objective is to hold the financial asset and collect the contractual cash flows, by considering the way in which the financial assets are managed to achieve a particular business objective as determined by management.

Financial assets that are held for trading or managed on a fair value basis are measured at FVTPL insofar as the associated business model is neither to hold the financial assets to collect contractual cash flows nor to hold to collect contractual cash flows and sell.

UBS AG originates loans to hold to maturity and to sell or sub-participate to other parties, resulting in a transfer of substantially all the risks and rewards, and derecognition of the loan or portions of it. UBS AG considers the activities of lending to hold and lending to sell or sub-participate as two separate business models, with financial assets within the former considered to be within a business model that has an objective to hold the assets to collect contractual cash flows, and those

within the latter included in a trading portfolio. In certain cases, it may not be possible on origination to identify whether loans or portions of loans will be sold or sub-participated and certain loans may be managed on a fair value basis through, for instance, using credit derivatives. These financial assets are mandatorily measured at FVTPL.

#### **Critical accounting estimates and judgments**

UBS AG exercises judgment in determining the appropriate level at which to assess its business models. In general, the assessment is performed at the product level, e.g., retail and commercial mortgages. In other cases, the assessment is carried out at a more granular level, e.g., loan portfolios by region, and, if required, further disaggregation is performed by business strategy. A detailed assessment is carried out considering how the financial assets are evaluated and reported to UBS AG's key management, the risks that affect the performance of the business and the way that management is compensated. In addition, UBS AG exercises judgment in determining the effect of sales of financial instruments on the business model assessment. In particular, an assessment is made on whether and the extent to which sales are consistent with the objective of the business model.

#### *Contractual cash flow characteristics*

In assessing whether the contractual cash flows are SPPI, UBS AG considers whether the contractual terms of the financial asset contain a term that could change the timing or amount of contractual cash flows arising over the life of the instrument, which could affect whether the instrument is considered to meet the SPPI criterion.

For example, UBS AG holds portfolios of private mortgage contracts and corporate loans in Personal & Corporate Banking that commonly contain clauses that provide for two-way compensation if prepayment occurs. The amount of compensation paid by or to UBS AG reflects the effect of changes in market interest rates. UBS AG has determined that the inclusion of the change in market interest rates in the compensation amount is reasonable for the early termination of the contract, and therefore results in contractual cash flows that are SPPI.

#### **Critical accounting estimates and judgments**

UBS AG applies judgment when considering whether certain contractual features, such as interest rate reset frequency or non-recourse features, significantly affect future cash flows and whether compensation paid or received on early termination of lending arrangements results in cash flows that are not SPPI. A thorough analysis of all relevant facts and circumstances is assessed before concluding whether contractual cash flows of the financial instrument are consistent with payments representing principal and interest.

After initial recognition, UBS AG classifies, measures and presents its financial assets and liabilities in accordance with IFRS 9, as described in the table on the following pages.

<sup>1</sup> The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

## Note 1 Summary of significant accounting policies (continued)

### Classification, measurement and presentation of financial instruments from 1 January 2018

Financial assets classification		Significant items included	Measurement and presentation
Measured at amortized cost		<p>A debt financial asset is measured at amortized cost if:</p> <ul style="list-style-type: none"> <li>– it is held in a business model that has an objective to hold assets to collect contractual cash flows; and</li> <li>– the contractual terms give rise to cash flows that are SPPI.</li> </ul> <p>This classification includes:</p> <ul style="list-style-type: none"> <li>– cash and balances at central banks</li> <li>– loans and advances to banks</li> <li>– cash collateral receivables on securities borrowed</li> <li>– receivables on reverse repurchase agreements</li> <li>– cash collateral receivables on derivative instruments</li> <li>– residential and commercial mortgages</li> <li>– corporate loans</li> <li>– secured loans, including Lombard loans, and unsecured loans</li> <li>– loans to financial advisors</li> <li>– debt securities held as high-quality liquid assets (HQLA)</li> <li>– fee and lease receivables.</li> </ul>	<p>Measured at amortized cost using the effective interest rate (EIR) method less allowances for expected credit losses (ECL) (refer to items 3c and 3g in this Note for more information).</p> <p>The following items are recognized in the income statement:</p> <ul style="list-style-type: none"> <li>– interest income, which is accounted for in accordance with item 3c in this Note</li> <li>– ECL and reversals</li> <li>– foreign exchange translation gains and losses.</li> </ul> <p>Upfront fees and direct costs relating to loan origination, refinancing or restructuring as well as to loan commitments – when it is probable that UBS AG will enter into a specific lending relationship – are deferred and amortized over the life of the loan using the EIR method.</p> <p>When the financial asset at amortized cost is derecognized, the gain or loss is recognized in the income statement.</p> <p>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 in substance net settled on a daily basis (refer to items 3d and 3i in this Note) are presented within <i>Cash collateral receivables on derivative instruments</i>.</p>
Measured at FVOCI	Debt instruments measured at FVOCI	<p>A debt financial asset is measured at FVOCI if:</p> <ul style="list-style-type: none"> <li>– it is held in a business model whose objective is achieved by both holding assets to collect contractual cash flows and selling the assets; and</li> <li>– the contractual terms give rise to cash flows that are SPPI.</li> </ul> <p>This classification primarily includes debt securities and certain asset-backed securities held as HQLA for which the contractual cash flows meet the SPPI criterion.</p>	<p>Measured at fair value with unrealized gains and losses reported in <i>Other comprehensive income</i>, net of applicable income taxes, until such investments are derecognized (when sold, collected or otherwise disposed). Upon derecognition, any accumulated balances in <i>Other comprehensive income</i> are reclassified to the income statement and reported within <i>Other income</i>.</p> <p>The following items are recognized in the income statement:</p> <ul style="list-style-type: none"> <li>– interest income, which is accounted for in accordance with item 3c in this Note</li> <li>– ECL and reversals</li> <li>– foreign exchange translation gains and losses.</li> </ul> <p>The amounts recognized in the income statement are determined on the same basis as for financial assets measured at amortized cost.</p>

## Note 1 Summary of significant accounting policies (continued)

### Classification, measurement and presentation of financial instruments from 1 January 2018 (continued)

Financial assets classification		Significant items included	Measurement and presentation
Measured at FVTPL	Held for trading	<p>Financial assets held for trading include:</p> <ul style="list-style-type: none"> <li>– all derivatives with a positive replacement value, except those that are designated and effective hedging instruments; and</li> <li>– other financial assets acquired principally for the purpose of selling or repurchasing in the near term, or that are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking. Included in this category are debt instruments (including those in the form of securities, money market paper and traded corporate and bank loans) and equity instruments.</li> </ul>	<p>Measured at fair value with changes recognized in profit or loss.</p> <p>Changes in fair value, initial transaction costs and gains and losses realized on disposal or redemption are recognized in <i>Other net income from fair value changes on financial instruments</i>, except interest and dividend income on instruments other than derivatives (refer to item 3c in this Note for more information), interest on derivatives designated as hedging instruments in certain types of hedge accounting relationships and forward points on certain short- and long-duration foreign exchange contracts, which are reported in <i>Net interest income</i>.</p>
	Mandatorily measured at FVTPL – Other	<p>A financial asset is mandatorily measured at FVTPL if:</p> <ul style="list-style-type: none"> <li>– it is not held in a business model whose objective is to hold assets to collect contractual cash flows or to hold them to collect contractual cash flows and sell; and / or</li> <li>– the contractual terms give rise to cash flows that are not SPPI; and / or</li> <li>– it is not held for trading.</li> </ul> <p>The following financial assets are mandatorily measured at FVTPL:</p> <ul style="list-style-type: none"> <li>– certain structured loans, certain commercial loans, receivables under reverse repurchase and cash collateral on securities borrowing agreements that are managed on a fair value basis;</li> <li>– loans managed on a fair value basis and hedged with credit derivatives;</li> <li>– certain debt securities held as HQLA and managed on a fair value basis;</li> <li>– certain investment fund holdings and assets held to hedge delivery obligations related to cash-settled employee compensation plans. These assets represent holdings in investment funds, whereby the contractual cash flows do not meet the SPPI criterion because the entry and exit price is based on the fair value of the fund's assets;</li> <li>– brokerage receivables, for which contractual cash flows do not meet the SPPI criterion because the aggregate balance is accounted for as a single unit of account, with interest being calculated on the individual components;</li> <li>– auction rate securities, for which contractual cash flows do not meet the SPPI criterion because interest may be reset at rates that contain leverage;</li> <li>– equity instruments; and</li> <li>– assets held under unit-linked investment contracts.</li> </ul>	<p>Derivative assets (including derivatives that are designated and effective hedging instruments) are generally presented as <i>Derivative financial instruments</i>, except those exchange-traded and OTC-cleared derivatives that are considered to be settled on a daily basis or in substance net settled on a daily basis, which are presented within <i>Cash collateral receivables on derivative instruments</i>.</p> <p>The presentation of fair value changes on derivatives that are designated and effective as hedging instruments depends on the type of hedge relationship (refer to item 3j in this Note for more information).</p> <p>Financial assets held for trading (other than derivatives) are presented as <i>Financial assets at fair value held for trading</i>.</p> <p>Other financial assets mandatorily measured at fair value through profit or loss are presented as <i>Financial assets at fair value not held for trading</i>, except for brokerage receivables, which are presented as a separate line item on UBS AG's balance sheet.</p>

## Note 1 Summary of significant accounting policies (continued)

### Classification, measurement and presentation of financial instruments from 1 January 2018 (continued)

Financial liabilities classification		Significant items included	Measurement and presentation
Measured at amortized cost		<p>This classification includes:</p> <ul style="list-style-type: none"> <li>– demand and time deposits;</li> <li>– retail savings / deposits;</li> <li>– amounts payable under repurchase agreements;</li> <li>– cash collateral on securities lent;</li> <li>– non-structured fixed-rate bonds;</li> <li>– subordinated debt;</li> <li>– certificates of deposit and covered bonds;</li> <li>– obligations against funding from UBS Group AG and its subsidiaries ; and</li> <li>– cash collateral payables on derivative instruments.</li> </ul>	<p>Measured at amortized cost using the EIR method.</p> <p>Upfront fees and direct costs relating to the issuance or origination of the liability are deferred and amortized over the life of the liability using the EIR method.</p> <p>When the financial liability at amortized cost is derecognized, the gain or loss is recognized in the income statement.</p> <p>Amortized cost liabilities are presented on the balance sheet primarily as <i>Amounts due to banks, Customer deposits, Payables from securities financing transactions, Debt issued measured at amortized cost</i> and <i>Funding from UBS Group AG and its subsidiaries</i>.</p> <p>Amounts arising from ETD and certain OTC derivatives cleared through central clearing counterparties that are either considered to be daily settled or in substance net settled on a daily basis (refer to items 3d and 3i in this Note for more information) are presented within <i>Cash collateral payables on derivative instruments</i>.</p>
Measured at fair value through profit or loss	Held for trading	<p>Financial liabilities held for trading include:</p> <ul style="list-style-type: none"> <li>– all derivatives with a negative replacement value (including certain loan commitments), except those that are designated and effective hedging instruments; and</li> <li>– 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).</li> </ul>	<p>Measurement of financial liabilities classified at FVTPL follows the same principles as for financial assets classified at FVTPL, except that the amount of change in the fair value of the financial liability that is attributable to changes in UBS AG's own credit risk is presented in OCI.</p> <p>Financial liabilities measured at FVTPL are presented as <i>Financial liabilities at fair value held for trading</i> and <i>Other financial liabilities designated at fair value</i>, respectively, except for brokerage payables and debt issued, which are presented separately on UBS AG's balance sheet.</p>
	Designated at FVTPL	<p>UBS AG designates at FVTPL the following financial liabilities:</p> <ul style="list-style-type: none"> <li>– issued hybrid debt instruments that primarily include equity-linked, credit-linked and rates-linked bonds or notes</li> <li>– issued debt instruments managed on a fair value basis</li> <li>– certain payables under repurchase agreements and cash collateral on securities lending agreements that are managed in conjunction with associated reverse repurchase agreements and cash collateral on securities borrowed (from 1 January 2018)</li> <li>– amounts due under unit-linked investment contracts whose cash flows are linked to financial assets measured at FVTPL and eliminate an accounting mismatch (from 1 January 2018)</li> <li>– brokerage payables, which arise in conjunction with brokerage receivables and are measured at FVTPL to achieve measurement consistency (from 1 January 2018).</li> </ul>	<p>Derivative liabilities (including derivatives that are designated and effective hedging instruments) are generally presented as <i>Derivative financial instruments</i>, except those exchange-traded and OTC-cleared derivatives that are considered to be settled on a daily basis or in substance net settled on a daily basis, which are presented within <i>Cash collateral payables on derivative instruments</i>.</p> <p>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.</p> <p>Derivatives that are designated and effective as 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 3j in this Note for more information).</p>

## Note 1 Summary of significant accounting policies (continued)

### Comparative policy | Policy applicable prior to 1 January 2018

Prior to 1 January 2018, on initial recognition, UBS AG classified, measured and presented its financial assets and liabilities in accordance with IAS 39, *Financial Instruments: Recognition and Measurement*. Classification, measurement and presentation requirements in respect of financial liabilities have been

substantially retained by IFRS 9 and are detailed in the table "Classification, measurement and presentation of financial instruments from 1 January 2018." The following table sets out details of classification, measurement and presentation of financial assets prior to 1 January 2018.

### Classification, measurement and presentation of financial assets prior to 1 January 2018

Financial assets classification	Significant items included	Measurement and presentation <sup>1</sup>
<b>Held for trading</b>	<p>Financial assets held for trading include:</p> <ul style="list-style-type: none"> <li>– all derivatives with a positive replacement value, except those that are designated and effective hedging instruments; and</li> <li>– 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.</li> </ul>	<p>Measured at fair value with changes recognized in profit or loss.</p> <p>Changes in fair value, initial transaction costs and gains and losses realized on disposal or redemption are recognized in <i>Other net income from fair value changes on financial instruments</i>, 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 <i>Net interest income</i>.</p> <p>Derivative assets are generally presented as <i>Derivative financial instruments</i>.</p>
<b>Designated at fair value through profit or loss</b>	<p>A financial asset may be designated at fair value through profit or loss only upon initial recognition and this designation is irrevocable.</p> <p>The fair value option can be applied only if one of the following criteria is met:</p> <ul style="list-style-type: none"> <li>– the financial instrument is a hybrid instrument that includes a substantive embedded derivative;</li> <li>– 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</li> <li>– the application of the fair value option eliminates or significantly reduces an accounting mismatch that would otherwise arise.</li> </ul> <p>UBS AG designated at fair value through profit or loss the following financial assets:</p> <ul style="list-style-type: none"> <li>– certain structured loans, reverse repurchase and securities borrowing agreements that are managed on a fair value basis;</li> <li>– loans that are hedged predominantly with credit derivatives. These instruments are designated at fair value to eliminate an accounting mismatch;</li> <li>– certain debt securities held as high-quality liquid assets (HQLA) and managed by Corporate Center – Group ALM on a fair value basis; and</li> <li>– 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 as a result of the liability being measured on a fair value basis.</li> </ul>	<p>Bifurcated embedded derivatives are measured at fair value, but presented on the same balance sheet line as the host contract measured at amortized cost.</p> <p>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 3j in this Note for more information).</p> <p>Financial assets held for trading (other than derivatives) are presented as <i>Financial assets at fair value held for trading</i>.</p> <p>Financial assets designated at fair value through profit or loss are presented as <i>Financial assets at fair value not held for trading</i>.</p>

<sup>1</sup> Presentation categories in this table reflect retrospective amendments to UBS AG's balance sheet presentation carried out upon transition to IFRS 9 to facilitate comparability. For a detailed description of line items presented in UBS AG's financial statements on or before the year ended 31 December 2017, refer to item 4 within Note 1c.

## Note 1 Summary of significant accounting policies (continued)

### Classification, measurement and presentation of financial assets prior to 1 January 2018 (continued)

Financial assets classification	Significant items included	Measurement and presentation
<b>Loans and receivables (amortized cost)</b>	<p>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:</p> <ul style="list-style-type: none"> <li>– cash and balances with central banks</li> <li>– cash collateral receivables on derivative instruments</li> <li>– residential and commercial mortgages</li> <li>– secured loans, including reverse repurchase agreements, receivables under stock borrowing and Lombard loans, and unsecured loans</li> <li>– certain securities held within Corporate Center – Non-core and Legacy Portfolio</li> <li>– trade and lease receivables.</li> </ul>	<p>Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note).</p> <p>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.</p> <p>Loans and receivables are presented on the balance sheet primarily as <i>Cash and balances with central banks, Loans and advances to banks, Loans and advances to customers, Receivables from securities financing transactions</i> and <i>Cash collateral receivables on derivative instruments</i>.</p> <p>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 3i in this Note) are presented within <i>Cash collateral receivables on derivative instruments</i>.</p>
<b>Available for sale</b>	<p>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, investment fund holdings and strategic and commercial equity investments.</p>	<p>Measured at fair value with unrealized gains and losses reported in <i>Other comprehensive income</i>, 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 3g in this Note). Upon disposal, any accumulated balances in <i>Other comprehensive income</i> are reclassified to the income statement and reported within <i>Other income</i>.</p> <p>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.</p>
<b>Held to maturity</b>	<p>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.</p> <p>This classification mainly includes debt securities held as HQLA and managed by Corporate Center – Group ALM.</p>	<p>Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note).</p>



## Note 1 Summary of significant accounting policies (continued)

### c. Interest income and expense

Interest income and expense are recognized in the income statement applying the effective interest rate (EIR) method. When calculating the EIR for financial instruments (other than credit-impaired financial instruments), UBS AG estimates future cash flows considering all contractual terms of the instrument, but not expected credit losses.

In determining interest income and expense, the EIR is applied to the gross carrying amount of the financial asset (unless the asset is credit-impaired) or the amortized cost of a financial liability (prior to 1 January 2018: amortized cost of a financial asset or financial liability). However, when a financial asset becomes credit-impaired after initial recognition, interest income is determined by applying the EIR to the amortized cost of the instrument, which represents the gross carrying amount adjusted for any credit loss allowance. Furthermore, for financial assets that were credit-impaired on initial recognition, interest is determined by applying a credit-adjusted EIR to the amortized cost of the instrument.

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 FVOCI (prior to 1 January 2018: financial asset 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*.

→ Please refer to item 4 in this Note for more information

### Presentation of interest in the income statement

Effective from 1 January 2018, interest income or expense on financial instruments measured at amortized cost and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) are presented separately within *Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income* and *Interest expense from financial instruments measured at amortized cost*.

UBS AG also presents interest income and expense on financial instruments (excluding derivatives) measured at FVTPL including forward points on certain short- and long-duration foreign exchange contracts and dividends separately in *Interest income (or expense) from financial instruments measured at fair value through profit or loss*. Furthermore, interest income and expense on derivatives designated as hedging instruments in effective hedge relationships are presented consistently with the interest income and expense of the respective hedged item.

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*.

→ Refer to item 3j 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.



## Note 1 Summary of significant accounting policies (continued)

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 25 for more information

### Financial liabilities

UBS AG derecognizes a financial liability from its balance sheet when it is extinguished; i.e., when the obligation specified in the contract is discharged, canceled or expires. When an existing financial liability is exchanged for a new one from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, 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 the 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 line *Receivables from securities financing transactions* (prior to 1 January 2018: *Reverse repurchase agreements* and *Cash collateral on securities borrowed*), 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 *Payables from securities financing transactions* (prior to 1 January 2018: *Repurchase agreements* and *Cash collateral on securities lent*). 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 are generally presented net, subject to meeting the netting requirements described in item 3i of this Note.

→ Refer to Notes 26 and 25 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.

## Note 1 Summary of significant accounting policies (continued)

### 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, UBS AG prioritizes 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 governance framework over fair value measurement is described in Note 24b.

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 24d. 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 24g.

→ Refer to Note 24 for more information

### g. Allowances and provisions for expected credit losses

#### *Policy applicable from 1 January 2018<sup>1</sup>*

Expected credit losses (ECL) are recognized for financial assets measured at amortized cost, financial assets measured at FVOCI, fee and lease receivables, financial guarantees and loan commitments. ECL are also recognized on the undrawn portion of revolving revocable credit lines, which include UBS AG's credit card limits and master credit facilities, which are customary in the Swiss market for corporate and commercial clients. UBS AG refers to both as "other credit lines," with clients allowed to draw down on-demand balances (with the Swiss master credit facilities also allowing for term products) and which can be terminated by UBS AG at any time. Though these other credit lines are revocable, UBS AG is exposed to credit risk because the client has the ability to draw down funds before UBS AG can take credit risk mitigation actions.

#### *Recognition of expected credit losses*

ECL represent the difference between contractual cash flows and those UBS AG expects to receive, discounted at the EIR. For loan commitments and other credit facilities in scope of ECL, expected cash shortfalls are determined by considering expected future drawdowns.

ECL are recognized on the following basis:

- Maximum 12-month ECL are recognized from initial recognition, reflecting the portion of lifetime cash shortfalls that would result if a default occurs in the 12 months after the reporting date, weighted by the risk of a default occurring. Instruments in this category are referred to as instruments in stage 1. For instruments with a remaining maturity of less than 12 months, ECL are determined for this shorter period.
- Lifetime ECL are recognized if a significant increase in credit risk (SICR) is detected subsequent to the instrument's initial recognition, reflecting lifetime cash shortfalls that would result from all possible default events over the expected life of a financial instrument, weighted by the risk of a default occurring. Instruments in this category are referred to as instruments in stage 2. Where an SICR is no longer observed, the instrument will move back to stage 1.
- Lifetime ECL 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 is based on the occurrence of one or more loss events, with lifetime ECL generally derived by estimating expected cash flows based on a chosen recovery strategy. 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.
- Changes in lifetime ECL since initial recognition are also recognized for assets that are purchased or originated credit-impaired (POCI). POCI financial assets are initially recognized at fair value, with interest income subsequently being recognized based on a credit-adjusted EIR. POCI financial instruments include those that are newly recognized following a substantial restructuring and remain a separate category until derecognition.

UBS AG does not apply the low-credit-risk practical expedient that allows a lifetime ECL for lease or fee receivables to be recognized irrespective of whether a significant increase in credit risk has occurred. Instead, UBS AG has incorporated lease and fee receivables into the standard ECL calculation.

<sup>1</sup> The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

## Note 1 Summary of significant accounting policies (continued)

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 generally credited to *Credit loss (expense) / recovery*. Write-offs and partial write-offs represent derecognition / partial derecognition events.

ECL are recognized in profit or loss with a corresponding ECL allowance reported as a decrease in the carrying value of financial assets measured at amortized cost on the balance sheet. For financial assets measured at fair value through OCI, the carrying value is not reduced, but an accumulated amount is recognized in OCI. For off-balance sheet financial instruments and other credit lines, provisions for ECL are reported in *Provisions*. ECL are recognized within the income statement in *Credit loss (expense) / recovery*.

### *Default and credit impairment*

UBS AG applies a single definition of default for classifying assets and determining the probability of default of its obligors for risk modeling purposes. The definition of default is based on quantitative and qualitative criteria. A counterparty is classified as defaulted at the latest when material payments of interest, principal or fees are overdue for more than 90 days, or more than 180 days for certain exposures in relation to loans to private and commercial clients in Personal & Corporate Banking, and to private clients of Global Wealth Management Region Switzerland. UBS AG does not consider the general 90-day presumption for default recognition appropriate for these latter portfolios based on an analysis of the cure rates, which demonstrated that strict application of the 90-day criterion would not accurately reflect the inherent credit risk. Counterparties are also classified as defaulted when bankruptcy, insolvency proceedings or enforced liquidation have commenced; obligations have been restructured on preferential terms (forbearance); or there is other evidence that payment obligations will not be fully met without recourse to collateral. The latter may be the case even if, to date, all contractual payments have been made when due. If a counterparty is defaulted, generally all claims against the counterparty are treated as defaulted.

An instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is identified as POCI. An instrument is POCI if it has been purchased with a material discount to its carrying amount following a risk event of the issuer or originated with a defaulted counterparty. Once a financial asset is classified as defaulted / credit-impaired (except when it is POCI), it is reported as a stage 3 instrument and remains as such unless all past due amounts have been rectified, additional payments have been made on time, the position is not classified as credit-restructured, and there is general evidence of credit recovery. A three-month probation period is applied before a transfer back to stages 1 or 2 can be triggered.

However, most instruments remain in stage 3 for a longer period.

### *Measurement of expected credit losses*

IFRS 9 ECL reflect an unbiased, probability-weighted estimate based on either loss expectations resulting from default events over a maximum 12-month period from the reporting date or over the remaining life of a financial instrument. The method used to calculate individual probability-weighted unbiased ECL is based on a combination of the following principal factors: probability of default (PD), loss given default (LGD) and exposure at default (EAD). Parameters are generally determined on an individual financial asset level. Based on the materiality of the portfolio, for credit card exposures and personal account overdrafts in Switzerland, and certain loans to financial advisors of Global Wealth Management Region Americas, a portfolio approach is applied that derives an average PD and LGD for the entire portfolio. PDs and LGDs used in the ECL calculation are point in time (PIT)-based for key portfolios and consider both current conditions and expected cyclical changes. For each instrument or group of instruments, parameter time series are generated consisting of the instruments' PD, LGD and EAD profiles considering the respective period of exposure to credit risk. For material portfolios, PD and LGD are determined for four different scenarios, whereas EAD projections are treated as scenario independent.

For the purpose of determining the ECL-relevant parameters, UBS AG leverages its Pillar 1 internal ratings-based (IRB) models that are also used in determining expected loss (EL) and risk-weighted assets under the Basel III framework and Pillar 2 stress loss models. Adjustments have been made to these models and new IFRS 9-related models have been developed that consider the complexity, structure and risk profile of relevant portfolios and take account of the fact that PDs and LGDs used in the ECL calculation are PIT-based, as opposed to the corresponding Basel III through-the-cycle (TTC) parameters. All models that are relevant for measuring expected credit losses have been subject to the existing model validation and oversight processes with the Group Model Governance Board as the highest approval authority. The assignment of internal counterparty rating grades and the determination of default probabilities for the purposes of Basel III are not affected by the IFRS 9 ECL calculation.

*Probability of default (PD):* The PD represents the likelihood of a default over a specified time period. A 12-month PD represents the likelihood of default determined for the next 12 months and a lifetime PD represents the probability of default over the remaining lifetime of the instrument. The lifetime PD calculation is based on a series of 12-month PIT PDs that are derived from TTC PDs and scenario forecasts. This modeling is region-, industry- and client segment-specific and considers both scenario-systematic and client-idiosyncratic information. To derive the cumulative lifetime PD per scenario, the series of 12-month PIT PDs are transformed into marginal PIT PDs, taking any assumed default events from previous periods into account.

## Note 1 Summary of significant accounting policies (continued)

*Loss given default (LGD):* The LGD represents an estimate of the loss at the time of a potential default occurring during the life of a financial instrument. The determination of the LGD takes into account expected future cash flows from collateral and other credit enhancements, or expected payouts from bankruptcy proceedings for unsecured claims and, where applicable, time to realization of collateral and the seniority of claims. The LGD is commonly expressed as a percentage of the EAD.

*Exposure at default (EAD):* The EAD represents an estimate of the exposure to credit risk at the time of a potential default occurring during the life of a financial instrument. It represents the cash flows outstanding at the time of default, considering expected repayments, interest payments and accruals, discounted at the EIR. Future drawdowns on facilities are considered through a credit conversion factor (CCF) that is reflective of historical drawdown and default patterns and the characteristics of the respective portfolios. IFRS 9-specific CCFs have been modeled to capture client segment- and product-specific patterns after removing Basel III standard-specific elements, i.e., conservatism and focus on a 12-month period prior to default.

### *Estimation of expected credit losses*

#### *Number of scenarios and estimation of scenario weights*

The determination of the probability-weighted ECL requires evaluating a range of diverse and relevant future economic conditions, especially with a view to modeling the non-linear effect of assumptions about macroeconomic factors on the estimate.

To accommodate this requirement, UBS AG uses four different economic scenarios in the ECL calculation: an upside, a baseline, a mild downside and a severe downside scenario. Each scenario is represented by a specific scenario narrative, which is relevant considering the exposure of key portfolios to economic risks, and for which a set of consistent macroeconomic variables is determined. Those variables range from above-trend economic growth to severe recession. The baseline scenario is aligned to the economic and market assumptions used for UBS AG business planning purposes. An econometric model is used to provide an input into the scenario weight assessment process giving a first indication of the probability that the GDP forecast used for each scenario would materialize, if historically observed deviations of GDP growth from trend growth were representative. As such historical analyses of GDP development do not include an assessment of the underlying economic or political causes, management positions the model output into the context of current conditions and future expectations and applies material judgment in determining the final scenario weights. The determined weights constitute the probabilities that the respective set of macroeconomic conditions will occur and not that the chosen particular narratives with the related macroeconomic variables will materialize.

#### *Macroeconomic and other factors*

The range of macroeconomic, market and other factors that is modeled as part of the scenario determination is wide, and historical information is used to support the identification of the key factors. As the forecast horizon increases, the availability of information decreases and judgment increases. For cycle-sensitive PD and LGD determination purposes, UBS AG projects the relevant economic factors for a period of three years before reverting, over a specified period, to a cycle-neutral PD and LGD for longer-term projections.

Factors relevant for the ECL calculation vary by type of exposure and are determined during the credit cycle index model development process in close alignment with expert judgment. Certain variables may only be relevant for specific types of exposures, such as house price indices for mortgage loans, while other variables have key relevance in the ECL calculation for all exposures. Regional and client segment characteristics are generally taken into account, with specific focus on Switzerland and the US considering UBS AG's key ECL-relevant portfolios.

For UBS AG, the following forward-looking macroeconomic variables represent the most relevant factors in the ECL calculation:

- GDP growth rates, given their significant effect on borrowers' performance;
- house price indices, given their significant effect on mortgage collateral valuations;
- unemployment rates, given their significant effect on private clients' ability to meet contractual obligations;
- interest rates, given their significant effect on the counterparties' abilities to service their debt;
- consumer price indices, given their overall relevance for companies' performance, private clients' purchasing power and economic stability; and
- equity indices, given that they are an important factor in our corporate rating tools.

The forward-looking macroeconomic assumptions used in the ECL calculation are developed by UBS AG's economists, risk methodology personnel and credit risk officers. Assumptions and scenarios are validated and approved through a Scenario Committee and an Operating Committee, which also aim to ensure a consistent use of forward-looking information throughout UBS AG, including in the business planning process. ECL inputs are tested and reassessed for appropriateness at least each quarter and appropriate adjustments are made when needed.

#### *Scenario generation, review process and governance*

All aspects of the scenario selection, including the specific narratives, their weight for the ECL estimation, and the key macroeconomic and other factors, are subject to a formal governance and approval process.

## Note 1 Summary of significant accounting policies (continued)

A team of economists, who are part of Group Risk Control, provide the basic analysis taking into account information obtained through established risk identification and assessment processes, which involve a broad range of experts, in particular, risk specialists and other in-house economists. Material risks with a high likelihood of materializing are then factored into the scenario selection process. Once narratives have been developed, key macroeconomic factors that are consistent with the severity of the case and interdependencies are determined.

The scenarios, their weight and the key macroeconomic and other factors are subject to a critical assessment by members of the Scenario Committee, where senior credit officers from the divisions and representatives from Group Risk Control are represented. Important aspects for the review are the extent to which the selected scenarios reflect the vulnerabilities of the relevant portfolios; whether their transformation into PIT PD and LGD values is in line with credit risk officers' expectations; and whether there may be pockets of exposures, where particular credit risk concerns may not be capable of being addressed systematically and require an expert-based overlay for stage allocation and ECL allowance. This also ensures a consistent use of forward-looking information throughout UBS AG and an alignment with the business planning process.

The Operating Committee is jointly chaired by the Group Controller and Chief Accounting Officer, and the Risk Chief Operating Officer and Group Chief Risk Model Officer, and is comprised of the divisional Chief Risk Officers and divisional Chief Financial Officers as well as senior Corporate Center Risk and Finance representatives. They review the proposals submitted by the Scenario Committee and approve the final selection of scenarios and factors and any expert-based overlays as they may be required to cover temporary issues, either related to specific risk elements in a portfolio, or due to identified technical deficiencies pending remediation (model updates, data quality, etc.).

The Group Model Governance Board as the highest authority under UBS's model governance framework ratifies the decisions by the Operating Committee.

### *ECL measurement period*

The period for which lifetime ECL are determined is based on the maximum contractual period that UBS AG is exposed to credit risk, taking into account contractual extension, termination and prepayment options. For irrevocable loan commitments and financial guarantee contracts, the measurement period represents the maximum contractual period for which UBS AG has an obligation to extend credit.

Additionally, some financial instruments include both an on-demand loan and a revocable undrawn commitment, where the contractual cancellation right does not limit UBS AG's exposure to credit risk to the contractual notice period as the client has the ability to draw down funds before UBS AG can take risk-mitigating actions. In such cases, UBS AG is required to estimate

the period over which it is exposed to credit risk. This applies to UBS AG's credit card limits, which do not have a defined contractual maturity date, are callable on demand and where the drawn and undrawn components are managed as one unit. The exposure arising from UBS AG's credit card limits is not significant and is managed at a portfolio level, with credit actions triggered when balances are past due. An ECL measurement period of seven years is applied for credit card limits, capped at 12 months for stage 1 balances, as a proxy for the period that UBS AG is exposed to credit risk.

Customary master credit agreements in the Swiss corporate market also include on-demand loans and revocable undrawn commitments. For smaller commercial facilities, a risk-based monitoring (RbM) approach is in place that highlights negative trends as risk events, at an individual facility level, based on a combination of continuously updated risk indicators. The risk events trigger additional credit reviews by a risk officer, allowing for informed credit decisions to be taken. Larger corporate facilities are not subject to RbM, but are reviewed at least annually through a formal credit review. UBS AG has assessed these credit risk management practices and considers both the RbM approach and formal credit review as substantive credit reviews resulting in a re-origination of the facility. Following this, a 12-month measurement period from the reporting date is used for both types of facilities as an appropriate proxy of the period over which UBS AG is exposed to credit risk, with 12 months also used as a look-back period for assessing SICR, always from the respective reporting date.

### *Significant increase in credit risk*

Financial instruments subject to ECL are monitored on an ongoing basis. To determine whether the recognition of a maximum 12-month ECL continues to be appropriate, it is assessed whether an SICR has occurred since initial recognition of the financial instrument. The assessment criteria include both quantitative and qualitative factors. UBS AG does not make use of the expedient that no particular SICR test is required for instruments that have low credit risk at reporting date.

Primarily, UBS AG assesses changes in an instrument's risk of default on a quantitative basis by comparing the annualized forward-looking and scenario-weighted lifetime PD of an instrument determined at two different dates:

- at the reporting date; and
- at inception of the instrument.

In both cases, the respective PDs are determined for the residual lifetime of the instrument, i.e., the period between the reporting date and maturity. If, based on UBS AG's quantitative modeling, an increase exceeds a set threshold, an SICR is deemed to have occurred and the instrument is transferred to stage 2 with lifetime ECL being recognized.



## Note 1 Summary of significant accounting policies (continued)

The threshold applied varies depending on the original credit quality of the borrower. For instruments with lower default probabilities at inception due to good credit quality of the counterparty, the SICR threshold is set at a higher level than for instruments with higher default probabilities at inception. This implies that for instruments with initially lower default probabilities, a relatively higher deterioration in credit quality is needed to trigger an SICR than for those instruments with originally higher PDs. The SICR assessment based on PD changes is made at an individual financial asset level. A high-level overview of the SICR trigger, which is a multiple of the annualized remaining lifetime PIT PD expressed in rating downgrades that entail the same multiple of PD values, together with the corresponding ratings at origination of an instrument, is provided in the "SICR thresholds" table below. This simplified view is aligned to internal ratings as disclosed in "Internal UBS AG rating scale and mapping of external ratings" presented in "Credit risk" in the "Risk management and control" section of this report. The actual SICR thresholds applied are defined on a more granular level interpolating between the values shown in the table below.

### SICR thresholds

Internal rating at origination of the instrument	Rating downgrades / SICR trigger
0-3	3
4-8	2
9-13	1

→ Refer to the "Risk management and control" section of this report for more details on the bank's internal grading system

Irrespective of the SICR assessment based on default probabilities, credit risk is generally deemed to have significantly increased for an instrument if the contractual payments are more than 30 days past due. For certain less material portfolios, specifically the Swiss credit card portfolio and the recruitment and retention loans to financial advisors of Global Wealth Management Region Americas, the 30-day past due criterion is used as the primary indicator of an SICR. Where instruments are transferred to stage 2 due to the 30-day past due criterion, a minimum period of six months is applied before a transfer back to stage 1 can be triggered. For instruments in Personal & Corporate Banking that are between 90 and 180 days past due but have not been reclassified to stage 3, a one-year period is applied before a transfer back to stage 1 can be triggered.

Additionally, based on individual counterparty-specific indicators, external market indicators of credit risk or general economic conditions, counterparties may be moved to a watch list, which is used as a secondary qualitative indicator for an SICR and hence for a transfer to stage 2. Exception management is further applied, allowing for individual and collective adjustments on exposures sharing the same credit risk characteristics to take account of specific situations that are not otherwise fully reflected. Instruments for which an SICR since initial recognition is determined based on criteria other than changed default probabilities or watch list items remain in stage 2 for at least six months post resolution of the stage 2 trigger event.

The overall SICR determination process does not apply to Lombard loans, securities financing transactions and certain other asset-based lending transactions, because of the risk management practices adopted, including daily monitoring processes with strict remargining requirements. If margin calls are not satisfied, a position is closed out and classified as a stage 3 position.

Credit risk officers are responsible for ensuring that the stage allocation of instruments is in line with the requirements of the standard. Identification of an SICR for accounting purposes is in some aspects different from internal credit risk management processes for loans with increased credit risk, mainly because ECL accounting requirements are instrument-specific, such that a borrower can have multiple exposures allocated to different stages, and that maturing loans in stage 2 will migrate to stage 1 upon renewal irrespective of the actual credit risk at that time. Under a risk-based approach, a holistic counterparty credit assessment and the absolute level of risk at any given date will determine what risk mitigating actions may be warranted.

→ Refer to the "Risk management and control" section of this report for more information

## Note 1 Summary of significant accounting policies (continued)

### Critical accounting estimates and judgments

The calculation of ECL requires management to apply significant judgment and make estimates and assumptions that involve significant uncertainty at the time they are made. Changes to these estimates and assumptions can result in significant changes to the timing and amount of ECL to be recognized.

#### *Determination of a significant increase in credit risk*

IFRS 9 does not include a definition of what constitutes an SICR. UBS AG's assessment of whether an SICR has occurred since initial recognition is based on reasonable and supportable forward-looking information, both qualitative and quantitative, and includes significant management judgment. More stringent criteria could significantly increase the number of instruments migrating to stage 2. An IFRS 9 Operating Committee has been established to review and challenge the SICR approach and any potential changes and determinations made in the quarter.

#### *Scenarios, scenario weights and macroeconomic factors*

ECL reflect an unbiased and probability-weighted amount, which UBS AG determines by evaluating a range of possible outcomes. Management selects forward-looking scenarios and judges the suitability of respective weights to be applied. Each of the scenarios is based on management's assumptions around future economic conditions in the form of macroeconomic, market and other factors. Changes in the scenarios and weights, the corresponding set of macroeconomic variables and the assumptions made around those variables for the forecast horizon would have a significant effect on the ECL. An IFRS 9 Scenario Committee, in addition to the Operating Committee, has been established to derive, review and challenge the selection and weights.

#### *ECL measurement period*

Lifetime ECL are generally determined based upon the contractual maturity of the transaction, which significantly affects ECL. The ECL calculation is therefore sensitive to any extension of contractual maturities triggered by business decisions, consumer behaviors and an increased number of stage 2 positions. In addition, for credit card limits and Swiss callable master credit facilities, judgment is required as UBS AG must determine the period over which it is exposed to credit risk. A seven-year period has been applied for credit card limits, capped at 12 months for stage 1 positions, and a 12-month period has been applied for master credit facilities.

#### *Modeling and management adjustments*

A number of complex models have been developed or modified to calculate ECL, with additional management adjustments required. Internal counterparty rating changes, new or revised models and changes to data may significantly affect ECL. The models are governed by UBS AG's model validation controls, which aim to ensure independent verification, and are approved by the Group Model Governance Board (GMGB). The management adjustments are approved by the IFRS 9 Operating Committee and endorsed by the GMGB.

UBS provides a sensitivity analysis of the effect of scenario selection, scenario weights and SICR trigger points on ECL measurement within Note 23g.

### Comparative policy | Policy applicable prior to 1 January 2018

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 effect 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 as a result of 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*.

### 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.

## Note 1 Summary of significant accounting policies (continued)

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.

### *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 on the previous page, 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*. ▲

### *h. Restructured and modified financial assets*

When payment default is expected or where default has already occurred, UBS AG may grant concessions to borrowers in financial difficulties that it would otherwise not consider in the normal course of its business, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc. When a concession or forbearance measure is granted, each case is considered individually and the exposure is generally classified as being in default. Forbearance classification will remain 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 UBS AG's usual risk appetite, are not considered to be in forbearance. Modifications represent contractual amendments that result in an alteration of future contractual cash flows and that can occur within UBS AG's normal risk appetite or as part of a credit restructuring where a counterparty is in financial difficulties.

A restructuring or modification of a financial asset could lead to a substantial change in the terms and conditions, resulting in the original financial asset being derecognized and a new financial asset being recognized. Where the modification does not result in a derecognition, any difference between the modified contractual cash flows discounted at the original EIR and the existing gross carrying value of a financial asset is recognized in profit or loss as a modification gain or loss. Further, the subsequent SICR assessment is made by comparing the risk of default at the reporting date based on the modified contractual terms of the financial asset with the risk of default at initial recognition based on the original, unmodified contractual terms of the financial asset.



## Note 1 Summary of significant accounting policies (continued)

### i. 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 all of the 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 25 for more information

### j. 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. UBS AG continues to apply hedge accounting requirements as set out in IAS 39. 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).

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 *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *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

## Note 1 Summary of significant accounting policies (continued)

### 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 financial assets measured at amortized cost* or *Other financial liabilities measured at amortized cost*. If the portfolio hedge relationship is terminated for reasons other than the derecognition of the hedged item, the amount included in *Other financial assets measured at amortized cost* or *Other financial liabilities measured at amortized cost* 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 *Other income*.

### 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 *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*), except for the forward points on certain short- and long-duration foreign exchange contracts, which are reported in *Net interest income*.

→ Refer to Note 11 for more information

### k. 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 (from 1 January 2018: unless the host contract is a financial asset in scope of IFRS 9) 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.

## Note 1 Summary of significant accounting policies (continued)

### l. Financial liabilities

Financial liabilities measured at amortized cost include *Debt issued measured at amortized cost* and *Funding from UBS Group AG and its subsidiaries*. The latter includes 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, 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 3j 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 *Funding from UBS Group AG and its subsidiaries*.

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.

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).

### m. Own credit

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.

### n. Loan commitments

#### *Policy applicable from 1 January 2018<sup>1</sup>*

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 that are revocable only because of automatic cancellation 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.

UBS AG recognizes ECL on non-cancelable other loan commitments. In addition, UBS AG also recognizes ECL on loan commitments that can be canceled at any time if UBS AG is exposed to credit risk (refer to item g in this Note). Corresponding ECL are presented within *Provisions* on the UBS AG's balance sheet. ECL relating to these other loan commitments are recorded in the income statement in *Credit loss (expense) / recovery*.

When a client draws on a commitment, the resulting loan is presented within *Financial assets at fair value held for trading*, or within *Financial assets at fair value not held for trading* when the associated loan commitments are measured at fair value through profit or loss, and within *Loans and advances to customers* when the associated loan commitment is not measured at fair value through profit or loss.

#### *Comparative policy | Policy applicable prior to 1 January 2018*

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. ▲

### o. Financial guarantee contracts

#### *Policy applicable from 1 January 2018<sup>1</sup>*

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.

<sup>1</sup> The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

## Note 1 Summary of significant accounting policies (continued)

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 of ECL (refer to item g in this Note); and
- the amount initially recognized less the cumulative amount of income recognized as of the reporting date.

ECL resulting from guarantees is recorded in the income statement in *Credit loss (expense) / recovery*.

### Comparative policy | Policy applicable prior to 1 January 2018

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*. ▲

### p. Other net income from fair value changes on financial instruments

The line item *Other net income from fair value changes on financial instruments* includes fair value gains and losses on financial instruments at fair value through profit or loss but excluding interest income and expense on non-derivatives (refer to item 3c in this Note), as well as the effects at derecognition, trading gains and losses and intermediation income arising from certain client-driven Global Wealth Management and Personal & Corporate Banking financial transactions. In addition, foreign currency translation effects and income and expenses from precious metals are presented within this income statement line item.

## 4) Fee and commission income and expenses

### Policy applicable from 1 January 2018<sup>1</sup>

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: fees earned from services that are provided over a certain period of time, such as asset or portfolio management, custody services and certain advisory services; and fees earned

from point-in-time services such as underwriting fees and brokerage fees (e.g., securities and derivative execution and clearing).

→ Refer to Note 4 for more information, including the disaggregation of revenues

### Performance obligations satisfied over time

Fees earned from services that are provided over a certain period of time are recognized on a pro rata basis over the service period, provided the fees are not contingent on successfully meeting specified performance criteria that are beyond the control of UBS AG (see measurement below).

Costs to fulfill services over time are recorded in the income statement immediately, because such services are considered to be a series of services that are substantially the same from day to day and have the same pattern of transfer. The costs to fulfill neither generate nor enhance the resources of UBS AG that will be used to satisfy future performance obligations and cannot be distinguished between those that relate to satisfied and unsatisfied performance obligations. Therefore, these costs do not qualify to be recognized as an asset. Where costs incurred relate to contracts that include variable consideration that is constrained by factors beyond UBS AG's control (e.g., successful mergers and acquisitions (M&A) activity) or where UBS AG has a history of not recovering such costs on similar transactions, such costs are expensed immediately as incurred.

### Performance obligations satisfied at a point in time

Fees earned from providing transaction-type services are recognized when the service has been completed, provided such fees are not subject to refund or another contingency beyond the control of UBS AG.

Incremental costs to fulfill services provided at a point in time are typically incurred and recorded at the same time as the performance obligation is satisfied and revenue is earned, and are therefore not recognized as an asset, e.g., brokerage. Where recovery of costs to fulfill relates to an uncompleted point-in-time service for which the satisfaction of the performance obligation in the contract is dependent upon factors beyond the control of UBS AG, such as underwriting a successful securities issuance, or where UBS AG has a history of not recovering such costs through reimbursement on similar transactions, such costs are expensed immediately as incurred.

<sup>1</sup> The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 15. For the details of transition effects refer to Note 1b.

## Note 1 Summary of significant accounting policies (continued)

### Measurement

Fee and commission income is measured based on consideration specified in a legally enforceable contract with a customer, excluding amounts such as taxes collected on behalf of third parties. Consideration can include both fixed and variable amounts. Variable consideration includes refunds, discounts, performance bonuses and other amounts that are contingent on the occurrence or non-occurrence of a future event. Variable consideration that is contingent on an uncertain event can only be recognized to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue for a contract will not occur. This is referred to as the variable consideration constraint. UBS AG does not consider the highly probable criterion to be met where the contingency on which income is dependent is beyond the control of UBS AG. In such circumstances, UBS AG only recognizes revenue when the contingency has been resolved or an uncertain event has occurred. Examples include asset management performance-linked fees, which are only payable if the returns of a fund exceed a benchmark and are only recognized after the performance period has elapsed. Similarly, M&A advisory fees that are dependent on a successful client transaction are not recognized until the transaction on which the fees are dependent has been executed. Asset management fees (excluding performance-based fees) received on a periodic basis, typically quarterly, that are determined based on a fixed percentage of net asset value that has not been established at the reporting date, are estimated and accrued ratably over the period to the next invoice date, except during periods in which market volatility indicates there is a risk of significant reversal. Research revenues earned by the Investment Bank under commission-sharing or research payment account agreements are not recognized until the client has provided a definitive allocation of amounts between research providers, as prior to this UBS AG generally does not have an enforceable right to a specified amount of consideration.

Consideration received is allocated to the separately identifiable performance obligations in a contract. Owing to the nature of UBS's business, contracts that include multiple performance obligations are typically those that are considered to include a series of similar performance obligations fulfilled over time with the same pattern of transfer to the client, e.g., asset management. As a consequence, UBS AG is not required to apply significant judgment in allocating the consideration received across the various performance obligations. UBS AG has taken the practical expedient to not disclose information on the allocation of the transaction price to remaining performance obligations in contracts. This is because contracts are typically less than one year in duration. Where contracts have a longer duration, they are either subject to the variable consideration constraint, with fees calculated on future net asset value, which cannot be included within the transaction price for the contract, or result in revenue being recognized ratably using the output method corresponding directly to the value of the services

completed to date and to which UBS would be entitled to invoice upon termination of the contract, e.g., loan commitments.

### Presentation of fee and commission income and expense

Fee and commission income and expense are presented gross on the face of the income statement when UBS AG is considered to be principal in the contractual relationship with its customer and any suppliers used to fulfill such contracts. This occurs where UBS AG has control over such services and its relationship with suppliers prior to provision of the service to the client. UBS AG only considers itself to be an agent in relation to services provided by third parties, e.g., third-party execution costs for exchange-traded derivatives and fees payable to third-party research providers, where the client controls both the choice of supplier and the scope of the services to be provided. Furthermore, in order to be considered an agent UBS AG must not take responsibility for the quality of the service, transform or integrate the services into a UBS AG product. In such circumstances UBS AG is essentially acting as a payment agent for its client. When UBS AG is acting as an agent, any costs incurred are directly offset against the associated income.

### Presentation of expenses in the income statement

UBS AG presents expenses primarily in line with their nature in the income statement, differentiating between expenses that are incremental and incidental to revenues, which are presented within *Total operating income*, and those that are related to personnel, general and administrative expenses, which are presented within *Total operating expenses*.

### Contract assets, contract liabilities and capitalized expenses

UBS AG has applied the practical expedient of allowing for costs incurred to obtain a contract to be expensed as incurred where the amortization period for any asset recognized would be less than 12 months.

Where UBS AG provides services to clients, consideration is due immediately upon satisfaction of a point-in-time service or at the end of a prespecified period for a service performed over time; e.g., certain asset management fees are collected monthly or quarterly, through deduction from a client account, deduction from fund assets or through separate invoicing. Where receivables are recorded, they are presented within *Other financial assets measured at amortized cost*.

Contract liabilities relate to prepayments received from customers where UBS AG is yet to satisfy its performance obligation.

Contract assets are recorded when an entity's right to consideration in exchange for services transferred is conditional on something other than the passage of time, e.g., the entity's future performance.

UBS AG has not recognized any material contract assets, contract liabilities or capitalized expenses during the period and has therefore not provided a contract balances reconciliation.

## Note 1 Summary of significant accounting policies (continued)

### Comparative policy | Policy applicable prior to 1 January 2018

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 purpose 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 at central and other banks.

### 6) Share-based and other deferred compensation plans

#### Share-based compensation plans

UBS Group AG is the grantor of and maintains the obligation to settle share-based compensation plans that are awarded to employees of UBS AG. 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 eligible for retirement or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized 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 of 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 their 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 30 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 eligible for retirement or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized 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 30 for more information



## Note 1 Summary of significant accounting policies (continued)

### 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 29 for more information

#### Defined benefit plans

UBS AG offers defined benefit pension and medical insurance benefits. Defined benefit plans specify an amount of benefit that an employee will receive, which usually depends on one or more factors, such as age, years of service and compensation. The defined benefit liability recognized on 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 29.

#### 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.

### 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) temporary differences that will result in deductions against profits in future years. 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.

## Note 1 Summary of significant accounting policies (continued)

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 (for which such amounts would affect the amount of goodwill arising from the acquisition); (ii) for gains and losses on the sale of treasury shares (for which the tax effects are recognized directly in *Equity*); (iii) for unrealized gains or losses on financial instruments that are classified as FVOCI (prior to 1 January 2018: financial assets classified as available for sale); (iv) for changes in fair value of derivative instruments designated as cash flow hedges; (v) for remeasurements of defined benefit plans; or (vi) for certain foreign currency translations of foreign operations. Amounts relating to points (iii) through (vi) are recognized in *Other comprehensive income* within *Equity*.

UBS AG reflects the potential effect of uncertain tax positions using expected value (i.e., a probability-weighted approach), except where the likelihood of loss is remote (less than 5%).

### 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 fourth quarter of each year, but adjustments may be made at other times, if required. In a situation where recent losses have been incurred, convincing other 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.

In addition, judgment is required to assess the expected value of uncertain tax positions that are incorporated into the estimate of income and deferred tax and the assessment of the related probabilities, including in relation to the interpretation of tax laws, the resolution of any income tax-related appeals or litigation and the assessment of the related probabilities.

→ Refer to Note 8 for more information

## 9) Investments in associates

Interests in 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 the 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 exceeds its recoverable amount.

→ Refer to Note 31 for more information



## Note 1 Summary of significant accounting policies (continued)

### 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 (i.e., 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 15 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.

For the 2017 annual test, UBS AG considered the segments, as they are reported in Note 2a, as separate cash-generating units, since that was the level at which the performance of investments (and the related goodwill) was reviewed and assessed by management.

Following the integration in 2018 of the Wealth Management and Wealth Management Americas business divisions into the single reportable segment Global Wealth Management, UBS AG continued to separately monitor the goodwill previously allocated to the two former business divisions. As a consequence, for the purpose of goodwill impairment testing, the former Wealth Management and Wealth Management Americas business divisions are considered to be two separate cash-generating units referred to in Note 16 as Global Wealth Management Americas<sup>1</sup> and Global Wealth Management ex Americas. The remaining

goodwill balances continued to be tested at the level of Asset Management and the Investment Bank, respectively, consistent with the 2017 annual test.

The impairment test is performed for each cash-generating unit to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, to the carrying amount of the respective cash-generating unit. An impairment charge is recognized in the income statement if the carrying amount exceeds the recoverable amount.

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.

The key assumptions are linked to external market information, where applicable. 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, the view of management and regional differences in risk-free rates, at the level of individual cash-generating units. Long-term growth rates are determined in a consistent manner based on nominal or real GDP growth rate forecasts, considering different regions worldwide as incorporated in the business plan approved by the BoD.

The key assumptions used to determine the recoverable amounts of each cash-generating unit are tested for sensitivity by applying reasonably possible changes to those assumptions. Refer to Note 16 for details on how the reasonably possible changes may affect the results of UBS AG's model for goodwill impairment testing.

→ Refer to Notes 2 and 16 for more information

<sup>1</sup> Now including the Global Wealth Management business in Latin America, previously part of the Wealth Management business division.

## Note 1 Summary of significant accounting policies (continued)

### 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, the requirements for recognition have been met. 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.

Management may undertake restructuring activities, i.e., a planned and controlled program that materially changes either the scope of the business or the manner in which it is conducted. 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 measurement point that represents our 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 disclosed 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.

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. 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 21 for more information

## Note 1 Summary of significant accounting policies (continued)

### 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 including those at FVOCI (prior to 1 January 2018: monetary financial assets classified as available for sale) and monetary liabilities denominated in foreign currency are translated into the functional currency using the closing exchange rate. Translation differences (which for monetary financial assets at FVOCI are determined as if they were financial assets measured at amortized cost) are reported in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*).

Non-monetary items measured at historical cost are translated at the exchange rate on the date of the transaction. Prior to 1 January 2018, foreign currency translation differences on non-monetary financial assets classified as available for sale were recorded directly in *Equity* until the asset was derecognized.

Upon consolidation, assets and liabilities of foreign operations (which from 1 October 2018 also include UBS AG's Swiss-based operations with Swiss franc functional currency) are translated into US dollars, UBS AG's presentation currency, at the closing exchange rate on the balance sheet date, and income and expense items and other comprehensive income are translated at the average rate for the period. The resulting foreign currency translation differences attributable to shareholders are recognized 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 included within *Equity attributable to non-controlling interests*. Share capital issued, share premium and treasury shares held are translated at the historic average rate, whereby the difference between the historic average rate and the spot rate realized upon repayment of share capital or disposal of treasury shares is reported as *Share premium*. Cumulative amounts recognized in OCI in respect of cash flow hedges and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) are translated at the closing exchange rate as of balance sheet dates, with any translation effects adjusted through *Retained earnings*.

When a foreign operation is disposed or partially disposed of and UBS AG no longer controls 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. Similarly, if an investment in an associate becomes an investment in a subsidiary, the cumulative amount of foreign currency translation differences is reclassified to profit or loss. 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 37 for more information

#### Critical accounting estimates and judgments

The determination of an entity's functional currency and the trigger for a change requires management to apply significant judgment and assumptions. IAS 21, *The Effects of Changes in Foreign Exchange Rates*, requires management to consider the underlying transactions, events and conditions that are relevant to the entity when determining the appropriate functional currency and any changes. UBS AG's conclusion, in the fourth quarter of 2018, that the functional currency of UBS AG, UBS AG's Head Office in Switzerland and UBS AG's London Branch has changed was based on a detailed assessment of the primary currencies affecting and influencing the economics of each entity, considering revenue generating income streams, expenses, funding and risk management activities.

In addition, determining the earliest date from which it is practicable to perform a restatement following a voluntary change in presentational currency also requires management to apply significant judgment and make estimates and assumptions. UBS AG's decision in 2018 to change the presentation currency of its consolidated financial statements from Swiss francs to US dollars was made in line with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*, by assessing the earliest date from which it was practicable to perform a restatement, taking into consideration whether sufficiently reliable data was available for earlier periods and whether any assumptions on management intent or significant estimates of amounts were required. UBS AG carried out a detailed and extensive data analysis before concluding that 1 January 2004 represented the earliest date available, with the consequence that foreign currency translation gains and losses prior to 2004 have been disregarded and foreign currency translation effects first calculated from 1 January 2004 onward.

→ Refer to Note 1b for more information

## Note 1 Summary of significant accounting policies (continued)

### 14) Non-controlling interests and preferred noteholders

*Net profit* is split into *Net profit attributable to shareholders*, *Net profit attributable to non-controlling interest* 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*.

Non-controlling interests subject to option arrangements, e.g., written puts, are generally deemed to be acquired by UBS AG. As a result, the amounts allocated to non-controlling interests are reduced accordingly and a liability for the options' exercise price is recognized, with any difference between these two amounts recorded in *Share premium*.

### 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 *Other financial assets measured at amortized cost* 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 Note 33 for more information**

## Note 1 Summary of significant accounting policies (continued)

### b) Changes in accounting policies, comparability and other adjustments, excluding the effects of adoption of IFRS 9, *Financial Instruments*

#### 1) Changes in functional and presentation currency

##### Change in functional currencies

As a consequence of legal entity structural changes over recent years – notably the transfer of the Personal & Corporate Banking and Global Wealth Management businesses booked in Switzerland from UBS AG to UBS Switzerland AG, and the creation of UBS Business Solutions AG, which houses a significant portion of the employees and associated costs that were previously held in UBS AG's Head Office in Switzerland and UBS AG's London Branch – a concentration of US dollar-influenced and -managed business activities now exist in UBS AG's Head Office in Switzerland and UBS AG's London Branch. In addition, from the fourth quarter of 2018, for risk management purposes UBS AG adopted the US dollar as the risk-neutral currency and has adjusted its structural risk positions accordingly. As a result of these changes, effective from 1 October 2018, the functional currency of UBS AG's Head Office in Switzerland changed prospectively from Swiss francs to US dollars and that of UBS AG's London Branch changed from British pounds to US dollars, in compliance with the requirements of IAS 21, *The Effects of Changes in Foreign Exchange Rates*.

##### Change in presentation currency

In 2018, the presentation currency of UBS AG's consolidated financial statements has changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. UBS AG has restated prior periods for this voluntary presentational change in line with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*, from 1 January 2004. This point in time represented the earliest date from which it was practicable to perform a restatement, given the lack of sufficiently reliable data for earlier periods. As a consequence, foreign currency translation (FCT) gains or losses prior to 2004 have been disregarded, with FCT effects first calculated from 1 January 2004 onward. In addition, UBS AG has included a second comparative balance sheet as of 1 January 2017 in line with IAS 1, *Presentation of Financial Statements*.

Income and expenses as well as *Other comprehensive income* (OCI) were translated to US dollars at the respective average exchange rates prevailing for the relevant periods. Additionally, *Other income* was restated to reflect releases of FCT gains or losses from OCI to the income statement when calculated under the new US dollar presentation currency. The effect of such restatements for 2018, 2017 and 2016 was not material to the income statements of these periods.

Assets, liabilities and total equity were translated at closing exchange rates prevailing on the respective balance sheet dates, after reflection of deferred tax effects relating to the restatement. Share capital issued, share premium and treasury shares held were translated at historic average rates, whereby differences between historic average rate and closing exchange rate realized upon repayment of share capital or disposal of treasury shares were reported as *Share premium*. Cumulative amounts recognized in OCI in respect of cash flow hedges and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) were translated at closing exchange rate as of respective balance sheet dates, with any translation effects adjusted through *Retained earnings*.

The restated FCT balance as of 1 October 2018 included a cumulative gain of USD 767 million related to previously applied net investment hedges entered into by UBS AG's Head Office to hedge investments in foreign operations against their former Swiss franc functional currency.

## Note 1 Summary of significant accounting policies (continued)

### Effect of the change in UBS AG's presentation currency from Swiss francs to US dollars

	As of or for the year ended		
	31.12.17		
	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency <sup>1</sup>	Under a CHF presentation currency (CHF)
<i>In million</i>			
<b>Balance sheet</b>			
<b>Equity</b>			
Share capital	338	396	386
Share premium	24,633	27,663	26,966
Retained earnings	22,189	29,855	29,102
Other comprehensive income recognized directly in equity, net of tax	4,828	(5,884)	(5,736)
<b>Equity attributable to shareholders</b>	<b>51,987</b>	<b>52,030</b>	<b>50,718</b>
Equity attributable to non-controlling interests	59	58	57
<b>Total equity</b>	<b>52,046</b>	<b>52,088</b>	<b>50,775</b>
<b>Income statement</b>			
Other income	952	956	939
<b>Total operating income</b>	<b>30,044</b>	<b>30,049</b>	<b>29,479</b>
<b>Operating profit / (loss) before tax</b>	<b>5,076</b>	<b>5,080</b>	<b>4,998</b>
Tax expense / (benefit)	4,242	4,171	4,077
<b>Net profit / (loss)</b>	<b>834</b>	<b>909</b>	<b>921</b>
Net profit / (loss) attributable to preferred noteholders	73	73	72
Net profit / (loss) attributable to non-controlling interests	4	4	4
<b>Net profit / (loss) attributable to shareholders</b>	<b>758</b>	<b>833</b>	<b>845</b>
	As of or for the year ended		
	31.12.16		
	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency <sup>1</sup>	Under a CHF presentation currency (CHF)
<i>In million</i>			
<b>Balance sheet</b>			
<b>Equity</b>			
Share capital	338	379	386
Share premium	27,154	28,989	29,505
Retained earnings	21,480	27,771	28,265
Other comprehensive income recognized directly in equity, net of tax	3,985	(4,415)	(4,494)
<b>Equity attributable to shareholders</b>	<b>52,957</b>	<b>52,724</b>	<b>53,662</b>
Equity attributable to preferred noteholders	631	631	642
Equity attributable to non-controlling interests	39	39	40
<b>Total equity</b>	<b>53,627</b>	<b>53,393</b>	<b>54,343</b>
<b>Income statement</b>			
Other income	749	689	685
<b>Total operating income</b>	<b>28,831</b>	<b>28,770</b>	<b>28,421</b>
<b>Operating profit / (loss) before tax</b>	<b>4,188</b>	<b>4,128</b>	<b>4,069</b>
Tax expense / (benefit)	753	792	781
<b>Net profit / (loss)</b>	<b>3,435</b>	<b>3,336</b>	<b>3,288</b>
Net profit / (loss) attributable to preferred noteholders	80	80	78
Net profit / (loss) attributable to non-controlling interests	4	4	4
<b>Net profit / (loss) attributable to shareholders</b>	<b>3,351</b>	<b>3,252</b>	<b>3,207</b>

## Note 1 Summary of significant accounting policies (continued)

### Effect of the change in UBS AG's presentation currency from Swiss francs to US dollars (continued)

	As of or for the year ended		
	31.12.15		
	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency <sup>1</sup>	Under a CHF presentation currency (CHF)
<i>In million</i>			
<b>Balance sheet</b>			
<b>Equity</b>			
Share capital	338	385	386
Share premium	27,126	29,429	29,477
Retained earnings	22,664	29,385	29,433
Other comprehensive income recognized directly in equity, net of tax	5,144	(4,040)	(4,047)
<b>Equity attributable to shareholders</b>	<b>55,272</b>	<b>55,157</b>	<b>55,248</b>
Equity attributable to preferred noteholders	1,951	1,951	1,954
Equity attributable to non-controlling interests	41	41	41
<b>Total equity</b>	<b>57,264</b>	<b>57,149</b>	<b>57,243</b>

<sup>1</sup> Amounts presented in this column represent a translation of the previously published information under a Swiss franc presentation currency, translated to US dollars using a simplified approach. Assets, liabilities and equity were translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses were translated at the respective average rates prevailing for the relevant periods.



## Note 1 Summary of significant accounting policies (continued)

### 2) IFRS 15, Revenue from Contracts with Customers

Effective from 1 January 2018, UBS AG adopted IFRS 15, *Revenue from Contracts with Customers*, which replaced IAS 18, *Revenue*, and establishes principles for revenue recognition that apply to all contracts with customers except those relating to financial instruments, leases and insurance contracts. The standard requires an entity to recognize revenue as performance obligations are satisfied.

IFRS 15 specifies that variable consideration is only recognized when the related performance obligation has been satisfied and 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.

As permitted by the transitional provisions of IFRS 15, UBS AG elected not to restate comparative figures. Instead, the cumulative effect of initially applying the standard was recognized as an adjustment to the opening balance of retained earnings. A transition adjustment of USD 28 million on a pre-tax basis and USD 25 million net of tax was posted to retained earnings to reverse income recognized prior to 1 January 2018 under IAS 18 that must be deferred under IFRS 15, either owing to the variable consideration constraint (asset management performance fees of USD 16 million) or because UBS AG does not have an enforceable right to a specified amount of consideration (commission-sharing agreements for research services of USD 11 million).

The adoption of IFRS 15 resulted in changes to UBS AG's accounting policies applicable from 1 January 2018 as set out in Note 1a.

Following the adoption of IFRS 15, fee and commission income is presented in the income statement separately from fee and commission expense.

Where UBS AG is acting as principal as defined by IFRS 15, costs of fulfilling contracts are required by IFRS 15 to be presented separately in the income statement within *Fee and commission expense*. Where UBS AG is acting as agent as defined by IFRS 15, costs of fulfilling contracts are required to be presented as a reduction in *Fee and commission income*. This resulted in a reclassification of certain brokerage fees paid in an agency capacity from *Fee and commission expense* to *Fee and commission income* from 1 January 2018, primarily relating to third-party execution costs for exchange-traded derivative transactions and fees payable to third-party research providers on behalf of clients.

### Other presentation changes

In addition to the IFRS 15 changes, certain revenues presented within *Fee and commission income*, primarily distribution fees and fund management fees, have been reclassified between reporting lines in Note 4 to better reflect the nature of the revenues, with comparative-period information restated accordingly. Also, certain expenses that are incremental and incidental to revenues have been reclassified prospectively from *General and administrative expenses* to *Fee and commission expense* to improve the alignment of transaction-based costs with the associated revenue stream, primarily affecting clearing costs, client loyalty costs, and fund and custody expenses. As the effect of this reclassification was not material, prior-period information was not restated.

→ **Refer to Note 4 for more information on the nature, amount, timing and uncertainty of revenues and cash flows from contracts with customers**

### 3) Changes in segment reporting

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



## Note 1 Summary of significant accounting policies (continued)

### 4) IFRS 7, *Financial Instruments: Disclosures*

IFRS 7, *Financial Instruments: Disclosures*, was updated in line with IFRS 9, *Financial Instruments*. UBS AG adopted the revised requirements on 1 January 2018, which is the date of initial application of IFRS 9. IFRS 9 transition disclosures as set out by IFRS 7 are presented in Note 1c.

In line with amendments to IFRS 7, from 1 January 2018, UBS AG separately presents hedging gains and losses recognized during the period in the statement of comprehensive income and the amounts reclassified to the income statement. More specifically, the effective portion of changes in fair value of hedging instruments designated as net investment hedges (before tax) recognized in other comprehensive income and the amounts reclassified to the income statement, previously included within *Foreign currency translation movements, before tax* and *Foreign exchange amounts reclassified to the income statement from equity*, are now presented in *Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax* and *Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement*, respectively.

Furthermore, the line *Foreign exchange amounts reclassified to the income statement from equity* was renamed to *Foreign currency translation differences on foreign operations reclassified to income statement*, and the line *Income tax relating to foreign currency translation movements* was renamed to *Income tax relating to foreign currency translations, including the effect of net investment hedges*.

In addition, while retaining hedge accounting under IAS 39, from 2018 UBS AG presents new disclosures to reflect the effects of hedge accounting on its financial statements as required by consequential amendments of IFRS 7. The enhanced disclosures are included in the "Derivatives transacted for hedging purposes" section of Note 28. Specifically, hedging disclosures now include a more extensive description of UBS AG's hedging strategies as risk management tools, and effects of hedge accounting on financial position and performance are structured in tabular format. These additional disclosures are presented prospectively from 1 January 2018.

### 5) Amendments to IAS 1, *Presentation of Financial Statements*

In line with amendments to IAS 1, *Presentation of Financial Statements*, from 1 January 2018, in the income statement, UBS presents interest income and interest expense, calculated using the effective interest rate method, on financial instruments measured at amortized cost and financial assets measured at fair value through other comprehensive income separately from interest income and expense on financial instruments measured at fair value through profit or loss.

→ Refer to Note 3 for more information

### 6) Change in presentation of forward points on certain long-duration foreign exchange contracts transacted as economic hedges

Effective from 1 January 2018, UBS AG refined the presentation of forward points on certain long-duration foreign exchange contracts transacted as economic hedges, transferring the forward points from *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*) to *Interest income from financial instruments measured at fair value through profit or loss* to align with the presentation of forward points on certain short-duration foreign exchange contracts. The amount of forward points on certain long-duration foreign exchange contracts recognized in *Interest income from financial instruments measured at fair value through profit or loss* did not have a material effect on UBS AG's financial statements and prior periods have not been restated.

### 7) IFRS Interpretations Committee, *Payments relating to taxes other than income tax*

During the second quarter of 2018, UBS AG refined its treatment of prepayments or overpayments in relation to uncertain tax positions outside of the scope of IAS 12, *Income Taxes*, following the IFRS Interpretation Committee's discussion on *Payments relating to taxes other than income tax*. More specifically, prepayments for uncertain tax positions that have not yet given rise to a liability are recognized as assets because UBS AG will either receive a cash rebate or a benefit through the extinguishment of a future liability. Adoption of the change did not have a material effect on UBS AG's financial statements.

## Note 1 Summary of significant accounting policies (continued)

### c) Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 *Financial Instruments*

#### 1) Introduction

Effective 1 January 2018, UBS AG adopted IFRS 9, *Financial Instruments*, which replaced IAS 39, *Financial Instruments: Recognition and Measurement*, and substantially changed accounting and financial reporting in three key areas: classification and measurement of financial assets, impairment and hedge accounting. In addition, UBS AG early adopted the Amendment to IFRS 9, *Prepayment Features with Negative Compensation*, issued in October 2017, which allows UBS AG to continue to apply amortized cost accounting to Swiss private mortgages and corporate loans that provide for two-way compensation if a prepayment occurs. UBS AG has retained hedge accounting under IAS 39 as permitted and early adopted the own credit requirements of IFRS 9 during the first quarter of 2016.

As permitted by the transitional provisions of IFRS 9, UBS AG elected not to restate comparative figures. Any effect on the carrying amounts of financial assets and liabilities at the date of transition to IFRS 9 was recognized as an adjustment to opening retained earnings. The detailed effects of the adoption of IFRS 9 on 1 January 2018 are presented in this Note and the updated accounting policies for classification and measurement of financial instruments and impairment of financial assets as applied from 1 January 2018 are presented in Note 1a.

#### 2) Transition effect

The adoption of IFRS 9 effective 1 January 2018 has resulted in a reduction to IFRS consolidated equity as of 1 January 2018 of USD 591 million. This effect is comprised of classification and measurement changes of USD 360 million on a pre-tax basis and USD 300 million net of tax, as well as effects from the implementation of impairment requirements based on an expected credit loss (ECL) methodology of USD 357 million on a pre-tax basis and USD 291 million net of tax.

→ Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at [www.ubs.com/investors](http://www.ubs.com/investors) for more information on the effect of the IFRS 9 transition on UBS's capital adequacy

#### 3) Governance

The implementation of IFRS 9 has been a key strategic initiative for UBS AG implemented under the joint sponsorship of the Group Chief Financial Officer and the Group Chief Risk Officer. The incorporation of forward-looking information into the ECL calculation and the definition and assessment of what constitutes a significant increase in credit risk (SICR) are inherently subjective and involve the use of significant expert judgment. Therefore, UBS AG has developed a front-to-back governance framework over the ECL calculation process jointly owned by the Group Chief

Financial Officer and the Group Chief Risk Officer and has designed controls to meet the requirements of the Sarbanes-Oxley Act. UBS AG has efficient credit risk management processes in place that continue to be applicable and aim to ensure that the effects of economic developments are appropriately considered, mitigation actions are taken where required and risk appetite is reassessed and adjusted as needed.

→ Refer to the "Risk management and control" section of this report for more information

#### 4) Retrospective amendments to UBS AG's balance sheet presentation

Although the effect of IFRS 9 classification and measurement changes has been applied prospectively, UBS AG has made a series of changes to the presentation of its balance sheet to facilitate comparability, with information for periods ending before 1 January 2018 being presented in this revised structure. The primary changes include:

- IAS 39-specific asset categories, such as *Financial assets held to maturity* and *Financial assets available for sale*, have been superseded by the new categories *Financial assets measured at amortized cost* and *Financial assets measured at fair value through other comprehensive income*.
- A new line, *Financial assets at fair value not held for trading*, has been created to accommodate in particular financial assets previously designated at fair value, all of which are mandatorily classified at fair value through profit or loss under IFRS 9.
- *Other assets* and *Other liabilities* have been split into those 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* have been combined into a single line, *Receivables from securities financing transactions*. Similarly, *Cash collateral on securities lent* and *Repurchase agreements* have been combined into a single line, *Payables from securities financing transactions*.
- Finance lease receivables, previously presented within *Loans*, are now presented within *Other financial assets measured at amortized cost*.
- Precious metal positions previously presented in *Trading portfolio assets* are now presented within the new line *Other non-financial assets*.
- *Financial liabilities designated at fair value* have been split into two lines: *Debt issued designated at fair value* and *Other financial liabilities designated at fair value*.
- Obligations of UBS AG from funding received from UBS Group AG or its subsidiaries, previously included within *Due to customers*, are now presented separately within *Funding from UBS Group AG and its subsidiaries*.

## Note 1 Summary of significant accounting policies (continued)

The table below illustrates the revised balance sheet presentation of assets and liabilities as of 31 December 2017 in comparison with the presentation in the Annual Report 2017. The presentation of the components of equity has not changed, and therefore, for illustration purposes, total liabilities and equity

are presented in a single line in the table. The table does not reflect any of the effects of adopting the classification and measurement requirements of IFRS 9, which are presented in the "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9" table in this Note.

### Retrospective amendments to UBS AG's balance sheet presentation as of 31 December 2017

USD million		31.12.17	31.12.17
	References	Former presentation	Revised presentation
<b>Assets</b>			
Cash and balances at central banks		90,045	90,045
Loans and advances to banks (formerly: Due from banks)		14,047	14,047
Receivables from securities financing transactions (new line)	1		91,951
Cash collateral on securities borrowed (newly included in Receivables from securities financing transactions)	1	12,714	
Reverse repurchase agreements (newly included in Receivables from securities financing transactions)	1	79,238	
Cash collateral receivables on derivative instruments		24,040	24,040
Loans and advances to customers (formerly: Loans)	2	330,038	328,952
Financial assets held to maturity (superseded)	3	9,403	
Other financial assets measured at amortized cost (new line)	2,3,7		37,890
<b>Total financial assets measured at amortized cost</b>			<b>586,925</b>
Financial assets at fair value held for trading (formerly: Trading portfolio assets)	4	134,190	129,509
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>		<i>36,277</i>	<i>36,277</i>
Derivative financial instruments (formerly: Positive replacement values)		121,286	121,286
Brokerage receivables (new line, formerly included within Other assets)		n/a	n/a
Financial assets at fair value not held for trading (new line)	5		60,070
Financial assets designated at fair value	5	60,070	
<b>Total financial assets measured at fair value through profit or loss</b>			<b>310,865</b>
Financial assets available for sale (superseded)	6	8,889	
<b>Financial assets measured at fair value through other comprehensive income (new line)</b>	<b>6</b>		<b>8,889</b>
Investments in associates		1,045	1,045
Property, equipment and software		8,191	8,191
Goodwill and intangible assets		6,563	6,563
Deferred tax assets		9,993	9,993
Other non-financial assets (new line)	4,7		7,548
Other assets (superseded)	7	30,268	
<b>Total assets</b>		<b>940,020</b>	<b>940,020</b>
<b>Liabilities</b>			
Amounts due to banks		7,728	7,728
Payables from securities financing transactions (new line)	8		17,485
Cash collateral on securities lent (newly included in Payables from securities financing transactions)	8	1,835	
Repurchase agreements (newly included in Payables from securities financing transactions)	8	15,650	
Cash collateral payables on derivative instruments		31,029	31,029
Customer deposits (formerly: Due to customers)	9	458,705	423,058
Funding from UBS Group AG and its subsidiaries (new line, formerly included within Due to customers)	9		35,648
Debt issued measured at amortized cost		107,458	107,458
Other financial liabilities measured at amortized cost (new line)	11		38,092
<b>Total financial liabilities measured at amortized cost</b>			<b>660,498</b>
Financial liabilities at fair value held for trading (formerly: Trading portfolio liabilities)		31,251	31,251
Derivative financial instruments (formerly: Negative replacement values)		119,138	119,138
Brokerage payables designated at fair value (new line, formerly included within Other liabilities)		n/a	n/a
Financial liabilities designated at fair value (superseded)	10	55,604	
Debt issued designated at fair value (new line)	10		50,782
Other financial liabilities designated at fair value (new line)	10,11		16,643
<b>Total financial liabilities measured at fair value through profit or loss</b>			<b>217,814</b>
Provisions		3,164	3,164
Other non-financial liabilities (new line)	11		6,499
Other liabilities (superseded)	11	56,412	
<b>Total liabilities</b>		<b>887,974</b>	<b>887,974</b>
<b>Total liabilities and equity</b>		<b>940,020</b>	<b>940,020</b>

## Note 1 Summary of significant accounting policies (continued)

### Explanatory footnotes to the table "Retrospective amendments to UBS AG's balance sheet presentation"

Table ref.	Description of presentation changes applied retrospectively to the balance sheet as of 31 December 2017
<b>Balance sheet assets</b>	
1	Cash collateral on securities borrowed of USD 12,714 million and reverse repurchase agreements of USD 79,238 million as of 31 December 2017 are now presented as a total of USD 91,951 million within a single line, <i>Receivables from securities financing transactions</i> .
2	Finance lease receivables of USD 1,086 million as of 31 December 2017, previously presented within <i>Loans</i> , are now presented within <i>Other financial assets measured at amortized cost</i> .
3	<i>Financial assets held to maturity</i> measured at amortized cost of USD 9,403 million as of 31 December 2017 are now presented within <i>Other financial assets measured at amortized cost</i> .
4	Precious metal positions of USD 4,681 million as of 31 December 2017, previously presented in <i>Trading portfolio assets</i> , are now presented within <i>Other non-financial assets</i> .
5	Financial assets designated at fair value through profit or loss of USD 60,070 million as of 31 December 2017, previously presented in a separate line, are now presented within <i>Financial assets at fair value not held for trading</i> .
6	Debt and equity instruments of USD 8,889 million as of 31 December 2017, previously presented in <i>Financial assets available for sale</i> , are now presented within <i>Financial assets measured at fair value through other comprehensive income</i> .
7	The reporting line <i>Other assets</i> has been split into two new reporting lines, <i>Other financial assets measured at amortized cost</i> and <i>Other non-financial assets</i> . <ul style="list-style-type: none"> <li>– Assets of USD 30,268 million as of 31 December 2017, previously presented within <i>Other assets</i>, are now presented within <i>Other financial assets measured at amortized cost</i> (USD 27,401 million) and <i>Other non-financial assets</i> (USD 2,867 million).</li> <li>– Financial assets now presented within <i>Other financial assets measured at amortized cost</i> include brokerage receivables of USD 19,573 million, debt securities of USD 9,403 million, loans to financial advisors of USD 3,199 million and other assets amounting to USD 5,715 million. Refer to Note 17a for more information.</li> <li>– Refer to Note 17b for more information on assets now presented within <i>Other non-financial assets</i>.</li> </ul>
<b>Balance sheet liabilities</b>	
8	Cash collateral on securities lent of USD 1,835 million and repurchase agreements of USD 15,650 million as of 31 December 2017 are now presented within a single line, <i>Payables from securities financing transactions</i> .
9	Obligations of UBS AG from funding received from UBS Group AG or its subsidiaries of USD 35,648 million as of 31 December 2017, which are not within the UBS AG scope of consolidation and were previously included within <i>Due to customers</i> , are now presented separately within <i>Funding from UBS Group AG and its subsidiaries</i> .
10	Financial liabilities designated at fair value through profit or loss of USD 55,604 million as of 31 December 2017 are now presented within <i>Debt issued designated at fair value</i> (USD 50,782 million) and <i>Other financial liabilities designated at fair value</i> (USD 4,822 million).
11	The reporting line <i>Other liabilities</i> has been split into three new reporting lines, <i>Other financial liabilities measured at amortized cost</i> , <i>Other financial liabilities designated at fair value</i> and <i>Other non-financial liabilities</i> . <ul style="list-style-type: none"> <li>– Liabilities amounting to USD 56,412 million as of 31 December 2017, previously presented within <i>Other liabilities</i>, are now presented within <i>Other financial liabilities measured at amortized cost</i> (USD 38,093 million, thereof USD 30,413 million brokerage payables), within <i>Other financial liabilities designated at fair value</i> (amounts due under unit-linked investment contracts of USD 11,821 million) and within <i>Other non-financial liabilities</i> (USD 6,499 million).</li> <li>– Refer to Note 22a for more information on financial liabilities now presented within <i>Other financial liabilities measured at amortized cost</i>.</li> <li>– Refer to Note 22b for more information on financial liabilities now presented within <i>Other financial liabilities designated at fair value</i>.</li> <li>– Refer to Note 22c for more information on liabilities now presented within <i>Other non-financial liabilities</i>.</li> </ul>

## Note 1 Summary of significant accounting policies (continued)

### 5) Transition to IFRS 9 as of 1 January 2018

#### Transition to classification and measurement requirements

As set out in the amended accounting policies in Note 1a, IFRS 9 requires all financial assets, except equity instruments and derivatives, to be classified at amortized cost, at fair value through other comprehensive income or at fair value through profit or loss (FVTPL), based on the business model for managing the respective assets and their contractual cash flow characteristics.

Changes resulting from the application of IFRS 9 classification and measurement requirements as of 1 January 2018 have been applied as follows:

- Determination of the business model was made based on facts and circumstances as of the 1 January 2018 transition date.
- De-designations and new designations of financial instruments at FVTPL, pursuant to transition requirements of IFRS 9, have been carried out as of 1 January 2018. These reassessments resulted in:
  - i. the de-designation of certain financial assets designated at FVTPL, as they are managed on a fair value basis, and therefore mandatorily measured at fair value, or are no longer managed on a fair value basis but held to collect the contractual cash flows and therefore measured at amortized cost; and
  - ii. the new designation of financial liabilities at FVTPL (e.g., brokerage payables) in order to achieve measurement consistency with associated financial assets that are mandatorily measured at FVTPL (e.g., brokerage receivables).

For UBS AG, the most significant IFRS 9 classification and measurement changes on transition to IFRS 9 were as follows:

- financial assets that no longer qualify for amortized cost accounting under IFRS 9 have been classified at FVTPL because their cash flow characteristics do not satisfy the solely payments of principal and interest criterion (e.g., auction rate securities and certain brokerage receivables);
- lending arrangements that no longer qualify for amortized cost accounting under IFRS 9 are classified at FVTPL 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 or to collect contractual cash flows and sell (e.g., certain Investment Bank lending arrangements);
- equity instruments classified as available for sale under IAS 39 are classified at FVTPL under IFRS 9; and
- financial liabilities are newly designated under IFRS 9 at FVTPL, from amortized cost accounting, to align with conclusions reached for associated financial assets that will be measured at FVTPL (e.g., brokerage payables).

#### Effect on UBS AG income statement presentation

Upon adoption of IFRS 9, the reclassification of auction rate securities, certain loans in the Investment Bank, certain repurchase agreements and brokerage balances from amortized cost to FVTPL has resulted in the interest income from these instruments moving from *Interest income (expense) from financial instruments measured at amortized cost* to *Interest income (expense) from financial instruments measured at fair value through profit or loss*. These changes have been applied prospectively from 1 January 2018.

#### Effect on UBS AG's statement of cash flows

Following the adoption of IFRS 9, changes have been made to the statement of cash flows to reflect the changes arising from financial instruments that have been reclassified on the balance sheet. In particular, cash flows from certain financial assets previously measured as available-for-sale assets at fair value through other comprehensive income have been reclassified from investing activities to operating activities as the assets are measured at fair value through profit or loss effective 1 January 2018.

#### Transition to expected credit loss requirements

As set out in UBS AG's amended accounting policies in Note 1a, IFRS 9 introduced a forward-looking ECL approach, which is intended to result in an earlier recognition of credit losses compared with the incurred-loss impairment approach for financial instruments under IAS 39 and the loss-provisioning approach for financial guarantees and loan commitments under IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*.

The majority of ECL calculated as of the transition date relate to the private and commercial mortgage portfolio and corporate lending in Switzerland within Personal & Corporate Banking.

## Note 1 Summary of significant accounting policies (continued)

### Models at transition

For the purpose of implementing ECL under IFRS 9, UBS AG has leveraged existing Pillar 1 internal ratings-based (IRB) models that are also used in determining expected loss and risk-weighted assets under the Basel III framework and Pillar 2 stress loss models.

Existing models have been adapted and 29 new models have been developed for the ECL calculation that consider the complexity, structure and risk profile of relevant portfolios and take account of the fact that the probabilities of default (PD) and the loss given default (LGD) used in the ECL calculation are point-in-time-based as opposed to the corresponding Basel III through-the-cycle (TTC) parameters. Management adjustments have also been made. UBS AG has leveraged its existing model risk framework, including the key model validation control executed by Model Risk Management & Control. New and revised models have been approved by UBS's Group Model Governance Board.

The assignment of internal counterparty rating grades and the determination of default probabilities for the purposes of Basel III remain unchanged.

→ Refer to "Credit risk models" in the "Risk management and control" section of this report for more information

### Scenarios and scenario weights at transition

As outlined in Note 1a, UBS AG uses four different economic scenarios in the ECL calculation: an upside, a baseline, a mild downside and a severe downside scenario. ECL calculated on transition have been determined for each of the scenarios and subsequently weighted based on the probabilities in the table "Economic scenarios and weights applied."

#### Economic scenarios and weights applied

ECL scenario	Assigned weights in % (1.1.18)
Upside	20.0
Baseline	42.5
Mild downside	30.0
Severe downside	7.5

→ Refer to Note 23b for information on weights applied to economic scenarios as at 31 December 2018

UBS AG has established IFRS 9 ECL Scenario and Operating Committees to propose and approve the selection of the scenarios and weights to be applied and to monitor whether appropriate governance exists.

### Macroeconomic and other factors at transition

Assumptions around the most important forward-looking economic factors for Switzerland, the US and other regions as applied in each of the economic scenarios to determine ECL at the date of transition can be summarized as follows.

For the baseline scenario, which is modeled along our business plan assumptions of a continuation of overall important global growth, Swiss GDP growth remains between 1% and 2% annually over the three years of the scenario. Moderate growth results in a very mild increase of unemployment, which stabilizes at around 3.5%. Asset price growth is also moderate, with the Swiss equity price index rising approximately 8% annually, while house prices grow by less than 1% annually. Policy rates, short-term interest rates and government bond yields increase very gradually over the three years of the scenario by approximately 50 basis points. GDP growth in the US remains relatively stable, and faster than in Switzerland. Monetary policy tightens at a similar pace to Switzerland and, combined with a modest decline in the unemployment rate, helps to keep inflation in check. US equity prices slightly underperform their Swiss counterparts, while house prices outperform relatively stagnant Swiss house price growth. In the rest of the world, growth remains buoyant, with moderating growth in both Europe and China contrasting with accelerating growth in other emerging markets.

In the upside scenario, which assumes GDP growth rising above trend in most countries with only a moderate rise in inflation and ongoing accommodative monetary policies, GDP growth in Switzerland peaks at around 5% annually. Strong growth leads to a decline in unemployment to very low levels (below 1%) by 2020. Asset prices grow at a robust pace, with equity prices increasing approximately 10% annually and house prices (single-family homes) rising approximately 4% annually. Policy and short-term interest rates remain low over the entire scenario, while government bond yields experience a sustained increase. In the US and the rest of the world, the scenario shows broadly similar features, with growth accelerating in Year 1 before steadily returning toward trend by Year 3. Specifically in the US, GDP growth accelerates at a slightly faster pace than in Switzerland, although the US experiences a slightly less substantial improvement in the unemployment rate by Year 3. The degree of policy tightening is marginally greater over the scenario horizon and, as in Switzerland, long-term government bond yields rise more significantly than short-term rates, and to a greater degree.



## Note 1 Summary of significant accounting policies (continued)

The mild downside scenario is based on a monetary policy tightening assumption, implemented to deflate a potential asset price bubble, causing Swiss GDP to decline by almost 1% in the first year of the scenario. The unemployment rate rises to roughly 5%. Equity prices fall by more than 20% over three years, while house prices decline by 15% over the same period. The fall of the nominal asking rent index, which is cushioned by higher interest rates, is more moderate than the decline in house prices. Short-term interest rates rise significantly as a result of monetary tightening, as well as government bond yields. In this scenario, inflation in the US accelerates rapidly, leading to a sharp rise in short-term interest rates, with a similar development in Switzerland. GDP growth and house prices decline at a similar rate in the US and Switzerland. In the rest of the world, growth is also weighed down, particularly in more vulnerable emerging markets such as Russia, Turkey and Brazil, as interest rates and credit spreads rise sharply.

The severe downside scenario is modeled to mimic a severe recession caused by an event affecting Switzerland's competitiveness in key export markets, with Swiss GDP shrinking almost 7% in the first year of the scenario. The severe recession results in a substantial increase in unemployment, which peaks at around 9%. Asset prices plummet, with the Swiss equity index falling more than 55% over three years, and house prices declining 27% over the same period. Policy and short-term interest rates remain low over the entire scenario horizon. US GDP and unemployment deteriorate by a lesser degree than in Switzerland, and while house and equity prices decline sharply, the effects are also less severe than in Switzerland. With more scope to cut rates than the Swiss National Bank, short-term rates fall in the US. In the rest of the world, growth also slows sharply, particularly in the eurozone and neighboring emerging markets, such as Turkey and Russia.

→ Refer to Note 23 for more information

### *ECL measurement period at transition*

As set out in Note 1a, for the majority of ECL-relevant instruments, the contractual maturity is used to calculate the measurement period, with this capped at 12 months when stage 1 ECL are required. In addition, for credit card limits and Swiss callable master credit facilities, judgment is required as UBS AG must determine the period over which it is exposed to credit risk. A seven-year period has been applied for credit cards and 12 months for master credit facilities. UBS AG's ECL-relevant financial instruments have relatively short average maturities, which significantly contribute to the level of ECL on transition.

### *SICR determination at transition*

The identification of instruments for which a significant increase in credit risk (SICR) has been determined since initial recognition,

and the corresponding allocation to stage 2 at transition, generally follow the principles described in the relevant accounting policy provided in Note 1a. Furthermore, the following principles have been applied.

*General:* In estimating the retrospective lifetime PDs, the economic conditions over the relevant prior periods and the general significant uncertainty inherent in such approximation have been considered to determine the allocation of instruments to stage 2 at transition.

*Real estate financing:* The Basel III rating methodology applied to the majority of income-producing real estate financings within Personal & Corporate Banking, which is leveraged for IFRS 9 ECL calculations, was significantly changed in 2017. As a consequence, there is no comparable rating on origination to determine whether an SICR has arisen over time. As permitted by the IFRS 9 transition requirements, a lifetime ECL allowance has therefore been recognized for certain real estate financing positions and will continue to be recognized until the positions are derecognized.

*Other portfolios, including private mortgages and commercial SME clients:* The Basel III rating models for other key portfolios in Personal & Corporate Banking, in particular for private client mortgages and commercial clients in the small and medium-sized enterprise segment, have recently been subject to a major redesign. While the methodology remained essentially the same and the calibration to the portfolios' average TTC PD value unchanged, the effect on the stage allocation is significant. This is due to the fact that the introduction of new models has led to a broader and different distribution of borrowers across the rating spectrum; while there was no material effect on those counterparties with an uplift in their rating, some of those that had a downward shift in their rating triggered the SICR threshold and a reclassification into stage 2 at transition.

### *Overview of transition effects*

The table on the following pages provides a detailed overview of the IFRS 9 transition effects as of 1 January 2018. This includes:

- reclassification of IAS 39 carrying amounts to the new categories applicable under IFRS 9;
- remeasurement of carrying amounts due to reclassification (any remeasurement to fair value and / or reversal of IAS 39 allowances or IAS 37 provisions for assets moving from amortized cost to fair value); and
- recognition of IFRS 9 ECL for in-scope assets, off-balance sheet positions and other credit lines.

The following table also includes the effects recognized for deferred tax assets and therefore the total effect provided in *Retained earnings* in the table is net of tax effects. Explanatory footnotes set out after the table provide additional details on these changes.

## Note 1 Summary of significant accounting policies (continued)

### Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9

USD million	31.12.17		1.1.18			Carrying amount (IFRS 9)
	Classification under IAS 39	Carrying amount (IAS 39)	Reclassification (of IAS 39 carrying amounts)	Remeasurement due to reclassification incl. reversal of IAS 39 / IAS 37 allowances / provisions	Recognition of ECL (IFRS 9)	
<b>Assets</b>						
Cash and balances at central banks	Loans and receivables	90,045			0	90,045
Loans and advances to banks	Loans and receivables	14,047	(17)		(3) <sup>12</sup>	14,027
to: Brokerage receivables	Loans and receivables		(17) <sup>1</sup>			
Receivables from securities financing transactions	Loans and receivables	91,951	(5,085)		(2) <sup>12</sup>	86,864
to: Financial assets at fair value not held for trading	Loans and receivables		(5,085) <sup>2</sup>			
Cash collateral receivables on derivative instruments	Loans and receivables	24,040			0	24,040
Loans and advances to customers	Loans and receivables	328,952	(8,024)	0	(241) <sup>12</sup>	320,687
to: Financial assets at fair value not held for trading	Loans and receivables		(2,747) <sup>3</sup>			
to: Brokerage receivables	Loans and receivables		(4,812) <sup>1</sup>			
to: Financial assets at fair value held for trading	Loans and receivables		(480) <sup>4</sup>			
from: Financial assets at fair value not held for trading	FVTPL (designated)		9 <sup>5</sup>	0		
from: Financial assets at fair value held for trading	FVTPL (held for trading)		6 <sup>5</sup>			
Other financial assets measured at amortized cost	held to maturity	37,890	(19,004)	0	(36) <sup>12</sup>	18,850
to: Brokerage receivables	Loans and receivables		(19,573) <sup>1</sup>			
from: Financial assets measured at fair value through other comprehensive income	Available for sale		569 <sup>6</sup>	0		
<b>Total financial assets measured at amortized cost</b>		586,925	(32,131)	0	(282)	554,512
Financial assets at fair value held for trading	FVTPL (held for trading)	129,509	(11,135)	(16)		118,359
to: Loans and advances to customers	FVTPL (held for trading)		(6) <sup>5</sup>			
to: Financial assets at fair value not held for trading	FVTPL (held for trading)		(11,609) <sup>7</sup>			
from: Loans and advances to customers	Loans and receivables		480 <sup>4</sup>	(16) <sup>4</sup>		
of which: assets pledged as collateral that may be sold or repledged by counterparties	FVTPL (held for trading)	36,277				36,277
Derivative financial instruments	FVTPL (derivatives)	121,286				121,286
Brokerage receivables	Loans and receivables		24,403			24,403
from: Loans and advances to banks	Loans and receivables		17 <sup>1</sup>			
from: Loans and advances to customers	Loans and receivables		4,812 <sup>1</sup>			
from: Other financial assets measured at amortized cost	Loans and receivables		19,573 <sup>1</sup>			
Financial assets at fair value not held for trading	FVTPL (designated)	60,070 <sup>9</sup>	20,822	(295)		80,598
to: Loans and advances to customers	FVTPL (designated)		(9) <sup>5</sup>			
from: Financial assets at fair value held for trading	FVTPL (held for trading)		11,609 <sup>7</sup>			
from: Receivables from securities financing transactions	Loans and receivables		5,085 <sup>2</sup>	(1)		
from: Loans and advances to customers	Loans and receivables		2,747 <sup>3</sup>	(293) <sup>3</sup>		
from: Financial assets measured at fair value through other comprehensive income	Available for sale		1,391 <sup>8</sup>			
<b>Total financial assets measured at fair value through profit or loss</b>		310,865	34,090	(310)		344,646
Financial assets measured at fair value through other comprehensive income	Available for sale	8,889	(1,960)			6,930 <sup>10</sup>
to: Other financial assets measured at amortized cost	Available for sale		(569) <sup>6</sup>			
to: Financial assets at fair value not held for trading	Available for sale		(1,391) <sup>8</sup>			
Investments in associates		1,045				1,045
Property, equipment and software		8,191				8,191
Goodwill and intangible assets		6,563				6,563
Deferred tax assets		9,993		59 <sup>11</sup>	66 <sup>11</sup>	10,118
Other non-financial assets		7,548				7,548
<b>Total assets</b>		940,020		(251)	(216)	939,554



## Note 1 Summary of significant accounting policies (continued)

### Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9 (continued)

USD million	31.12.17		1.1.18			Carrying amount (IFRS 9)
	Classification under IAS 39	Carrying amount (IAS 39)	Reclassification (of IAS 39 carrying amounts)	Remeasurement due to reclassification incl. reversal of allowances / provisions	Recognition of ECL (IFRS 9)	
<b>Liabilities</b>						
Amounts due to banks	Amortized cost	7,728				7,728
Payables from securities financing transactions	Amortized cost	17,485	(5,212)			12,272
<i>to: Other financial liabilities designated at fair value</i>	<i>Amortized cost</i>		<i>(5,212)<sup>13</sup></i>			
Cash collateral payables on derivative instruments	Amortized cost	31,029				31,029
Customer deposits	Amortized cost	423,058	(5,404)			417,653
<i>to: Brokerage payables designated at fair value</i>	<i>Amortized cost</i>		<i>(5,404)<sup>14</sup></i>			
Funding from UBS Group AG and its subsidiaries	Amortized cost	35,648				35,648
Debt issued measured at amortized cost	Amortized cost	107,458				107,458
Other financial liabilities measured at amortized cost	Amortized cost	38,092	(30,413)	(4)		7,675
<i>to: Brokerage payables designated at fair value</i>	<i>Amortized cost</i>		<i>(30,413)<sup>14</sup></i>			
<i>Derecognition: deferred fees on other loan commitments</i>	<i>Amortized cost</i>			<i>(4)<sup>4</sup></i>		
<b>Total financial liabilities measured at amortized cost</b>		660,498	(41,030)	(4)		619,465
Financial liabilities at fair value held for trading	FVTPL (held for trading)	31,251				31,251
Derivative financial instruments	FVTPL (derivatives)	119,138		59		119,197
	<i>Amortized cost – off-balance sheet</i>			<i>61<sup>4</sup></i>		
<i>Recognition: Loan commitments</i>						
<i>Derecognition: Loan commitments</i>	<i>FVTPL (derivatives)</i>			<i>(2)<sup>5</sup></i>		
Brokerage payables designated at fair value	Amortized cost		35,818			35,818
<i>from: Customer deposits</i>	<i>Amortized cost</i>		<i>5,404<sup>14</sup></i>			
<i>from: Other financial liabilities measured at amortized cost</i>	<i>Amortized cost</i>		<i>30,413<sup>14</sup></i>			
Debt issued designated at fair value	FVTPL (designated)	50,782				50,782
Other financial liabilities designated at fair value	FVTPL (designated)	16,643	5,212	(5)		21,851
<i>from: Payables from securities financing transactions</i>	<i>Amortized cost</i>		<i>5,212<sup>13</sup></i>	<i>(5)<sup>13</sup></i>		
<b>Total financial liabilities measured at fair value through profit or loss</b>		217,814	41,030	54		258,898
Provisions		3,164			76 <sup>12</sup>	3,240
Other non-financial liabilities		6,499				6,499
<b>Total liabilities</b>		887,974		50	76	888,100
<b>Equity</b>						
Share capital		338				338
Share premium		24,633				24,633
Retained earnings		22,189	74 <sup>8,15</sup>	(300)	(291)	21,672
Other comprehensive income recognized directly in equity, net of tax		4,828	(74) <sup>8,15</sup>			4,754
<b>Equity attributable to shareholders</b>		51,987	0	(300) <sup>15</sup>	(291) <sup>15</sup>	51,397
Equity attributable to non-controlling interests		59				59
<b>Total equity</b>		52,046	0	(300)	(291)	51,455
<b>Total liabilities and equity</b>		940,020	0	(251)	(216)	939,554

## Note 1 Summary of significant accounting policies (continued)

### Explanatory footnotes to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9"

Table ref.	Description of classification or remeasurement changes on adoption of IFRS 9 as of 1 January 2018
1	Certain customer and prime brokerage receivable balances, in the Investment Bank and Global Wealth Management, fail the solely payments of principal and interest (SPPI) criterion for measurement at amortized cost. These include USD 4,812 million previously included within <i>Loans and advances to customers</i> , USD 17 million from <i>Loans and advances to banks</i> and USD 19,573 million previously included within <i>Other financial assets measured at amortized cost</i> . The receivables are managed under a business model whose objective is to hold the assets to collect contractual cash flows. However, the reported receivables represent an aggregation of cash receivable and payable balances that form a single unit of account at the client level and generate a return that does not constitute consideration for the time value of money, credit risk and other basic lending risks. The SPPI criterion is therefore not met and under IFRS 9 the receivables are mandatorily measured at fair value through profit or loss (FVTPL) and separately presented as <i>Brokerage receivables</i> . There was no difference between the amortized cost carrying amount and the fair value as of 1 January 2018 and therefore no remeasurement gain or loss has been recognized.
2	Based on the business model assessment under IFRS 9, certain reverse repurchase agreements with a carrying amount of USD 5,085 million as of 31 December 2017 were determined to be managed on a fair value basis and were therefore reclassified from amortized cost to FVTPL measurement under IFRS 9. The carrying value has been reclassified from <i>Receivables from securities financing transactions</i> to <i>Financial assets at fair value not held for trading</i> as of 1 January 2018. A remeasurement loss of USD 1 million has been recorded in <i>Retained earnings</i> . USD 11,787 million of forward starting reverse repurchase agreements are newly accounted for as derivatives, prior to settlement, from 1 January 2018 as they are managed on a fair value basis. The fair value of the derivatives as of 1 January 2018 was immaterial.
3	Certain positions previously included within <i>Loans and advances to customers</i> with a carrying amount of USD 2,747 million as of 31 December 2017 were reclassified to <i>Financial assets at fair value not held for trading</i> upon adoption of IFRS 9. This includes: – auction rate securities (USD 2,169 million) that are held in Corporate Center and contain an embedded leverage feature triggering the failure of the SPPI criterion; and – certain loans in the Investment Bank (USD 566 million) and in Corporate Center (USD 12 million) that either fail the SPPI criterion or are held within a business model with an intent to sell or substantially hedge the primary risks. These assets are mandatorily measured at FVTPL under IFRS 9. A corresponding net remeasurement loss of USD 293 million was recognized in <i>Retained earnings</i> related to these reclassifications. This remeasurement loss also included reversal of specific credit loss allowances (USD 11 million).
4	Due to a change in the underlying business model, loans and advances to customers with a carrying amount of USD 480 million as of 31 December 2017 have been reclassified to <i>Financial assets at fair value held for trading</i> as of 1 January 2018. A corresponding net remeasurement loss of USD 16 million, which includes the reversal of specific IAS 39 credit loss allowances, was recognized in <i>Retained earnings</i> related to this reclassification. Irrevocable loan commitments that are contractually linked with these financial assets are now recognized as <i>Derivative financial instruments</i> (derivative liabilities) and are measured at FVTPL as of 1 January 2018. This reclassification resulted in a USD 61 million loss with a corresponding entry to <i>Retained earnings</i> . Liabilities arising from deferred fees of USD 4 million related to these loan commitments recorded as <i>Other financial liabilities measured at amortized cost</i> at 31 December 2017 were derecognized with a corresponding entry to <i>Retained earnings</i> .
5	Financial assets with a carrying amount of USD 15 million as of 31 December 2017 were reclassified to <i>Loans and advances to customers</i> from <i>Financial assets at fair value not held for trading</i> (USD 9 million) and from <i>Financial assets at fair value held for trading</i> (USD 6 million) given management's intent to hold these financial assets to collect contractual cash flows. Loan commitments related to these financial assets, which were recognized as derivative liabilities with a carrying value of USD 2 million as of 31 December 2017, were accordingly derecognized on 1 January 2018 with a corresponding entry to <i>Retained earnings</i> .
6	Certain debt instruments with a carrying amount of USD 569 million as of 31 December 2017 were formerly classified as available for sale and measured at fair value through other comprehensive income (FVOCI) under IAS 39 but are measured at amortized cost under IFRS 9. Those positions, which are held to collect cash flows solely representing payment of principal and interest, are presented within <i>Other financial assets measured at amortized cost</i> as of 1 January 2018. The fair value of these assets was consistent with the amortized cost value as of 1 January 2018 and no remeasurement gain or loss has been recognized.
7	Upon adopting IFRS 9, UBS AG has elected to refine the assets classified within <i>Financial assets at fair value held for trading</i> to carve out those that are segregated from UBS AG's trading activities, where UBS AG's role is primarily to manage the assets on a fair value basis on behalf of others. Instead, such assets will be presented alongside others managed on a fair value basis within <i>Financial assets at fair value not held for trading</i> . As a consequence of this refinement, UBS AG has reclassified assets held to hedge unit-linked investment contracts of USD 11,609 million from <i>Financial assets at fair value held for trading</i> to <i>Financial assets at fair value not held for trading</i> as of 1 January 2018. No remeasurement gain or loss has been recognized.

## Note 1 Summary of significant accounting policies (continued)

### Explanatory footnotes to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9" (continued)

Table ref.	Description of classification or remeasurement changes on adoption of IFRS 9 as of 1 January 2018 (continued)
8	<p>UBS AG holds certain global and local liquidity buffers that were determined to be managed on a fair value basis as management utilizes fair value information for reporting and decision-making purposes. Therefore, assets previously classified as available for sale under IAS 39 with a carrying amount of USD 636 million as of 31 December 2017 were reclassified to <i>Financial assets at fair value not held for trading</i>. An unrealized gain of USD 5 million related to these positions was reclassified from <i>Other comprehensive income</i> to <i>Retained earnings</i>.</p> <p>Additionally, equity instruments and investment fund units previously classified as available for sale under IAS 39 with a carrying amount of USD 755 million as of 31 December 2017 were reclassified to <i>Financial assets at fair value not held for trading</i> under the revised IFRS 9 measurement rules. A related unrealized gain in OCI of USD 204 million has been reclassified to <i>Retained earnings</i>.</p> <p>Additionally, a net tax expense of USD 134 million was transferred from OCI to <i>Retained earnings</i> related to the positions above that were reclassified out of the IAS 39 available-for-sale category.</p>
9	<p>Assets previously designated at FVTPL with a carrying amount of USD 60,070 million as of 31 December 2017 are no longer designated as such under IFRS 9, as it was determined that these assets were either held in a business model that is managed on a fair value basis, did not meet the SPPI criterion, or did meet the SPPI criterion and are held in a hold-to-collect business model.</p> <p>Of the total, assets with a carrying amount of USD 60,062 million are now mandatorily measured at FVTPL and included within <i>Financial assets at fair value not held for trading</i>. The remaining assets with a carrying amount of USD 9 million have been de-designated and were reclassified to <i>Loans and advances to customers</i>, given a change in business model to hold-to-collect (refer to footnote 5).</p>
10	<p>Certain debt instruments with a carrying amount of USD 6,930 million as of 31 December 2017 were formerly classified as available for sale under IAS 39 and are measured at FVOCI under IFRS 9. These instruments include US government bonds, US government-sponsored mortgage-backed securities, and other forms of debt that are held in a business model whose objective is achieved by both collecting contractual cash flows and selling and that meet the SPPI criterion. These positions are now presented within <i>Financial assets measured at fair value through other comprehensive income</i>.</p>
11	<p>Deferred tax assets of USD 126 million have been recognized in connection with the adoption of IFRS 9. Of the total effect, USD 66 million relates to the recognition of ECL and USD 59 million relates to classification and measurement changes upon adoption of IFRS 9.</p>
12	<p>Upon adoption of the ECL requirements of IFRS 9, a transition effect of USD 357 million was recognized, consisting of USD 148 million of stage 1 allowances, USD 193 million of stage 2 allowances and an incremental increase in stage 3 allowances of USD 16 million. The effect was mainly recognized within <i>Loans and advances to customers</i> (USD 241 million), with effects also recognized in <i>Other financial assets measured at amortized cost</i> (USD 36 million), <i>Loans and advances to banks</i> (USD 3 million), <i>Receivables from securities financing transactions</i> (USD 2 million) and <i>Provisions</i> (USD 76 million).</p>
13	<p>Certain repurchase agreements with a carrying amount of USD 5,212 million as of 31 December 2017 have been designated at FVTPL as they are managed in conjunction with reverse repurchase agreements that are mandatorily measured at FVTPL under IFRS 9. These amounts are included within <i>Other financial liabilities designated at fair value</i> as of 1 January 2018. A remeasurement gain of USD 5 million has been recognized in <i>Retained earnings</i> as of 1 January 2018 related to this reclassification.</p> <p>USD 7,930 million of forward starting repurchase agreements are newly accounted for as derivatives, prior to settlement, from 1 January 2018 as they are managed on a fair value basis. The fair value of the derivatives as of 1 January 2018 was immaterial.</p>
14	<p>To achieve measurement consistency with reclassified customer and prime brokerage receivables that are measured at FVTPL following adoption of IFRS 9, certain customer deposits with a carrying amount of USD 5,404 million and prime brokerage payables with a carrying amount of USD 30,413 million as of 31 December 2017 have been designated at FVTPL and are presented within <i>Brokerage payables designated at fair value</i> as of 1 January 2018. There was no difference between the amortized cost carrying amount and the fair value as of 1 January 2018 and therefore no remeasurement gain or loss has been recognized.</p>
15	<p>The adoption of IFRS 9 has resulted in a reduction to IFRS consolidated equity as of 1 January 2018 of USD 591 million.</p> <p>This effect is comprised of classification and measurement changes of USD 360 million on a pre-tax basis and USD 300 million net of tax, as well as effects from the implementation of ECL methodology of USD 357 million on a pre-tax basis and USD 291 million net of tax. In addition, USD 74 million has been reclassified from <i>Other comprehensive income</i> recognized directly in equity, net of tax, to <i>Retained earnings</i> (refer to footnote 8 above), with no overall effect on equity attributable to shareholders.</p>

## Note 1 Summary of significant accounting policies (continued)

### Reconciliation of allowances and provisions on adoption of IFRS 9 as of 1 January 2018

The table below provides a reconciliation from the IAS 39 allowances / IAS 37 provisions to the IFRS 9 ECL allowances / provisions recognized as of 1 January 2018 upon adoption of IFRS 9.

#### Reconciliation of allowances and provisions on adoption of IFRS 9

	31.12.17	1.1.18		
<i>USD million</i>	Loss allowances and provisions (IAS 39 / IAS 37)	Reversal of allowances (IAS 39)	Recognition of ECL (IFRS 9) <sup>1</sup>	Allowances and provisions for ECL (IFRS 9)
<b>On-balance sheet</b>				
Cash and balances at central banks			0	0
Loans and advances to banks	(3)		(3)	(5)
Receivables from securities financing transactions			(2)	(2)
Cash collateral receivables on derivative instruments			0	0
Loans and advances to customers	(675)	27 <sup>2</sup>	(241) <sup>3</sup>	(890)
Other financial assets measured at amortized cost	(104) <sup>4</sup>		(36)	(139)
<b>Total on-balance sheet</b>	<b>(781)</b>	<b>27</b>	<b>(282)</b>	<b>(1,037)</b>
<b>Off-balance sheet financial instruments and other credit lines</b>				
Guarantees	(30)		(8)	(38)
Loan commitments	(4)		(33)	(37)
Other credit lines			(35)	(35)
<b>Total off-balance sheet financial instruments and other credit lines</b>	<b>(34)</b>		<b>(76)</b>	<b>(110)</b>
<b>Total</b>	<b>(815)</b>	<b>27</b>	<b>(357)</b>	<b>(1,146)</b>
<i>of which: stage 1</i>			<i>(148)</i>	<i>(148)</i>
<i>of which: stage 2</i>			<i>(193)</i>	<i>(193)</i>
<i>of which: stage 3</i>			<i>(16)</i> <sup>5</sup>	<i>(806)</i>

<sup>1</sup> Includes stage 1 and stage 2 expected credit losses and additional stage 3 expected credit losses. <sup>2</sup> The reversal of USD 27 million of IAS 39 loss allowances relates to instruments reclassified from amortized cost to fair value through profit or loss on transition to IFRS 9. Refer also to footnotes 3 and 4 to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9." <sup>3</sup> Includes the reversal of collective allowances of USD 13 million. <sup>4</sup> Includes USD 84 million related to loans to financial advisors for which an allowance was reported as a direct reduction of the carrying amount as of 31 December 2017. <sup>5</sup> The incremental increase in stage 3 allowances of USD 16 million arises from additional consideration of forward looking scenarios under IFRS 9.

## Note 1 Summary of significant accounting policies (continued)

### *IFRS 9 transition effect on other comprehensive income and retained earnings as of 1 January 2018*

The table below presents the transition effects recognized in OCI and retained earnings upon adoption of IFRS 9.

#### **IFRS 9 impact on other comprehensive income and retained earnings**

*USD million*

##### **Other comprehensive income recognized directly in equity, net of tax**

Reclassification of financial assets (available for sale to fair value through profit or loss) – equity instruments	(204)
Reclassification of financial assets (available for sale to fair value through profit or loss) – debt instruments	(5)
Tax (expense) / benefit	134
<b>Total change in other comprehensive income</b>	<b>(74)</b>

##### **Retained earnings**

Remeasurement of financial assets (reclassified from amortized cost to fair value through profit or loss)	(310)
Reclassification of financial assets (reclassified from available for sale to fair value through profit or loss)	209
Recognition of ECL for on-balance sheet financial assets	(282)
Remeasurement of financial liabilities (reclassified from amortized cost to designated at fair value through profit or loss)	5
Recognition of derivative loan commitments measured at fair value through profit or loss	(61)
Derecognition of liabilities for deferred fees on other loan commitments	4
Derecognition of derivative loan commitments measured at fair value through profit or loss	2
Recognition of ECL for off-balance sheet positions	(76)
Tax (expense) / benefit	(9)
<b>Total change in retained earnings</b>	<b>(518)</b>
<b>Total change in equity due to the adoption of IFRS 9</b>	<b>(591)</b>

## Note 1 Summary of significant accounting policies (continued)

### d) International Financial Reporting Standards and Interpretations to be adopted in 2019 and later and other changes

#### IFRS 16, Leases

UBS AG will adopt IFRS 16, *Leases*, on 1 January 2019. This will fundamentally change how UBS AG accounts for operating leases when acting as a lessee, with a requirement to record a lease obligation and a right-of-use asset on the balance sheet. Upon adoption of IFRS 16, assets and liabilities are expected to increase by approximately USD 3.5 billion with no material effect to the UBS AG's equity.

#### Changes in Corporate Center cost allocations and equity attribution to business divisions as of the first quarter of 2019

In order to further align Group and divisional performance, UBS AG will adjust the methodology for the allocation of Corporate Center – Services funding costs and expenses to the business divisions. At the same time, UBS AG is updating its funds transfer pricing framework to better reflect the sources and usage of funding. All of these changes are effective as of 1 January 2019 and prior-period segment information will be restated.

Together, these changes will decrease the business divisions' operating results and thereby increase their adjusted cost / income ratios by approximately 1-2 percentage points, with an offsetting effect of approximately USD 0.7 billion in Corporate Center's operating profit / (loss) before tax.

Corporate Center will retain funding costs for deferred tax assets, costs relating to UBS AG's legal entity transformation program and other costs not attributable to or representative of the performance of the business divisions.

Alongside the update to allocations and UBS AG's funds transfer pricing framework, UBS AG is increasing the allocation of balance sheet resources from Corporate Center to the business divisions, resulting in approximately USD 220 billion of assets allocated from Corporate Center to the business divisions in restated 2018 numbers, predominantly from high-quality liquid assets and certain other assets centrally managed on behalf of the business divisions.

Upon adoption of IFRS 16, *Leases*, as of 1 January 2019, UBS AG intends to additionally allocate approximately USD 3.5 billion of newly recognized right of use assets to the business divisions.

#### Changes to Corporate Center segment reporting effective first quarter 2019

As announced in the third quarter 2018 report, UBS AG will no longer separately assess the performance of Non-core and Legacy Portfolio, given its substantially reduced size and resource consumption. In addition, following the aforementioned changes to UBS's methodology for allocating funding costs and expenses from Corporate Center – Services and Corporate Center – Group Asset and Liability Management (Group ALM) to the business divisions, the operating loss retained in Corporate Center – Services and Corporate Center – Group ALM will be significantly reduced. As a consequence and in compliance with IFRS 8, *Operating Segments*, beginning with the first quarter 2019 report, UBS AG will provide results for total Corporate Center only and will not separately report Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, UBS AG will operationally combine Group Treasury with Group ALM and call this combined unit Group Treasury. Commentary on performance of this function will be included in the Corporate Center management discussion and analysis in UBS's quarterly and annual reporting. Former Group ALM total risk management net income after allocations will continue to be disclosed separately. Prior-period information will be restated.

#### 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. 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 expects to recognize a net tax expense of USD 11 million in retained earnings on 1 January 2019 in respect of the adoption of IFRIC 23, which will be reflected in UBS AG's first quarter 2019 report.

## Note 1 Summary of significant accounting policies (continued)

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### 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. The adoption will have no effect on UBS AG's financial statements on transition at 1 January 2019.

### 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. The adoption of these amendments will have no material effect on the UBS AG's financial statements on the transition date.

### Conceptual Framework

In March 2018, the IASB issued a revised version of its Conceptual Framework for Financial Reporting (the Framework). The Framework sets out the fundamental concepts of financial reporting that guide the IASB in developing IFRS standards. The amended Framework seeks to improve the concepts for reporting assets, liabilities, income and expenses, explains how to decide when assets and liabilities should be measured using historical cost and when they should be measured at current value, and provides up-to-date tools that will help the IASB in setting IFRS standards. It underpins existing IFRS standards but does not override them. Preparers use the Framework as a point of reference to develop accounting policies in rare instances where a particular business transaction is not covered by existing IFRS standards.

The IASB and the IFRS Interpretations Committee will begin to use the new Framework immediately in developing new, or amending existing, financial reporting standards and interpretations. For UBS AG, the Framework becomes effective in annual periods beginning on 1 January 2020. UBS AG is currently assessing the effect of the amended Framework on its financial accounting policies.

### Amendments to IFRS 3, *Business Combinations*

In October 2018, the IASB issued *Definition of a Business (Amendments to IFRS 3)*. The amendments clarify the definition of a business, with the objective of assisting in the determination of whether a transaction should be accounted for as a business combination or an asset acquisition. The amendments apply to transactions for which the acquisition date is on or after 1 January 2020, with early application permitted. Adoption of these amendments is not expected to have a material effect on the financial statements.



## Note 2a Segment reporting

The operational structure of UBS AG as of 31 December 2018 was comprised of Corporate Center and four business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank.

→ Refer to “Segment reporting” in Note 1a for more information

### Global Wealth Management

In the first quarter of 2018, Wealth Management and Wealth Management Americas were combined into a single unit. Global Wealth Management provides investment advice and solutions to private clients, in particular in the ultra high net worth and high net worth segments. Clients benefit from Global Wealth Management’s comprehensive set of capabilities, including wealth planning, investing, lending, asset protection, philanthropy, corporate and banking services as well as family office services in collaboration with the Investment Bank and Asset Management. Global Wealth Management has a global footprint, with the US representing its largest market. Clients are served through local offices and dedicated advisors. The ultra high net worth business is managed globally across the regions.

### Personal & Corporate Banking

Personal & Corporate Banking provides comprehensive financial products and services to private, corporate and institutional clients and operates in Switzerland in the private and corporate loan market. Personal & Corporate Banking is central to UBS AG’s universal bank model in Switzerland and it 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. While Personal & Corporate Banking operates primarily in its home market of Switzerland, it also provides capabilities to support the growth of the international business activities of UBS AG’s corporate and institutional clients through local hubs in Frankfurt, New York, Hong Kong and Singapore. The business is divided into Personal Banking and Corporate & Institutional Clients (CIC).

### Asset Management

Asset Management is a large-scale and diversified global asset manager. It offers investment capabilities and styles across all major traditional and alternative asset classes, as well as platform solutions and advisory support to institutions, wholesale intermediaries and Global Wealth Management clients around the world. Asset Management offers clients a wide range of investment products and services in different asset classes in the form of segregated, pooled or advisory mandates

as well as registered investment funds in various jurisdictions. It covers the main asset management markets globally, with a presence in 23 countries grouped in four regions: the Americas; Europe, Middle East and Africa; Switzerland; and Asia Pacific.

### Investment Bank

The Investment Bank provides a range of services to institutional, corporate and wealth management clients to help them raise capital, grow their businesses, invest and manage risks. It is focused on its traditional strengths in advisory, capital markets, equities and foreign exchange, complemented by a targeted rates and credit platform. The Investment Bank uses its research and technology capabilities to support its clients as they adapt to the evolving market structures and changes in the regulatory, technological, economic and competitive landscape. The Investment Bank delivers solutions to corporate, institutional and wealth management clients, using its intellectual capital and electronic platforms. It also provides services to Global Wealth Management, Personal & Corporate Banking and Asset Management. It has a global reach, with a presence in 33 countries and principal offices in all major financial hubs.

### Corporate Center

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

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

Group ALM manages the structural risk of UBS AG’s balance sheet, including interest rate risk, structural foreign exchange risk and collateral risk, as well as the risks associated with UBS AG’s liquidity and funding portfolios. Group ALM also seeks to optimize financial performance by matching assets and liabilities. Group ALM serves all business divisions and the 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. It is overseen by a committee chaired by the Group Chief Risk Officer.



## Note 2a Segment reporting (continued)

	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center			UBS AG
					Services	Group ALM	Non-core and Legacy Portfolio	
<i>USD million</i>								
<b>For the year ended 31 December 2018<sup>1</sup></b>								
Net interest income	4,206	2,057	(31)	937	(410)	(845)	35	5,949
Non-interest income	12,659	2,167	1,874	7,642	312	(89)	246	24,811
Allocations from CC – Group ALM	90	56	15	(391)	43	295	(108)	0
Income <sup>2</sup>	16,957	4,279	1,857	8,189	(56)	(639)	172	30,759
Credit loss (expense) / recovery	(15)	(56)	0	(38)	0	0	(8)	(117)
Total operating income	16,941	4,223	1,857	8,151	(56)	(639)	165	30,642
Personnel expenses	7,680	799	702	2,936	1,800	40	35	13,992
General and administrative expenses	1,771	289	206	706	6,956	43	105	10,075
Services (to) / from CC and other BDs	3,851	1,206	496	2,884	(8,615)	1	176	0
<i>of which: services from CC – Services</i>	<i>3,739</i>	<i>1,282</i>	<i>539</i>	<i>2,806</i>	<i>(8,688)</i>	<i>169</i>	<i>152</i>	<i>0</i>
Depreciation and impairment of property, equipment and software	4	14	2	8	1,023	0	0	1,052
Amortization and impairment of intangible assets <sup>3</sup>	50	0	1	12	2	0	0	65
Total operating expenses	13,356	2,309	1,407	6,546	1,166	84	317	25,184
<b>Operating profit / (loss) before tax</b>	<b>3,586</b>	<b>1,914</b>	<b>450</b>	<b>1,604</b>	<b>(1,221)</b>	<b>(723)</b>	<b>(152)</b>	<b>5,458</b>
Tax expense / (benefit)								1,345
<b>Net profit / (loss)</b>								<b>4,113</b>
<b>Additional information</b>								
Total assets	200,036	138,873	24,371	258,871	20,193	280,996	34,715	958,055
Additions to non-current assets	196	23	1	89	1,448	0	0	1,757

<sup>1</sup> Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. <sup>2</sup> Impairments of financial assets classified at fair value through other comprehensive income for the year ended 31 December 2018 totaled USD 0 million. <sup>3</sup> Refer to Note 16 for more information.

## Note 2a Segment reporting (continued)

	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center			UBS AG
					Services	Group ALM	Non-core and Legacy Portfolio	
<i>USD million</i>								
<b>For the year ended 31 December 2017<sup>1</sup></b>								
Net interest income	3,723	1,954	(33)	1,217	(361)	84	24	6,607
Non-interest income	12,197	1,807	2,097	7,020	476	(77)	50	23,569
Allocations from CC – Group ALM	377	184	19	(351)	123	(268)	(84)	0
Income <sup>2</sup>	16,296	3,945	2,083	7,886	237	(260)	(11)	30,176
Credit loss (expense) / recovery	(8)	(20)	0	(92)	0	0	(11)	(131)
Total operating income	16,288	3,925	2,083	7,795	237	(260)	(22)	30,044
Personnel expenses	7,679	849	731	3,007	2,608	34	44	14,952
General and administrative expenses	1,308	300	238	728	6,283	27	116	9,001
Services (to) / from CC and other BDs	3,726	1,154	522	2,822	(8,438)	(13)	228	0
<i>of which: services from CC – Services</i>	<i>3,626</i>	<i>1,248</i>	<i>560</i>	<i>2,727</i>	<i>(8,503)</i>	<i>145</i>	<i>197</i>	<i>0</i>
Depreciation and impairment of property, equipment and software	4	13	1	10	916	0	0	945
Amortization and impairment of intangible assets <sup>3</sup>	49	0	3	12	7	0	0	71
Total operating expenses	12,766	2,316	1,496	6,578	1,376	48	388	24,969
<b>Operating profit / (loss) before tax</b>	<b>3,522</b>	<b>1,609</b>	<b>587</b>	<b>1,216</b>	<b>(1,139)</b>	<b>(308)</b>	<b>(410)</b>	<b>5,076</b>
Tax expense / (benefit)								4,242
<b>Net profit / (loss)</b>								<b>834</b>
<b>Additional information</b>								
Total assets	194,990	139,094	14,639	269,849	19,907	254,146	47,395	940,020
Additions to non-current assets	120	15	1	3	1,509	0	0	1,648

<sup>1</sup> Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. <sup>2</sup> Impairments of financial assets classified at fair value through other comprehensive income (prior to 2018 classified as financial assets available for sale) for the year ended 31 December 2017 totaled USD 15 million, of which USD 12 million was recorded in Asset Management. <sup>3</sup> Refer to Note 16 for more information.

**Note 2a Segment reporting (continued)**

	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center			UBS AG
					Services	Group ALM	Non-core and Legacy Portfolio	
<i>USD million</i>								
<b>For the year ended 31 December 2016<sup>1</sup></b>								
Net interest income	3,318	1,914	(33)	1,012	(326)	568	3	6,457
Non-interest income	11,427	1,791	1,980	7,039	253	(169)	89	22,411
Allocations from CC – Group ALM	512	336	7	(264)	37	(517)	(112)	0
Income <sup>2</sup>	15,257	4,042	1,955	7,788	(36)	(118)	(20)	28,868
Credit loss (expense) / recovery	(8)	(6)	0	(11)	0	0	(12)	(38)
Total operating income	15,250	4,035	1,955	7,777	(36)	(118)	(32)	28,831
Personnel expenses	7,253	854	736	3,122	3,718	31	67	15,782
General and administrative expenses	1,261	288	245	861	4,361	17	743	7,776
Services (to) / from CC and other BDs	3,626	1,092	512	2,790	(8,255)	(49)	283	0
<i>of which: services from CC – Services</i>	<i>3,520</i>	<i>1,200</i>	<i>537</i>	<i>2,700</i>	<i>(8,295)</i>	<i>112</i>	<i>227</i>	<i>0</i>
Depreciation and impairment of property, equipment and software	4	15	1	22	950	0	0	992
Amortization and impairment of intangible assets <sup>3</sup>	54	0	5	12	21	0	0	93
Total operating expenses	12,199	2,250	1,499	6,807	796	(1)	1,093	24,643
<b>Operating profit / (loss) before tax</b>	<b>3,051</b>	<b>1,785</b>	<b>455</b>	<b>970</b>	<b>(832)</b>	<b>(117)</b>	<b>(1,125)</b>	<b>4,188</b>
Tax expense / (benefit)								753
<b>Net profit / (loss)</b>								<b>3,435</b>
<b>Additional information</b>								
Total assets	178,250	137,499	11,816	238,151	23,630	262,603	67,288	919,236
Additions to non-current assets	31	24	1	3	1,763	0	0	1,821

<sup>1</sup> Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. <sup>2</sup> Impairments of financial assets classified at fair value through other comprehensive income (prior to 2018 classified as financial assets available for sale) for the year ended 31 December 2016 totaled USD 5 million, of which USD 3 million was recorded in Asset Management. <sup>3</sup> Refer to Note 16 for more information.

## 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 2018

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	12.8	42	7.4	46
<i>of which: USA</i>	12.2	40	7.0	43
Asia Pacific	5.0	16	0.8	5
Europe, Middle East and Africa	6.3	20	1.8	11
Switzerland	7.3	24	6.2	38
Global	(0.6)	(2)	0.0	0
<b>Total</b>	<b>30.6</b>	<b>100</b>	<b>16.2</b>	<b>100</b>

### For the year ended 31 December 2017<sup>1</sup>

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	12.1	40	7.4	47
<i>of which: USA</i>	11.6	39	6.9	44
Asia Pacific	4.8	16	0.8	5
Europe, Middle East and Africa	6.2	21	1.7	10
Switzerland	7.0	23	6.0	38
Global	0.0	0	0.0	0
<b>Total</b>	<b>30.0</b>	<b>100</b>	<b>15.8</b>	<b>100</b>

### For the year ended 31 December 2016<sup>1</sup>

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	11.6	40	7.2	47
<i>of which: USA</i>	11.1	38	6.8	44
Asia Pacific	4.3	15	0.6	4
Europe, Middle East and Africa	6.2	22	1.8	11
Switzerland	7.0	24	5.9	38
Global	(0.3)	(1)	0.0	0
<b>Total</b>	<b>28.8</b>	<b>100</b>	<b>15.5</b>	<b>100</b>

<sup>1</sup> 2017 and 2016 figures have been restated for the change of the presentation currency from Swiss francs to US dollars. Refer to Note 1b item 1 for more information. In addition, 2017 and 2016 figures have been restated to reflect the regional representation of Global Wealth Management after combining Wealth Management and Wealth Management Americas in 2018. Refer to Note 1b item 3 for more information.

## Income statement notes

### Note 3 Net interest income and other net income from fair value changes on financial instruments

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#### Change in presentation of net interest income and other net income from fair value changes on financial instruments

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The table on the following pages reflects certain presentation changes made to reflect the effects from the adoption of new standards and interpretations in 2018. These changes are summarized as follows:

- In line with amendments to IAS 1, *Presentation of Financial Statements*, from 1 January 2018, UBS presents interest income and interest expense calculated, using the effective interest rate method, on financial instruments measured at amortized cost and financial assets measured at fair value through other comprehensive income separately from interest income and expense on financial instruments measured at fair value through profit or loss (FVTPL) in the income statement. Comparative information has been adjusted accordingly. As a result of this change, forward points on certain short-duration foreign exchange contracts are now presented within *Interest income from financial instruments at fair value held for trading* that were previously presented within *Interest income from loans and deposits*. Comparative information was restated accordingly.
- Upon adoption of IFRS 9, certain assets and liabilities were reclassified from amortized cost to fair value through profit or loss (auction rate securities, certain loans in the Investment Bank, certain repurchase agreements and brokerage balances). This has resulted in the interest income from these instruments moving from *Interest income (expense) from financial instruments measured at amortized cost* to *Interest income (expense) from financial instruments measured at fair value through profit or loss*. These changes have been applied prospectively from 1 January 2018 with certain prior-period information being adjusted for comparability. Comparative information for brokerage balances now separately presents the related interest income and expense, which was formerly included within *Interest income (expense) from loans and deposits*.
- A new line, *Interest income from financial instruments at fair value not held for trading*, has been included to accommodate in particular interest income from financial assets previously designated at fair value under IAS 39, which are now mandatorily classified at fair value through profit or loss under IFRS 9. Comparative information has been adjusted accordingly.
- Net gains / losses from financial assets previously designated at fair value under IAS 39 (2017: net gains of USD 2,567 million; 2016: net losses of USD 171 million) are no longer separately disclosed in the table on the following pages as assets are now mandatorily classified at fair value through profit or loss under IFRS 9.

### Note 3 Net interest income and other net income from fair value changes on financial instruments (continued)

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3,628	4,969	5,372
Net interest income from financial instruments measured at fair value through profit or loss	2,321	1,638	1,084
Other net income from fair value changes on financial instruments	5,977	5,067	5,018
<b>Total<sup>1</sup></b>	<b>11,925</b>	<b>11,674</b>	<b>11,475</b>
<i>Global Wealth Management</i>	<i>5,254</i>	<i>5,150</i>	<i>4,893</i>
<i>of which: net interest income</i>	<i>4,310</i>	<i>4,104</i>	<i>3,843</i>
<i>of which: transaction-based income from foreign exchange and other intermediary activity<sup>2</sup></i>	<i>944</i>	<i>1,046</i>	<i>1,050</i>
<i>Personal &amp; Corporate Banking</i>	<i>2,514</i>	<i>2,510</i>	<i>2,563</i>
<i>of which: net interest income</i>	<i>2,106</i>	<i>2,127</i>	<i>2,225</i>
<i>of which: transaction-based income from foreign exchange and other intermediary activity<sup>2</sup></i>	<i>408</i>	<i>383</i>	<i>337</i>
<i>Asset Management</i>	<i>(30)</i>	<i>(24)</i>	<i>(29)</i>
<i>Investment Bank</i>	<i>4,813</i>	<i>4,364</i>	<i>4,328</i>
<i>Corporate Client Solutions</i>	<i>1,056</i>	<i>1,087</i>	<i>830</i>
<i>Investor Client Services</i>	<i>3,756</i>	<i>3,276</i>	<i>3,498</i>
<i>Corporate Center</i>	<i>(626)</i>	<i>(325)</i>	<i>(279)</i>
<i>CC – Services</i>	<i>(177)</i>	<i>(49)</i>	<i>(93)</i>
<i>CC – Group ALM</i>	<i>(621)</i>	<i>(204)</i>	<i>(126)</i>
<i>CC – Non-core and Legacy Portfolio</i>	<i>173</i>	<i>(72)</i>	<i>(60)</i>
<b>Net interest income<sup>3</sup></b>			
<b>Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income</b>			
Interest income from loans and deposits <sup>4,5</sup>	7,822	6,736	8,075
Interest income from brokerage balances		1,030	906
Interest income from securities financing transactions <sup>6</sup>	1,567	1,573	1,152
<i>of which: interest income from securities financing transactions measured at fair value through profit or loss since 1 January 2018</i>		663	252
Interest income from other financial instruments measured at amortized cost	266	99	54
Interest income from debt instruments measured at fair value through other comprehensive income	142	152	189
Interest income from derivative instruments designated as cash flow hedges	324	846	
<b>Total interest income from financial instruments measured at amortized cost and fair value through other comprehensive income</b>	<b>10,121</b>	<b>10,437</b>	<b>10,375</b>
Interest expense on loans and deposits <sup>7</sup>	3,566	2,161	1,537
Interest expense on brokerage balances		354	147
Interest expense on securities financing transactions <sup>8</sup>	1,130	1,473	1,251
<i>of which: interest expense on securities financing transactions measured at fair value through profit or loss since 1 January 2018</i>		249	127
Interest expense on debt issued	1,797	1,480	2,068
<b>Total interest expense from financial instruments measured at amortized cost</b>	<b>6,494</b>	<b>5,468</b>	<b>5,002</b>
<b>Total net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income</b>	<b>3,628</b>	<b>4,969</b>	<b>5,372</b>
<b>Net interest income from financial instruments measured at fair value through profit or loss</b>			
Interest income from financial instruments at fair value held for trading <sup>4,9</sup>	3,729	3,483	3,201
Interest income from brokerage balances	1,243		
Interest income from financial instruments at fair value not held for trading <sup>9</sup>	1,786	512	330
<i>of which: interest income from securities financing transactions measured at fair value through profit or loss since 1 January 2018<sup>10</sup></i>	<i>974</i>		
Other interest income	215	61	48
<b>Total interest income from financial instruments measured at fair value through profit or loss</b>	<b>6,974</b>	<b>4,056</b>	<b>3,579</b>
Interest expense on financial instruments at fair value held for trading <sup>11</sup>	1,671	1,537	1,644
Interest expense on brokerage balances	668		
Interest expense on financial instruments designated at fair value	2,314	881	851
<i>of which: interest expense on securities financing transactions measured at fair value through profit or loss since 1 January 2018<sup>12</sup></i>	<i>124</i>		
<b>Total interest expense from financial instruments measured at fair value through profit or loss</b>	<b>4,653</b>	<b>2,418</b>	<b>2,495</b>
<b>Total net interest income from financial instruments measured at fair value through profit or loss</b>	<b>2,321</b>	<b>1,638</b>	<b>1,084</b>

### Note 3 Net interest income and other net income from fair value changes on financial instruments (continued)

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Other net income from fair value changes on financial instruments</b>			
Investment Bank Corporate Client Solutions	709	611	188
Investment Bank Investor Client Services	3,537	2,863	3,380
Other business divisions and Corporate Center	1,730	1,593	1,451
<b>Other net income from fair value changes on financial instruments</b>	<b>5,977</b>	<b>5,067</b>	<b>5,018</b>
<i>of which: net gains / (losses) from financial liabilities designated at fair value<sup>13</sup></i>	<i>9,382</i>	<i>(3,979)</i>	<i>(1,516)</i>

<sup>1</sup> Net interest income and other net income from fair value changes on financial instruments presented for business divisions and Corporate Center units includes allocations from Corporate Center – Group ALM.

<sup>2</sup> Mainly includes spread-related income in connection with client-driven transactions, foreign currency translation effects and income and expenses from precious metals, which are included in the income statement line Other net income from fair value changes on financial instruments. <sup>3</sup> Prior-period information may not be comparable as a result of the adoption of IFRS 9, effective 1 January 2018. Refer to Note 1c for more information on these changes. Negative interest income and negative interest expense are each individually approximately 9% of net interest income (2017: approximately 8% of net interest income; 2016: approximately 5% of net interest income).

<sup>4</sup> As a consequence of amendments to IAS 1, Presentation of Financial Statements, effective 1 January 2018, forward points on certain short-duration foreign exchange contracts previously presented within Interest income from loans and deposits are now presented within Interest income from financial instruments at fair value held for trading. Comparative information was restated accordingly. <sup>5</sup> Consists of interest income from cash and balances at central banks, loans and advances to banks, and negative interest on amounts due to banks and customer deposits.

<sup>6</sup> Includes interest income on receivables from securities financing transactions and negative interest, including fees, on payables from securities financing transactions. <sup>7</sup> Consists of interest expense on amounts due to banks and customer deposits, and negative interest on cash and balances at central banks, loans and advances to banks. <sup>8</sup> Includes interest expense on payables from securities financing transactions and negative interest, including fees, on receivables from securities financing transactions.

<sup>9</sup> Includes dividend income. <sup>10</sup> Includes interest income on certain reverse repurchase agreements that are measured at fair value through profit or loss since 1 January 2018 and negative interest, including fees, on the corresponding repurchase agreements. <sup>11</sup> Includes expense related to dividend payment obligations on financial instruments held for trading. <sup>12</sup> Includes interest expense on certain repurchase agreements that are measured at fair value through profit or loss since 1 January 2018 and negative interest, including fees, on the corresponding reverse repurchase agreements.

<sup>13</sup> 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 Other net income from fair value changes on financial instruments. 2018 includes a net gain of USD 2,152 million related to amounts due under unit-linked investment contracts, which are designated at fair value under IFRS 9. Refer to Note 1c for more information.

## Note 4 Net fee and commission income<sup>1</sup>

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
Underwriting fees	843	1,029	787
of which: equity underwriting fees	431	573	356
of which: debt underwriting fees	412	456	431
M&A and corporate finance fees	768	698	742
Brokerage fees	3,521	3,821	3,804
Investment fund fees	4,955	4,322	4,265
Portfolio management and related services	7,756	7,666	7,069
Other	1,789	1,854	1,758
<b>Total fee and commission income<sup>2</sup></b>	<b>19,632</b>	<b>19,390</b>	<b>18,425</b>
of which: recurring	12,911		
of which: transaction-based	6,629		
of which: performance-based	93		
Brokerage fees paid	316	673	769
Other	1,387	1,167	1,013
<b>Total fee and commission expense</b>	<b>1,703</b>	<b>1,840</b>	<b>1,781</b>
<b>Net fee and commission income</b>	<b>17,930</b>	<b>17,550</b>	<b>16,644</b>
of which: net brokerage fees	3,205	3,148	3,035

<sup>1</sup> Upon adoption of IFRS 15, certain brokerage fees paid in an agency capacity have been reclassified from Fee and commission expense to Fee and commission income on a prospective basis from 1 January 2018, primarily relating to third-party execution costs for exchange-traded derivative transactions and fees payable to third-party research providers on behalf of clients. In addition to the IFRS 15 changes, certain revenues, primarily distribution fees and fund management fees, have been reclassified between reporting lines to better reflect the nature of the revenues, with prior-period information restated accordingly. This resulted in the following effects: For the year ended 31 December 2017, USD 316 million was reclassified from Underwriting fees to Brokerage fees and USD 1,040 million was reclassified from Portfolio management and related services to Investment fund fees. For the year ended 31 December 2016, USD 220 million was reclassified from Underwriting fees to Brokerage fees and USD 1,061 million was reclassified from Portfolio management and related services to Investment fund fees. Also, certain expenses that are incremental and incidental to revenues have been reclassified prospectively from General and administrative expenses to Fee and commission expense to improve the alignment of transaction-based costs with the associated revenue stream, primarily affecting clearing costs, client loyalty costs, fund and custody expenses. As the effect of this reclassification was not material, prior-period information was not restated. <sup>2</sup> Reflects third-party fee and commission income of USD 12,059 million for Global Wealth Management, USD 3,557 million for the Investment Bank, USD 2,579 million for Asset Management, USD 1,338 million for Personal & Corporate Banking and USD 100 million for Corporate Center.

## Note 5 Other income

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Associates, joint ventures and subsidiaries</b>			
Net gains / (losses) from acquisitions and disposals of subsidiaries <sup>1</sup>	(292) <sup>2,3</sup>	32	(96)
Net gains / (losses) from disposals of investments in associates	46 <sup>4</sup>	0	0
Share of net profits of associates and joint ventures	529 <sup>5</sup>	76	109
Impairments related to associates		(7)	
<b>Total</b>	<b>283</b>	<b>101</b>	<b>12</b>
<b>Financial assets measured at fair value through other comprehensive income</b>			
Net gains / (losses) from disposals	0	195	350
Impairments	0	(15)	(5)
<b>Total</b>	<b>1</b>	<b>180</b>	<b>345</b>
Net gains / (losses) from disposals of financial assets measured at amortized cost	0	14	(3)
Net income from properties (excluding net gains / (losses) from disposals) <sup>6</sup>	24	24	26
Net gains / (losses) from disposals of properties held for sale	40 <sup>5</sup>	0	128
Income from shared services provided to UBS Group AG or its subsidiaries <sup>7</sup>	478	395	48
Other	80	238	193
<b>Total other income</b>	<b>905</b>	<b>952</b>	<b>749</b>

<sup>1</sup> Includes foreign exchange gains / losses reclassified from other comprehensive income related to disposed foreign subsidiaries and branches. As a result of the change in presentation currency, foreign exchange gains / losses were restated. Refer to Note 1b for more information. <sup>2</sup> Includes a remeasurement loss of USD 270 million related to UBS Securities China. Refer to Note 32 for more information. <sup>3</sup> Includes a USD 25 million gain on sale of subsidiaries and a USD 31 million pre-tax gain on sale of real estate related to the sale of Widder Hotel. Refer to Note 32 for more information. <sup>4</sup> Reflects a net foreign currency translation gain related to UBS Securities China. Refer to Note 32 for more information. <sup>5</sup> Includes a USD 460 million valuation gain on our equity ownership in SIX related to the sale of SIX Payment Services to Worldline. Refer to Note 31b for more information. <sup>6</sup> Includes net rent received from third parties and net operating expenses. <sup>7</sup> Relates to subsidiaries not in the UBS AG scope of consolidation. The increase in 2018 and 2017 compared with 2016 was mainly due to the transfer of shared services functions in Switzerland and the UK from UBS AG to UBS Business Solutions AG in the second quarter and fourth quarter of 2017, respectively. Refer to Note 32 for more information.



## Note 6 Personnel expenses

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
Salaries <sup>1</sup>	5,199	5,423	6,210
Variable compensation – performance awards <sup>2</sup>	2,794	3,054	3,005
<i>of which: guarantees for new hires</i>	43	36	30
Variable compensation – other <sup>2</sup>	220	231	425
<i>of which: replacement payments<sup>3</sup></i>	68	70	87
<i>of which: forfeiture credits</i>	(136)	(106)	(74)
<i>of which: severance payments<sup>4</sup></i>	106	95	220
<i>of which: retention plan and other payments<sup>5</sup></i>	181	172	191
Financial advisor variable compensation <sup>2,6</sup>	4,054	4,064	3,740
Contractors	184	318	425
Social security	629	731	742
Pension and other post-employment benefit plans <sup>7</sup>	363	601	677
Other personnel expenses	549	531	559
<b>Total personnel expenses<sup>8</sup></b>	<b>13,992</b>	<b>14,952</b>	<b>15,782</b>

<sup>1</sup> Includes role-based allowances. <sup>2</sup> Refer to Note 30 for more information. <sup>3</sup> Replacement payments are payments made to compensate employees for deferred awards forfeited as a result of joining UBS. <sup>4</sup> Includes legally obligated and standard severance payments. <sup>5</sup> Includes interest expense related to Deferred Contingent Capital Plan awards. <sup>6</sup> Financial advisor variable compensation consists of formulaic compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated based on financial advisor productivity, firm tenure, new 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. <sup>7</sup> Changes to the pension fund of UBS AG in Switzerland in 2018 resulted in a reduction in the pension obligation recognized by UBS AG. As a consequence, a pre-tax gain of USD 132 million was recognized in the income statement in 2018, with no overall effect on total equity. Refer to Note 29 for more information. <sup>8</sup> The decrease in 2018 and 2017 compared with 2016 was mainly due to the transfer of shared services functions in Switzerland and the UK from UBS AG to UBS Business Solutions AG in the second quarter and fourth quarter of 2017, respectively. Refer to Note 32 for more information.

## Note 7 General and administrative expenses

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
Occupancy	852	865	931
Rent and maintenance of IT and other equipment	326	422	517
Communication and market data services	520	544	632
Administration	5,383	3,644	1,077
<i>of which: shared services costs charged by UBS Group AG or its subsidiaries<sup>1</sup></i>	4,803	3,046	370
<i>of which: UK and German bank levy<sup>2</sup></i>	58	20	124
Marketing and public relations	277	338	470
Travel and entertainment	367	382	416
Professional fees	870	1,086	1,238
Outsourcing of IT and other services	729	1,169	1,610
Litigation, regulatory and similar matters <sup>3</sup>	657	434	805
Other	95	118	79
<b>Total general and administrative expenses</b>	<b>10,075</b>	<b>9,001</b>	<b>7,776</b>

<sup>1</sup> Relates to subsidiaries not in the UBS AG scope of consolidation. The increase in 2018 and 2017 compared with 2016 was mainly due to the transfer of shared services functions in Switzerland and the UK from UBS AG to UBS Business Solutions AG in the second quarter and fourth quarter of 2017, respectively. Refer to Note 32 for more information. <sup>2</sup> The UK bank levy expenses of USD 40 million for 2018 and USD 17 million for 2017 included a credit of USD 45 million and USD 85 million, respectively, related to prior years. <sup>3</sup> Reflects the net increase in provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to Note 21 for more information. Also includes recoveries from third parties of USD 29 million, USD 55 million and USD 13 million for the years ended 31 December 2018, 31 December 2017 and 31 December 2016, respectively.

## Note 8 Income taxes

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Tax expense / (benefit)</b>			
<b>Swiss</b>			
Current	434	408	431
Deferred	2,326	91	624
<b>Non-Swiss</b>			
Current	537	435	356
Deferred	(1,952)	3,308	(658)
<b>Total income tax expense / (benefit) recognized in the income statement</b>	<b>1,345</b>	<b>4,242</b>	<b>753</b>

### Income tax recognized in the income statement

An income tax expense of USD 1,345 million was recognized for UBS AG in 2018, which included a net Swiss tax expense of USD 2,760 million and a net non-Swiss tax benefit of USD 1,415 million.

The Swiss tax expense included a deferred tax expense of USD 2,326 million, which reflected a net decrease in deferred tax assets (DTA) previously recognized in relation to tax losses carried forward and deductible temporary differences of USD 709 million following their offset against profits for the year and the write-off of a Swiss temporary difference DTA of USD 1,617 million relating to UBS AG's investment in our US intermediate holding company (US IHC), UBS Americas Holding LLC. The write-off occurred because the deductible temporary difference between the tax and accounting values in respect of UBS AG's investment in the US IHC is no longer expected to reverse in the foreseeable future, reflecting the expected repatriation of a significant portion of future US earnings. In

addition, it included a current tax expense of USD 434 million related to taxable profits earned by Swiss subsidiaries against which no losses were available to offset.

The non-Swiss tax expense included a deferred tax benefit of USD 1,952 million. This primarily reflected a net increase in US DTAs of USD 2,052 million following the review of the approach to the remeasurement of those DTAs. It also included other net deferred tax expenses of USD 100 million and a current tax expense of USD 537 million related to taxable profits earned by non-Swiss subsidiaries and branches against which no losses were available to offset.

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 length of time remaining until expiration for tax loss carry-forwards and its assessment of expected future taxable profits. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
Operating profit / (loss) before tax	5,458	5,076	4,188
of which: Swiss	1,427	1,911	2,614
of which: non-Swiss	4,031	3,165	1,574
Income taxes at Swiss tax rate of 21%	1,146	1,066	879
Increase / (decrease) resulting from:			
Non-Swiss tax rates differing from Swiss tax rate	68	230	70
Tax effects of losses not recognized	222	173	182
Previously unrecognized tax losses now utilized	(25)	(368)	(38)
Non-taxable and lower taxed income	(419)	(306)	(337)
Non-deductible expenses and additional taxable income	883	588	898
Adjustments related to prior years – current tax	114	(14)	22
Adjustments related to prior years – deferred tax	27	6	2
Change in deferred tax recognition	(802)	(165)	(961)
Adjustments to deferred tax balances arising from changes in tax rates	0	2,897	19
Other items	130	135	16
<b>Income tax expense / (benefit)</b>	<b>1,345</b>	<b>4,242</b>	<b>753</b>

## Note 8 Income taxes (continued)

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The tax expense of USD 1,345 million for 2018 was lower than the tax expense of USD 4,242 million in 2017. This was mainly because 2017 included a large net deferred tax expense of USD 3,399 million, which was primarily the result of a net write-down of DTAs related to the US federal corporate tax rate reduction included in the Tax Cuts and Jobs Act enacted in the fourth quarter of 2017.

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 that 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 that are offset by tax losses of previous years for which no DTAs were previously recorded. Consequently, no current tax or deferred tax expense arises in relation to those taxable profits. 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 tax deductions for the year in respect of permanent differences. These include deductions in respect of profits that are either not taxable or are taxable at a lower rate of tax than the local tax rate. They also include deductions made for tax purposes, which are not reflected in the accounts.

### Non-deductible expenses and additional taxable income

This item relates to additional taxable income for the year in respect of permanent differences. These include income that is recognized for tax purposes by an entity, but is not included in its profit that is reported in the financial statements. In addition, they include expenses for the year that are non-deductible. For example, the costs of entertaining clients are not deductible in certain locations.

### Adjustments related to prior years – current tax

This item relates to adjustments to current tax expense for prior years, e.g. if the tax payable for a year is agreed with the tax authorities in an amount that differs from the amount previously reflected in the financial statements.

### Adjustments related to prior years – deferred tax

This item relates to adjustments to deferred tax positions recognized in prior years, e.g., if a tax loss for a year is fully recognized and the amount of the tax loss agreed with the tax authorities is expected to differ from the amount previously recognized as DTAs in the accounts.

### Change in deferred tax recognition

This item relates to changes in DTAs, including those 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 net benefit in the year mainly relates to the upward revaluation of US DTAs, partly offset by the write-off of the Swiss temporary difference DTA relating to UBS AG's investment in the US intermediate holding company.

### Adjustments to deferred tax balances arising from changes in tax rates

This item relates to remeasurements of DTAs and liabilities recognized due to changes in tax rates. These have the effect of changing the future tax saving that is expected from tax losses or deductible tax differences and therefore the amount of DTAs recognized or, alternatively, changing the tax cost of additional taxable income from taxable temporary differences and therefore the deferred tax liability.

### Other items

Other items include other differences between profits or losses at the local tax rate and the actual local tax expense or benefit, including increases in provisions for uncertain positions in relation to the current year and other items.

## Note 8 Income taxes (continued)

### Income tax recognized directly in equity

Certain tax expenses and benefits were recognized directly in equity during the year. These included the following items:

- a net tax benefit of USD 314 million recognized in other comprehensive income (OCI) (2017: net benefit of USD 159 million), which included a tax benefit of USD 67 million related to cash flow hedges (2017: benefit of USD 163 million), a tax benefit of USD 12 million related to financial assets recognized at fair value through OCI (2017: expense of USD 6 million), a tax expense of USD 2 million related to foreign currency translation gains and losses (2017: expense of USD 2 million), a tax benefit of USD 245 million related to defined benefit pension plans (2017: benefit of USD 6 million) and a tax expense of USD 8 million related to own credit (2017: expense of USD 2 million);
- a tax expense of USD 5 million recognized in share premium (2017: benefit of USD 16 million).

### Deferred tax assets and liabilities

UBS AG has gross DTAs, valuation allowances and recognized DTAs related to tax loss carry-forwards and deductible temporary differences and also deferred tax liabilities in respect of taxable temporary differences as shown in the table below. The valuation allowances reflect DTAs that were not recognized because it was not considered probable that future taxable profits will be available to utilize the related tax loss carry-forwards and deductible temporary differences.

Of the recognized DTAs as of 31 December 2018, USD 9.5 billion related to the US, USD 0.3 billion related to Switzerland and USD 0.3 billion related to other locations (as of 31 December 2017, USD 7.2 billion related to the US, USD 2.5 billion related to Switzerland and USD 0.3 billion related to other locations).

As of 31 December 2018, UBS AG has recognized DTAs of USD 53 million (31 December 2017: USD 1,216 million) in respect of entities that incurred losses in either the current or preceding year. The recognition of these DTAs is supported by projections of future taxable profits for these entities.

USD million	31.12.18			31.12.17		
	Gross	Valuation allowance	Recognized	Gross	Valuation allowance	Recognized
<b>Deferred tax assets<sup>1</sup></b>						
Tax loss carry-forwards	15,088	(8,989)	6,099	17,372	(11,480)	5,892
Temporary differences	4,526	(559)	3,967	5,102	(1,001)	4,101
<i>of which: related to real estate costs capitalized for US tax purposes</i>	2,159	(25)	2,134	0	0	0
<i>of which: related to compensation and benefits</i>	1,146	(192)	954	1,162	(228)	934
<i>of which: related to trading assets</i>	390	(50)	339	485	(60)	425
<i>of which: related to investments in subsidiaries and goodwill</i>	179	0	179	2,344	0	2,344
<i>of which: other</i>	653	(292)	361	1,111	(713)	398
<b>Total deferred tax assets</b>	<b>19,614</b>	<b>(9,548)</b>	<b>10,066</b>	<b>22,474</b>	<b>(12,481)</b>	<b>9,993</b>
<b>Deferred tax liabilities</b>						
Goodwill and intangible assets			26			19
Other			62			32
<b>Total deferred tax liabilities</b>			<b>88</b>			<b>51</b>

<sup>1</sup> Less deferred tax liabilities as applicable.

## Note 8 Income taxes (continued)

As of 31 December 2018, tax loss carry-forwards totaling USD 38,428 million (31 December 2017: USD 47,427 million) that 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

<i>USD million</i>	<b>31.12.18</b>	31.12.17
Within 1 year	<b>0</b>	171
From 2 to 5 years	<b>464</b>	106
From 6 to 10 years	<b>16,297</b>	3,267
From 11 to 20 years	<b>4,457</b>	26,688
No expiry	<b>17,210</b>	17,195
<b>Total</b>	<b>38,428</b>	47,427

As of 31 December 2018, USD 20.0 billion of the unrecognized tax losses carried forward related to the US, USD 14.2 billion related to the UK and USD 4.2 billion related to other locations (at 31 December 2017, USD 28.6 billion related to the US, USD 14.3 billion related to the UK and USD 4.5 billion related to other locations).

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 tax losses for an unlimited period. The amounts of US tax loss carry-forwards that are included in the above table are based on their amount for federal tax purposes rather than for state and local tax purposes.

Deferred tax liabilities are recognized in respect of investments in subsidiaries, branches and associates and interests in joint arrangements, except to the extent that UBS AG can control the timing of the reversal of the associated taxable temporary difference and it is probable that it will not reverse in the foreseeable future. However, as of 31 December 2018, this exception was not considered to apply to any taxable temporary differences.

## 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 2018, 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

### Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement

The tables on the following pages provide information on financial instruments and certain non-financial instruments (e.g., committed unconditionally revocable credit lines) that are subject to ECL. UBS AG has established ECL disclosure segments or "ECL segments" to disaggregate portfolios based on shared risk characteristics and on the same or similar rating methods applied. The key segments are presented in the table below.

Tables provided for 31 December 2018 include additional detail on certain segments that have not been provided for balances as of 1 January 2018.

→ Refer to Note 1c for the comparative information as of 31 December 2017 under IAS 39

→ Refer to Note 23 for more information on expected credit loss measurement

Segment	Segment description	Description of credit risk sensitivity	Business division / Corporate Center
<b>Private clients with mortgages</b>	Lending to private clients secured by owner-occupied real estate and personal account overdrafts of those clients	Sensitive to the interest rate environment, employment status and influence from regional effects (e.g., property values)	– Personal & Corporate Banking – Global Wealth Management
<b>Real estate financing</b>	Rental or income-producing real estate financing to private and corporate clients secured by real estate	Sensitive to GDP development, the interest rate environment and regional effects (e.g., property values)	– Personal & Corporate Banking – Global Wealth Management
<b>Large corporate clients</b>	Lending to large corporate and multinational clients	Sensitive to GDP development, seasonality and business cycles and collateral values (diverse collateral including real estate and other collateral types)	– Personal & Corporate Banking – Investment Bank
<b>SME clients</b>	Lending to small and medium-sized corporate clients	Sensitive to GDP development, the interest rate environment and, to some extent, seasonality and business cycles and collateral values (diverse collateral including real estate and other collateral types)	– Personal & Corporate Banking
<b>Lombard</b>	Loans secured by pledges of marketable securities, guarantees and other forms of collateral	Sensitive to the market (e.g., changes in collateral as well as in invested assets)	– Personal & Corporate Banking – Global Wealth Management
<b>Credit cards</b>	Credit card solutions in Switzerland and the US	Sensitive to the interest rate environment and employment status	– Personal & Corporate Banking – Global Wealth Management
<b>Commodity trade finance</b>	Working capital financing of commodity traders, generally extended on a self-liquidating transactional basis	Sensitive primarily to the strength of individual transaction structures and collateral values (price volatility of commodities) as the primary source for debt service is directly linked to the shipments financed	– Personal & Corporate Banking

→ Refer to Note 23g for more details on sensitivity

## Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

For amortized cost instruments, the net carrying value represents the maximum exposure to credit risk, taking into account the allowance for credit losses. Financial assets measured at fair value through other comprehensive income (FVOCI) are also subject to ECL; however, unlike for amortized cost instruments, the allowance does not reduce the carrying value of these financial assets. The carrying value of financial assets measured at FVOCI represents the maximum exposure to credit risk.

No purchased credit-impaired financial assets are recognized

in the period. Originated credit-impaired financial assets were not material and are not presented in the table below and on the following page.

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

	31.12.18							
	Carrying amount <sup>1</sup>				ECL allowances			
Financial instruments measured at amortized cost	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Cash and balances at central banks	108,370	108,370	0	0	0	0	0	0
Loans and advances to banks	16,642	16,440	202	0	(7)	(4)	(1)	(3)
Receivables from securities financing transactions	95,349	95,349	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	23,603	23,603	0	0	0	0	0	0
Loans and advances to customers	321,482	299,378	20,357	1,748	(772)	(69)	(155)	(549)
of which: Private clients with mortgages	126,335	115,679	9,859	796	(138)	(16)	(83)	(39)
of which: Real estate financing	36,474	28,578	7,858	38	(59)	(3)	(40)	(16)
of which: Large corporate clients	11,390	10,845	457	88	(95)	(9)	(4)	(82)
of which: SME clients	9,924	8,029	1,263	632	(281)	(13)	(12)	(256)
of which: Lombard	111,722	111,707	0	14	(21)	(4)	0	(17)
of which: Credit cards	1,529	1,216	297	16	(30)	(6)	(13)	(11)
of which: Commodity trade finance	3,260	2,798	445	16	(86)	(5)	(3)	(78)
Other financial assets measured at amortized cost	22,637	21,936	223	478	(155)	(43)	(4)	(109)
of which: Loans to financial advisors	3,291	3,104	62	125	(113)	(34)	(2)	(77)
<b>Total financial assets measured at amortized cost</b>	<b>588,084</b>	<b>565,076</b>	<b>20,782</b>	<b>2,226</b>	<b>(937)</b>	<b>(117)</b>	<b>(159)</b>	<b>(660)</b>
Financial assets measured at fair value through other comprehensive income	6,667	6,667	0	0	0	0	0	0
<b>Total on-balance sheet financial assets in scope of ECL requirements</b>	<b>594,750</b>	<b>571,743</b>	<b>20,782</b>	<b>2,226</b>	<b>(937)</b>	<b>(117)</b>	<b>(159)</b>	<b>(660)</b>

Off-balance sheet (in scope of ECL)	Total exposure				ECL provisions			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	18,146	17,321	611	215	(43)	(7)	(2)	(34)
of which: Large corporate clients	3,862	3,599	136	127	(8)	(1)	(1)	(6)
of which: SME clients	1,298	1,057	164	77	(26)	0	0	(25)
of which: Financial intermediaries and hedge funds	7,193	7,125	67	0	(4)	(3)	0	0
of which: Lombard	834	834	0	0	0	0	0	0
of which: Commodity trade finance	2,097	1,851	236	11	(1)	(1)	0	0
Irrevocable loan commitments	31,212	30,590	568	53	(37)	(32)	(5)	0
of which: Large corporate clients	22,019	21,492	519	7	(31)	(26)	(4)	0
Forward starting reverse repurchase and securities borrowing agreements	937	937	0	0	0	0	0	0
Committed unconditionally revocable credit lines	38,851	37,338	1,420	93	(36)	(19)	(16)	0
of which: Real estate financing	2,562	2,150	401	11	(17)	(4)	(12)	0
of which: Large corporate clients	4,260	4,152	91	17	(2)	(1)	0	0
of which: SME clients	4,505	4,163	285	57	(7)	(6)	(1)	0
of which: Lombard	7,402	7,402	0	0	0	(1)	0	0
of which: Credit cards	7,343	7,035	309	0	(6)	(4)	(2)	0
of which: Commodity trade finance	3,467	3,209	254	4	(2)	(2)	0	0
Irrevocable committed prolongation of existing loans	3,339	2,861	456	22	(1)	(1)	0	0
<b>Total off-balance sheet financial instruments and other credit lines</b>	<b>92,486</b>	<b>89,048</b>	<b>3,055</b>	<b>383</b>	<b>(116)</b>	<b>(59)</b>	<b>(23)</b>	<b>(34)</b>
<b>Total allowances and provisions</b>					<b>(1,054)</b>	<b>(176)</b>	<b>(183)</b>	<b>(695)</b>

<sup>1</sup> The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances.



## Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

USD million		1.1.18							
	Carrying amount <sup>1</sup>				ECL allowances				
	Total	Stage 1	Stage 2	Stage 3 <sup>2</sup>	Total	Stage 1	Stage 2	Stage 3	
<b>Financial instruments measured at amortized cost</b>									
Cash and balances at central banks	90,045	90,045	0	0	0	0	0	0	
Loans and advances to banks	14,027	14,007	18	0	(5)	(3)	0	(3)	
Receivables from securities financing transactions	86,864	86,864	0	0	(2)	(2)	0	0	
Cash collateral receivables on derivative instruments	24,040	24,040	0	0	0	0	0	0	
Loans and advances to customers	320,687	290,582	28,575	1,530	(890)	(62)	(167)	(661)	
<i>of which: Private clients with mortgages</i>	<i>122,652</i>	<i>106,553</i>	<i>15,394</i>	<i>704</i>	<i>(128)</i>	<i>(12)</i>	<i>(71)</i>	<i>(45)</i>	
<i>of which: Real estate financing</i>	<i>36,824</i>	<i>26,888</i>	<i>9,907</i>	<i>30</i>	<i>(64)</i>	<i>(4)</i>	<i>(54)</i>	<i>(6)</i>	
<i>of which: Large corporate clients</i>	<i>11,289</i>	<i>10,626</i>	<i>571</i>	<i>90</i>	<i>(71)</i>	<i>(6)</i>	<i>0</i>	<i>(65)</i>	
<i>of which: SME clients</i>	<i>10,589</i>	<i>8,431</i>	<i>1,557</i>	<i>600</i>	<i>(295)</i>	<i>(8)</i>	<i>(24)</i>	<i>(262)</i>	
<i>of which: Lombard</i>	<i>113,461</i>	<i>113,444</i>	<i>0</i>	<i>17</i>	<i>(86)</i>	<i>(5)</i>	<i>0</i>	<i>(81)</i>	
Other financial assets measured at amortized cost	18,850	18,339	33	477	(139)	(30)	(1)	(108)	
<i>of which: Loans to financial advisors</i>	<i>3,166</i>	<i>2,948</i>	<i>33</i>	<i>184</i>	<i>(118)</i>	<i>(29)</i>	<i>(1)</i>	<i>(89)</i>	
<b>Total financial assets measured at amortized cost</b>	<b>554,512</b>	<b>523,878</b>	<b>28,628</b>	<b>2,007</b>	<b>(1,037)</b>	<b>(97)</b>	<b>(168)</b>	<b>(772)</b>	
Financial assets measured at fair value through other comprehensive income	6,930	6,930	0	0	0	0	0	0	
<b>Total on-balance sheet financial assets in scope of ECL requirements</b>	<b>561,442</b>	<b>530,808</b>	<b>28,628</b>	<b>2,007</b>	<b>(1,037)</b>	<b>(97)</b>	<b>(168)</b>	<b>(772)</b>	
<b>Off-balance sheet (in scope of ECL)</b>									
	Total exposure				ECL provisions				
	Total	Stage 1	Stage 2	Stage 3 <sup>2</sup>	Total	Stage 1	Stage 2	Stage 3	
Guarantees	17,596	16,753	649	194	(38)	(6)	(2)	(30)	
Irrevocable loan commitments	31,650	30,933	679	38	(37)	(25)	(8)	(4)	
<i>of which: Large corporate clients</i>	<i>22,568</i>	<i>21,896</i>	<i>645</i>	<i>27</i>	<i>(28)</i>	<i>(19)</i>	<i>(4)</i>	<i>(4)</i>	
Forward starting reverse repurchase and securities borrowing agreements	1,247	1,247	0	0	0	0	0	0	
Committed unconditionally revocable credit lines	37,639	35,362	2,213	64	(35)	(19)	(15)	0	
<i>of which: Real estate financing</i>	<i>3,183</i>	<i>2,151</i>	<i>1,033</i>	<i>0</i>	<i>(10)</i>	<i>(2)</i>	<i>(7)</i>	<i>0</i>	
<i>of which: SME clients</i>	<i>4,893</i>	<i>4,422</i>	<i>416</i>	<i>54</i>	<i>(7)</i>	<i>(5)</i>	<i>(2)</i>	<i>0</i>	
Irrevocable committed prolongation of existing loans	1,677	1,676	0	1	0	0	0	0	
<b>Total off-balance sheet financial instruments and other credit lines</b>	<b>89,809</b>	<b>85,972</b>	<b>3,541</b>	<b>295</b>	<b>(110)</b>	<b>(50)</b>	<b>(25)</b>	<b>(34)</b>	
<b>Total allowances and provisions</b>					<b>(1,146)</b>	<b>(148)</b>	<b>(193)</b>	<b>(806)</b>	

<sup>1</sup> The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances. <sup>2</sup> Upon adoption of IFRS 9 as of 1 January 2018, an instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is purchased or originated credit-impaired and includes credit-impaired exposures for which no loss has occurred or no allowance has been recognized (e.g., because they are expected to be fully recoverable through the collateral held). Refer to Note 1c for more information on the adoption of IFRS 9.



## Note 11 Derivative instruments

### 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 AG and its counterparties. Terms are negotiated directly with counterparties and the contracts have industry standard settlement mechanisms prescribed by ISDA. Beginning in 2016, regulators in various jurisdictions began a phased introduction of rules requiring 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 on the balance sheet as *Derivative financial instruments* within *Assets* when having positive replacement values and *Derivative financial instruments* within *Liabilities* when having negative replacement values. 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 *Other net income from fair value changes on financial instruments*, except for interest on derivatives designated as hedging instruments in effective hedge accounting relationships and forward points on certain short- and long-duration foreign exchange contracts, which are recorded in *Net interest income*.

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

→ Refer to Note 25 for more information on derivative financial assets and liabilities 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 24. 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 AG 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 19 and 24 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 derivative financial assets 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 25 for more information on derivative financial assets and liabilities after consideration of netting potential allowed under enforceable netting arrangements

## Note 11 Derivative instruments (continued)

### Derivative instruments<sup>1,2</sup>

USD billion	31.12.18					31.12.17				
	PRV <sup>3</sup>	Notional values related to PRV <sup>4</sup>	NRV <sup>5</sup>	Notional values related to NRV <sup>4</sup>	Other notional values <sup>4,6</sup>	PRV <sup>3</sup>	Notional values related to PRV <sup>4</sup>	NRV <sup>5</sup>	Notional values related to NRV <sup>4</sup>	Other notional values <sup>4,6</sup>
<b>Interest rate contracts</b>										
Over-the-counter (OTC) contracts										
Forward contracts	0.0	1.4	0.1	3.1	2,873.9	0.1	22.6	0.3	8.5	2,381.2
Swaps	29.5	459.8	23.5	441.8	7,189.1	36.3	553.2	29.0	465.5	7,724.9
Options	7.6	562.2	9.0	550.0		8.7	572.6	10.1	561.4	
Exchange-traded contracts										
Futures					516.1					467.3
Options	0.0	27.7	0.0	26.3	199.7	0.0	23.2	0.0	35.2	159.4
Agency transactions <sup>7</sup>	0.0		0.1			0.0		0.0		
<b>Total</b>	<b>37.1</b>	<b>1,051.1</b>	<b>32.7</b>	<b>1,021.3</b>	<b>10,778.8</b>	<b>45.2</b>	<b>1,171.6</b>	<b>39.4</b>	<b>1,070.5</b>	<b>10,732.8</b>
<b>Credit derivative contracts</b>										
Over-the-counter (OTC) contracts										
Credit default swaps	1.7	68.8	2.1	73.2		2.7	87.4	3.0	96.8	1.2
Total return swaps	0.2	3.0	0.6	3.7		0.2	2.3	0.9	4.0	
Options and warrants	0.0	2.7	0.0	1.4		0.0	4.4	0.0	0.1	
<b>Total</b>	<b>1.9</b>	<b>74.5</b>	<b>2.7</b>	<b>78.3</b>		<b>2.9</b>	<b>94.1</b>	<b>3.9</b>	<b>100.8</b>	<b>1.2</b>
<b>Foreign exchange contracts</b>										
Over-the-counter (OTC) contracts										
Forward contracts	20.3	708.8	20.9	731.2		17.6	699.0	18.3	709.5	
Interest and currency swaps	24.8	1,299.7	24.6	1,203.5		24.4	1,308.5	22.3	1,126.9	
Options	8.3	613.8	7.8	577.4		6.3	438.1	6.0	407.9	
Exchange-traded contracts										
Futures					0.4					0.4
Options	0.0	3.6	0.0	5.3		0.0	4.8	0.1	5.7	
Agency transactions <sup>7</sup>	0.0		0.1			0.0		0.0		
<b>Total</b>	<b>53.5</b>	<b>2,625.8</b>	<b>53.4</b>	<b>2,517.3</b>	<b>0.4</b>	<b>48.4</b>	<b>2,450.3</b>	<b>46.7</b>	<b>2,250.0</b>	<b>0.4</b>
<b>Equity / index contracts</b>										
Over-the-counter (OTC) contracts										
Forward contracts	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Swaps	4.7	78.5	5.6	86.3		3.4	73.0	5.7	103.0	
Options	5.5	97.6	7.2	139.6		6.0	78.6	8.4	128.2	
Exchange-traded contracts										
Futures					71.7					53.3
Options	10.1	232.8	9.0	262.8	34.1	7.1	238.6	7.1	268.0	31.8
Agency transactions <sup>7</sup>	11.2		13.3			6.3		6.3		
<b>Total</b>	<b>31.4</b>	<b>408.9</b>	<b>35.0</b>	<b>488.8</b>	<b>105.9</b>	<b>22.8</b>	<b>390.2</b>	<b>27.4</b>	<b>499.2</b>	<b>85.0</b>

Table continues on the next page.

## Note 11 Derivative instruments (continued)

### Derivative instruments (continued)<sup>1,2</sup>

Table continued from the previous page.

USD billion	31.12.18					31.12.17				
	PRV <sup>3</sup>	Notional values related to PRV <sup>4</sup>	NRV <sup>5</sup>	Notional values related to NRV <sup>4</sup>	Other notional values <sup>4,6</sup>	PRV <sup>3</sup>	Notional values related to PRV <sup>4</sup>	NRV <sup>5</sup>	Notional values related to NRV <sup>4</sup>	Other notional values <sup>4,6</sup>
<b>Commodity contracts</b>										
Over-the-counter (OTC) contracts										
Forward contracts	0.1	3.2	0.1	3.4		0.1	3.0	0.1	3.9	
Swaps	0.7	15.2	0.4	9.9		0.2	8.7	0.4	13.1	
Options	0.4	18.6	0.3	16.1		0.3	11.6	0.1	8.1	
Exchange-traded contracts										
Futures					8.5					8.4
Forward contracts	0.0	6.6	0.0	5.4		0.2	9.6	0.0	8.1	
Options	0.1	2.9	0.0	3.7	0.1	0.0	1.0	0.1	4.6	0.3
Agency transactions <sup>7</sup>	0.4		0.7			0.9		0.9		
<b>Total</b>	<b>1.8</b>	<b>46.4</b>	<b>1.5</b>	<b>38.5</b>	<b>8.6</b>	<b>1.8</b>	<b>33.9</b>	<b>1.6</b>	<b>37.8</b>	<b>8.6</b>
<b>Unsettled purchases of non-derivative financial instruments<sup>8</sup></b>	<b>0.2</b>	<b>17.0</b>	<b>0.1</b>	<b>6.0</b>		<b>0.1</b>	<b>12.4</b>	<b>0.1</b>	<b>11.2</b>	
<b>Unsettled sales of non-derivative financial instruments<sup>8</sup></b>	<b>0.4</b>	<b>15.1</b>	<b>0.2</b>	<b>13.2</b>		<b>0.1</b>	<b>15.2</b>	<b>0.1</b>	<b>9.0</b>	
<b>Total derivative instruments, based on IFRS netting<sup>9</sup></b>	<b>126.2</b>	<b>4,238.7</b>	<b>125.7</b>	<b>4,163.4</b>	<b>10,893.6</b>	<b>121.3</b>	<b>4,167.7</b>	<b>119.1</b>	<b>3,978.6</b>	<b>10,828.0</b>

<sup>1</sup> Derivative financial liabilities as of 31 December 2018 include USD 0.0 billion related to derivative loan commitments (31 December 2017: USD 0.0 billion). No notional amounts related to these commitments are included in this table, but they are disclosed within Note 34 under Loan commitments. <sup>2</sup> Upon adoption of IFRS 9 on 1 January 2018, certain forward starting repurchase and reverse repurchase agreements have been classified as measured at fair value through profit or loss and are recognized within derivative instruments. The fair value of these derivative instruments was not material as of 31 December 2018. No notional amounts related to these instruments are included in this table, but they are disclosed within Note 34 under Forward starting transactions. <sup>3</sup> PRV: positive replacement value. <sup>4</sup> 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. <sup>5</sup> NRV: negative replacement value. <sup>6</sup> Other notional values relate to derivatives that are cleared through either a central counterparty or an exchange. The fair value of these derivatives is presented on the balance sheet net of the corresponding cash margin under Cash collateral receivables on derivative instruments and Cash collateral payables on derivative instruments and was not material for all periods presented. <sup>7</sup> Notional values of exchange-traded agency transactions and OTC-cleared transactions entered into on behalf of clients are not disclosed as they have a significantly different risk profile. <sup>8</sup> Changes in the fair value of purchased and sold non-derivative financial instruments between trade date and settlement date are recognized as replacement values. <sup>9</sup> Financial assets and liabilities are presented net on the balance sheet if UBS has the unconditional and legally enforceable right to offset the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of the entity and all of the counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. Refer to Note 25 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 56% of OTC interest rate contracts held as of 31 December 2018 (31 December 2017: 54%) mature within one year, 28% (31 December 2017: 28%) within one to five years and 16% (31 December 2017: 18%) 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 sales and 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 AG 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 ongoing hedging of trading book exposures and market making, primarily on behalf of clients.

## Note 11 Derivative instruments (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 AG 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 AG 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 AG'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 14% of credit protection bought and sold as of 31 December 2018 matures within one year (31 December 2017: 23%), approximately 74% within one to five years (31 December 2017: 65%) and approximately 12% after five years (31 December 2017: 12%).

### Credit derivatives by type of instrument

USD billion	Protection bought			Protection sold		
	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	0.6	0.6	43.3	0.5	1.0	44.9
Multi-name index-linked credit default swaps	0.3	0.3	29.1	0.3	0.2	24.4
Multi-name other credit default swaps	0.0	0.0	0.1	0.0	0.0	0.1
Total rate of return swaps	0.2	0.7	4.7	0.0	0.0	2.0
Options and warrants	0.0	0.0	4.1	0.0	0.0	0.1
<b>Total 31 December 2018</b>	<b>1.1</b>	<b>1.6</b>	<b>81.3</b>	<b>0.8</b>	<b>1.2</b>	<b>71.4</b>
<i>of which: credit derivatives related to economic hedges</i>	<i>0.9</i>	<i>1.3</i>	<i>59.2</i>	<i>0.5</i>	<i>1.1</i>	<i>48.9</i>
<i>of which: credit derivatives related to market-making</i>	<i>0.2</i>	<i>0.4</i>	<i>22.1</i>	<i>0.3</i>	<i>0.2</i>	<i>22.6</i>

USD billion	Protection bought			Protection sold		
	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	0.6	1.2	62.9	1.1	0.7	57.1
Multi-name index-linked credit default swaps	0.2	1.0	32.6	0.9	0.2	32.8
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	4.6	0.1	0.0	1.7
Options and warrants	0.0	0.0	4.4	0.0	0.0	0.1
<b>Total 31 December 2017</b>	<b>0.8</b>	<b>3.0</b>	<b>104.5</b>	<b>2.1</b>	<b>0.9</b>	<b>91.7</b>
<i>of which: credit derivatives related to economic hedges</i>	<i>0.8</i>	<i>2.5</i>	<i>83.7</i>	<i>1.6</i>	<i>0.9</i>	<i>72.3</i>
<i>of which: credit derivatives related to market-making</i>	<i>0.0</i>	<i>0.5</i>	<i>20.9</i>	<i>0.5</i>	<i>0.0</i>	<i>19.4</i>

## Note 11 Derivative instruments (continued)

### Credit derivatives by counterparty

<i>USD billion</i>	Protection bought			Protection sold		
	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.2	0.1	13.0	0.1	0.2	11.5
Banks	0.4	0.4	29.2	0.3	0.5	25.6
Central clearing counterparties	0.2	0.4	31.9	0.4	0.3	30.8
Other	0.3	0.7	7.2	0.0	0.3	3.5
<b>Total 31 December 2018</b>	<b>1.1</b>	<b>1.6</b>	<b>81.3</b>	<b>0.8</b>	<b>1.2</b>	<b>71.4</b>

<i>USD billion</i>	Protection bought			Protection sold		
	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.2	0.2	16.6	0.2	0.1	12.6
Banks	0.3	0.8	38.0	0.6	0.4	32.4
Central clearing counterparties	0.1	1.1	42.5	1.0	0.1	41.6
Other	0.3	0.9	7.4	0.3	0.2	5.0
<b>Total 31 December 2017</b>	<b>0.8</b>	<b>3.0</b>	<b>104.5</b>	<b>2.1</b>	<b>0.9</b>	<b>91.7</b>

UBS AG'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 AG to recover from third parties any amounts paid out by UBS AG.

The types of credit events that would require UBS AG 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 AG's credit ratings as of 31 December 2018, USD 0.0 billion, USD 0.3 billion and USD 1.0 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 AG's liquidity requirements, UBS AG considers additional collateral or termination payments that would be required in the event of a reduction in UBS AG's long-term credit ratings, and a corresponding reduction in UBS AG's short-term ratings.

## Note 12 Financial assets and liabilities at fair value held for trading

<i>USD million</i>	31.12.18	31.12.17
<b>Financial assets at fair value held for trading<sup>1</sup></b>		
Government bills / bonds	11,161	13,186
Corporate and municipal bonds	6,908	8,886
Loans	3,566	3,946
Investment fund units	9,716	9,881
Asset-backed securities	392	377
Equity instruments	72,771	81,624
Financial assets for unit-linked investment contracts <sup>2</sup>		11,609
<b>Total financial assets at fair value held for trading</b>	<b>104,513</b>	<b>129,509</b>
<b>Financial liabilities at fair value held for trading<sup>1</sup></b>		
Government bills / bonds	2,839	5,549
Corporate and municipal bonds	3,530	3,629
Investment fund units	689	841
Equity instruments	21,892	21,230
Other	0	2
<b>Total financial liabilities at fair value held for trading</b>	<b>28,949</b>	<b>31,251</b>

<sup>1</sup> Refer to Note 24c for more information on product type and fair value hierarchy categorization. <sup>2</sup> Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

## Note 13 Financial assets at fair value not held for trading

<i>USD million</i>	31.12.18	31.12.17
<b>Financial assets at fair value not held for trading<sup>1</sup></b>		
Government bills / bonds	22,493	26,633
Corporate and municipal bonds	17,236	22,022
Financial assets for unit-linked investment contracts <sup>2</sup>	21,446	
Loans	8,132	10,405
Securities financing transactions <sup>3</sup>	9,937	298
Auction rate securities <sup>4</sup>	1,664	
Investment fund units	407	210
Equity instruments <sup>5</sup>	702	
Other	369	501
<b>Total financial assets at fair value not held for trading</b>	<b>82,387</b>	<b>60,070</b>

<sup>1</sup> Refer to Note 24c for more information on product type and fair value hierarchy categorization. <sup>2</sup> Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>3</sup> Certain reverse repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>4</sup> Auction rate securities have been reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>5</sup> Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information.

## Note 14 Financial assets measured at fair value through other comprehensive income

<i>USD million</i>	31.12.18	31.12.17
<b>Financial assets measured at fair value through other comprehensive income<sup>1</sup></b>		
<b>Debt instruments</b>		
Government and government agencies	6,463	7,181
<i>of which: USA</i>	6,101	6,739
Banks	149	307
Corporates and other	54	842
<b>Total debt instruments</b>	<b>6,667</b>	<b>8,330</b>
<b>Equity instruments<sup>2</sup></b>		560
<b>Total financial assets measured at fair value through other comprehensive income</b>	<b>6,667</b>	<b>8,889</b>
Unrealized gains – before tax	4	221
Unrealized (losses) – before tax	(146)	(108)
<b>Net unrealized gains / (losses) – before tax</b>	<b>(143)</b>	<b>114</b>
<b>Net unrealized gains / (losses) – after tax</b>	<b>(104)</b>	<b>6</b>

<sup>1</sup> Refer to Note 24c for more information on product type and fair value hierarchy categorization. Refer also to Note 10 and Note 23 for more information on expected credit loss measurement. <sup>2</sup> Comparative-period information includes equity instruments that were formerly classified as available for sale under IAS 39 and have been reclassified to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

## Note 15 Property, equipment and software

### At historical cost less accumulated depreciation

<i>USD million</i>	Own-used properties	Leasehold improvements	IT hardware and communications equipment	Internally generated software	Purchased software	Other machines and equipment	Projects in progress	2018	2017
<b>Historical cost</b>									
Balance at the beginning of the year	7,268	3,309	1,044	3,967	279	836	1,001	17,705	17,789
Additions <sup>1</sup>	16	18	81	30	27	19	1,294	1,484	1,540
Disposals / write-offs <sup>2</sup>	(14)	(385)	(111)	(94)	(11)	(111)	0	(726)	(2,293)
Reclassifications	(177)	135	0	1,009	11	32	(1,205)	(195) <sup>7</sup>	(47)
Foreign currency translation	(61)	(36)	(12)	(33)	(3)	(7)	(15)	(166)	716
Balance at the end of the year	7,031	3,042	1,002	4,879	303	769	1,076	18,102	17,705
<b>Accumulated depreciation</b>									
Balance at the beginning of the year	4,171	2,045	747	1,763	188	599	0	9,514	9,638
Depreciation	139	189	105	456	35	61	0	984	930
Impairment <sup>3</sup>	0	2	1	63	0	0	0	67	15
Disposals / write-offs <sup>2</sup>	(14)	(380)	(111)	(107)	(11)	(108)	0	(730)	(1,445)
Reclassifications	(129)	4	1	0	0	0	0	(124) <sup>7</sup>	(7)
Foreign currency translation	(36)	(19)	(10)	(14)	(3)	(6)	0	(88)	383
Balance at the end of the year	4,132	1,842	733	2,161	209	546	0	9,623	9,514
<b>Net book value</b>									
Net book value at the beginning of the year	3,097	1,264	297	2,203	91	238	1,001	8,191	8,152
<b>Net book value at the end of the year<sup>4,5</sup></b>	<b>2,900</b>	<b>1,200</b>	<b>269</b>	<b>2,718</b>	<b>93</b>	<b>223</b>	<b>1,076<sup>6</sup></b>	<b>8,479</b>	<b>8,191</b>

<sup>1</sup> Includes USD 7 million additional assets related to acquisition of businesses in 2018. <sup>2</sup> Includes write-offs of fully depreciated assets. <sup>3</sup> Impairment charges recorded in 2018 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 2018. <sup>4</sup> As of 31 December 2018, contractual commitments to purchase property in the future amounted to approximately USD 0.3 billion (31 December 2017: approximately USD 0.3 billion). <sup>5</sup> Includes USD 22 million related to leased assets, mainly Own-used properties. <sup>6</sup> Consists of USD 739 million related to Internally generated software, USD 279 million related to Own-used properties and USD 58 million related to Leasehold improvements. <sup>7</sup> Reflects reclassifications to Properties held for sale (USD 70 million on a net basis) of properties sold in 2018.



## Note 16 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.

For annual tests prior to 2018, UBS AG considered the segments, as they were reported in Note 2a, as separate cash-generating units, as that was the level at which the performance of investments (and the related goodwill) was reviewed and assessed by management. Following the integration in 2018 of the Wealth Management and Wealth Management Americas business divisions into the single reportable segment Global Wealth Management, UBS AG continued to separately monitor the goodwill previously allocated to the two former business divisions. As a consequence, for the purposes of goodwill impairment testing, the former Wealth Management and Wealth Management Americas business divisions are considered to be two separate cash-generating units, referred to in this Note as Global Wealth Management Americas<sup>1</sup> and Global Wealth Management ex Americas. The remaining goodwill balances continued to be tested at the level of Asset Management and the Investment Bank, respectively, consistent with the 2017 annual test.

The impairment test is performed for each cash-generating unit to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, with the carrying amount of the respective cash-generating unit. An impairment charge is recognized if the carrying amount exceeds the recoverable amount. As of 31 December 2018, total goodwill recognized on the balance sheet was USD 6.4 billion, of which USD 3.7 billion was carried by the Global Wealth Management Americas cash-generating unit, USD 1.2 billion was carried by the Global Wealth Management ex Americas cash-generating unit, USD 1.4 billion was carried by Asset Management and USD 0.1 billion was carried by the Investment Bank. Based on the impairment testing methodology described below, UBS AG concluded that the goodwill balances as of 31 December 2018 allocated to these cash-generating units are 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 cash-generating unit is the sum of the discounted earnings attributable to

shareholders from the first three forecast years and the terminal value, adjusted for the effect of the capital assumed to be needed over the next three years and to support growth beyond this period. 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 cash-generating unit 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 Corporate Center – Group Asset and Liability Management 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 cash-generating unit requires to conduct its business and is currently considered a reasonable approximation of the carrying value of the cash-generating units. 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 cash-generating unit.

→ 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 Board of Directors.

The discount rates are determined by applying a capital asset pricing model-based approach, as well as considering quantitative and qualitative inputs from both internal and external analysts and the view of management.

<sup>1</sup> Now including the Global Wealth Management business in Latin America, previously part of the Wealth Management business division.



## Note 16 Goodwill and intangible assets (continued)

Following the change of UBS AG's presentation currency to US dollars, UBS AG has refined its assumptions on long-term growth rates and discount rates. The discount rates now take into account regional differences in risk free rates, at the level of individual cash-generating units. Consistently, long-term growth rates are determined based on nominal or real GDP growth rate forecasts, depending on region. The change to nominal GDP forecasts for some regions results in higher long-term growth rates and thus higher recoverable amounts for all cash-generating units. The change did not affect the outcome of the impairment test.

Key assumptions used to determine the recoverable amounts of each cash-generating unit 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. As of 31 December 2018, the Investment Bank's recoverable amount exceeded its carrying amount by USD 2.5 billion. A reasonably possible change in the forecast earnings or the discount rate used in the calculation of the Investment Bank's recoverable amount would cause its carrying amount to exceed the recoverable amount. More specifically, if forecast earnings used in the calculation of the Investment Bank's recoverable amount were reduced by approximately 12% or the discount rate increased by 1.4 percentage points, then the Investment Bank's recoverable amount would be equal to its carrying amount.

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 capital ratios.

### Discount and growth rates

In %	Discount rates		Growth rates	
	31.12.18	31.12.17	31.12.18	31.12.17
Global Wealth Management Americas	9.5	9.0	3.2	2.4
Global Wealth Management ex Americas	8.5	9.0	3.0	1.7
Asset Management	9.0	9.0	2.7	2.4
Investment Bank	11.0	11.0	3.5	2.4

USD million	Goodwill		Intangible assets		Total	2018	2017
	Total	Infrastructure <sup>1</sup>	Customer relationships, contractual rights and other	Total			
<b>Historical cost</b>							
Balance at the beginning of the year	6,342	760	786	1,546	7,888	7,687	
Additions	161		109	109	270	105	
Disposals	(40)		(5)	(5)	(45)	(63)	
Write-offs			(7)	(7)	(7)	0	
Foreign currency translation	(71)		(17)	(17)	(88)	160	
Balance at the end of the year	6,392	760	865	1,625	8,018	7,888	
<b>Accumulated amortization and impairment</b>							
Balance at the beginning of the year		653	672	1,325	1,325	1,245	
Amortization		38	24	62	62	71	
Impairment <sup>2</sup>			4	4	4	0	
Disposals			(1)	(1)	(1)	(16)	
Write-offs			(7)	(7)	(7)	0	
Foreign currency translation			(12)	(12)	(12)	26	
Balance at the end of the year		691	679	1,371	1,371	1,325	
<b>Net book value at the end of the year</b>	<b>6,392</b>	<b>68</b>	<b>186</b>	<b>254</b>	<b>6,647</b>	<b>6,563</b>	

<sup>1</sup> Consists of the branch network intangible asset recognized in connection with the acquisition of PaineWebber Group, Inc. <sup>2</sup> Impairment charges recorded in 2018 and 2017 relate to assets for which the recoverable amount was determined based on value-in-use (recoverable amount of the impaired assets: USD 18 million for 2018 and USD 0 million for 2017).

## Note 16 Goodwill and intangible assets (continued)

The table below presents goodwill and intangible assets by cash-generating unit for the year ended 31 December 2018.

<i>USD million</i>	Global Wealth Management Americas	Global Wealth Management ex Americas	Investment Bank	Asset Management	Corporate Center – Services	Total
<b>Goodwill</b>						
Balance at the beginning of the year	3,742	1,148	35	1,418		6,342
Additions		79	82	0		161
Disposals	(13)		0	(27)		(40)
Foreign currency translation	(8)	(21)	(5)	(37)		(71)
<b>Balance at the end of the year</b>	<b>3,721</b>	<b>1,206</b>	<b>112</b>	<b>1,354</b>		<b>6,392</b>
<b>Intangible assets</b>						
Balance at the beginning of the year	164	25	29	1	2	221
Additions / transfers	22	86			1	109
Disposals	0		(4)	0		(4)
Amortization	(44)	(6)	(10)	(1)	(2)	(62)
Impairment	0	0	(3)	0		(4)
Foreign currency translation	(4)	0	(1)	0	0	(5)
<b>Balance at the end of the year</b>	<b>138</b>	<b>104</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>254</b>

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

<i>USD million</i>	Intangible assets
<b>Estimated, aggregated amortization expenses for:</b>	
2019	65
2020	52
2021	21
2022	21
2023	18
Thereafter	76
Not amortized due to indefinite useful life	2
<b>Total</b>	<b>254</b>

## Note 17 Other assets

### a) Other financial assets measured at amortized cost

<i>USD million</i>	<b>31.12.18</b>	31.12.17
Prime brokerage receivables <sup>1</sup>		19,573
Debt securities	<b>13,562</b>	9,403
<i>of which: government bills / bonds</i>	<b>8,778</b>	6,632
Loans to financial advisors <sup>2</sup>	<b>3,291</b>	3,199
Fee- and commission-related receivables	<b>1,644</b>	1,794
Finance lease receivables	<b>1,091</b>	1,086
Settlement and clearing accounts	<b>1,039</b>	734
Accrued interest income	<b>700</b>	593
Other	<b>1,310</b>	1,508
<b>Total other financial assets measured at amortized cost</b>	<b>22,637</b>	37,890

<sup>1</sup> Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Brokerage receivables and payables are now presented separately on the balance sheet. Refer to Note 1c for more information. <sup>2</sup> Related to financial advisors in the US and Canada.

### b) Other non-financial assets

<i>USD million</i>	<b>31.12.18</b>	31.12.17
Precious metals and other physical commodities	<b>4,298</b>	4,681
Bail deposit <sup>1</sup>	<b>1,312</b>	1,371
Prepaid expenses	<b>731</b>	840
VAT and other tax receivables	<b>282</b>	299
Properties and other non-current assets held for sale	<b>82</b>	98
Other	<b>358</b>	258
<b>Total other non-financial assets</b>	<b>7,062</b>	7,548

<sup>1</sup> Refer to item 1 in Note 21b for more information.

## Note 18 Amounts due to banks, customer deposits, and funding from UBS Group AG and its subsidiaries

### a) Amounts due to banks and customer deposits

<i>USD million</i>	<b>31.12.18</b>	31.12.17
Amounts due to banks	<b>10,962</b>	7,728
Customer deposits	<b>421,986</b>	423,058
<i>of which: demand deposits</i>	<b>182,642</b>	195,264
<i>of which: retail savings / deposits</i>	<b>165,790</b>	166,013
<i>of which: time deposits</i>	<b>54,998</b>	50,291
<i>of which: fiduciary deposits</i>	<b>18,556</b>	11,490
<b>Total amounts due to banks and customer deposits</b>	<b>432,948</b>	430,786

### b) Funding from UBS Group AG and its subsidiaries

<i>USD million</i>	<b>31.12.18</b>	31.12.17
Senior unsecured debt that contributes to total loss-absorbing capacity (TLAC)	<b>29,988</b>	27,937
Senior unsecured debt other than TLAC	<b>1,031</b>	2,736
High-trigger loss-absorbing additional tier 1 capital instruments	<b>7,805</b>	3,761
Low-trigger loss-absorbing additional tier 1 capital instruments	<b>2,378</b>	1,213
<b>Total<sup>1</sup></b>	<b>41,202</b>	35,648

<sup>1</sup> All balances in 2018 are against UBS Group Funding (Switzerland) AG as counterparty. Prior year balances were against both UBS Group AG and UBS Group Funding (Switzerland) AG as counterparties. In May 2018, UBS substituted UBS Group AG where it was the issuer of outstanding AT1 capital instruments with UBS Group Funding (Switzerland) AG.

## Note 19 Debt issued designated at fair value

USD million	31.12.18	31.12.17
<b>Issued debt instruments</b>		
Equity-linked <sup>1</sup>	34,392	35,046
Rates-linked	12,073	5,961
Credit-linked	3,282	3,013
Fixed-rate	5,099	4,022
Other	2,185	2,740
Total debt issued designated at fair value	57,031	50,782
<i>of which: issued by UBS AG with original maturity greater than one year<sup>2</sup></i>	40,289	38,230
<i>of which: life-to-date own credit (gain) / loss</i>	(270)	163

<sup>1</sup> Includes investment fund unit-linked instruments issued. <sup>2</sup> Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. More than 99% of the balance as of 31 December 2018 was unsecured (31 December 2017: more than 99% of the balance was unsecured).

As of 31 December 2018 and 31 December 2017, the contractual redemption amount at maturity of debt issued designated at fair value through profit or loss was not materially different from the carrying value.

The table below shows the residual contractual maturity of the carrying value of debt issued 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 debt issued designated at fair value have not been included in the table below as a majority of the debt instruments issued are structured products, and therefore the future interest payments are highly dependent upon the embedded derivative and prevailing market conditions at the point in time that each interest payment is made.

→ Refer to Note 27 for maturity information on an undiscounted cash flow basis

### Contractual maturity of carrying value

USD million	2019	2020	2021	2022	2023	2024–2028	Thereafter	Total 31.12.18	Total 31.12.17
<b>UBS AG<sup>1</sup></b>									
Non-subordinated debt									
Fixed-rate	3,904	1,509	1,178	447	274	802	3,694	11,807	9,664
Floating-rate	19,921	4,669	3,947	1,610	2,758	5,544	5,113	43,562	39,063
Subtotal	23,825	6,178	5,126	2,057	3,031	6,346	8,807	55,370	48,728
<b>Other subsidiaries<sup>2</sup></b>									
Non-subordinated debt									
Fixed-rate	805	25	66	7	0	321	6	1,230	1,437
Floating-rate	13	119	83	6	26	0	183	431	617
Subtotal	818	145	149	13	26	321	189	1,662	2,054
<b>Total</b>	24,643	6,322	5,275	2,070	3,058	6,668	8,996	57,031	50,782

<sup>1</sup> Comprises instruments issued by the legal entity UBS AG. <sup>2</sup> Comprises instruments issued by subsidiaries of UBS AG.

## Note 20 Debt issued measured at amortized cost

<i>USD million</i>	31.12.18	31.12.17
Certificates of deposit	7,980	24,447
Commercial paper	27,514	24,140
Other short-term debt	3,531	3,683
<b>Short-term debt<sup>1</sup></b>	<b>39,025</b>	<b>52,270</b>
Senior unsecured debt	32,135	33,102
<i>of which: issued by UBS AG with original maturity greater than one year<sup>2</sup></i>	<i>32,133</i>	<i>33,090</i>
Covered bonds	3,947	4,218
Subordinated debt	7,511	9,217
<i>of which: low-trigger loss-absorbing tier 2 capital instruments</i>	<i>6,808</i>	<i>8,500</i>
<i>of which: non-Basel III-compliant tier 2 capital instruments</i>	<i>703</i>	<i>718</i>
Debt issued through the Swiss central mortgage institutions	8,569	8,561
Other long-term debt	58	89
<i>of which: issued by UBS AG with original maturity greater than one year<sup>2</sup></i>	<i>52</i>	<i>68</i>
<b>Long-term debt<sup>3</sup></b>	<b>52,220</b>	<b>55,187</b>
<b>Total debt issued measured at amortized cost<sup>4</sup></b>	<b>91,245</b>	<b>107,458</b>

<sup>1</sup> Debt with an original maturity of less than one year. <sup>2</sup> Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. As of 31 December 2018, 100% of the balance was unsecured (31 December 2017: 100% of the balance was unsecured). <sup>3</sup> Debt with an original maturity greater than or equal to one year. The classification of debt issued into short-term and long-term does not consider any early redemption features. <sup>4</sup> 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 3j and Note 28. As a result of applying hedge accounting, the life-

to-date adjustment to the carrying value of debt issued was an increase of USD 282 million as of 31 December 2018 and an increase of USD 493 million as of 31 December 2017, reflecting changes in fair value due to interest rate movements.

## Note 20 Debt issued measured 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 2018 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 27 for maturity information on an undiscounted cash flow basis

### Contractual maturity of carrying value

<i>USD million, except where indicated</i>	2019	2020	2021	2022	2023	2024–2028	Thereafter	Total 31.12.18	Total 31.12.17
<b>UBS AG<sup>1</sup></b>									
Non-subordinated debt									
Fixed-rate	21,287	9,397	4,078	2,726	1,635	0	985	40,108	57,694
Floating-rate	25,450	6,482	1,964	0	369	0	770	35,035	31,930
Subordinated debt									
Fixed-rate	0	0	0	1,945	0	5,566	0	7,511	9,217
Subtotal	46,737	15,879	6,042	4,671	2,005	5,566	1,755	82,654	98,841
<b>Other subsidiaries<sup>2</sup></b>									
Non-subordinated debt									
Fixed-rate	765	734	1,016	845	937	3,647	646	8,590	8,616
Floating-rate	0	0	0	0	0	0	0	0	1
Subtotal	765	734	1,016	845	937	3,647	646	8,591	8,617
<b>Total</b>	<b>47,502</b>	<b>16,613</b>	<b>7,057</b>	<b>5,517</b>	<b>2,942</b>	<b>9,213</b>	<b>2,402</b>	<b>91,245</b>	<b>107,458</b>

<sup>1</sup> Comprises debt issued by the legal entity UBS AG. <sup>2</sup> Comprises debt issued by subsidiaries of UBS AG.

## Note 21 Provisions and contingent liabilities

### a) Provisions

The table below presents an overview of total provisions recognized under both IAS 37 and IFRS 9.

<i>USD million</i>	31.12.18	31.12.17
Provisions recognized under IAS 37	3,341	3,130
Provisions for off-balance sheet financial instruments <sup>1</sup>	79	34
Provisions for other credit lines <sup>1</sup>	37	0
<b>Total provisions</b>	<b>3,457</b>	<b>3,164</b>

<sup>1</sup> Provisions recognized in 2018 relate to exposures in the scope of the expected credit loss requirements of IFRS 9. Refer to Notes 1c, 10 and 23 for more information. 2017 provisions for off-balance sheet financial instruments relate to loss provisions recognized under IAS 37.

The following table presents additional information for provisions recognized under IAS 37.

<i>USD million</i>	Operational risks <sup>1</sup>	Litigation, regulatory and similar matters <sup>2</sup>	Restructuring	Real estate	Employee benefits <sup>5</sup>	Other	Total 2018	Total 2017
Balance at the beginning of the year	44	2,508	302	128	57	91	3,130	4,043
Additions from acquired companies	0	0	0	2	0	0	2	7
Increase in provisions recognized in the income statement	25	905	142	4	8	34	1,117	956
Release of provisions recognized in the income statement	(5)	(220)	(54)	(1)	(7)	(14)	(301)	(338)
Provisions used in conformity with designated purpose	(20)	(350)	(173)	(11)	0	(33)	(587)	(1,598)
Capitalized reinstatement costs	0	0	0	0	0	0	0	4
Reclassifications	0	0	0	0	0	0	0	(35)
Foreign currency translation / unwind of discount	0	(16)	(1)	0	(2)	(1)	(20)	91
<b>Balance at the end of the year</b>	<b>45</b>	<b>2,827</b>	<b>215<sup>3</sup></b>	<b>122<sup>4</sup></b>	<b>55</b>	<b>77</b>	<b>3,341</b>	<b>3,130</b>

<sup>1</sup> Comprises provisions for losses resulting from security risks and transaction processing risks. <sup>2</sup> Comprises provisions for losses resulting from legal, liability and compliance risks. <sup>3</sup> Primarily consists of personnel-related restructuring provisions of USD 40 million as of 31 December 2018 (31 December 2017: USD 56 million) and provisions for onerous lease contracts of USD 170 million as of 31 December 2018 (31 December 2017: USD 241 million). <sup>4</sup> Consists of reinstatement costs for leasehold improvements of USD 83 million as of 31 December 2018 (31 December 2017: USD 89 million) and provisions for onerous lease contracts of USD 40 million as of 31 December 2018 (31 December 2017: USD 40 million). <sup>5</sup> Includes provisions for sabbatical and anniversary awards.

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 21b. 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. Developments relating to a matter that occur after the relevant reporting period, but prior to the issuance of financial statements, which affect management's assessment of the provision for such matter (because, for example, the developments provide evidence of conditions that existed at the end of the reporting period), are adjusting events after the reporting period under IAS 10 and must be recognized in the financial statements for the reporting period.



## Note 21 Provisions and contingent liabilities (continued)

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.

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 21a 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 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<sup>1</sup>

<i>USD million</i>	Global Wealth Manage- ment	Personal & Corporate Banking	Asset Manage- ment	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Total 2018	Total 2017
Balance at the beginning of the year	569	81	1	354	246	0	1,256	2,508	3,204
Increase in provisions recognized in the income statement	659	41	0	83	32	0	90	905	703
Release of provisions recognized in the income statement	(33)	(1)	(1)	(146)	(38)	0	0	(220)	(214)
Provisions used in conformity with designated purpose	(184)	(3)	0	(18)	(1)	0	(143)	(350)	(1,251)
Foreign currency translation / unwind of discount	(9)	(1)	0	(3)	(2)	0	(1)	(16)	66
<b>Balance at the end of the year</b>	<b>1,003</b>	<b>117</b>	<b>0</b>	<b>269</b>	<b>236</b>	<b>0</b>	<b>1,202</b>	<b>2,827</b>	2,508

<sup>1</sup> Provisions, if any, for the matters described in this Note are recorded in Global Wealth Management (items 3 and 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 Global 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.

## Note 21 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. On 30 July 2018, the Swiss Federal Administrative Court granted UBS's appeal by holding the French administrative assistance request inadmissible. The FTA filed a final appeal with the Swiss Federal Supreme Court.

Since 2013, UBS (France) S.A., UBS AG and certain former employees have been under investigation in France for alleged complicity in having illicitly solicited clients on French territory, 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 March 2017, the investigating judges issued a 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. The trial on these charges in the court of first instance took place from 8 October 2018 until 15 November 2018. During the trial, the prosecutors and the French State requested penalties and civil monetary damages in connection with the money laundering charges aggregating EUR 5.3 billion. On 20 February 2019, the court announced a verdict finding UBS AG guilty of illicitly soliciting clients on French territory and laundering the proceeds of tax fraud, and UBS France S.A. guilty of aiding and abetting unlawful solicitation and laundering the proceeds of tax fraud.

The court imposed fines aggregating EUR 3.7 billion on UBS AG and UBS France S.A. and awarded EUR 800 million of civil damages to the French state. UBS has appealed the decision. Under French law, the judgment is suspended while the appeal is pending. The Court of Appeal will retry the case de novo as to both the law and the facts and the fines and penalties can be greater than or less than those imposed by the court of first instance. A subsequent appeal to the Cour de Cassation, France's highest court, is possible with respect to questions of law.

UBS believes that based on both the law and the facts the judgment of the court of first instance should be reversed. UBS believes it followed its obligations under Swiss and French law as well as the European Savings Tax Directive. Even assuming liability, which it contests, UBS believes the penalties and damage amounts awarded greatly exceeded the amounts that could be supported by the law and the facts. In particular, UBS believes the court incorrectly based the penalty on the total regularized assets rather than on any unpaid taxes on those assets for which a fraud has been characterized, and further incorrectly awarded damages based on costs that were not proven by the civil party. Notwithstanding that UBS believes it should be acquitted, our balance sheet at 31 December 2018 reflected provisions with respect to this matter in an amount of USD 516 million. The wide range of possible outcomes in this case contributes to a high degree of estimation uncertainty. The provision reflected on our balance sheet at 31 December 2018 reflects our best estimate of possible financial implications, although it is reasonably possible that actual penalties and civil damages could exceed the provision amount.

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, of banking and financial solicitation by unauthorized persons, and of serious tax fraud. In 2018, tax authorities and a prosecutor's office in Italy asserted that UBS is potentially liable for taxes and penalties as a result of its activities in Italy from 2012 to 2017.

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 2018 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.

## Note 21 Provisions and contingent liabilities (continued)

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

From 2002 through 2007, prior to the crisis in the US residential loan market, UBS was a substantial issuer and underwriter of US residential mortgage-backed securities (RMBS) and was a purchaser and seller of US residential mortgages. 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 in the US District Court for the Southern District of New York seeking to enforce UBS RESI's obligation to repurchase loans in the collateral pools for three RMBS securitizations issued and underwritten by UBS with an original principal balance of approximately USD 2 billion. In July 2018, UBS and the trustee entered into an agreement under which UBS will pay USD 850 million to resolve this matter. A significant portion of this amount will be borne by other parties that indemnified UBS. The settlement remains subject to court approval and proceedings to determine how the settlement funds will be distributed to RMBS holders. After giving effect to this settlement, 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:* Since 2014, the US Attorney's Office for the Eastern District of New York has sought information from UBS pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA), related to UBS's RMBS business from 2005 through 2007. On 8 November 2018, the DOJ filed a civil complaint in the District Court for the Eastern District of New York. The complaint seeks unspecified civil monetary penalties under FIRREA related to

UBS's issuance, underwriting and sale of 40 RMBS transactions in 2006 and 2007. UBS moved to dismiss the civil complaint on 6 February 2019.

Our balance sheet at 31 December 2018 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. Those inquiries concerned two third-party funds established under Luxembourg law, substantially all assets of which were with BMIS, as well as certain funds established in offshore jurisdictions with either direct or indirect exposure to BMIS. These funds faced severe losses, and the Luxembourg funds are in liquidation. The documentation establishing both funds identifies UBS entities in various roles, including custodian, administrator, manager, distributor and promoter, and indicates that UBS employees serve as board members.

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

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

In the US, the BMIS Trustee filed claims against UBS entities, among others, in relation to the two Luxembourg funds and one of the offshore funds. The total amount claimed against all defendants in these actions was not less than USD 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.

## Note 21 Provisions and contingent liabilities (continued)

### 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 2.9 billion, of which claims with aggregate claimed damages of USD 1.9 billion have been resolved through settlements, arbitration or withdrawal of the claim. The claims have been 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 and a request for permission to appeal that ruling was denied by 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. Following denial of the plaintiffs' motion for class certification, the case was dismissed in October 2018.

In 2014 and 2015, UBS entered into settlements with the Office of the Commissioner of Financial Institutions for the Commonwealth of Puerto Rico, the US Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority in relation to their examinations of UBS's operations. 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 2015, and continuing through 2017, certain agencies and public corporations of the Commonwealth of Puerto Rico (Commonwealth) defaulted on certain interest payments on Puerto Rico bonds. 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 has imposed a stay on the exercise of creditors' rights. In 2017, the oversight board placed certain of the bonds into a bankruptcy-like proceeding under the supervision of a Federal District Judge. 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 2018 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.

## Note 21 Provisions and contingent liabilities (continued)

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

*Foreign exchange-related regulatory matters:* Beginning in 2013 numerous authorities commenced investigations concerning possible manipulation of foreign exchange markets and precious metals prices. 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 2015, the DOJ's Criminal Division terminated the 2012 non-prosecution agreement 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. UBS has ongoing obligations to cooperate with these authorities and to undertake certain remediation measures. UBS has also been granted conditional immunity by the Antitrust Division of the DOJ and by authorities in other jurisdictions in connection with potential competition law violations relating to foreign exchange and precious metals businesses. 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. UBS has entered into a settlement agreement that would resolve US federal court class actions relating to foreign currency transactions with the defendant banks and persons who transacted in foreign exchange futures contracts and options on such futures. The settlement agreement, which has been approved by the court, requires, among other things, that UBS pay an aggregate of USD 141 million and provide cooperation to the settlement classes. Certain class members have excluded themselves from that settlement and have filed individual actions in US and English courts against UBS and other banks alleging violations of US and European competition laws and unjust enrichment.

In 2015, a putative class action was filed in federal court against UBS and numerous other banks on behalf of persons and businesses in the US who directly purchased foreign currency from the defendants and alleged co-conspirators for their own end use. In 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 March 2018, the court denied the defendants' motions to dismiss the amended complaint.

In 2016, a putative class action was filed in federal court in New York against UBS and numerous other banks on behalf 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 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 March 2018, the court dismissed the consolidated complaint. In October 2018, the court granted plaintiffs' motion seeking leave to file an amended complaint.

Putative class actions were also filed against UBS and 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 asserted claims under the antitrust laws and the Commodity Exchange Act (CEA), and other claims. In July 2018, the court in New York granted UBS's motions to dismiss amended complaints in the putative class actions relating to gold and silver. In 2017, the court granted UBS's motion to dismiss the platinum and palladium action. Plaintiffs in the platinum and palladium action subsequently filed an amended complaint that did not allege claims against UBS.



## Note 21 Provisions and contingent liabilities (continued)

*LIBOR and other benchmark-related regulatory matters:* Numerous government agencies, including the SEC, the CFTC, the DOJ, the FCA, the UK Serious Fraud Office, the Monetary Authority of Singapore, the Hong Kong Monetary Authority, 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 UK Financial Services Authority, 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 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 measures with respect to benchmark interest rate submissions. In December 2018, UBS entered into a settlement agreement with the New York and other state attorneys general under which it will pay USD 68 million to resolve claims by the attorneys general related to LIBOR. 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.

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

*USD LIBOR class and individual actions in the US:* In 2013 and 2015, the district court in the USD LIBOR actions dismissed, in whole or in part, certain plaintiffs' antitrust claims, federal racketeering claims, CEA claims, and state common law claims. Although the Second Circuit vacated the district court's judgment dismissing antitrust claims, the district court again dismissed antitrust claims against UBS in 2016. Certain plaintiffs have appealed that decision to the Second Circuit. Separately, in 2018,

the Second Circuit reversed in part the district court's 2015 decision dismissing certain individual plaintiffs' claims. UBS entered into an agreement in 2016 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. In 2018, the district court denied plaintiffs' motions for class certification in the USD class actions for claims pending against UBS, and plaintiffs sought permission to appeal that ruling to the Second Circuit. In July 2018, the Second Circuit denied the petition to appeal of the class of USD lenders and in November 2018 denied the petition of the USD exchange class. In January 2019, a putative class action was filed in the District Court for the Southern District of New York against UBS and numerous other banks on behalf of US residents who, from 1 February 2014 through the present, directly transacted with a defendant bank in USD LIBOR instruments. The complaint asserts antitrust and unjust enrichment claims.

*Other benchmark class actions in the US:* In 2014, the court in one of the Euroyen TIBOR lawsuits dismissed certain of the plaintiff's claims, including a federal antitrust claim, for lack of standing. In 2015, this court dismissed the plaintiff's federal racketeering claims on the same basis and affirmed its previous dismissal of the plaintiff's antitrust claims against UBS. In 2017, this 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 lawsuit dismissed the cases as to UBS and certain other foreign defendants for lack of personal jurisdiction. In October 2018, the court in the SIBOR / SOR action dismissed all but one of plaintiffs' claims against UBS. Plaintiffs in the CHF LIBOR and SIBOR / SOR actions have filed amended complaints following the dismissals, which UBS and other defendants have moved to dismiss. In November 2018, the court in the BBSW lawsuit dismissed the case as to UBS and certain other foreign defendants for lack of personal jurisdiction. Following that dismissal, plaintiffs in the BBSW action moved in January 2019 to file an amended complaint seeking to re-name UBS and certain other banks as defendants. UBS and other defendants also moved to dismiss the GBP LIBOR action in December 2016, but that motion was denied as to UBS in December 2018. UBS moved for reconsideration of that decision in January 2019.

*Government bonds:* Putative class actions have been filed since 2015 in US federal courts against UBS and other banks on behalf of persons who participated in markets for US Treasury securities since 2007. A consolidated complaint was filed in 2017 in the US District Court for the Southern District of New York alleging that the banks colluded with respect to, and manipulated prices of, US Treasury securities sold at auction and in the secondary market and asserting claims under the antitrust laws and for unjust enrichment. Defendants' motions to dismiss the consolidated complaint are pending.

## Note 21 Provisions and contingent liabilities (continued)

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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 2018 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 2018 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. On 13 March 2019, UBS Securities Hong Kong Limited and UBS AG entered into a settlement agreement with the SFC resolving all of the SFC's pending investigations related to sponsorship of initial public offerings (IPOs) by UBS. The agreement provides for a fine of HKD 375 million (USD 48 million) and the suspension of UBS Securities Hong Kong Limited's ability to act as a sponsor for Hong Kong-listed IPOs for one year.

## Note 22 Other liabilities

### a) Other financial liabilities measured at amortized cost

<i>USD million</i>	31.12.18	31.12.17
Prime brokerage payables <sup>1</sup>		30,413
Other accrued expenses	1,911	2,160
Accrued interest expenses	1,501	1,572
Settlement and clearing accounts	1,477	1,416
Other	2,688	2,532
<b>Total other financial liabilities measured at amortized cost</b>	<b>7,576</b>	<b>38,092</b>

<sup>1</sup> Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Brokerage receivables and payables are now presented separately on the balance sheet. Refer to Note 1c for more information.

### b) Other financial liabilities designated at fair value

<i>USD million</i>	31.12.18	31.12.17
Amounts due under unit-linked investment contracts	21,679	11,821
Securities financing transactions <sup>1</sup>	9,461	384
Over-the-counter debt instruments	2,450	4,428
<i>of which: life-to-date own credit (gain) / loss</i>	<i>(51)</i>	<i>37</i>
Other	5	9
<b>Total other financial liabilities designated at fair value<sup>2</sup></b>	<b>33,594</b>	<b>16,643</b>

<sup>1</sup> Certain repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information. <sup>2</sup> As of 31 December 2018 and 31 December 2017, the contractual redemption amount at maturity of other financial liabilities designated at fair value through profit or loss was not materially different from the carrying value.

### c) Other non-financial liabilities

<i>USD million</i>	31.12.18	31.12.17
Compensation-related liabilities	4,645	5,036
<i>of which: accrued expenses</i>	<i>2,400</i>	<i>2,433</i>
<i>of which: other deferred compensation plans</i>	<i>1,473</i>	<i>1,655</i>
<i>of which: net defined benefit pension and post-employment liabilities<sup>1</sup></i>	<i>773</i>	<i>948</i>
Current and deferred tax liabilities <sup>2</sup>	915	866
VAT and other tax payables	403	388
Deferred income	215	153
Other	98	55
<b>Total other non-financial liabilities</b>	<b>6,275</b>	<b>6,499</b>

<sup>1</sup> Refer to Note 29 for more information. <sup>2</sup> Refer to Note 8 for more information.



## Additional information

### Note 23 Expected credit loss measurement

#### a) Expected credit losses in the period

Total net credit loss expenses amounted to USD 118 million in 2018, reflecting expected credit losses (ECL) of USD 23 million related to stage 1 and 2 positions and net losses of USD 95 million related to credit-impaired (stage 3) positions.

In the Investment Bank and Global Wealth Management, increased stage 1 and 2 ECL provisions recognized over the year primarily relate to loans and credit facilities originated during 2018 and to a lesser extent to changes in credit quality of existing assets. In Personal & Corporate Banking, ECL remained

unchanged over the year primarily because increased ECL from new transactions and minor changes in applied credit risk models were offset by ECL net recoveries as a lower proportion of transactions was subject to stage 2 classification.

Stage 3 net losses of USD 95 million were recognized across a number of defaulted positions, mainly in Personal & Corporate Banking (USD 56 million) and to a lesser extent in the Investment Bank (USD 29 million).

#### b) Changes to ECL models, scenarios, scenario weights and key inputs

Refer to Note 1a and 1c for information on ECL models, scenarios, scenario weights and key inputs applied at transition to IFRS 9 as of 1 January 2018. No changes were applied to the determination of a significant increase in credit risk (SICR) and the ECL measurement period during the year 2018. Apart from updating market data, such as house prices, equity indices and foreign exchange rates, and macroeconomic factors, such as gross domestic product (GDP) and unemployment rates, no significant changes were applied to the models used to calculate ECL during the year 2018.

The four scenarios and the related macroeconomic factors were reviewed in light of the economic and political conditions prevailing at year-end 2018. UBS has determined that the fundamental risk assessment made upon transition to IFRS 9 on 1 January 2018 is still appropriate and that potential developments remain suitably covered by the baseline scenario, which is aligned with the business plan, and the three additional scenarios introduced to capture potential non-linearity of credit losses required under IFRS 9. The key parameters (e.g., the real GDP growth, consumer price inflation, unemployment rate) of each scenario have been updated over the course of the year, but remained materially unchanged from what was applied at transition (refer to Note 1c). The key parameters applied as of 31 December 2018 are summarized in the table on the following page.

The determination of the scenario weights is subject to the process and governance outlined in Note 1a Section 3g. An econometric model is used to provide an input into the scenario weight assessment process giving a first indication of the probability that the GDP forecast used for each scenario would materialize, if historically observed deviations of GDP growth from trend growth were representative. As such historical analyses of GDP development do not include an assessment of the underlying economic or political causes, management positions the model output into the context of current conditions and future expectations and applies judgment in

determining the final scenario weights. The reviews during 2018 reflected the increasing probability of a weakening economy in key markets, after a long spell of substantial expansion, and the uncertainties about the influence that several political developments with unforeseeable outcomes may have on future growth. At year-end 2018, management reflected these developments by giving more weight to the mild and severe downside scenarios compared to transition date.

Non-linearity of credit losses in relation to macroeconomic factors is usually most pronounced in portfolios that are most sensitive to interest rates, especially in the areas of mortgage loans to private clients and real estate financing. The mild downside scenario reflects a significant rise of interest rates as a key component and is also particularly relevant for credit risk management purposes.

As noted above, scenario weights are a reflection of risks identified during management's assessment of economic and geopolitical risks and not a specific expectation that a particular narrative with its defined macroeconomic factors (e.g., interest rates) will materialize. Other scenarios for a mild downside with less focus on interest rates would, however, not have been representative of the potential asymmetry of loan losses in a downturn. A more severe recession can be triggered by political factors that cannot be modeled based on observed history; given this consideration, the weight assigned to the severe downside case was based on management's assessment of the geopolitical risks that might affect all of our key markets and portfolios.

ECL scenario	Assigned weights in %	
	2018	2017
	31.12.18	1.1.18
Upside	10.0	20.0
Baseline	45.0	42.5
Mild downside	35.0	30.0
Severe downside	10.0	7.5

## Note 23 Expected credit loss measurement (continued)

Key parameters	1-year shock				3-year cumulative shock			
	Upside	Baseline	Mild downside	Severe downside	Upside	Baseline	Mild downside	Severe downside
<b>Real GDP growth (% change)</b>								
United States	5.5	2.8	(0.5)	(5.2)	9.9	7.0	0.0	(3.6)
Eurozone	4.3	1.8	(0.3)	(10.4)	8.5	4.7	0.7	(13.4)
Switzerland	5.0	2.0	(0.8)	(7.0)	9.4	5.5	(0.1)	(6.9)
<b>Consumer price inflation (% change)</b>								
United States	3.5	2.1	4.9	(1.0)	10.4	5.5	11.1	0.6
Eurozone	2.4	1.6	2.8	(1.1)	8.1	5.3	6.2	(1.4)
Switzerland	1.4	0.9	1.8	(1.8)	7.1	2.8	4.2	(1.2)
<b>Unemployment rate (% average)</b>								
United States	(1.7)	(0.6)	0.6	3.4	(1.5)	(0.5)	1.8	2.9
Eurozone	(1.0)	(0.5)	0.0	3.2	(1.9)	(0.9)	0.1	3.7
Switzerland	(1.5)	(0.3)	0.6	4.3	(1.4)	0.1	1.6	5.3
<b>Fixed income: 10-year government bonds (bps)</b>								
USD	61.0	3.9	187.5	(160.0)	249.1	5.7	262.5	(135.0)
EUR	40.0	22.0	75.0	(20.0)	146.7	60.7	225.0	(10.0)
CHF	48.0	19.7	187.5	(75.0)	208.0	53.2	262.5	(40.0)
<b>Equity indices (% change)</b>								
S&P 500	14.8	5.8	(20.3)	(50.1)	38.7	15.1	(23.5)	(48.2)
EuroStoxx 50	17.0	6.0	(15.5)	(63.7)	38.4	15.6	(14.7)	(65.9)
SPI	13.9	4.2	(19.0)	(56.2)	37.1	10.4	(24.0)	(56.7)
<b>Swiss real estate (% change)</b>								
Single-Family Homes	4.5	(0.3)	(7.3)	(15.2)	14.1	1.4	(15.8)	(27.0)
<b>Other real estate (% change)</b>								
United States (S&P/Case-Shiller)	10.3	6.9	(2.7)	(16.0)	30.9	17.7	(17.0)	(22.1)
Eurozone (Housing Price Index)	4.9	1.9	(0.2)	(9.5)	15.4	8.2	3.0	(18.3)

### c) Development of ECL allowances and provisions

The ECL allowances and provisions recognized in the period are impacted by a variety of factors, such as:

- origination of new instruments during the period;
- effect of passage of time as the ECL on an instrument for the remaining lifetime reduces (all other factors remaining the same);
- credit impairment: increased ECL as default is certain and PD increases to 100%;
- discount unwind within ECL as it is measured on a present value basis;
- derecognition of instruments in the period;
- change in individual asset quality of instruments;
- portfolio effect of updating forward-looking scenarios and the respective weights;
- movements from a “maximum 12-month ECL” to the recognition of “lifetime ECL” (and vice versa) following transfers between the stages 1, 2 and 3 (SICR or credit-impairment status);
- changes in credit risk and / or economic forecasting models or updates to model parameters;
- foreign exchange translations for assets denominated in foreign currencies and other movements.

## Note 23 Expected credit loss measurement (continued)

The following table explains the changes in the ECL allowances and provisions for *Loans and advances to customers*, *Loans to financial advisors* and off-balance sheet financial instruments and other credit lines between the beginning and the end of the period due to the factors listed on the previous page.

USD million	Development of ECL allowances and provisions			
	Total	Stage 1	Stage 2	Stage 3
Balance as of 1 January 2018	(1,117)	(141)	(193)	(783)
ECL movements due to stage transfer (profit or loss neutral) <sup>1</sup>	0	(97)	95	2
ECL movements with profit or loss impact <sup>2</sup>	(104)	66	(83)	(88)
Net movement from new and derecognized transactions <sup>3</sup>	(10)	(44)	15	19
of which: Private clients with mortgages	(3)	(6)	4	0
of which: Real estate financing	(3)	(8)	5	0
of which: Large corporate clients	2	(6)	1	8
of which: SME clients	(10)	(14)	4	0
Book quality movements	(89)	112	(87)	(114)
Remeasurements due to stage transfers <sup>4</sup>	(16)	95	(103)	(7)
of which: Private clients with mortgages	(11)	54	(63)	(1)
of which: Real estate financing	5	24	(19)	0
of which: Large corporate clients	(1)	0	(3)	1
of which: SME clients	1	7	(7)	0
Remeasurements without stage transfers <sup>5</sup>	(73)	17	16	(106)
of which: Private clients with mortgages	(9)	2	(3)	(7)
of which: Real estate financing	8	4	12	(8)
of which: Large corporate clients	(56)	(2)	(6)	(48)
of which: SME clients	(55)	9	6	(70)
Model and methodology changes <sup>6</sup>	(13)	(2)	(11)	0
Other allowance and provision movements	227	10	1	216
Write-offs / recoveries <sup>7</sup>	200	1	0	199
Reclassifications <sup>8</sup>	25	7	3	15
Foreign exchange movements <sup>9</sup>	8	0	0	8
Other	(6)	2	(1)	(6)
Balance as of 31 December 2018	(1,002)	(162)	(180)	(661)

<sup>1</sup> Represents ECL allowances and provisions prior to ECL remeasurement due to stage transfer. <sup>2</sup> Includes ECL movements from new and derecognized transactions, book quality changes, model and methodology changes and foreign exchange rates. <sup>3</sup> Represents the increase and decrease in allowances and provisions resulting from financial instruments (including guarantees and facilities) that were newly originated, purchased or renewed and from the final derecognition of loans or facilities on their maturity date or earlier. <sup>4</sup> Represents the remeasurement between 12-month and lifetime ECL due to stage transfers. <sup>5</sup> Represents the change in allowances and provisions related to changes in model inputs or assumptions, including changes in forward-looking macroeconomic conditions, changes in the exposure profile, PD and LGD changes, and unwinding of the time value. <sup>6</sup> Represents the change in the allowances and provisions related to changes in models and methodologies. <sup>7</sup> Represents the decrease in allowances and provisions resulting from write-offs of the ECL allowance against the gross carrying amount when all or part of a financial asset is deemed uncollectible or forgiven. <sup>8</sup> Represents reclassifications to Other assets measured at amortized cost. <sup>9</sup> Represents the change in allowances and provisions related to movements in foreign exchange rates.

## Note 23 Expected credit loss measurement (continued)

### d) Maximum exposure to credit risk

The tables on the following pages provide UBS AG's maximum exposure to credit risk for financial instruments subject to ECL and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as

real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS.

#### Maximum exposure to credit risk

	31.12.18								
	Maximum exposure to credit risk	Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
		Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral <sup>1</sup>	Netting	Credit derivative contracts	Guarantees	
<i>USD billion</i>									
<b>Financial assets measured at amortized cost on the balance sheet</b>									
Cash and balances at central banks	108.4								108.4
Loans and advances to banks <sup>2</sup>	16.6		0.1						16.6
Receivables from securities financing transactions	95.3		92.5		2.5				0.3
Cash collateral receivables on derivative instruments <sup>3,4</sup>	23.6					14.5			9.1
Loans and advances to customers <sup>5</sup>	321.5	17.7	104.4	167.1	16.2		0.0	1.2	14.8
Other financial assets measured at amortized cost	22.6	0.1	0.4	0.0	1.1				21.0
<b>Total financial assets measured at amortized cost</b>	<b>588.1</b>	<b>17.8</b>	<b>197.4</b>	<b>167.2</b>	<b>19.9</b>	<b>14.5</b>	<b>0.0</b>	<b>1.2</b>	<b>170.2</b>
<b>Financial assets measured at fair value through other comprehensive income – debt</b>	<b>6.7</b>								<b>6.7</b>
<b>Total maximum exposure to credit risk reflected on the balance sheet in scope of ECL</b>	<b>594.8</b>	<b>17.8</b>	<b>197.4</b>	<b>167.2</b>	<b>19.9</b>	<b>14.5</b>	<b>0.0</b>	<b>1.2</b>	<b>176.9</b>
Guarantees <sup>6</sup>	18.1	1.3	2.5	0.1	1.2			2.7	10.2
Loan commitments <sup>6</sup>	31.2	0.4	2.8	1.5	5.7		0.2	0.7	19.8
Forward starting transactions, reverse repurchase and securities borrowing agreements	0.9		0.9						0.0
Committed unconditionally revocable credit lines	38.8	1.1	6.5	4.2	3.9				23.2
<b>Total maximum exposure to credit risk not reflected on the balance sheet, in scope of ECL</b>	<b>89.0</b>	<b>2.8</b>	<b>12.7</b>	<b>5.8</b>	<b>10.8</b>	<b>0.0</b>	<b>0.2</b>	<b>3.4</b>	<b>53.2</b>

## Note 23 Expected credit loss measurement (continued)

### Maximum exposure to credit risk (continued)

	31.12.17								
	Maximum exposure to credit risk	Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
Cash collateral received		Collateralized by securities	Secured by real estate	Other collateral <sup>1</sup>	Netting	Credit derivative contracts	Guarantees		
<i>USD billion</i>									
<b>Financial assets measured at amortized cost on the balance sheet</b>									
Cash and balances at central banks	90.0								90.0
Loans and advances to banks <sup>2</sup>	14.0	0.0	0.1					0.0	13.9
Receivables from securities financing transactions	92.0		87.2		4.3				0.4
Cash collateral receivables on derivative instruments <sup>3,4</sup>	24.0					12.8			11.3
Loans and advances to customers <sup>5</sup>	329.0	18.3	114.3	164.3	15.2		0.0	1.4	15.5
Other financial assets measured at amortized cost	37.9	0.1	20.0	0.0	1.1				16.7
<b>Total financial assets measured at amortized cost</b>	<b>586.9</b>	<b>18.4</b>	<b>221.6</b>	<b>164.3</b>	<b>20.7</b>	<b>12.8</b>	<b>0.0</b>	<b>1.4</b>	<b>147.8</b>
<b>Financial assets measured at fair value through other comprehensive income – debt</b>	<b>8.1</b>								<b>8.1</b>
<b>Total maximum exposure to credit risk reflected on the balance sheet in scope of ECL</b>	<b>595.1</b>	<b>18.4</b>	<b>221.6</b>	<b>164.3</b>	<b>20.7</b>	<b>12.8</b>	<b>0.0</b>	<b>1.4</b>	<b>155.9</b>
Guarantees <sup>6</sup>	17.7	1.0	2.1	0.2	1.3			3.1	9.9
Loan commitments <sup>6</sup>	32.1	0.0	2.9	1.1	5.8		0.1	1.2	21.0
Forward starting transactions, reverse repurchase and securities borrowing agreements	13.0		12.8						0.3
<b>Total maximum exposure to credit risk not reflected on the balance sheet, in scope of ECL</b>	<b>62.8</b>	<b>1.1</b>	<b>17.8</b>	<b>1.2</b>	<b>7.1</b>	<b>0.0</b>	<b>0.1</b>	<b>4.3</b>	<b>31.2</b>

<sup>1</sup> Includes but is not limited to life insurance contracts, inventory, accounts receivable, mortgage loans, patents and copyrights. <sup>2</sup> Loans and advances to banks include amounts held with third-party banks on behalf of clients. The credit risk associated with these balances may be borne by those clients. <sup>3</sup> 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. <sup>4</sup> The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 25 for more information. <sup>5</sup> Collateral arrangements generally incorporate a range of collateral, including cash, securities, property and other collateral. <sup>6</sup> The amount shown in the "Guarantees" column largely relates to sub-participations. Refer to Note 34 for more information.

Prior-period information is presented under IAS 39 requirements.

## Note 23 Expected credit loss measurement (continued)

### e) Financial assets subject to credit risk by rating category

The table below shows the credit quality and the maximum exposure to credit risk based on UBS AG's internal credit rating system and year-end stage classification. With the transition to IFRS 9, the credit risk rating reflects UBS AG's assessment of the

probability of default of individual counterparties, prior to substitutions. The amounts presented are gross of impairment allowances.

→ Refer to the "Risk management and control" section of this report for more details on UBS AG's internal grading system

#### Financial assets subject to credit risk by rating category

31.12.18									
USD million									
Rating category <sup>1</sup>	0-1	2-3	4-5	6-8	9-13	Credit- impaired (defaulted)	Total gross carrying amount	ECL allowances	Net carrying amount (maximum exposure to credit risk)
<b>Financial assets measured at amortized cost</b>									
Cash and balances at central banks	103,635	4,735	0	0	0	0	108,370	0	108,370
of which: stage 1	103,635	4,735	0	0	0	0	108,370	0	108,370
Loans and advances to banks	829	13,286	1,302	922	307	3	16,649	(8)	16,641
of which: stage 1	829	13,286	1,302	758	268	0	16,443	(4)	16,439
of which: stage 2	0	0	0	164	39	0	203	(1)	202
of which: stage 3	0	0	0	0	0	3	3	(3)	0
Receivables from securities financing transactions	29,065	24,653	13,602	26,866	1,165	0	95,351	(2)	95,349
of which: stage 1	29,065	24,653	13,602	26,866	1,165	0	95,351	(2)	95,349
Cash collateral receivables on derivative instruments	5,136	10,044	5,282	3,040	101	0	23,603	0	23,603
of which: stage 1	5,136	10,044	5,282	3,040	101	0	23,603	0	23,603
Loans and advances to customers	3,641	173,454	52,806	74,042	16,014	2,297	322,255	(772)	321,482
of which: stage 1	3,621	172,714	49,517	62,484	11,111	0	299,448	(69)	299,379
of which: stage 2	20	740	3,289	11,558	4,903	0	20,510	(155)	20,355
of which: stage 3	0	0	0	0	0	2,297	2,297	(549)	1,748
Other financial assets measured at amortized cost	13,409	682	316	7,525	274	586	22,792	(156)	22,636
of which: stage 1	13,409	682	316	7,300	272	0	21,979	(43)	21,936
of which: stage 2	0	0	0	225	2	0	227	(4)	223
of which: stage 3	0	0	0	0	0	586	586	(109)	477
<b>Total financial assets measured at amortized cost</b>	<b>155,715</b>	<b>226,854</b>	<b>73,308</b>	<b>112,395</b>	<b>17,861</b>	<b>2,886</b>	<b>589,020</b>	<b>(937)</b>	<b>588,081</b>
<b>On-balance sheet financial instruments</b>									
Financial assets measured at FVOCI – debt instruments	3,889	2,702	0	76	0	0	6,667	0	6,667
<b>Total on balance sheet financial instruments</b>	<b>159,604</b>	<b>229,556</b>	<b>73,308</b>	<b>112,471</b>	<b>17,861</b>	<b>2,886</b>	<b>595,687</b>	<b>(937)</b>	<b>594,748</b>

<sup>1</sup> Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

## Note 23 Expected credit loss measurement (continued)

### Off-balance sheet positions subject to expected credit loss by rating category

<i>USD million</i>		31.12.18							
Rating category <sup>1</sup>	0-1	2-3	4-5	6-8	9-13	Credit-impaired (defaulted)	Total carrying amount (maximum exposure to credit risk)	ECL provision	
<b>Off-balance sheet financial instruments</b>									
<b>Guarantees</b>	<b>978</b>	<b>6,673</b>	<b>3,859</b>	<b>5,415</b>	<b>1,006</b>	<b>215</b>	<b>18,146</b>	<b>(43)</b>	
<i>of which: stage 1</i>	<i>978</i>	<i>6,670</i>	<i>3,849</i>	<i>5,013</i>	<i>811</i>		<i>17,321</i>	<i>(7)</i>	
<i>of which: stage 2</i>		<i>3</i>	<i>10</i>	<i>402</i>	<i>195</i>	<i>0</i>	<i>610</i>	<i>(2)</i>	
<i>of which: stage 3</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>		<i>215</i>	<i>215</i>	<i>(34)</i>	
<b>Irrevocable loan commitments</b>	<b>2,088</b>	<b>11,667</b>	<b>6,519</b>	<b>6,480</b>	<b>4,405</b>	<b>53</b>	<b>31,212</b>	<b>(37)</b>	
<i>of which: stage 1</i>	<i>2,088</i>	<i>11,667</i>	<i>6,519</i>	<i>6,297</i>	<i>4,020</i>	<i>0</i>	<i>30,591</i>	<i>(32)</i>	
<i>of which: stage 2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>183</i>	<i>385</i>	<i>0</i>	<i>568</i>	<i>(5)</i>	
<i>of which: stage 3</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>		<i>53</i>	<i>53</i>	<i>0</i>	
<b>Forward starting reverse repurchase and securities borrowing agreements</b>	<b>25</b>	<b>510</b>	<b>150</b>	<b>254</b>	<b>0</b>	<b>0</b>	<b>939</b>	<b>0</b>	
<b>Total off balance sheet financial instruments</b>	<b>3,091</b>	<b>18,850</b>	<b>10,528</b>	<b>12,148</b>	<b>5,411</b>	<b>268</b>	<b>50,296</b>	<b>(80)</b>	
<b>Other credit lines</b>									
<b>Committed unconditionally revocable credit lines</b>	<b>776</b>	<b>12,426</b>	<b>5,332</b>	<b>12,140</b>	<b>8,084</b>	<b>93</b>	<b>38,851</b>	<b>(35)</b>	
<i>of which: stage 1</i>	<i>768</i>	<i>12,398</i>	<i>5,202</i>	<i>11,367</i>	<i>7,603</i>		<i>37,338</i>	<i>(19)</i>	
<i>of which: stage 2</i>	<i>8</i>	<i>28</i>	<i>130</i>	<i>773</i>	<i>481</i>	<i>0</i>	<i>1,420</i>	<i>(16)</i>	
<i>of which: stage 3</i>	<i>0</i>				<i>0</i>	<i>93</i>	<i>93</i>		
<b>Irrevocable committed prolongation of existing loans</b>	<b>27</b>	<b>1,346</b>	<b>889</b>	<b>901</b>	<b>154</b>	<b>22</b>	<b>3,339</b>	<b>(1)</b>	
<i>of which: stage 1</i>	<i>27</i>	<i>1,315</i>	<i>680</i>	<i>701</i>	<i>137</i>	<i>0</i>	<i>2,860</i>	<i>(1)</i>	
<i>of which: stage 2</i>	<i>0</i>	<i>31</i>	<i>209</i>	<i>200</i>	<i>17</i>	<i>0</i>	<i>457</i>	<i>0</i>	
<i>of which: stage 3</i>	<i>0</i>	<i>0</i>	<i>0</i>			<i>22</i>	<i>22</i>	<i>0</i>	
<b>Total other credit lines</b>	<b>803</b>	<b>13,772</b>	<b>6,221</b>	<b>13,041</b>	<b>8,238</b>	<b>115</b>	<b>42,190</b>	<b>(36)</b>	

<sup>1</sup> Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

## Note 23 Expected credit loss measurement (continued)

### Financial assets subject to credit risk by rating category

<i>USD billion</i>		31.12.17						
		Gross carrying amount per rating category					Credit- impaired (defaulted)	Total gross carrying amount
Rating category <sup>1</sup>		0–1	2–3	4–5	6–8	9–13		
<b>Financial assets measured at amortized cost</b>								
Cash and balances at central banks		89.6	0.5	0.0				90.0
Loans and advances to banks		0.6	10.8	1.4	0.9	0.3		14.1
Receivables from securities financing transactions		24.9	37.3	17.2	10.7	1.8		92.0
Cash collateral receivables on derivative instruments		6.6	10.0	5.7	1.6	0.1		24.0
Loans and advances to customers		3.2	165.9	66.9	71.3	17.9	1.5	326.7
Other financial assets measured at amortized cost		9.4	1.1	8.9	17.1	1.0	0.3	37.8
<b>Total financial assets measured at amortized cost</b>		<b>134.4</b>	<b>225.6</b>	<b>100.1</b>	<b>101.5</b>	<b>21.1</b>	<b>1.9</b>	<b>584.7</b>
<b>On-balance sheet financial instruments</b>								
Financial assets measured at FVOCI – debt instruments		7.0	1.0		0.1			8.1
<b>Total on-balance sheet financial instruments</b>		<b>141.4</b>	<b>226.6</b>	<b>100.1</b>	<b>101.6</b>	<b>21.1</b>	<b>1.9</b>	<b>592.8</b>

<sup>1</sup> Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

### Off-balance sheet positions subject to expected credit loss by rating category

<i>USD billion</i>		31.12.17						
		Gross carrying amount per rating category					Credit- impaired (defaulted)	Total carrying amount (maximum exposure to credit risk)
Rating category <sup>1</sup>		0–1	2–3	4–5	6–8	9–13		
<b>Off-balance sheet financial instruments</b>								
Guarantees		1.2	8.5	4.2	2.8	0.8	0.2	17.7
Irrevocable loan commitments		2.0	13.5	7.8	5.2	3.6		32.1
Forward starting reverse repurchase and securities borrowing agreements			13.0					13.0
<b>Total off-balance sheet financial instruments</b>		<b>3.2</b>	<b>34.9</b>	<b>12.0</b>	<b>8.1</b>	<b>4.4</b>	<b>0.2</b>	<b>62.8</b>

<sup>1</sup> 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.

Prior-period information is presented under IAS 39 requirements.



## Note 23 Expected credit loss measurement (continued)

### f) Credit-impaired financial instruments at amortized cost

The credit risk in UBS AG's portfolio is actively managed by taking collateral against exposures and by utilizing credit hedging. Collateral held against the credit-impaired loan exposure (stage 3) mainly consisted of real estate and securities. It is UBS AG's 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 2018 and 2017

amounted to USD 60 million and USD 61 million, respectively. The Bank seeks 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. Financial assets that are credit-impaired and related collateral held in order to mitigate potential losses are shown in the table below.

USD million	31.12.18			
	Gross carrying amount	Allowance for expected credit losses	Net carrying amount	Collateral / credit enhancements
Loans and advances to banks	3	(3)	0	0
Loans and advances to customers	2,297	(549)	1,748	1,654
<i>of which: Private clients with mortgages</i>	836	(39)	796	796
<i>of which: Real estate financing</i>	54	(16)	38	30
<i>of which: Large corporate clients</i>	170	(82)	88	79
<i>of which: SME clients</i>	888	(256)	632	561
<i>of which: Lombard</i>	31	(17)	14	14
Other financial assets measured at amortized cost	586	(109)	478	12
<b>Total credit-impaired financial assets measured at amortized cost</b>	<b>2,886<sup>1</sup></b>	<b>(660)<sup>1</sup></b>	<b>2,226</b>	<b>1,666</b>
Guarantees	215	(34)		84
<i>of which: Large corporate clients</i>	127	(6)		79
<i>of which: SME clients</i>	77	(25)		5
Loan commitments	53	0		8
Committed unconditionally revocable credit lines	93	0		9
Irrevocable committed prolongation of existing loans	22	0		0
<b>Total off-balance sheet financial instruments and other credit lines</b>	<b>383<sup>1</sup></b>	<b>(34)<sup>1</sup></b>		<b>102</b>
	31.12.17			
USD million	Gross carrying amount	Allowance for expected credit losses	Net carrying amount	Collateral / credit enhancements
Loans and advances to customers	1,104	(672)	432	210
Guarantees and loan commitments	204	(34)		5
<b>Total credit-impaired financial assets</b>	<b>1,308<sup>2</sup></b>	<b>(706)<sup>2</sup></b>	<b>432</b>	<b>215</b>

<sup>1</sup> Upon adoption of IFRS 9 as of 1 January 2018, an instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is purchased or originated credit-impaired and includes credit-impaired exposures for which no loss has occurred or no allowance has been recognized (e.g., because they are expected to be fully recoverable through the collateral held). Refer to Note 1c for more information on the adoption of IFRS 9. <sup>2</sup> December 2017 numbers do not include exposure of USD 0.3 billion presented on the balance sheet as other assets.

## Note 23 Expected credit loss measurement (continued)

### g) Sensitivity analysis

As outlined in Note 1a, ECL estimates involve significant uncertainties at the time they are made.

#### ECL model

The models applied to determine point-in-time PD and LGD rely on market and statistical data, which have been found to correlate well with historically observed defaults in sufficiently homogeneous segments. The risk sensitivity of each of our IFRS 9 reporting segments to such factors has been summarized in Note 10.

Emerging new systematic risk factors may not be sufficiently taken into account by existing models and affect their responsiveness to a changing environment. This risk is deemed to be immaterial and monitored through regular model review processes; in particular, it is deemed to be of less importance for the large books of mortgage loans, where risk drivers tend to be stable.

Statistically derived models, which perform well on a reasonably sized and homogeneous portfolio, may show weakness in smaller-sized sub-portfolios, for which other or differently weighted factors may be more relevant criteria. Where risk experts conclude that the output of a general model is not in line with what they would have expected for a specific portfolio segment, and that this would be material for ECL, overlays would be recommended based on management judgment.

ECL estimations for segments where the PD is homogeneous, but the credit exposure is not, may prove to be inaccurate – even though all parameters were accurately predicted – as the actual amount of loss depends on the exposure of the position that defaulted. This observation is less relevant in retail-type portfolios with smaller individual exposures from mortgage loans or financings of SME, but may become important in the large corporate client portfolios in the Investment Bank and Personal & Corporate Banking.

#### Forward-looking scenarios

Depending on the scenario selection and related macro-economic assumptions for the risk factors, the components of the relevant weighted average ECL change. This is particularly relevant for interest rates, which can take both directions under a given growth assumption (for example, low growth with high interest rates in a stagflation scenario, versus low growth and falling interest rates in a recession). Management will look for scenario narratives that are expected to address the risks of a credit portfolio, while at the same time meeting the requirements of IFRS 9 to avoid bias.

As forecasting models are complex due to the combination of multiple factors, simple what-if analyses by changing individual parameters do not provide reasonable information on the exposure of segments to changes in the macroeconomy. Portfolio-specific analyses based on their key risk factors would also not be additive as potential compensatory effects in other segments would be ignored. Sensitivities at the UBS AG level can only be meaningfully assessed in the context of coherent scenarios with consistently developed macroeconomic factors.

The table below indicates the potential effect of changing economic conditions on ECL for stage 1 and stage 2 positions by disclosing for each scenario (see Note 23b) and material portfolio the corresponding ECL output. The effect of applying scenarios is not linear across the portfolio, with a significant impact observed in the mortgage loan books as the potential effect of rising interest rates manifests itself in the mild downside scenario, with high unemployment rates combined with a marked correction of house prices contributing to high expected losses in the severe downside scenario.

#### Potential effect of changing economic conditions

	Weighted average		Baseline		Scenarios Upside		Mild downside		Severe downside	
	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline
<i>USD million, unless otherwise indicated</i>										
<b>Segmentation</b>										
Private clients with mortgages	102	275	37	100	29	78	173	468	365	988
Real estate financing	61	150	41	100	32	79	80	198	119	293
Large corporate clients	47	133	35	100	31	89	46	130	108	308
SME clients	34	118	29	100	28	97	39	135	63	216
Other segments	115	122	95	100	83	88	135	142	171	180
<b>Total</b>	<b>359</b>	<b>152</b>	<b>237</b>	<b>100</b>	<b>204</b>	<b>86</b>	<b>473</b>	<b>200</b>	<b>826</b>	<b>349</b>

## Note 23 Expected credit loss measurement (continued)

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The forecasting horizon is limited to three years, with a model-based mean reversion of PD and LGD assumed thereafter. Changes to these timelines may have an effect on ECL; depending on the cycle, a longer or shorter forecasting horizon will lead to different annualized lifetime PD and average LGD estimations. This is currently not deemed to be material for UBS AG as a large share of positions, including mortgages in Switzerland, have a maturity that is within the forecasting horizon.

### Scenario weights

ECL is sensitive to changing scenario weights, in particular, if narratives and parameters are selected that are not close to the baseline scenario highlighting the non-linearity of credit losses.

As shown in the table on the previous page, the ECL for stage 1 and stage 2 positions would have been USD 237 million instead of USD 359 million if ECL had been determined solely on the baseline scenario. The weighted average ECL amounts therefore to 152% of the baseline value.

### Stage allocation and SICR

The determination of what constitutes an SICR is based on

management judgment as explained in Note 1a. Changing the SICR trigger will have a direct effect on ECL as more or fewer positions would be subject to lifetime ECL under any scenario.

### Maturity profile

The maturity profile of the assets is an important driver for changes in ECL due to transfers to stage 2. The current maturity profile of most lending books is relatively short; hence a movement to stage 2 may have a limited effect on ECL. A significant portion of our lending to SME is documented under frame credit agreements, which allow for various forms of utilization but are unconditionally cancelable by UBS AG at any time. The relevant maturity for drawings under such agreements with a fixed maturity is the respective term, or maximum 12 months in stage 1. For unused credit lines and all drawings that have no fixed maturity (e.g., current accounts), UBS AG generally applies a 12-month maturity from the reporting date, given the credit review policies, which require either continuous monitoring of key indicators and behavioral patterns for smaller positions or an annual formal review for any other limit. The ECL for these products is sensitive to shortening or extending the maturity assumption.

## Note 24 Fair value measurement

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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) Maximum exposure to credit risk for financial instruments measured at fair value
- j) Financial instruments not measured at fair value

### Adoption of IFRS 9

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Adoption of IFRS 9 on 1 January 2018 resulted in the reclassification of certain financial assets and liabilities from amortized cost to fair value through profit or loss. This included:

- brokerage receivables and payables held in the Investment Bank and Global Wealth Management;
- auction rate securities held in Corporate Center; and
- certain loans held in the Investment Bank.

Some of those financial assets and liabilities are designated as Level 3 in the fair value hierarchy. Refer to the tables and text within this Note for more information.

An immaterial amount of financial assets were reclassified from *Financial assets at fair value held for trading* and *Financial*

*assets at fair value not held for trading* to *Loans and advances to customers* upon adoption of IFRS 9. An immaterial amount of associated loan commitments, which were recognized as derivative liabilities as of 31 December 2017, were also derecognized from the balance sheet. No material fair value gains or losses would have been recognized in the income statement in 2018 had these instruments not been reclassified. Similarly, no material fair value gains or losses would have been recognized in *Other comprehensive income* related to debt instruments that were reclassified from *Financial assets available for sale* to *Other financial assets measured at amortized cost* upon adoption of IFRS 9.

→ Refer to Note 1c for more information

### a) Valuation principles

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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, the Group 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.

## Note 24 Fair value measurement (continued)

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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 24d for more information

### b) Valuation governance

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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 24d for more information

## Note 24 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<sup>1</sup>

USD million	31.12.18				31.12.17			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value on a recurring basis</b>								
Financial assets at fair value held for trading	88,455	14,096	1,962	104,513	111,781	15,705	2,023	129,509
of which:								
Government bills / bonds	9,554	1,607	0	11,161	12,244	941	0	13,186
Corporate and municipal bonds	558	5,699	651	6,908	38	8,281	566	8,886
Loans	0	2,886	680	3,566	0	3,433	513	3,946
Investment fund units	6,074	3,200	442	9,716	7,409	1,886	586	9,881
Asset-backed securities	0	248	144	392	0	199	178	377
Equity instruments	72,270	455	46	72,771	81,326	190	108	81,624
Financial assets for unit-linked investment contracts <sup>2</sup>					10,764	774	71	11,609
Derivative financial instruments	753	124,035	1,424	126,212	470	119,228	1,589	121,286
of which:								
Interest rate contracts	0	36,658	418	37,076	1	45,049	138	45,188
Credit derivative contracts	0	1,444	476	1,920	0	2,325	564	2,889
Foreign exchange contracts	311	53,151	30	53,492	212	47,958	194	48,364
Equity / index contracts	3	30,905	496	31,404	16	22,099	693	22,807
Commodity contracts	0	1,768	2	1,769	0	1,772	0	1,772
Brokerage receivables <sup>3</sup>	0	16,840	0	16,840				
Financial assets at fair value not held for trading <sup>4</sup>	35,458	42,516	4,413	82,387	23,628	34,986	1,456	60,070
of which:								
Government bills / bonds	17,687	4,806	0	22,493	22,632	4,000	0	26,633
Corporate and municipal bonds	781	16,455	0	17,236	785	21,237	0	22,022
Financial assets for unit-linked investment contracts <sup>2</sup>	16,694	4,751	0	21,446				
Loans	0	6,380	1,752	8,132	0	9,627	778	10,405
Securities financing transactions <sup>5</sup>	0	9,899	39	9,937	0	121	177	298
Auction rate securities <sup>6</sup>	0	0	1,664	1,664				
Investment fund units	173	125	109	407	210	0	0	210
Equity instruments <sup>5</sup>	123	62	517	702				
Other	0	38	331	369	0	0	501	501
<b>Financial assets measured at fair value through other comprehensive income on a recurring basis</b>								
Financial assets measured at fair value through other comprehensive income <sup>4</sup>	2,319	4,347	0	6,667	3,078	5,291	521	8,889
of which:								
Government bills / bonds	2,171	69	0	2,239	2,804	136	0	2,940
Corporate and municipal bonds	149	348	0	497	124	1,087	9	1,220
Asset-backed securities	0	3,931	0	3,931	0	3,980	0	3,980
Other <sup>6</sup>	0	0	0	0	150	88	512	749
<b>Non-financial assets measured at fair value on a recurring basis</b>								
Precious metals and other physical commodities	4,298	0	0	4,298	4,681	0	0	4,681
<b>Non-financial assets measured at fair value on a non-recurring basis</b>								
Other non-financial assets <sup>7</sup>	0	82	0	82	0	55	43	98
<b>Total assets measured at fair value</b>	<b>131,283</b>	<b>201,916</b>	<b>7,800</b>	<b>340,999</b>	<b>143,638</b>	<b>175,266</b>	<b>5,631</b>	<b>324,535</b>

## Note 24 Fair value measurement (continued)

### Determination of fair values from quoted market prices or valuation techniques (continued)<sup>1</sup>

USD million	31.12.18				31.12.17			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
<b>Financial liabilities measured at fair value on a recurring basis</b>								
Financial liabilities at fair value held for trading	24,413	4,468	69	28,949	26,710	4,421	120	31,251
<i>of which:</i>								
Government bills / bonds	2,423	416	0	2,839	5,286	263	0	5,549
Corporate and municipal bonds	126	3,377	27	3,530	51	3,542	36	3,629
Investment fund units	551	137	0	689	555	269	16	841
Equity instruments	21,313	537	42	21,892	20,817	345	68	21,230
Derivative financial instruments	580	122,933	2,210	125,723	409	115,850	2,879	119,138
<i>of which:</i>								
Interest rate contracts	7	32,511	226	32,743	5	39,184	191	39,380
Credit derivative contracts	0	2,203	519	2,722	0	3,278	617	3,895
Foreign exchange contracts	322	52,964	86	53,372	218	46,319	125	46,663
Equity / index contracts	1	33,669	1,371	35,041	43	25,445	1,945	27,433
Commodity contracts	0	1,487	0	1,487	0	1,601	1	1,602
<b>Financial liabilities designated at fair value on a recurring basis</b>								
Brokerage payables designated at fair value <sup>3</sup>	0	38,420	0	38,420				
Debt issued designated at fair value	0	46,074	10,957	57,031	0	39,616	11,166	50,782
Other financial liabilities designated at fair value	0	32,569	1,025	33,594	0	14,651	1,991	16,643
<i>of which:</i>								
Amounts due under unit-linked investment contracts	0	21,679	0	21,679	0	11,821	0	11,821
Securities financing transactions <sup>5</sup>	0	9,461	0	9,461	0	382	4	385
Over-the-counter debt instruments	0	1,427	1,023	2,450	0	2,447	1,980	4,427
<b>Non-financial liabilities measured at fair value on a non-recurring basis</b>								
Other non-financial liabilities	0	0	0	0	0	1	0	1
<b>Total liabilities measured at fair value</b>	<b>24,992</b>	<b>244,465</b>	<b>14,260</b>	<b>283,717</b>	<b>27,119</b>	<b>174,539</b>	<b>16,157</b>	<b>217,814</b>

<sup>1</sup> Bifurcated embedded derivatives are presented on the same balance sheet lines as their host contracts and are not included in this table. The fair value of these derivatives was not material for the periods presented. <sup>2</sup> Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>3</sup> Comparative-period information is not disclosed for financial assets and liabilities that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>4</sup> As of 31 December 2018, USD 23 billion of Financial assets at fair value not held for trading and USD 6 billion of Financial assets measured at fair value through other comprehensive income are expected to be recovered or settled after 12 months. As of 31 December 2017, USD 24 billion of Financial assets at fair value not held for trading and USD 7 billion of Financial assets measured at fair value through other comprehensive income were expected to be recovered or settled after 12 months. <sup>5</sup> The increases in Securities financing transactions primarily relate to the reclassification of certain balances from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>6</sup> Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information. <sup>7</sup> Other non-financial assets primarily consist of properties and other non-current assets held for sale, which are measured at the lower of their net carrying amount or fair value less costs to sell.



## Note 24 Fair value measurement (continued)

### 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 24f for more information. The discount curves used by the Group 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.

#### 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.



## Note 24 Fair value measurement (continued)

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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 by relative value benchmarking using pricing derived from debt instruments in comparable entities or different products in the same entity, or by using a credit default swap valuation technique, which requires inputs for credit spreads, credit recovery rates and interest rates. Recently originated commercial real estate loans are measured using a securitization approach based on rating agency guidelines. 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 are not available or that are not redeemable at the measurement date or shortly thereafter are classified as Level 3.

### Asset-backed securities

Product description: asset-backed securities (ABS) include residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), collateralized debt obligations (CDO) and other ABS 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 and asset default and recovery rates.

Fair value hierarchy: CDO, RMBS, CMBS and other ABS are generally classified as Level 2. However, if significant inputs are unobservable, or if market or fundamental data is not available, they are classified as Level 3.

### Auction rate securities

Product description: there are two types of auction rate securities (ARS): auction preferred securities (APS) and auction rate certificates (ARC). ARC are issued by municipalities and are used by investors as tax-exempt alternatives to money market instruments. Interest rates for these instruments are reset through a periodic Dutch auction. APS are similar to ARC with the primary difference being that they are issued from closed-end funds.

Valuation: ARS are valued using market prices that reflect recent transactions after applying an adjustment for trade size or quoted dealer prices, where available.

Fair value hierarchy: suitably deep and liquid pricing information is generally not available for ARS securities. As a result, these securities 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 are 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.

## Note 24 Fair value measurement (continued)

### Securities financing transactions

Product description: securities financing transactions include (reverse) repurchase agreements (securities purchased under resale agreements and securities sold under repurchase agreements) that are managed on a fair value basis.

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

Fair value hierarchy: Collateral funding curves for these instruments are generally observable and, as a result, these positions are classified as Level 2. Where the collateral terms are non-standard the funding curve may be considered unobservable and classified Level 3.

### Brokerage receivables and payables

Product description: brokerage receivables and payables include callable, on-demand balances, including long cash credits, short cash debits, margin debit balances and short sale proceeds.

Valuation: fair value is determined based on the value of the underlying balances.

Fair value hierarchy: due to their on-demand nature, these receivables and payables are designated as Level 2.

### 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 contracts.

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

- **Refer to Notes 19 and 22 for information on debt issued designated at fair value and other financial liabilities designated at fair value**
- **Refer to Note 24d 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 24d, 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.

## Note 24 Fair value measurement (continued)

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Fair value hierarchy: the majority of interest rate swaps are classified as Level 2 as the standard market contracts that form the inputs for yield curve models are generally traded in active and observable markets. Options are generally treated as Level 2 as the calibration process enables the model output to be validated to active-market levels. Models calibrated in this way are then used to revalue the portfolio of both standard options and more exotic products. 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.

### 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 and securitized products, plus first to default swaps and certain total return swaps.

Valuation: credit derivative contracts are valued using industry standard models based primarily on market credit spreads, upfront pricing points and implied recovery rates. Where a derivative credit spread is not directly available, it may be derived from the price of the reference cash bond. Asset-backed credit derivatives are valued using a 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 and recovery rates are determined from actively traded observable market data. Where the underlying reference name(s) are not actively traded and the correlation cannot be directly mapped to actively traded tranche instruments, these contracts are classified as Level 3. Asset-backed credit derivatives follow the characteristics of the underlying security and are therefore distributed across Level 2 and Level 3.

### 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.

### 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.

## Note 24 Fair value measurement (continued)

Valuation: equity forward contracts have a single stock or index underlying and are valued using market standard models. The key inputs to the models are stock prices, estimated dividend rates and equity funding rates (which are implied from prices of forward contracts observed in the market). Estimated cash flows are then discounted using market standard discounted cash flow models using a rate that reflects the appropriate funding rate for that portion of the portfolio. When no market data is available for the instrument maturity, they are valued by extrapolation of available data, use of historical dividend data, or use of data for a related equity. Equity option contracts are valued using market standard models that estimate the equity forward level as described for equity forward contracts and incorporate inputs for stock volatility and for correlation between stocks within a basket. The probability-weighted expected option payoff generated is then discounted using market standard discounted cash flow models applying a rate that reflects the appropriate funding rate for that portion of the portfolio. When volatility, forward or correlation inputs are not available, they are valued using extrapolation of available data, historical dividend, correlation or volatility data, or the equivalent data for a related equity.

Fair value hierarchy: as inputs are derived mostly from standard market contracts traded in active and observable markets, a significant proportion of equity forward contracts are

classified as Level 2. Equity option positions for which inputs are derived from standard market contracts traded in active and observable markets are also classified as Level 2. Level 3 positions are those for which volatility, forward or correlation inputs are not observable.

### Commodity contracts

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 11 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.

#### Deferred day-1 profit or loss reserves

For new transactions where the valuation technique used to measure fair value requires significant inputs that are not based on observable market data, the financial instrument is initially recognized at the transaction price. The transaction price may differ from the fair value obtained using a valuation technique, where any such difference is deferred and not initially recognized in the income statement. These day-1 profit or loss reserves are reflected, where appropriate, as valuation adjustments.

Deferred day-1 profit or loss related to financial instruments other than financial assets measured at fair value through other comprehensive income is released into *Other net income from fair value changes on financial instruments* 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 measured at fair value through other comprehensive income 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.

In the second quarter of 2018, a day-1 profit or loss reserve release of USD 196 million was recognized in the income statement related to long-dated UBS-issued structured notes, which are reported within *Debt issued designated at fair value* on the balance sheet. The day-1 profit or loss reserve release was driven by increased observability of the own credit adjustment (OCA) curve used to value these positions following the issuance of a 30-year senior unsecured bond in the second quarter of 2018.

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

## Note 24 Fair value measurement (continued)

### Deferred day-1 profit or loss reserves

<i>USD million</i>	2018	2017	2016
<b>Reserve balance at the beginning of the year</b>	<b>338</b>	365	420
Profit / (loss) deferred on new transactions	341	247	257
(Profit) / loss recognized in the income statement	(417)	(279)	(293)
(Profit) / loss recognized in other comprehensive income			(23)
Foreign currency translation	(6)	6	4
<b>Reserve balance at the end of the year</b>	<b>255</b>	338	365

### 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.

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*. As the Group 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.

Own credit is estimated using an 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 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.

In June 2018, UBS AG issued a 30-year senior unsecured bond as part of its ongoing funding requirements. The market-observable secondary prices for this bond have been incorporated into the OCA curve construction, resulting in a widening of the curve at the long end. An own credit gain of USD 253 million was recognized in *Other comprehensive income* in the second quarter of 2018, mainly reflecting this OCA curve change.

→ Refer to Note 19 for more information on debt issued designated at fair value

### Own credit adjustments on financial liabilities designated at fair value

<i>USD million</i>	For the year ended		
	Included in Other comprehensive income		
	31.12.18	31.12.17	31.12.16
<b>Recognized during the year:</b>			
Realized gain / (loss)	(3)	22	18
Unrealized gain / (loss)	519	(337)	(152)
Total gain / (loss), before tax	517	(315)	(134)
		As of	
<i>USD million</i>	31.12.18	31.12.17	31.12.16
<b>Recognized on the balance sheet as of the end of the year:</b>			
Unrealized life-to-date gain / (loss)	320	(200)	139

## Note 24 Fair value measurement (continued)

### Credit valuation adjustments

In order to measure the fair value of OTC derivative instruments, including funded derivative instruments that are classified as *Financial assets at fair value not held for trading*, 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. A 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 the Group 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, the Group 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.

In the second quarter of 2018, a USD 65 million expense was recognized in the income statement reflecting the model valuation adjustment recorded to capture the spread between OCA and LIBOR volatility affecting the valuation of certain structured note issuances.

### Valuation adjustments on financial instruments

	As of	
<i>Life-to-date gain / (loss), USD million</i>	31.12.18	31.12.17
<b>Credit valuation adjustments<sup>1</sup></b>	<b>(90)</b>	(116)
<b>Funding valuation adjustments</b>	<b>(85)</b>	(51)
<b>Debit valuation adjustments</b>	<b>1</b>	2
<b>Other valuation adjustments</b>	<b>(716)</b>	(733)
<i>of which: liquidity</i>	<i>(388)</i>	<i>(477)</i>
<i>of which: model uncertainty</i>	<i>(327)</i>	<i>(256)</i>

<sup>1</sup> Amounts do not include reserves against defaulted counterparties.

## Note 24 Fair value measurement (continued)

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### e) Transfers between Level 1 and Level 2

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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 USD 0.6 billion, which were mainly comprised of 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 2018, generally resulting from increased levels of trading activity observed within the market. Transfers of financial liabilities from Level 2 to Level 1 during 2018 were not significant.

Assets totaling approximately USD 0.7 billion, which were mainly comprised of financial assets held for trading, predominantly investment fund units and equity instruments, were transferred from Level 1 to Level 2 during 2018, generally resulting from diminished levels of trading activity observed within the market. Transfers of financial liabilities from Level 1 to Level 2 during 2018 were not significant.



## Note 24 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 a given 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 2018.

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, reflecting the diversity of the products in each firm's inventory.

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

USD billion	Fair value				Valuation technique(s)	Significant unobservable input(s) <sup>1</sup>	Range of inputs						unit <sup>1</sup>
	Assets		Liabilities				31.12.18			31.12.17			
	31.12.18	31.12.17	31.12.18	31.12.17			low	high	weighted average <sup>2</sup>	low	high	weighted average <sup>2</sup>	
<b>Financial assets and liabilities at fair value held for trading and Financial assets at fair value not held for trading<sup>3</sup></b>													
Corporate and municipal bonds	0.7	0.6	0.0	0.0	Relative value to market comparable	Bond price equivalent	0	134	89	0	133	92	points
Traded loans, loans designated at fair value, loan commitments and guarantees	2.7	1.7	0.0	0.0	Relative value to market comparable	Loan price equivalent	0	100	99	50	102	98	points
					Discounted expected cash flows	Credit spread	301	513		23	124		basis points
					Market comparable and securitization model	Discount margin	1	14	2	0	14	2	%
Auction rate securities <sup>4</sup>	1.7		0.0		Relative value to market comparable	Bond price equivalent	79	99	89				points
Investment fund units <sup>5</sup>	0.6	0.7	0.0	0.0	Relative value to market comparable	Net asset value							
Equity instruments <sup>5</sup>	0.6	0.5	0.0	0.1	Relative value to market comparable	Price							
Debt issued designated at fair value <sup>6</sup>			11.0	11.2									
Other financial liabilities designated at fair value <sup>6</sup>			1.0	2.0									
<b>Derivative financial instruments</b>													
Interest rate contracts	0.4	0.1	0.2	0.2	Option model	Volatility of interest rates <sup>7</sup>	50	81		28	70		basis points
Credit derivative contracts	0.5	0.6	0.5	0.6	Discounted expected cash flows	Credit spreads	4	545		6	550		basis points
						Bond price equivalent	3	99		2	102		points
Equity / index contracts	0.5	0.7	1.4	1.9	Option model	Equity dividend yields	0	12		0	13		%
						Volatility of equity stocks, equity and other indices	4	93		0	172		%
						Equity-to-FX correlation	(39)	67		(39)	70		%
						Equity-to-equity correlation	(50)	97		(50)	97		%

<sup>1</sup> 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). <sup>2</sup> 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. <sup>3</sup> Comparative-period information includes equity instruments that were formerly classified as available for sale under IAS 39 and have been reclassified to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>4</sup> Comparative-period information is not disclosed for financial assets and liabilities that were measured at amortized cost prior to the adoption of IFRS 9. Refer to Note 1c for more information. <sup>5</sup> The range of inputs is not disclosed as there is a dispersion of values given the diverse nature of the investments. <sup>6</sup> Valuation techniques, significant unobservable inputs and the respective input ranges for Debt issued designated at fair value and Other financial liabilities designated at fair value, which are primarily comprised of over-the-counter debt instruments, are the same as the equivalent derivative or structured financing instruments presented elsewhere in this table. <sup>7</sup> Effective in 2018, the range of inputs reported for this significant unobservable input is based on normal volatility and the unit has been updated to basis points. Log-normal volatility with the unit as points was reported previously. Prior-period information has been restated to reflect this change in presentation.



## Note 24 Fair value measurement (continued)

### 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 24 Fair value measurement (continued)

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### 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 interrelationship between the movements of two variables. It is expressed as a percentage between -100% and +100%, where +100% represents

perfectly correlated variables (meaning a movement of one variable is associated with a movement of the other variable in the same direction) and -100% implies the variables are inversely correlated (meaning a movement of one variable is associated with a movement of the other variable in the opposite direction). The effect of correlation on the measurement of fair value depends on the specific terms of the instruments being valued, reflecting the range of different payoff features within such instruments.

Equity-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.

### 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.

## Note 24 Fair value measurement (continued)

### 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 interrelationships 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. The Group 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

USD million	31.12.18		31.12.17	
	Favorable changes	Unfavorable changes	Favorable changes	Unfavorable changes
Traded loans, loans designated at fair value, loan commitments and guarantees	99	(44)	81	(12)
Securities financing transactions	17	(11)	35	(35)
Auction rate securities <sup>1</sup>	81	(81)		
Asset-backed securities	27	(23)	19	(15)
Equity instruments	155	(94)	81	(54)
Interest rate derivative contracts, net	8	(39)	13	(27)
Credit derivative contracts, net	33	(37)	66	(102)
Foreign exchange derivative contracts, net	10	(5)	12	(6)
Equity / index derivative contracts, net	213	(225)	195	(198)
Other	19	(19)	13	(13)
<b>Total</b>	<b>661</b>	<b>(578)</b>	<b>515</b>	<b>(462)</b>

<sup>1</sup> Comparative-period information as of 31 December 2017 is not disclosed for financial assets that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

## Note 24 Fair value measurement (continued)

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### h) Level 3 instruments: movements during the period

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#### 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.

Upon adoption of IFRS 9 on 1 January 2018, certain financial assets and liabilities were newly classified at fair value through profit or loss and were designated as Level 3 in the fair value hierarchy. These financial instruments are presented in the table on the following pages, including the associated effect upon adoption. This includes auction rate securities held in Corporate Center and certain loans held in the Investment Bank.

In addition to various financial assets and liabilities being newly classified at fair value through profit or loss, certain equity investments and investment fund units measured at fair value through other comprehensive income were reclassified to *Financial assets at fair value not held for trading* under the

revised IFRS 9 classification and measurement rules, which resulted in an opening balance reclassification between reporting lines in the table on the following pages.

Assets transferred into and out of Level 3 totaled USD 1.4 billion and USD 0.4 billion, respectively. Transfers into Level 3 were primarily comprised of corporate and municipal bonds, reflecting decreased observability of the respective bond price equivalent. Transfers out of Level 3 were primarily comprised of equity / index contracts resulting from increased observability of the respective equity volatility inputs.

Liabilities transferred into and out of Level 3 totaled USD 2.5 billion and USD 4.8 billion, respectively. Transfers into Level 3 were primarily comprised of rates-linked and equity-linked issued debt instruments, reflecting decreased observability of the respective rates volatility and equity volatility inputs. Transfers out of Level 3 were primarily comprised of rates-linked fixed-rate and equity-linked issued debt instruments resulting from changes in the observability of the OCA curve and equity volatility inputs used to determine the fair value of these instruments. In the second quarter of 2018, USD 2.9 billion of UBS-issued structured notes, which are reported within *Debt issued designated at fair value* on the balance sheet, were transferred from Level 3 to Level 2 in the fair value hierarchy, reflecting increased observability of the OCA curve used to value these notes.

## Note 24 Fair value measurement (continued)

### Movements of Level 3 instruments

USD billion	Balance as of 31 December 2016	Total gains / (losses) included in comprehensive income						Transfers into Level 3	Transfers out of Level 3	Foreign currency translation
		Net gains / (losses) included in income <sup>1</sup>	of which: related to Level 3 instruments held at the end of the reporting period	Purchases	Sales	Issuances	Settlements			
<b>Financial assets at fair value held for trading</b>	<b>1.7</b>	<b>(0.1)</b>	<b>0.0</b>	<b>0.7</b>	<b>(3.9)</b>	<b>2.7</b>	<b>0.0</b>	<b>1.0</b>	<b>(0.2)</b>	<b>0.1</b>
<i>of which:</i>										
Corporate and municipal bonds	0.6	0.1	0.1	0.5	(0.7)	0.0	0.0	0.1	0.0	0.0
Loans	0.7	(0.1)	(0.1)	0.1	(2.8)	2.7	0.0	0.0	(0.1)	0.0
Investment fund units	0.1	(0.1)	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Other	0.3	0.0	0.0	0.2	(0.3)	0.0	0.0	0.2	0.0	0.0
<b>Financial assets at fair value not held for trading</b>	<b>2.0</b>	<b>0.2</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.4</b>	<b>(1.3)</b>	<b>0.1</b>	<b>(0.1)</b>	<b>0.1</b>
<i>of which:</i>										
Loans	1.2	0.2	0.2	0.0	0.0	0.1	(0.7)	0.0	(0.1)	0.0
Auction rate securities <sup>3</sup>										
Equity instruments <sup>4</sup>										
Other	0.9	(0.1)	(0.1)	0.0	0.0	0.3	(0.6)	0.1	0.0	0.0
<b>Financial assets measured at fair value through other comprehensive income</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>
<b>Derivative financial instruments – assets</b>	<b>2.5</b>	<b>(0.3)</b>	<b>(0.4)</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>(1.2)</b>	<b>0.4</b>	<b>(0.9)</b>	<b>0.1</b>
<i>of which:</i>										
Interest rate contracts	0.3	0.0	(0.1)	0.0	0.0	0.0	(0.1)	0.1	(0.1)	0.0
Credit derivative contracts	1.3	(0.2)	(0.2)	0.0	0.0	0.0	(0.3)	0.0	(0.4)	0.1
Equity / index contracts	0.7	(0.1)	(0.1)	0.0	0.0	0.9	(0.7)	0.3	(0.4)	0.0
Other	0.2	0.0	0.0	0.0	0.0	0.0	(0.1)	0.0	0.0	0.0
<b>Derivative financial instruments – liabilities</b>	<b>3.9</b>	<b>0.3</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.7</b>	<b>(1.4)</b>	<b>0.5</b>	<b>(1.4)</b>	<b>0.2</b>
<i>of which:</i>										
Credit derivative contracts	1.5	0.0	(0.2)	0.0	0.0	0.1	(0.4)	0.2	(0.8)	0.1
Equity / index contracts	1.8	0.3	0.3	0.0	0.0	0.6	(0.6)	0.2	(0.5)	0.1
Other	0.6	0.0	0.0	0.0	0.0	0.0	(0.4)	0.1	(0.1)	0.1
<b>Debt issued designated at fair value</b>	<b>9.5</b>	<b>1.4</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>5.3</b>	<b>(5.0)</b>	<b>1.2</b>	<b>(1.7)</b>	<b>0.4</b>
<b>Other financial liabilities designated at fair value</b>	<b>1.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.5</b>	<b>(0.8)</b>	<b>0.1</b>	<b>(0.2)</b>	<b>0.1</b>

<sup>1</sup> Net gains / (losses) included in comprehensive income are comprised of Net interest income, Other net income from fair value changes on financial instruments and Other income. <sup>2</sup> Total Level 3 assets as of 31 December 2018 were USD 7.8 billion (31 December 2017: USD 5.6 billion). Total Level 3 liabilities as of 31 December 2018 were USD 14.3 billion (31 December 2017: USD 16.2 billion). <sup>3</sup> Comparative-period information is not disclosed for items that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. <sup>4</sup> Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information.

## Note 24 Fair value measurement (continued)

Balance as of 31 December 2017	Reclassifications and remeasurements upon adoption of IFRS 9	Balance as of 1 January 2018	Total gains / (losses) included in comprehensive income		Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation	Balance as of 31 December 2018 <sup>2</sup>
			Net gains / (losses) included in income <sup>1</sup>	of which: related to Level 3 instruments held at the end of the reporting period								
2.0	0.4	2.4	(0.2)	(0.2)	2.1	(7.1)	4.2	0.0	0.7	(0.2)	0.0	2.0
0.6		0.6	0.0	0.0	0.6	(0.9)	0.0	0.0	0.5	0.0	0.0	0.7
0.5	0.4	0.9	0.1	0.0	0.9	(5.6)	4.2	0.0	0.1	0.0	0.0	0.7
0.6		0.6	(0.1)	(0.1)	0.2	(0.3)	0.0	0.0	0.1	(0.1)	0.0	0.4
0.4		0.4	(0.1)	(0.1)	0.4	(0.4)	0.0	0.0	0.0	0.0	0.0	0.2
1.5	3.0	4.4	0.0	0.0	1.7	(1.9)	0.0	0.0	0.1	(0.1)	0.1	4.4
0.8	0.6	1.4	(0.2)	(0.2)	1.5	(1.0)	0.0	0.0	0.1	0.0	0.0	1.8
	1.9	1.9	0.1	0.1	0.0	(0.4)	0.0	0.0	0.0	0.0	0.1	1.7
	0.4	0.4	0.1	0.1	0.2	(0.2)	0.0	0.0	0.0	0.0	0.0	0.5
0.7	0.1	0.8	0.0	0.0	0.0	(0.4)	0.0	0.0	0.0	(0.1)	0.0	0.5
0.5	(0.5)											
1.6		1.6	0.0	0.0	0.0	0.0	1.0	(1.5)	0.5	(0.1)	0.0	1.4
0.1		0.1	0.1	0.1	0.0	0.0	0.0	(0.1)	0.3	0.0	0.0	0.4
0.6		0.6	0.0	0.0	0.0	0.0	0.3	(0.4)	0.0	0.0	0.0	0.5
0.7		0.7	0.0	0.0	0.0	0.0	0.8	(1.0)	0.1	(0.1)	0.0	0.5
0.2		0.2	(0.1)	(0.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.9	0.0	2.9	(0.3)	(0.2)	0.0	0.0	1.3	(1.5)	0.3	(0.5)	0.0	2.2
0.6		0.6	0.0	0.0	0.0	0.0	0.1	(0.2)	0.1	0.0	0.0	0.5
2.0		2.0	(0.3)	(0.2)	0.0	0.0	1.2	(1.2)	0.3	(0.5)	0.0	1.4
0.3	0.0	0.3	0.0	0.1	0.0	0.0	0.0	(0.1)	0.0	0.0	0.0	0.3
11.2		11.2	0.5	0.0	0.0	0.0	5.8	(4.3)	2.2	(4.3)	(0.2)	11.0
2.0		2.0	0.0	0.0	0.0	0.0	1.1	(2.0)	0.0	0.0	0.0	1.0

## Note 24 Fair value measurement (continued)

### i) Maximum exposure to credit risk for financial instruments measured at fair value

The tables below provide UBS AG's maximum exposure to credit risk for financial instruments measured at fair value and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as

real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS.

#### Maximum exposure to credit risk

USD billion	31.12.18								
	Maximum exposure to credit risk	Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
		Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral <sup>1</sup>	Netting	Credit derivative contracts	Guarantees	
<b>Financial assets measured at fair value on the balance sheet</b>									
Financial assets at fair value held for trading – debt instruments <sup>2,3</sup>	22.0								22.0
Derivative financial instruments <sup>4</sup>	126.2		4.1			110.8			11.4
Brokerage receivables	16.8	0.0	16.5						0.3
Financial assets at fair value not held for trading – debt instruments <sup>6</sup>	59.8		16.7		0.1				43.1
<b>Total financial assets measured at fair value</b>	<b>224.9</b>	<b>0.0</b>	<b>37.3</b>	<b>0.0</b>	<b>0.1</b>	<b>110.8</b>	<b>0.0</b>	<b>0.0</b>	<b>76.7</b>
Guarantees <sup>7</sup>	1.6							0.2	1.4
Loan commitments <sup>7</sup>	3.5				2.4		0.2	0.1	0.7
Forward starting transactions, reverse repurchase and securities borrowing agreements	8.1		8.1						0.0
<b>Total maximum exposure to credit risk not reflected on the balance sheet</b>	<b>13.3</b>	<b>0.0</b>	<b>8.1</b>	<b>0.0</b>	<b>2.4</b>	<b>0.0</b>	<b>0.2</b>	<b>0.4</b>	<b>2.1</b>

USD billion	31.12.17								
	Maximum exposure to credit risk	Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
		Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral <sup>1</sup>	Netting	Credit derivative contracts	Guarantees	
<b>Financial assets measured at fair value on the balance sheet</b>									
Financial assets at fair value held for trading – debt instruments <sup>2,5</sup>	26.4								26.4
Derivative financial instruments <sup>4</sup>	121.3		4.1			102.8			14.4
Financial assets at fair value not held for trading – debt instruments <sup>3,6</sup>	59.9		10.1						49.8
<b>Total financial assets measured at fair value</b>	<b>207.5</b>	<b>0.0</b>	<b>14.1</b>	<b>0.0</b>	<b>0.0</b>	<b>102.8</b>	<b>0.0</b>	<b>0.0</b>	<b>90.6</b>
Guarantees <sup>7</sup>	1.7								1.7
Loan commitments <sup>7</sup>	8.0				3.9		1.0	0.2	2.8
<b>Total maximum exposure to credit risk not reflected on the balance sheet</b>	<b>9.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.9</b>	<b>0.0</b>	<b>1.0</b>	<b>0.2</b>	<b>4.5</b>

<sup>1</sup> Includes but is not limited to life insurance contracts, inventory, accounts receivable, mortgage loans, patents and copyrights. <sup>2</sup> These positions are generally managed under the market risk framework. For the purpose of this disclosure, collateral and credit enhancements were not considered. <sup>3</sup> Does not include investment fund units. <sup>4</sup> The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 25 for more information. <sup>5</sup> Does not include debt instruments held for unit-linked investment contracts and investment fund units. <sup>6</sup> Financial assets at fair value not held for trading collateralized by securities consisted of structured loans and reverse repurchase and securities borrowing agreements. <sup>7</sup> The amount shown in the "Guarantees" column largely relates to sub-participations. Refer to Note 34 for more information.

## Note 24 Fair value measurement (continued)

### j) 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

USD billion	31.12.18					31.12.17				
	Carrying value	Fair value				Carrying value	Fair value			
		Total	Total	Level 1	Level 2		Level 3	Total	Total	Level 1
<b>Assets<sup>1</sup></b>										
Cash and balances at central banks	108.4	108.4	108.4	0.0	0.0	90.0	90.0	90.0	0.0	0.0
Loans and advances to banks	16.6	16.6	16.0	0.6	0.0	14.0	14.0	13.4	0.6	0.0
Receivables from securities financing transactions	95.3	95.4	0.0	91.9	3.4	92.0	92.0	0.0	89.4	2.5
Cash collateral receivables on derivative instruments	23.6	23.6	0.0	23.6	0.0	24.0	24.0	0.0	24.0	0.0
Loans and advances to customers	321.5	322.0	0.0	172.3	149.7	329.0	330.4	0.0	183.4	147.0
Other financial assets measured at amortized cost <sup>2</sup>	22.6	22.5	8.4	10.7	3.3	37.9	37.7	6.5	30.3	1.0
<b>Liabilities</b>										
Amounts due to banks	11.0	11.0	8.9	1.9	0.2	7.7	7.7	6.6	1.1	0.0
Payables from securities financing transactions	10.3	10.3	0.0	10.3	0.0	17.5	17.5	0.0	17.5	0.0
Cash collateral payables on derivative instruments	28.9	28.9	0.0	28.9	0.0	31.0	31.0	0.0	31.0	0.0
Customer deposits	422.0	422.0	0.0	421.9	0.1	423.1	423.1	0.0	423.1	0.0
Funding from UBS Group AG and its subsidiaries	41.2	41.7	0.0	41.7	0.0	35.6	37.3	0.0	37.3	0.0
Debt issued measured at amortized cost	91.2	93.5	0.0	92.0	1.4	107.5	109.8	0.0	105.3	4.5
Other financial liabilities measured at amortized cost <sup>2</sup>	7.6	7.6	0.0	7.5	0.1	38.0	38.0	0.0	38.0	0.0

<sup>1</sup> As of 31 December 2018, USD 0 billion of Loans and advances to banks, USD 1 billion of Receivables from securities financing transactions, USD 139 billion of Loans and advances to customers and USD 15 billion of Other financial assets measured at amortized cost are expected to be recovered or settled after 12 months. As of 31 December 2017, USD 0 billion of Loans and advances to banks, USD 2 billion of Receivables from securities financing transactions, USD 137 billion of Loans and advances to customers and USD 7 billion of Other financial assets measured at amortized cost were expected to be recovered or settled after 12 months. <sup>2</sup> Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Refer to Note 1c for more information.

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 2018: 100% of cash and balances at central banks, 96% of loans and advances to banks, 89% of receivables from securities financing transactions, 100% of cash collateral receivables on derivative instruments, 48% of loans and advances to customers, 26% of other financial assets measured at amortized cost, 81% of amounts due to banks, 97% of payables from securities financing transactions, 100% of cash collateral payables on derivative instruments, 97% of customer deposits, 0% of funding from UBS Group AG and its subsidiaries, 11% of debt issued measured at amortized cost and 100% of other financial liabilities measured at amortized cost.
- 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 given the short-term nature of these instruments.



## Note 25 Offsetting financial assets and financial liabilities

UBS AG enters into netting agreements with counterparties to manage the credit risks associated primarily with repurchase and reverse repurchase transactions, securities borrowing and lending, over-the-counter derivatives and exchange-traded derivatives. These netting agreements and similar arrangements generally enable the counterparties to set off liabilities against available assets received in the ordinary course of business and / or in the event that the 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 their actual credit exposure.

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

	Assets subject to netting arrangements						Assets not subject to netting arrangements <sup>5</sup>		Total assets	
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet <sup>4</sup>			Assets recognized on the balance sheet	Total assets after consideration of netting potential	Total assets recognized on the balance sheet	
	Gross assets before netting	Netting with gross liabilities <sup>3</sup>	Net assets recognized on the balance sheet	Financial liabilities	Collateral received	Assets after consideration of netting potential				
<i>As of 31.12.18, USD billion</i>										
Receivables from securities financing transactions <sup>1</sup>	88.5	(13.0)	75.5	(4.4)	(71.2)	0.0	19.8	19.8	95.3	
Derivative financial instruments	124.3	(4.3)	120.0	(90.8)	(24.0)	5.2	6.2	11.4	126.2	
Cash collateral receivables on derivative instruments <sup>2</sup>	24.6	(2.3)	22.3	(13.5)	(1.0)	7.8	1.3	9.1	23.6	
Financial assets at fair value not held for trading <sup>1</sup>	85.4	(77.5)	7.8	(1.4)	(6.4)	0.0	74.6	74.6	82.4	
<i>of which: reverse repurchase agreements</i>	85.3	(77.5)	7.8	(1.4)	(6.4)	0.0	2.1	2.1	9.9	
<b>Total assets</b>	<b>322.9</b>	<b>(97.2)</b>	<b>225.7</b>	<b>(110.0)</b>	<b>(102.6)</b>	<b>13.0</b>	<b>101.9</b>	<b>114.9</b>	<b>327.6</b>	
<i>As of 31.12.17, USD billion</i>										
Receivables from securities financing transactions <sup>1</sup>	147.9	(78.8)	69.1	(7.7)	(61.4)	0.0	22.8	22.8	92.0	
Derivative financial instruments	117.2	(2.1)	115.1	(85.6)	(21.3)	8.2	6.2	14.4	121.3	
Cash collateral receivables on derivative instruments <sup>2</sup>	22.2	(1.1)	21.1	(12.0)	(0.8)	8.3	2.9	11.2	24.0	
Financial assets at fair value not held for trading <sup>1</sup>	0.4	0.0	0.4	0.0	(0.2)	0.2	59.6	59.9	60.1	
<b>Total assets</b>	<b>287.8</b>	<b>(82.0)</b>	<b>205.8</b>	<b>(105.4)</b>	<b>(83.7)</b>	<b>16.8</b>	<b>91.6</b>	<b>108.3</b>	<b>297.4</b>	

<sup>1</sup> Certain reverse repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. This has resulted in an increase in amounts presented on the line "Financial assets at fair value not held for trading" and a decrease in amounts presented on the line "Receivables from securities financing transactions." Refer to Note 1c for more information. <sup>2</sup> The net amount of Cash collateral receivables on derivative instruments recognized on the balance sheet includes certain OTC derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. <sup>3</sup> 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. Netting in this column for reverse repurchase agreements presented within the lines "Receivables from securities financing transactions" and "Financial assets at fair value not held for trading" taken together corresponds to the amounts presented for repurchase agreements in the "Payables from securities financing transactions" and "Other financial liabilities designated at fair value" lines in the liabilities table presented on the following page. <sup>4</sup> 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. <sup>5</sup> Includes assets not subject to enforceable netting arrangements and other out-of-scope items.

## Note 25 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 <sup>5</sup>	Total liabilities		
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet <sup>4</sup>				Liabilities recognized on the balance sheet	Total liabilities after consideration of netting potential	Total liabilities recognized on the balance sheet
	Gross liabilities before netting	Netting with gross assets <sup>3</sup>	Net liabilities recognized on the balance sheet	Financial assets	Collateral pledged	Liabilities after consideration of netting potential				
<i>As of 31.12.18, USD billion</i>										
Payables from securities financing transactions <sup>1</sup>	20.6	(12.4)	8.3	(3.6)	(4.7)	0.0	2.0	2.0	10.3	
Derivative financial instruments	124.1	(4.3)	119.8	(90.8)	(20.9)	8.1	5.9	14.0	125.7	
Cash collateral payables on derivative instruments <sup>2</sup>	29.0	(2.3)	26.7	(14.2)	(1.2)	11.3	2.2	13.5	28.9	
Other financial liabilities designated at fair value <sup>1</sup>	86.6	(78.2)	8.4	(2.1)	(5.9)	0.4	25.2	25.6	33.6	
<i>of which: repurchase agreements</i>	<i>86.1</i>	<i>(78.2)</i>	<i>7.9</i>	<i>(2.1)</i>	<i>(5.9)</i>	<i>0.0</i>	<i>1.6</i>	<i>1.6</i>	<i>9.5</i>	
<b>Total liabilities</b>	<b>260.4</b>	<b>(97.2)</b>	<b>163.2</b>	<b>(110.7)</b>	<b>(32.6)</b>	<b>19.8</b>	<b>35.4</b>	<b>55.2</b>	<b>198.5</b>	

### *As of 31.12.17, USD billion*

Payables from securities financing transactions <sup>1</sup>	92.5	(78.8)	13.7	(7.7)	(6.0)	0.0	3.8	3.8	17.5
Derivative financial instruments	114.3	(2.1)	112.2	(85.6)	(15.4)	11.2	6.9	18.1	119.1
Cash collateral payables on derivative instruments <sup>2</sup>	30.2	(1.1)	29.2	(16.7)	(1.2)	11.3	1.9	13.1	31.0
Other financial liabilities designated at fair value <sup>1</sup>	1.9	0.0	1.9	0.0	(0.1)	1.8	14.7	16.5	16.6
<b>Total liabilities</b>	<b>239.0</b>	<b>(82.0)</b>	<b>157.0</b>	<b>(110.0)</b>	<b>(22.7)</b>	<b>24.3</b>	<b>27.3</b>	<b>51.6</b>	<b>184.3</b>

<sup>1</sup> Certain repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. This has resulted in an increase in amounts presented on the line "Other financial liabilities designated at fair value" and a decrease in amounts presented on the line "Payables from securities financing transactions." Refer to Note 1c for more information. <sup>2</sup> The net amount of Cash collateral payables on derivative instruments recognized on the balance sheet includes certain exchange-traded derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. <sup>3</sup> The logic of the table results in amounts presented in the "Netting with gross assets" column corresponding to the amounts presented in the "Netting with gross liabilities" column in the assets table presented on the previous page. Netting in this column for repurchase agreements presented within the lines "Payables from securities financing transactions" and "Other financial liabilities designated at fair value" taken together corresponds to the amounts presented for reverse repurchase agreements in the "Receivables from securities financing transactions" and "Financial assets at fair value not held for trading" lines in the assets table presented on the previous page. <sup>4</sup> 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. <sup>5</sup> Includes liabilities not subject to enforceable netting arrangements and other out-of-scope items.

## Note 26 Restricted and transferred financial assets

This Note provides information on restricted financial assets (Note 26a), transfers of financial assets (Note 26b and 26c) and financial assets that are received as collateral with the right to resell or repledge these assets (Note 26d).

### 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 USD 12,516 million as of 31 December 2018 (31 December 2017: USD 12,779 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.

#### Restricted financial assets

USD million	31.12.18	31.12.17
<b>Financial assets pledged as collateral</b>		
Financial assets at fair value held for trading	43,292	47,454
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>	32,121	36,277
Loans and advances to customers <sup>1</sup>	18,804	18,087
Financial assets at fair value not held for trading	0	174
<b>Total financial assets pledged as collateral<sup>2</sup></b>	<b>62,096</b>	<b>65,715</b>
<b>Other restricted financial assets</b>		
Loans and advances to banks	5,140	3,364
Financial assets at fair value held for trading <sup>3</sup>	1,054	12,591
Cash collateral receivables on derivative instruments	3,205	3,921
Loans and advances to customers	935	1,289
Financial assets at fair value not held for trading <sup>3</sup>	23,212	2,282
Financial assets measured at fair value through other comprehensive income	171	253
Other	203	97
<b>Total other restricted financial assets</b>	<b>33,920</b>	<b>23,796</b>
<b>Total financial assets pledged and other restricted financial assets</b>	<b>96,016</b>	<b>89,512</b>

<sup>1</sup> 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 USD 3.2 billion for 31 December 2018 (31 December 2017: approximately USD 2.2 billion) could be withdrawn or used for future liabilities or covered bond issuances without breaching existing collateral requirements. <sup>2</sup> Does not include assets placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes (31 December 2018: USD 0.3 billion; 31 December 2017: USD 2.6 billion). <sup>3</sup> Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information.

In addition to restrictions on financial assets, UBS AG and its subsidiaries are, in certain cases, subject to regulatory requirements that affect the transfer of dividends and capital within UBS AG. Supervisory authorities also may require entities to measure capital and leverage ratios on a stressed basis, such as the Federal Reserve Board's Comprehensive Capital Analysis

and Review (CCAR) process, which affects UBS Americas Holding LLC, and may limit the ability of the intermediate holding company sub-group to make distributions of capital based on the results of those tests. In June 2018, the Federal Reserve Board released the 2018 CCAR results and did not object to UBS Americas Holding LLC's capital plan.

## Note 26 Restricted and transferred financial assets (continued)

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.

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

### b) Transferred financial assets that are not derecognized in their entirety

The table below presents information for financial assets that have been transferred but are subject to continued recognition in full, as well as recognized liabilities associated with those transferred assets.

#### Transferred financial assets subject to continued recognition in full

USD million	31.12.18		31.12.17	
	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
Financial assets at fair value held for trading that may be sold or repledged by counterparties	32,121	4,674	36,277	13,277
<i>relating to securities lending and repurchase agreements in exchange for cash received</i>	4,726	4,674	13,485	13,277
<i>relating to securities lending agreements in exchange for securities received</i>	26,234	0	21,684	0
<i>relating to other financial asset transfers</i>	1,161	0	1,109	0
Financial assets at fair value not held for trading that may be sold or repledged by counterparties	0	0	174	173
<b>Total financial assets transferred</b>	<b>32,121</b>	<b>4,674</b>	<b>36,451</b>	<b>13,450</b>

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 and securities lending agreements

As of 31 December 2018, approximately 14% of the transferred financial assets were assets held for trading 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 2018 and as of 31 December 2017.

## Note 26 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 2018, the majority of the retained continuing involvement related to securitization positions held as financial assets at fair value held for trading, 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 USD 6 million as of 31 December 2018, and UBS AG recognized gains of USD 3 million in 2018 related to these positions. As of 31 December 2018, life-to-date losses of USD 1,198 million were recorded related to the positions held as of 31 December 2018.

As of 31 December 2017, the fair value and carrying amount of UBS AG's continuing involvement related to purchased and retained interests in securitization vehicles was USD 8 million, and UBS AG recognized gains of USD 4 million in 2017 related to these positions. As of 31 December 2017, life-to-date losses of USD 1,200 million were recorded related to the positions held as of 31 December 2017.

The maximum exposure to loss related to purchased and retained interests in securitization structures was USD 10 million as of 31 December 2018, compared with USD 15 million as of 31 December 2017.

Undiscounted cash outflows of USD 4 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

<i>USD million</i>	<b>31.12.18</b>	31.12.17
Fair value of assets received that can be sold or repledged	<b>483,688</b>	481,265
<i>received as collateral under reverse repurchase, securities borrowing and lending arrangements, derivative and other transactions<sup>1</sup></i>	<b>473,302</b>	474,420
<i>received in unsecured borrowings</i>	<b>10,385</b>	6,845
Thereof sold or repledged <sup>2</sup>	<b>356,752</b>	346,243
<i>in connection with financing activities</i>	<b>315,402</b>	300,880
<i>to satisfy commitments under short sale transactions</i>	<b>28,949</b>	31,251
<i>in connection with derivative and other transactions<sup>1</sup></i>	<b>12,400</b>	14,112

<sup>1</sup> Includes securities received as initial margin from its clients that UBS AG is required to remit to central counterparties, brokers and deposit banks through its exchange-traded derivative clearing and execution services. <sup>2</sup> Does not include off-balance sheet securities (31 December 2018: USD 24.5 billion; 31 December 2017: USD 28.8 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 27 Maturity analysis of financial liabilities

The contractual maturities for non-derivative and non-trading financial liabilities as of 31 December 2018 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 2017. 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

USD billion	31.12.18					Total
	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	
<b>Financial liabilities recognized on balance sheet<sup>1</sup></b>						
Amounts due to banks	7.9	1.0	1.6	0.5	0.0	11.0
Payables from securities financing transactions	9.5	0.6	0.3		0.0	10.4
Cash collateral payables on derivative instruments	28.9					28.9
Customer deposits	396.6	13.4	6.9	5.1	0.0	422.1
Funding from UBS Group AG and its subsidiaries <sup>2</sup>	0.0	0.0	0.5	21.9	22.0	44.4
Debt issued measured at amortized cost <sup>2</sup>	4.6	5.8	39.1	34.7	12.4	96.5
Other financial liabilities measured at amortized cost	6.4					6.4
<b>Total financial liabilities measured at amortized cost</b>	<b>453.9</b>	<b>20.8</b>	<b>48.4</b>	<b>62.3</b>	<b>34.3</b>	<b>619.7</b>
Financial liabilities at fair value held for trading <sup>3,4</sup>	29.0					29.0
Derivative financial instruments <sup>3</sup>	125.7					125.7
Brokerage payables designated at fair value	38.4					38.4
Debt issued designated at fair value <sup>5</sup>	15.7	18.1	10.2	7.4	8.0	59.4
Other financial liabilities designated at fair value	30.0	0.4	1.1	1.2	1.0	33.7
<b>Total financial liabilities measured at fair value through profit or loss</b>	<b>238.8</b>	<b>18.5</b>	<b>11.3</b>	<b>8.6</b>	<b>9.0</b>	<b>286.2</b>
<b>Total</b>	<b>692.7</b>	<b>39.3</b>	<b>59.7</b>	<b>70.9</b>	<b>43.3</b>	<b>905.9</b>
<b>Guarantees, commitments and forward starting transactions<sup>6</sup></b>						
<b>Loan commitments<sup>7</sup></b>	<b>34.1</b>	<b>0.3</b>	<b>0.3</b>	<b>0.0</b>		<b>34.7</b>
<b>Guarantees<sup>7</sup></b>	<b>19.8</b>					<b>19.8</b>
<b>Forward starting transactions</b>						
Reverse repurchase agreements <sup>7</sup>	9.0		0.0			9.0
Securities borrowing agreements	0.0					0.0
<b>Total</b>	<b>62.9</b>	<b>0.3</b>	<b>0.4</b>	<b>0.0</b>	<b>0.0</b>	<b>63.6</b>
31.12.17						
<b>Financial liabilities recognized on balance sheet<sup>1</sup></b>						
Amounts due to banks	6.3	0.4	1.0	0.1	0.0	7.7
Payables from securities financing transactions	13.9	3.1	0.6	0.0	0.0	17.7
Cash collateral payables on derivative instruments	31.0					31.0
Customer deposits	405.0	11.3	5.2	0.9	0.0	422.4
Funding from UBS Group AG and its subsidiaries <sup>2</sup>		0.4	0.7	21.9	19.6	42.6
Debt issued measured at amortized cost <sup>2</sup>	4.2	14.8	45.6	35.7	12.8	113.1
Other financial liabilities measured at amortized cost	36.8					36.8
<b>Total financial liabilities measured at amortized cost</b>	<b>497.2</b>	<b>30.1</b>	<b>53.2</b>	<b>58.6</b>	<b>32.4</b>	<b>671.4</b>
Financial liabilities at fair value held for trading <sup>3,4</sup>	31.3					31.3
Derivative financial instruments <sup>3</sup>	119.1					119.1
Debt issued designated at fair value <sup>5</sup>	18.3	10.0	8.5	7.7	6.2	50.7
Other financial liabilities designated at fair value	12.4	0.6	3.4	1.4	1.0	18.8
<b>Total financial liabilities measured at fair value through profit or loss</b>	<b>181.1</b>	<b>10.6</b>	<b>11.9</b>	<b>9.1</b>	<b>7.3</b>	<b>219.9</b>
<b>Total</b>	<b>678.3</b>	<b>40.7</b>	<b>65.0</b>	<b>67.6</b>	<b>39.7</b>	<b>891.3</b>
<b>Guarantees, commitments and forward starting transactions<sup>6</sup></b>						
<b>Loan commitments<sup>7</sup></b>	<b>39.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.1</b>		<b>39.7</b>
<b>Guarantees<sup>7</sup></b>	<b>19.3</b>	<b>0.0</b>				<b>19.3</b>
<b>Forward starting transactions</b>						
Reverse repurchase agreements <sup>7</sup>	13.0					13.0
Securities borrowing agreements	0.0					0.0
<b>Total</b>	<b>71.5</b>	<b>0.2</b>	<b>0.2</b>	<b>0.1</b>	<b>0.0</b>	<b>72.0</b>

<sup>1</sup> Except for financial liabilities at fair value held for trading and derivative financial instruments (see footnote 3), the amounts presented generally represent undiscounted cash flows of future interest and principal payments. <sup>2</sup> The time bucket Due after 5 years includes perpetual loss-absorbing additional tier 1 capital instruments. <sup>3</sup> 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 28 for undiscounted cash flows of derivatives designated in hedge accounting relationships. <sup>4</sup> Contractual maturities of financial liabilities at fair value held for trading are: USD 28.3 billion due within one month (2017: USD 30.3 billion), USD 0.6 billion due between one month and one year (2017: USD 0.8 billion) and USD 0 billion due between 1 and 5 years (2017: USD 0.1 billion). <sup>5</sup> 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. <sup>6</sup> Comprises the maximum irrevocable amount of guarantees, commitments and forward starting transactions. <sup>7</sup> Loan commitments measured at fair value of USD 3.5 billion, guarantees measured at fair value of USD 1.6 billion and forward starting reverse repurchase agreements measured at fair value of USD 8.1 billion are under the time bucket Due within 1 month.

## Note 28 Hedge accounting

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### Derivatives transacted for hedging purposes

UBS AG enters into derivative transactions for the purpose 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 risk category headings in this Note (interest rate risk hedge accounting and structural foreign exchange risk hedge accounting). In addition, UBS designates certain non-derivative financial assets and liabilities as hedging instruments in structural foreign exchange risk hedge accounting, as described under the corresponding risk category headings of this Note.

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 credit default swaps that provide economic hedges for credit risk exposures (refer to "Credit derivatives" in Note 11). 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 3j, where terms used in the following sections are explained.



## Note 28 Hedge accounting (continued)

### Interest rate risk hedge accounting

#### Fair value hedges: interest rate risk related to debt instruments

UBS AG issues various long-term, fixed-rate debt instruments measured at amortized cost, such as senior unsecured debt, covered bonds and subordinated debt, that are exposed to changes in fair value due to movements in market interest rates. Interest rate swaps are used as fair value hedges to protect against changes in the fair value of the issued debt.

Fair value hedges of interest rate risk related to debt instruments involve swapping fixed cash flows associated with the debt issued to floating cash flows by entering into interest rate swaps that receive fixed and pay floating cash flows. The variable future cash flows are based on the following benchmark rates: USD LIBOR, CHF LIBOR, EURIBOR, GBP LIBOR, AUD LIBOR, JPY LIBOR and SGD LIBOR.

The issued debt and interest rate swaps are designated in a fair value hedge relationship. The notional of the designated hedging instrument matches the notional of the hedged item.

The hedged risk is determined as the change in the fair value of the debt issued arising solely from changes in the designated benchmark interest rate (e.g., one-month or three-month LIBOR). Such change is usually the largest component of the overall change in the fair value of the hedged position in transaction currency.

Hedge effectiveness is assessed by comparing changes in the fair value of the debt issued attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from different curves used for the discounting of the hedging instruments and the hedged items, or from mismatches of critical terms between fixed-term lending products and hedging interest rate swaps.

#### Hedging instruments and hedged items

USD million	31.12.18	31.12.17
<b>Hedging instruments: interest rate swaps</b>		
Nominal amount <sup>1</sup>	63,816	
Carrying amount		
Derivative financial assets	27	49
Derivative financial liabilities	1	2
<b>Hedged items: debt issued measured at amortized cost</b>		
Carrying amount <sup>1</sup>	28,139	
of which: accumulated amount of fair value hedge adjustment	282	
<b>Hedged items: funding from UBS Group AG and its subsidiaries</b>		
Carrying amount <sup>1</sup>	35,647	
of which: accumulated amount of fair value hedge adjustment	(580)	

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

#### Hedge ineffectiveness

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments <sup>1</sup>	(341)	(16)	166
Changes in fair value of hedged items <sup>1</sup>	329	(4)	(170)
<b>Net gains / (losses) related to hedge ineffectiveness recognized in Other net income from fair value changes on financial instruments</b>	<b>(11)</b>	<b>(20)</b>	<b>(4)</b>

<sup>1</sup> For prior periods, the amounts included offsetting accrued interest, which did not have any effect on net gains / (losses) related to hedge ineffectiveness.

#### Profile of the timing of the nominal amount of the hedging instrument

USD 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
Interest rate swaps			4	43	17	64



## Note 28 Hedge accounting (continued)

### Fair value hedges: portfolio interest rate risk related to loans

UBS AG has a portfolio of long-term fixed-rate mortgage loans in CHF that are measured at amortized cost and exposed to changes in the fair value attributable to movements in market interest rates. Interest rate swaps that pay a fixed rate of interest and receive a floating rate of interest are used as fair value hedges to protect against changes in the fair value of the originated loans.

The portfolio of mortgage loans and interest rate swaps are designated in a fair value hedge relationship. The notional of the designated hedging instrument matches the notional of the hedged item.

The hedging strategy involves an open portfolio of hedged items, i.e., mortgage loans. Both the hedged items and the hedging instruments are adjusted on a monthly basis to reflect changes in size and the maturity profile of the hedged portfolio. The existing hedging relationship is discontinued and a new one

is designated. Changes in the portfolio are driven by new loans originated or existing loans repaid.

The hedged risk is determined as the change in the fair value of the loans arising solely from changes in the designated benchmark interest rate (e.g., one-month or three-month LIBOR). Such change is usually the largest component of the overall change in the fair value of the hedged position in transaction currency.

Hedge effectiveness is assessed by comparing changes in the fair value of the hedged portfolio of loans attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from different curves used for the discounting of the hedging instruments and the hedged items, or from mismatches of critical terms between fixed-term lending products and hedging interest rate swaps.

### Hedging instruments and hedged items

<i>USD million</i>	31.12.18	31.12.17
<b>Hedging instruments: interest rate swaps</b>		
Nominal amount <sup>1</sup>	10,318	
Carrying amount		
Derivative financial assets	0	0
Derivative financial liabilities	31	33
<b>Hedged items: loans and advances to customers</b>		
Carrying amount <sup>1</sup>	10,299	
<i>of which: accumulated amount of fair value hedge adjustment on the portfolio that was subject to hedge accounting<sup>2</sup></i>	200	
<i>of which: accumulated amount of fair value hedge adjustment, subject to amortization attributable to the portion of the portfolio that ceased to be part of hedge accounting<sup>2</sup></i>	89	

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively. <sup>2</sup> Amounts presented within Other financial assets measured at amortized cost and Other financial liabilities measured at amortized cost.

### Hedge ineffectiveness

<i>USD million</i>	For the year ended		
	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments <sup>1</sup>	(22)	(10)	(132)
Changes in fair value of hedged items <sup>1</sup>	16	3	119
<b>Net gains / (losses) related to hedge ineffectiveness recognized in Other net income from fair value changes on financial instruments</b>	<b>(6)</b>	<b>(7)</b>	<b>(13)</b>

<sup>1</sup> For prior periods, the amounts included offsetting accrued interest, which had no effect on net gains / (losses) related to hedge ineffectiveness.

## Note 28 Hedge accounting (continued)

### 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, due to movements in future market rates. The amounts and timing of future cash flows, representing both principal and interest flows, are projected on the basis of contractual terms and other relevant factors, including estimates of prepayments and defaults. The aggregate principal balances and interest cash flows across all portfolios over time form the basis for identifying the non-trading interest rate risk of UBS AG, which is hedged with interest rate swaps, the maximum maturity of which is 10 years.

The group of forecast cash flows and interest rate swaps are designated in cash flow hedge relationships. The notional of the designated hedging instrument matches the notional of the hedged item for newly transacted swaps. For swaps that are re-designated, the ratio of the designation is determined based on the swap sensitivity.

The hedging strategy involves designation of each interest rate swap in a separate hedge relationship against a group of hedged items that share the same risk. The hedged items giving rise to the hedged cash flows are fungible and could be substituted for each other over the lifetime of the hedge. Cash flow forecasts and risk exposures are monitored and adjusted on an ongoing basis, and consequently hedging instruments are added or taken out of the program accordingly.

The hedged risk is determined as the variability of future cash flows arising solely from changes in the designated benchmark interest rate, i.e., overnight index swap rate / one-month or three-month LIBOR. Hedge effectiveness is assessed by comparing changes in the fair value of the hedged cash flows attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from differences in the reference index of the hedging instruments and hedged items, or from inception of the hedge relationship after the trade date of the hedging derivative.

### Hedging instruments

USD million	31.12.18	31.12.17
<b>Hedging instruments: interest rate swaps</b>		
Nominal amount <sup>1</sup>	70,149	
Carrying amount		
Derivative financial assets	24	31
Derivative financial liabilities	1	2

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

### Hedge ineffectiveness

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments <sup>1</sup>	97		
Changes in fair value of hedged items	(73)		
<b>Effective portion of changes in fair value of hedging instruments recognized as Other comprehensive income</b>	<b>(42)</b>	45	234
<b>Ineffectiveness recognized as Other net income from fair value changes on financial instruments</b>	<b>25</b>	8	11

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

### Other comprehensive income recognized directly in equity related to cash flow hedges

USD million	2018	2017	2016
<b>Balance at the beginning of the year</b>	<b>360</b>	955	1,635
Effective portion of changes in fair value of hedging instruments recognized in OCI	(42)	45	234
Amount reclassified to Net interest income when the hedged item affected net profit / (loss)	(294)	(843)	(1,094)
of which: reclassified to interest income on amortized-cost instruments <sup>1</sup>	(293)		
of which: reclassified to interest income on FVTPL instruments <sup>1</sup>	(1)		
Translation effects recognized directly in retained earnings	18	39	4
Income tax related to cash flow hedges	67	163	176
<b>Balance at the end of the year</b>	<b>109</b>	360	955
of which: related to hedging relationships for which hedge accounting continues to be applied <sup>1,2</sup>	74		
of which: related to hedging relationships for which hedge accounting is no longer applied <sup>1,2</sup>	73		

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively. <sup>2</sup> Amounts are disclosed on a pre-tax basis.

## Note 28 Hedge accounting (continued)

### Structural foreign exchange risk hedge accounting

#### Hedges of net investments in foreign operations

UBS AG applies hedge accounting for certain net investments in foreign operations. For this purpose, foreign exchange (FX) derivatives, mainly FX forwards and FX swaps, as well as non-derivative financial assets or liabilities are used and designated as hedging instruments. The notional of the designated hedging instrument matches the notional of the hedged item.

Based on UBS's risk management strategy, the hedges are adjusted on at least a monthly basis to reflect the changes in the hedged position.

The hedged risk is determined as the change in the carrying amount of net assets of foreign operations arising solely from changes in spot foreign exchange rates. Consequently, UBS AG only designates the spot element of the FX forwards as hedging instruments. Changes in the fair value of the hedging instruments attributable to changes in forward points and the effect of discounting are not part of a hedge accounting designation. These amounts, therefore, do not form part of the effectiveness assessment and are recognized directly in profit or loss.

The effective portion of gains and losses of these FX swaps, i.e., the spot element, 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 at the level of individual foreign branches and subsidiaries, which make up the total FCT OCI of UBS AG.

When UBS designates as hedging instruments certain non-derivative foreign currency financial assets and liabilities of foreign branches or subsidiaries, 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.

Due to the fact that only the spot element of hedging instruments is designated in hedging relationships, ineffectiveness is unlikely unless the hedged net assets fall below the designated hedged amount. The exceptions are hedges where the hedging currency is not the same as the currency of the foreign operation, where the currency basis may cause ineffectiveness.

As of 31 December 2017, the notional amount of hedging instruments exceeded the underlying hedged structural FX exposures, due to the fact that non-US dollar structural FX exposures were hedged against the US dollar first and then against Swiss francs, the former functional currency of the parent entity. As of 31 December 2018 all structural FX exposures are hedged directly against the US dollar.

#### Hedging instruments

<i>USD million</i>	31.12.18	31.12.17
<b>Hedging instruments: derivative financial instruments</b>		
Nominal amount	11,432	13,237
Carrying amount		
Derivative financial assets	56	79
Derivative financial liabilities	45	132
<b>Hedging instruments: non-derivative foreign currency assets and liabilities</b>		
Nominal amount	229	2,970
Carrying amount <sup>1</sup>		
Receivables from securities financing transactions	115	
Payables from securities financing transactions	115	

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

#### Hedge ineffectiveness

<i>USD million</i>	For the year ended
	31.12.18
Changes in fair value of hedging instruments <sup>1</sup>	199
Changes in fair value of hedged items <sup>1</sup>	(199)
<b>Effective portion of changes in fair value of hedging instruments recognized in Foreign currency translation OCI<sup>1</sup></b>	<b>181</b>
<b>Ineffectiveness recognized as Other net income from fair value changes on financial instruments<sup>1</sup></b>	<b>18</b>

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

## Note 28 Hedge accounting (continued)

### Foreign currency translation reserve

<i>USD million</i>	31.12.18	31.12.17	31.12.16
<b>Foreign currency translation reserve</b>	<b>3,940</b>	4,455	2,933
<i>of which: effective portion of changes in fair value of hedging instruments related to investment in subsidiaries</i>	<i>770</i>		
<i>of which: for which hedge accounting continues to be applied<sup>1</sup></i>	<i>515</i>		
<i>of which: for which hedge accounting is no longer applied<sup>1</sup></i>	<i>255</i>		
<b>Effective portion of changes in fair value of hedging instruments reclassified to Other income upon disposal of investment for the year ended<sup>1</sup></b>	<b>2</b>		

<sup>1</sup> This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

### 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)

<i>USD billion</i>	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
<b>Interest rate swaps<sup>1</sup></b>							
<b>FX swaps / forwards</b>							
Cash inflows	0	9	2	0	0	0	11
Cash outflows	0	9	2	0	0	0	11
<b>Net cash flows</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

<sup>1</sup> Undiscounted cash inflows and cash outflows of interest rate swaps as of 31 December 2018 were not material as the majority of interest rate swaps designated in hedge accounting relationships are legally settled on a daily basis.

## Note 29 Pension and other post-employment benefit plans

The table below provides a breakdown of expenses related to pension and other post-employment benefit plans recognized in the income statement within *Personnel expenses*.

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

USD million	31.12.18	31.12.17	31.12.16
Net periodic expenses for defined benefit plans	140	365	438
of which: related to major pension plans <sup>1</sup>	141	354	417
of which: Swiss plan <sup>2</sup>	108	307	386
of which: UK plan	11	15	(2)
of which: US and German plans	22	31	34
of which: related to post-employment medical insurance plans <sup>3</sup>	(11)	3	4
of which: UK plan	1	1	1
of which: US plans	(12)	2	3
of which: related to remaining plans and other expenses <sup>4</sup>	10	8	17
Expenses for defined contribution plans <sup>5</sup>	223	236	238
of which: UK plans	35	65	78
of which: US plan	127	110	107
of which: remaining plans	61	61	53
<b>Total pension and other post-employment benefit plan expenses<sup>6</sup></b>	<b>363</b>	<b>601</b>	<b>677</b>

<sup>1</sup> Refer to Note 29a for more information. <sup>2</sup> Changes to the Swiss pension plan in 2018 resulted in a pre-tax gain of USD 132 million related to past service. Refer to Note 29a for more information on these changes. <sup>3</sup> Refer to Note 29b for more information. <sup>4</sup> Other expenses include differences between actual and estimated performance award accruals. <sup>5</sup> Refer to Note 29c for more information. <sup>6</sup> Refer to Note 6.

The table below provides a breakdown of amounts recognized in *Other comprehensive income* for defined benefit plans.

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

USD million	31.12.18	31.12.17	31.12.16
Major pension plans <sup>1</sup>	(79)	276	(842)
of which: Swiss plan	(201)	(56)	(94)
of which: UK plan	130	304	(623)
of which: US and German plans	(8)	28	(126)
Post-employment medical insurance plans <sup>2</sup>	7	1	(13)
of which: UK plan	3	1	(5)
of which: US plans	4	0	(7)
Remaining plans	3	31	(26)
Gains / (losses) recognized in other comprehensive income, before tax	(70)	308	(880)
Tax (expense) / benefit relating to defined benefit plans recognized in other comprehensive income	245	6	51
<b>Gains / (losses) recognized in other comprehensive income, net of tax<sup>3</sup></b>	<b>175</b>	<b>314</b>	<b>(829)</b>

<sup>1</sup> Refer to Note 29a for more information. <sup>2</sup> Refer to Note 29b for more information. <sup>3</sup> Refer to the "Statement of comprehensive income."

## Note 29 Pension and other post-employment benefit plans (continued)

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

As of 31 December 2018 and 31 December 2017, 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 2018 and 31 December 2017, no net defined benefit pension asset was recognized on the balance sheet.

The table below provides a breakdown of liabilities recognized on the balance sheet within *Other non-financial liabilities* related to defined benefit plans.

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

USD million	31.12.18	31.12.17
Major pension plans <sup>1</sup>	671	825
of which: Swiss plan	0	0
of which: UK plan	160	275
of which: US and German plans <sup>2</sup>	511	550
Post-employment medical insurance plans <sup>3</sup>	62	88
of which: UK plan	22	27
of which: US plans	40	61
Remaining plans	40	35
<b>Total net defined benefit pension and post-employment liability<sup>4</sup></b>	<b>773</b>	<b>948</b>

<sup>1</sup> Refer to Note 29a for more information. <sup>2</sup> Of the total liability recognized as of 31 December 2018, USD 137 million related to US plans and USD 374 million related to German plans (31 December 2017: USD 153 million and USD 398 million, respectively). <sup>3</sup> Refer to Note 29b for more information. <sup>4</sup> Refer to Note 22.

### 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 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 IFRS, 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.

## Note 29 Pension and other post-employment benefit plans (continued)

### 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 opportunity 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 IFRS, primarily because of the obligation to accrue interest on the pension accounts and the payment of lifetime pension benefits.

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 2018, the Swiss pension plan had a technical funding ratio under Swiss pension law of 124.2% (31 December 2017: 131.9%).

## Note 29 Pension and other post-employment benefit plans (continued)

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 on 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 2018, the Swiss pension plan was in a surplus situation on an IFRS measurement basis, as the fair value of plan assets exceeded the DBO by USD 1,998 million (31 December 2017: surplus of USD 1,990 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. As of both 31 December 2018 and 31 December 2017, the estimated future economic benefit was zero and hence no net defined benefit asset was recognized on the balance sheet. As of 31 December 2018, the difference between the pension plan surplus and the estimated future economic benefit, i.e., the asset ceiling effect, was USD 1,998 million (31 December 2017: USD 1,990 million).

### Changes to the Swiss pension plan

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 AG in Switzerland and UBS AG agreed to measures that have taken effect from the start of 2019 to support the long-term financial stability of the Swiss pension fund. As a result, the conversion rate was lowered, the regular retirement age was increased to 65, employee contributions were increased to vary between 2.5% and 13.5% of the contributory base salary, and savings contributions start from age 20 instead of the previous starting age of 25. Pensions already in payment on 1 January 2019 were not affected by these measures.

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 USD 448 million in three installments in 2020, 2021 and 2022.

In accordance with IFRS, these measures led to a reduction in the pension obligation recognized by UBS AG, resulting in a pre-tax gain of USD 132 million in 2018. In addition, 2018 service costs were lower by USD 34 million due to the decrease in benefits. These effects were recognized as a reduction in *Personnel expenses* within the income statement across the business divisions and Corporate Center, with a corresponding effect in *Other comprehensive income*, as the Swiss pension plan was in a surplus situation that could not be recognized due to the IFRS asset ceiling restriction. If the Swiss pension plan remains in an asset ceiling position, the three annual payments, adjusted for expected forfeitures, are expected to reduce total equity by approximately USD 130 million per year over the installment period, with no effect on the income statement.

The employer contributions expected to be made to the Swiss pension plan in 2019 are estimated to be USD 275 million.

### Non-Swiss pension plans

UBS AG locations outside of Switzerland established 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. The normal retirement age for participants in the UK plan is 60. Since 2000, the UK plan has been closed to new entrants and, since 2013, 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 2018 and 2017, UBS AG did not make any deficit funding contributions.



## Note 29 Pension and other post-employment benefit plans (continued)

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 is likely to increase by more 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 2018, the UK plan was in a deficit situation on an IFRS measurement basis as the DBO exceeded the fair value of plan assets by USD 160 million (31 December 2017: deficit of USD 275 million).

Following the most recent triennial statutory actuarial valuation as of 30 June 2017, UBS AG agreed to minimum cash contributions of USD 26 million in 2019 and USD 13 million in 2020. Total contributions expected to be made to the UK defined benefit pension plan in 2019 are estimated at USD 128 million, subject to regular funding reviews during the year.

In addition, UBS AG and the Pension Trustee Board have entered into an arrangement whereby a collateral pool was established to provide security for the pension fund, effective 31 January 2019, at a value of USD 574 million. The collateral pool includes corporate bonds and government-related debt instruments. The Pension Trustee Board and UBS AG may agree adjustments to the collateral pool value in the future. The arrangement provides the Pension Trustee Board dedicated access to a pool of assets in the event of UBS AG insolvency or not paying a required deficit funding contribution.

Following a UK High Court ruling requiring pension trustees to equalize benefits for men and women in relation to guaranteed minimum pensions (GMP), UBS AG recorded an increase of USD 4 million in the DBO, resulting in a corresponding loss recognized in the income statement in 2018.

### *US pension plans*

There are two distinct major defined benefit pension plans in the US, both with a normal retirement age of 65. Since 1998 and 2001, respectively, the plans have been 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, considering 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 2018, the contributions made by UBS AG were USD 42 million (2017: USD 92 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 2019 are estimated at USD 9 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 paid directly by UBS AG. The normal retirement age for the participants in the German plans is 65. Within the larger of the two 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 6% for amounts accrued before 2010, of 4% for amounts accrued from 2010 to 2017 and of 0.9% for amounts accrued after 2017. Both plans are regulated under German pension law, under which the responsibility to pay pension benefits when they are due rests entirely with UBS AG. For these 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 2019 are estimated at USD 11 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 29 Pension and other post-employment benefit plans (continued)

### Defined benefit pension plans

USD million	Swiss plan		UK plan		US and German plans		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
Defined benefit obligation at the beginning of the year	14,398	22,465	3,744	3,639	1,816	1,725	19,957	27,830
Current service cost	251	330	0	0	7	9	258	338
Interest expense	93	119	93	102	55	63	241	284
Plan participant contributions	137	157	0	0	0	0	137	157
Remeasurements	(263)	47	(266)	(88)	(69)	82	(598)	40
of which: actuarial (gains) / losses due to changes in demographic assumptions	0	4	(18)	(82)	(5)	(5)	(23)	(84)
of which: actuarial (gains) / losses due to changes in financial assumptions	(391)	135	(257)	44	(69)	86	(716)	265
of which: experience (gains) / losses <sup>1</sup>	128	(92)	8	(50)	5	2	142	(140)
Past service cost related to plan amendments	(132)	0	4	0	0	0	(128)	0
Curtailments	(17)	(28)	0	0	0	0	(17)	(28)
Benefit payments	(586)	(782)	(202)	(256)	(112)	(109)	(900)	(1,147)
Other movements <sup>2</sup>	0	(8,728)	0	0	0	0	0	(8,728)
Foreign currency translation	(108)	818	(181)	347	(18)	47	(307)	1,211
<b>Defined benefit obligation at the end of the year</b>	<b>13,774</b>	<b>14,398</b>	<b>3,192</b>	<b>3,744</b>	<b>1,679</b>	<b>1,816</b>	<b>18,645</b>	<b>19,957</b>
of which: amounts owed to active members	6,380	6,604	146	180	226	255	6,751	7,038
of which: amounts owed to deferred members	0	0	1,434	1,930	606	645	2,040	2,575
of which: amounts owed to retirees	7,394	7,794	1,612	1,634	847	916	9,854	10,344
Fair value of plan assets at the beginning of the year	16,388	24,184	3,469	3,120	1,265	1,124	21,122	28,428
Return on plan assets excluding amounts included in interest income	(434)	1,003	(136)	215	(77)	110	(647)	1,329
Interest income	109	130	86	88	44	44	238	262
Employer contributions	308	356	0	0	51	100	360	456
Plan participant contributions	137	157	0	0	0	0	137	157
Benefit payments	(586)	(782)	(202)	(256)	(112)	(109)	(900)	(1,147)
Administration expenses, taxes and premiums paid	(7)	(7)	0	0	(3)	(4)	(10)	(12)
Other movements <sup>2</sup>	0	(9,541)	0	0	0	0	0	(9,541)
Foreign currency translation	(144)	889	(185)	302	0	0	(328)	1,191
<b>Fair value of plan assets at the end of the year</b>	<b>15,772</b>	<b>16,388</b>	<b>3,032</b>	<b>3,469</b>	<b>1,168</b>	<b>1,265</b>	<b>19,972</b>	<b>21,122</b>
Asset ceiling effect at the beginning of the year	1,990	1,718	0	0	0	0	1,990	1,718
Interest expense on asset ceiling effect	14	9	0	0	0	0	14	9
Asset ceiling effect excluding interest expense and foreign currency translation on asset ceiling effect	30	1,013	0	0	0	0	30	1,013
Other movements <sup>2</sup>	0	(821)	0	0	0	0	0	(821)
Foreign currency translation	(36)	71	0	0	0	0	(36)	71
<b>Asset ceiling effect at the end of the year</b>	<b>1,998</b>	<b>1,990</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,998</b>	<b>1,990</b>
<b>Net defined benefit asset / (liability)</b>	<b>0</b>	<b>0</b>	<b>(160)</b>	<b>(275)</b>	<b>(511)</b>	<b>(550)</b>	<b>(671)</b>	<b>(825)</b>
<b>Movement in the net asset / (liability) recognized on the balance sheet</b>								
<b>Net asset / (liability) recognized on the balance sheet at the beginning of the year</b>	<b>0</b>	<b>0</b>	<b>(275)</b>	<b>(519)</b>	<b>(550)</b>	<b>(601)</b>	<b>(825)</b>	<b>(1,120)</b>
Net periodic expenses recognized in net profit	(108)	(307)	(11)	(15)	(22)	(31)	(141)	(354)
Gains / (losses) recognized in other comprehensive income	(201)	(56)	130	304	(8)	28	(79)	276
Employer contributions	308	356	0	0	51	100	360	456
Other movements	0	8	0	0	0	0	0	8
Foreign currency translation	0	0	(4)	(45)	18	(47)	14	(91)
<b>Net asset / (liability) recognized on the balance sheet at the end of the year</b>	<b>0</b>	<b>0</b>	<b>(160)</b>	<b>(275)</b>	<b>(511)</b>	<b>(550)</b>	<b>(671)</b>	<b>(825)</b>
<b>Funded and unfunded plans</b>								
Defined benefit obligation from funded plans	13,774	14,398	3,192	3,744	1,219	1,324	18,184	19,466
Defined benefit obligation from unfunded plans	0	0	0	0	460	492	460	492
Plan assets	15,772	16,388	3,032	3,469	1,168	1,265	19,972	21,122
<b>Surplus / (deficit)</b>	<b>1,998</b>	<b>1,990</b>	<b>(160)</b>	<b>(275)</b>	<b>(511)</b>	<b>(550)</b>	<b>1,327</b>	<b>1,165</b>
<b>Asset ceiling effect</b>	<b>1,998</b>	<b>1,990</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,998</b>	<b>1,990</b>
<b>Net defined benefit asset / (liability)</b>	<b>0</b>	<b>0</b>	<b>(160)</b>	<b>(275)</b>	<b>(511)</b>	<b>(550)</b>	<b>(671)</b>	<b>(825)</b>

<sup>1</sup> 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. <sup>2</sup> Primarily reflects the transfer of employees from UBS AG to UBS Business Solutions AG.

## Note 29 Pension and other post-employment benefit plans (continued)

### Analysis of amounts recognized in net profit

<i>USD million</i>	Swiss plan		UK plan		US and German plans		Total	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
For the year ended								
Current service cost	251	330	0	0	7	9	258	338
Interest expense related to defined benefit obligation	93	119	93	102	55	63	241	284
Interest income related to plan assets	(109)	(130)	(86)	(88)	(44)	(44)	(238)	(262)
Interest expense on asset ceiling effect	14	9	0	0	0	0	14	9
Administration expenses, taxes and premiums paid	7	7	0	0	3	4	10	12
Past service cost related to plan amendments	(132)	0	4	0	0	0	(128)	0
Curtailments	(17)	(28)	0	0	0	0	(17)	(28)
<b>Net periodic expenses recognized in net profit</b>	<b>108</b>	<b>307</b>	<b>11</b>	<b>15</b>	<b>22</b>	<b>31</b>	<b>141</b>	<b>354</b>

### Analysis of amounts recognized in other comprehensive income (OCI)

<i>USD million</i>	Swiss plan		UK plan		US and German plans		Total	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
For the year ended								
Remeasurement of defined benefit obligation	263	(47)	266	88	69	(82)	598	(40)
Return on plan assets excluding amounts included in interest income	(434)	1,003	(136)	215	(77)	110	(647)	1,329
Asset ceiling effect excluding interest expense and foreign currency translation on asset ceiling effect	(30)	(1,013)	0	0	0	0	(30)	(1,013)
<b>Total gains / (losses) recognized in other comprehensive income, before tax</b>	<b>(201)</b>	<b>(56)</b>	<b>130</b>	<b>304</b>	<b>(8)</b>	<b>28</b>	<b>(79)</b>	<b>276</b>

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

	Swiss plan		UK plan		US and German plans <sup>1</sup>	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
<b>Duration of the defined benefit obligation (in years)</b>	<b>14.5</b>	<b>15.1</b>	<b>19.5</b>	<b>20.0</b>	<b>9.8</b>	<b>10.6</b>
<b>Maturity analysis of benefits expected to be paid</b>						
<i>USD million</i>						
Benefits expected to be paid within 12 months	704	707	82	83	108	108
Benefits expected to be paid between 1 and 3 years	1,439	1,425	187	182	216	217
Benefits expected to be paid between 3 and 6 years	2,170	2,139	345	337	336	330
Benefits expected to be paid between 6 and 11 years	3,446	3,412	701	717	566	572
Benefits expected to be paid between 11 and 16 years	3,140	3,170	770	806	494	514
Benefits expected to be paid in more than 16 years	10,253	10,723	3,927	4,325	798	887

<sup>1</sup> The duration of the defined benefit obligation represents a weighted average across US and German plans.

## Note 29 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 significant 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 or 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 each of these plans, an increase in the interest credit rate increases the plan's DBO.
- Life expectancy: most of UBS AG's defined benefit pension plans are 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 2018, a net gain of USD 263 million was recognized in *Other comprehensive income* (OCI) related to the remeasurement of the DBO. This was primarily due to a market-driven increase in the discount rate, which resulted in an OCI gain of USD 478 million. This effect was partly offset by experience losses of USD 128 million, reflecting differences between the previous actuarial assumptions and what actually occurred, and market-driven changes to the assumed rate of interest credit on retirement savings, which resulted in a loss of USD 77 million. Changes in other assumptions were not significant.

In 2017, a net loss of USD 47 million was recognized in 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 USD 159 million. This effect was partially offset by experience gains of USD 92 million and market-driven changes to the assumed rate of interest credit on retirement savings, which resulted in a gain of USD 25 million. Changes in other assumptions were not significant.

#### UK pension plan

In 2018, a net gain of USD 266 million was recognized in OCI related to the remeasurement of the DBO for the UK plan. This was primarily due to a market-driven increase in the discount rate, which resulted in an OCI gain of USD 219 million, as well as changes in the pension increase assumption, which resulted in an OCI gain of USD 37 million.

In 2017, a net gain of USD 88 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 USD 82 million. In addition, market-driven changes in the inflation rate assumption resulted in a gain of USD 60 million and experience gains were USD 50 million. These gains were partly offset by a market-driven decrease in the discount rate, which resulted in a loss of USD 102 million.

#### US and German pension plans

In 2018, a net gain of USD 69 million was recognized in OCI related to the remeasurement of the DBO for the US and German plans, compared with a net loss of USD 82 million in 2017. OCI gains and losses in both years were primarily driven by market-driven movements in discount rates.

## Note 29 Pension and other post-employment benefit plans (continued)

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

### Significant actuarial assumptions used

In %	Swiss plan		UK plan		US and German plans <sup>1</sup>	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate	0.92	0.67	2.90	2.55	3.69	3.14
Rate of salary increase	1.50	1.30	0.00	0.00	2.81	2.83
Rate of pension increase	0.00	0.00	3.10	3.11	1.50	1.50
Rate of interest credit on retirement savings	0.92	0.67	0.00	0.00	3.70	2.56

<sup>1</sup> Represents weighted average assumptions across US and German plans.

### Mortality tables and life expectancies for major plans

Country	Mortality table	Life expectancy at age 65 for a male member currently			
		aged 65		aged 45	
		31.12.18	31.12.17	31.12.18	31.12.17
Switzerland	BVG 2015 G with CMI 2016 projections	21.6	21.6	23.1	23.0
UK	S2PA with CMI 2017 projections <sup>1</sup>	23.4	23.4	24.6	24.6
USA	RP2014 WCHA with MP2018 projection scale <sup>2</sup>	22.8	22.8	24.3	24.4
Germany	Dr. K. Heubeck 2018 G <sup>3</sup>	20.5	20.3	23.3	22.9

Country	Mortality table	Life expectancy at age 65 for a female member currently			
		aged 65		aged 45	
		31.12.18	31.12.17	31.12.18	31.12.17
Switzerland	BVG 2015 G with CMI 2016 projections	23.5	23.4	25.0	24.9
UK	S2PA with CMI 2017 projections <sup>1</sup>	25.2	25.2	26.5	26.5
USA	RP2014 WCHA with MP2018 projection scale <sup>2</sup>	24.4	24.4	26.0	26.0
Germany	Dr. K. Heubeck 2018 G <sup>3</sup>	24.1	24.3	26.3	26.8

<sup>1</sup> In 2017, the mortality table S2PA with CMI 2016 projections was used. <sup>2</sup> In 2017, the mortality table RP2014 WCHA with MP2017 projection scale was used. <sup>3</sup> In 2017, the mortality table Dr. K. Heubeck 2005 G 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<sup>1</sup>

Increase / (decrease) in defined benefit obligation USD million	Swiss plan		UK plan		US and German plans	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
<b>Discount rate</b>						
Increase by 50 basis points	(797)	(898)	(292)	(350)	(77)	(90)
Decrease by 50 basis points	904	1,021	333	401	84	98
<b>Rate of salary increase</b>						
Increase by 50 basis points	45	61	-2	-2	1	1
Decrease by 50 basis points	(43)	(58)	-2	-2	(1)	(1)
<b>Rate of pension increase</b>						
Increase by 50 basis points	643	726	260	380	6	7
Decrease by 50 basis points	-3	-3	(262)	(336)	(6)	(7)
<b>Rate of interest credit on retirement savings</b>						
Increase by 50 basis points	141	168	-4	-4	9	9
Decrease by 50 basis points	(134)	(159)	-4	-4	(9)	(9)
<b>Life expectancy</b>						
Increase in longevity by one additional year	446	497	122	143	42	48

<sup>1</sup> 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. <sup>2</sup> As the plan is closed for future service, a change in assumption is not applicable. <sup>3</sup> As the assumed rate of pension increase was 0% as of 31 December 2018 and as of 31 December 2017, a downward change in assumption is not applicable. <sup>4</sup> As the UK plan does not provide interest credits on retirement savings, a change in assumption is not applicable.

## Note 29 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

USD million	31.12.18			Plan asset allocation %	31.12.17			Plan asset allocation %
	Fair value				Fair value			
	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
<b>Cash and cash equivalents</b>	<b>83</b>	<b>0</b>	<b>83</b>	<b>1</b>	74	0	74	0
<b>Real estate / property</b>								
Domestic	0	1,808	1,808	11	0	1,758	1,758	11
<b>Investment funds</b>								
Equity								
Domestic	383	0	383	2	410	0	410	3
Foreign	3,492	925	4,417	28	4,615	818	5,433	33
Bonds <sup>1</sup>								
Domestic, AAA to BBB-	1,569	0	1,569	10	1,401	0	1,401	9
Foreign, AAA to BBB-	3,781	0	3,781	24	3,919	0	3,919	24
Foreign, below BBB-	544	0	544	3	355	0	355	2
Real estate								
Foreign	0	7	7	0	0	14	14	0
Other	316	2,528	2,844	18	529	2,486	3,016	18
<b>Other investments</b>	<b>324</b>	<b>11</b>	<b>335</b>	<b>2</b>	0	8	8	0
<b>Total fair value of plan assets</b>	<b>10,493</b>	<b>5,279</b>	<b>15,772</b>	<b>100</b>	11,304	5,084	16,388	100
			<b>31.12.18</b>				<b>31.12.17</b>	
<b>Total fair value of plan assets</b>			<b>15,772</b>				<b>16,388</b>	
<i>of which:<sup>2</sup></i>								
Bank accounts at UBS AG			80				120	
UBS AG debt instruments			8				3	
UBS Group AG shares			15				34	
Securities lent to UBS AG <sup>3</sup>			957				2,030	
Property occupied by UBS AG			54				85	
Derivative financial instruments, counterparty UBS AG <sup>3</sup>			21				23	

<sup>1</sup> 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 Standard & Poor's rating classification. <sup>2</sup> 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. <sup>3</sup> 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 2018 and 31 December 2017. Net of collateral, derivative financial instruments amounted to USD 6 million as of 31 December 2018 (31 December 2017: USD 12 million).

## Note 29 Pension and other post-employment benefit plans (continued)

### Composition and fair value of plan assets (continued)

#### UK plan

	31.12.18			Plan asset allocation %	31.12.17			Plan asset allocation %
	Fair value				Fair value			
	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
<i>USD million</i>								
<b>Cash and cash equivalents</b>	<b>143</b>	<b>0</b>	<b>143</b>	<b>5</b>	163	0	163	5
<b>Bonds<sup>1</sup></b>								
Domestic, AAA to BBB–	1,604	0	1,604	53	1,709	0	1,709	49
Domestic, below BBB–	0	0	0	0	1	0	1	0
<b>Investment funds</b>								
Equity								
Domestic	26	0	26	1	31	0	31	1
Foreign	658	0	658	22	1,046	0	1,046	30
Bonds <sup>1</sup>								
Domestic, AAA to BBB–	587	93	680	22	641	83	724	21
Domestic, below BBB–	15	0	15	0	21	0	21	1
Foreign, AAA to BBB–	258	0	258	9	147	0	147	4
Foreign, below BBB–	51	0	51	2	57	0	57	2
Real estate								
Domestic	102	28	131	4	103	28	131	4
Other	0	0	0	0	(4)	5	1	0
<b>Asset-backed securities</b>	<b>21</b>	<b>2</b>	<b>22</b>	<b>1</b>	0	0	0	0
<b>Other investments<sup>2</sup></b>	<b>(565)</b>	<b>9</b>	<b>(556)</b>	<b>(18)</b>	(575)	11	(563)	(16)
<b>Total fair value of plan assets</b>	<b>2,900</b>	<b>132</b>	<b>3,032</b>	<b>100</b>	3,341	127	3,469	100

<sup>1</sup> 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 Standard & Poor's rating classification. <sup>2</sup> Mainly relates to repurchase arrangements on UK treasury bonds.



## Note 29 Pension and other post-employment benefit plans (continued)

### Composition and fair value of plan assets (continued)

#### US plans

	31.12.18				31.12.17			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
<i>USD million</i>								
<b>Cash and cash equivalents</b>	27	0	27	2	76	0	76	6
<b>Bonds<sup>1</sup></b>								
Domestic, AAA to BBB–	462	0	462	40	200	0	200	16
Domestic, below BBB–	2	0	2	0	10	0	10	1
Foreign, AAA to BBB–	92	0	92	8	46	0	46	4
Foreign, below BBB–	3	0	3	0	1	0	1	0
<b>Investment funds</b>								
Equity								
Domestic	143	0	143	12	298	0	298	24
Foreign	157	0	157	13	277	0	277	22
Bonds <sup>1</sup>								
Domestic, AAA to BBB–	104	0	104	9	216	0	216	17
Domestic, below BBB–	23	0	23	2	20	0	20	2
Foreign, AAA to BBB–	56	0	56	5	47	0	47	4
Foreign, below BBB–	6	0	6	1	5	0	5	0
Real estate								
Domestic	0	13	13	1	0	13	13	1
Other	64	0	64	5	21	0	21	2
<b>Insurance contracts</b>	0	17	17	1	0	18	18	1
<b>Asset-backed securities</b>	0	0	0	0	15	0	15	1
<b>Other investments</b>	0	0	0	0	4	0	4	0
<b>Total fair value of plan assets</b>	<b>1,139</b>	<b>29</b>	<b>1,168</b>	<b>100</b>	<b>1,235</b>	<b>31</b>	<b>1,265</b>	<b>100</b>

<sup>1</sup> 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 Standard & Poor's rating classification.



## Note 29 Pension and other post-employment benefit plans (continued)

### 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. In the US, retiree medical premiums are subsidized for eligible participants who retired before 2014.

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

In 2018, UBS AG announced changes to one of the US post-employment medical insurance plans that replaced the UBS AG retiree medical subsidy with a new subsidy to purchase medical coverage through a private Medicare exchange. This change

reduced the post-employment benefit obligation by USD 14 million, resulting in a corresponding gain recognized in the income statement in 2018.

The benefits expected to be paid by UBS AG to the post-employment medical insurance plans in 2019 are estimated at USD 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 insurance plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

#### Post-employment medical insurance plans

USD million	UK plan		US plans		Total	
	2018	2017	2018	2017	2018	2017
Post-employment benefit obligation at the beginning of the year	27	26	61	64	88	90
Current service cost	0	0	0	0	0	0
Interest expense	1	1	2	2	3	3
Plan participant contributions	0	0	3	3	3	3
Remeasurements	(3)	(1)	(4)	0	(7)	(1)
of which: actuarial (gains) / losses due to changes in demographic assumptions	0	0	0	0	0	(1)
of which: actuarial (gains) / losses due to changes in financial assumptions	(1)	(1)	(4)	2	(5)	2
of which: experience (gains) / losses <sup>1</sup>	(2)	0	0	(2)	(2)	(2)
Past service cost related to plan amendments	0	0	(14)	0	(14)	0
Benefit payments <sup>2</sup>	(1)	(1)	(7)	(8)	(9)	(9)
Foreign currency translation	(1)	2	0	0	(1)	2
<b>Post-employment benefit obligation at the end of the year</b>	<b>22</b>	<b>27</b>	<b>40</b>	<b>61</b>	<b>62</b>	<b>88</b>
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	17	21	40	61	56	81
Fair value of plan assets at the end of the year	0	0	0	0	0	0
<b>Net post-employment benefit asset / (liability)</b>	<b>(22)</b>	<b>(27)</b>	<b>(40)</b>	<b>(61)</b>	<b>(62)</b>	<b>(88)</b>

#### 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	2	3	3
Past service cost related to plan amendments	0	0	(14)	0	(14)	0
<b>Net periodic expenses</b>	<b>1</b>	<b>1</b>	<b>(12)</b>	<b>2</b>	<b>(11)</b>	<b>3</b>

#### Analysis of amounts recognized in other comprehensive income (OCI)

Remeasurement of post-employment benefit obligation	3	1	4	0	7	1
<b>Total gains / (losses) recognized in other comprehensive income, before tax</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>7</b>	<b>1</b>

<sup>1</sup> 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. <sup>2</sup> Benefit payments are funded by employer contributions and plan participant contributions.

## Note 29 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 significant 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. Significant actuarial assumptions used to determine post-employment benefit obligations at the end of the year were:

### Significant actuarial assumptions used<sup>1</sup>

In %	UK plan		US plans <sup>2</sup>	
	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate	2.90	2.55	4.20	3.54
Average health care cost trend rate – initial	5.10	5.10	7.79	7.99
Average health care cost trend rate – ultimate	5.10	5.10	4.50	4.50

<sup>1</sup> The assumptions for life expectancies are provided within Note 29a. <sup>2</sup> 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<sup>1</sup>

Increase / (decrease) in post-employment benefit obligation USD million	UK plan		US plans	
	31.12.18	31.12.17	31.12.18	31.12.17
<b>Discount rate</b>				
Increase by 50 basis points	(1)	(2)	(2)	(3)
Decrease by 50 basis points	1	2	2	3
<b>Average health care cost trend rate</b>				
Increase by 100 basis points	3	4	1	1
Decrease by 100 basis points	(3)	(3)	0	(1)
<b>Life expectancy</b>				
Increase in longevity by one additional year	2	2	2	4

<sup>1</sup> 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 2018, 2017 and 2016, amounted to USD 223 million, USD 236 million and USD 238 million, respectively.

## Note 29 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 2018, the minimum commitment toward the Swiss pension fund under the related

leases was approximately USD 10 million (31 December 2017: USD 5 million).

→ Refer to the "Composition and fair value of plan assets" table in Note 29a for more information on fair value of investments in UBS AG and UBS Group 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

USD million	For the year ended		
	31.12.18	31.12.17	31.12.16
<b>Received by UBS AG</b>			
Fees	22	36	36
<b>Paid by UBS AG</b>			
Rent	3	5	5
Dividends, capital repayments and interest	10	10	14

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	
	31.12.18	31.12.17
<b>Financial instruments bought by pension funds</b>		
UBS Group AG shares (in thousands of shares)	831	905
UBS AG debt instruments (par values, USD million)	9	2
<b>Financial instruments sold by pension funds or matured</b>		
UBS Group AG shares (in thousands of shares)	547	2,897
UBS AG debt instruments (par values, USD million)	2	4

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

	31.12.18	31.12.17
Number of shares (in thousands of shares)	15,934	16,370
Fair value (USD million)	197	301

## Note 30 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 and other employees with the interests of investors. These compensation plans are also designed to meet regulatory requirements. The most significant compensation plans are described below.

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 deferred compensation plans

#### Mandatory deferred compensation plans

##### Equity Ownership Plan (EOP)

The EOP is a mandatory deferred share-based compensation plan for all employees with total annual compensation greater than USD / CHF 300,000.

EOP awards granted to GEB members and certain other employees will only vest if both Group and business division performance conditions are met. For all awards granted for the performance year 2017 (awarded in early 2018) and before, the Group performance condition is based on the average adjusted return on tangible equity (RoTE) excluding deferred tax assets over the performance period. Starting with the EOP awards granted in 2019 for the performance year 2018, the Group performance condition is based on the average reported return on common equity tier 1 capital (RoCET1). Business division performance is measured on the basis of their average adjusted return on attributed equity (RoAE). For Corporate Center employees, it is measured on the basis of the average operating businesses' adjusted 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 prior to 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, starting with awards granted for the performance year 2017, European Banking Authority guidelines do not permit

individuals who are deemed to be Material Risk Takers (MRTs) to receive dividend or interest payments on instruments awarded as deferred variable remuneration. Where dividend payments are not permitted, the grant price of the EOP award is adjusted for the expected dividend yield over the vesting period to reflect the fair value of the non-dividend-bearing award.

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 annual compensation greater than USD / CHF 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 at the discretion of UBS can be settled in either a cash payment or a perpetual, marketable AT1 capital instrument. DCCP awards vest in full after five years, and up to seven years for UK senior management functions, unless there is a trigger event.

Awards are 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 UBS receives a commitment of extraordinary support from the public sector that is necessary to prevent such an event. Additionally, they are written down if the Group's common equity tier 1 capital ratio falls below 10% for GEB members and below 7% for all other employees. 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. Where interest payments are not permitted, such as for MRTs, the DCCP award reflects the fair value of the granted non-interest-bearing award.

The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

## Note 30 Employee benefits: variable compensation (continued)

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### 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.

### Financial advisor variable compensation

In line with market practice for US wealth management businesses, the compensation for US financial advisors in Global Wealth Management is comprised of production payout and deferred compensation awards. Production payout is primarily based on compensable revenue and is paid monthly.

Financial advisors may also qualify for deferred compensation awards, which generally vest over a six-year period. The awards are based on strategic performance measures, including production, length of service with the firm and net new business. 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 company contributions), participants were allowed to voluntarily contribute additional amounts otherwise payable as production payout up to a certain percentage, which vested upon contribution. Company contributions and voluntary contributions were credited with interest in accordance with the terms of the plan. Rather than being credited with interest, a participant could 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 10 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 2018. The awards are cash-based and are distributed over seven years, with the exception of 2018 awards, which are 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 employed by UBS, 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 fixed, non-forfeitable compensation. Unlike salary, an RBA is paid only as long as the employee is in such a role. RBAs consist of a cash portion and, where applicable, a blocked UBS share award. Such shares will be unblocked in equal installments after two and three years. The compensation expense is recognized in the year of grant.

## Note 30 Employee benefits: variable compensation (continued)

### Discontinued deferred compensation plans

The following plans have been discontinued. Expenses related to these plans were fully recognized in the income statement in periods prior to 2018. Any remaining outstanding options and stock appreciation rights under these awards will expire during 2019.

#### 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 market value of a UBS share on the grant date. These awards vested in full following a three-year vesting period and generally expired 10 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 30 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 variable compensation, that were recognized in the financial year ended 31 December 2018, as well as expenses that were deferred

and will be recognized in the income statement for 2019 and later. The majority of expenses deferred to 2019 and later that are related to the performance year 2018 relates to awards granted in March 2019. The total compensation expense for unvested share-based awards granted up to 31 December 2018 will be recognized in future periods over a weighted average period of 2.3 years.

#### Variable compensation including financial advisor variable compensation

USD million	Expenses recognized in 2018			Expenses deferred to 2019 and later		
	Related to the performance year 2018	Related to prior performance years	Total	Related to the performance year 2018	Related to prior performance years	Total
Non-deferred cash	1,896	(26)	1,870	0	0	0
Deferred compensation awards	360	564	924	570	638	1,208
of which: Equity Ownership Plan	208	299	507	316	238	554
of which: Deferred Contingent Capital Plan	126	235	361	232	373	605
of which: Asset Management EOP	25	28	53	22	26	48
of which: Other performance awards	0	2	2	0	1	1
<b>Total variable compensation – performance awards</b>	<b>2,256</b>	<b>538</b>	<b>2,794</b>	<b>570</b>	<b>638</b>	<b>1,208</b>
Replacement payments	7	61	68	58	40	99
Forfeiture credits	0	(136)	(136)	0	0	0
Severance payments	106	0	106	0	0	0
Retention plan and other payments	31	33	64	23	33	56
Deferred Contingent Capital Plan: interest expense	0	116	116	96	191	288
<b>Total variable compensation – other</b>	<b>144</b>	<b>75</b>	<b>220</b>	<b>178</b>	<b>264</b>	<b>442</b>
Financial advisor variable compensation	3,233	237	3,470	128	639	767
of which: non-deferred cash	3,089	0	3,089	0	0	0
of which: deferred share-based awards	51	44	95	52	131	183
of which: deferred cash-based awards	93	193	286	76	507	584
Compensation commitments with recruited financial advisors <sup>1</sup>	33	551	584	357	1,883	2,240
<b>Total financial advisor variable compensation</b>	<b>3,266</b>	<b>789</b>	<b>4,054</b>	<b>484</b>	<b>2,522</b>	<b>3,006</b>
<b>Total variable compensation including FA variable compensation</b>	<b>5,666</b>	<b>1,402</b>	<b>7,068<sup>2</sup></b>	<b>1,233</b>	<b>3,424</b>	<b>4,656</b>

<sup>1</sup> 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. <sup>2</sup> Includes USD 612 million in expenses related to share-based compensation (performance awards: USD 507 million; other variable compensation: USD 10 million; financial advisor compensation: USD 95 million). A further USD 44 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 15 million, related to role-based allowances; Social security: USD 7 million; Other personnel expenses: USD 22 million, related to the Equity Plus Plan).

## Note 30 Employee benefits: variable compensation (continued)

### Variable compensation including financial advisor variable compensation (continued)

USD million	Expenses recognized in 2017			Expenses deferred to 2018 and later		
	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	1,982	(24)	1,958	0	0	0
Deferred compensation awards	392	704	1,096	589	685	1,274
<i>of which: Equity Ownership Plan</i>	235	364	599	322	286	608
<i>of which: Deferred Contingent Capital Plan</i>	132	304	436	240	369	609
<i>of which: Asset Management EOP</i>	25	32	57	27	27	54
<i>of which: Other performance awards</i>	0	4	4	0	3	3
<b>Total variable compensation – performance awards</b>	<b>2,373</b>	<b>680</b>	<b>3,054</b>	<b>589</b>	<b>685</b>	<b>1,274</b>
Replacement payments	12	58	70	82	41	123
Forfeiture credits	0	(106)	(106)	0	0	0
Severance payments	95	0	95	0	0	0
Retention plan and other payments	24	38	62	30	32	62
Deferred Contingent Capital Plan: interest expense	0	110	110	80	218	297
<b>Total variable compensation – other</b>	<b>131</b>	<b>99</b>	<b>231</b>	<b>191</b>	<b>291</b>	<b>482</b>
Financial advisor variable compensation	3,050	260	3,310	156	795	951
<i>of which: non-deferred cash</i>	2,891	0	2,891	0	0	0
<i>of which: deferred share-based awards</i>	54	48	102	70	121	191
<i>of which: deferred cash-based awards</i>	104	212	316	86	674	760
Compensation commitments with recruited financial advisors <sup>1</sup>	31	723	754	369	2,058	2,429
<b>Total financial advisor variable compensation</b>	<b>3,080</b>	<b>984</b>	<b>4,064</b>	<b>526</b>	<b>2,853</b>	<b>3,379</b>
<b>Total variable compensation including FA variable compensation</b>	<b>5,585</b>	<b>1,764</b>	<b>7,349<sup>2</sup></b>	<b>1,306</b>	<b>3,829</b>	<b>5,135</b>

<sup>1</sup> 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. <sup>2</sup> Includes USD 726 million in expenses related to share-based compensation (performance awards: USD 599 million; other variable compensation: USD 25 million; financial advisor compensation: USD 102 million). A further USD 97 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 25 million, related to role-based allowances; Social security: USD 49 million; Other personnel expenses: USD 23 million, related to the Equity Plus Plan).



### Note 30 Employee benefits: variable compensation (continued)

#### Variable compensation including financial advisor variable compensation (continued)

USD million	Expenses recognized in 2016			Expenses deferred to 2017 and later		
	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	1,833	(42)	1,791	0	0	0
Deferred compensation awards	379	835	1,214	646	840	1,486
<i>of which: Equity Ownership Plan</i>	217	491	708	256	349	605
<i>of which: Deferred Contingent Capital Plan</i>	136	299	435	358	460	818
<i>of which: Asset Management EOP</i>	26	39	66	32	26	58
<i>of which: Other performance awards</i>	0	6	6	0	5	5
<b>Total variable compensation – performance awards</b>	<b>2,212</b>	<b>793</b>	<b>3,005</b>	<b>646</b>	<b>840</b>	<b>1,486</b>
Replacement payments	25	62	87	40	30	70
Forfeiture credits	0	(74)	(74)	0	0	0
Severance payments	220	0	220	0	0	0
Retention plan and other payments	26	51	78	23	26	50
Deferred Contingent Capital Plan: interest expense	0	113	113	96	239	335
<b>Total variable compensation – other</b>	<b>271</b>	<b>153</b>	<b>425</b>	<b>159</b>	<b>296</b>	<b>455</b>
Financial advisor variable compensation	2,682	250	2,931	194	877	1,071
<i>of which: non-deferred cash</i>	2,534	0	2,534	0	0	0
<i>of which: deferred share-based awards</i>	34	49	82	57	117	174
<i>of which: deferred cash-based awards</i>	114	201	315	137	760	897
Compensation commitments with recruited financial advisors <sup>1</sup>	43	765	808	596	2,084	2,679
<b>Total financial advisor variable compensation</b>	<b>2,725</b>	<b>1,015</b>	<b>3,740</b>	<b>790</b>	<b>2,961</b>	<b>3,750</b>
<b>Total variable compensation including FA variable compensation</b>	<b>5,208</b>	<b>1,961</b>	<b>7,170<sup>2</sup></b>	<b>1,595</b>	<b>4,096</b>	<b>5,691</b>

<sup>1</sup> 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. <sup>2</sup> Includes USD 830 million in expenses related to share-based compensation (performance awards: USD 708 million; other variable compensation: USD 40 million; financial advisor compensation: USD 82 million). A further USD 90 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 39 million, related to role-based allowances; Social security: USD 27 million; Other personnel expenses: USD 24 million, related to the Equity Plus Plan).

## Note 30 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 during 2018 and 2017 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 2018	Weighted average grant date fair value (USD)	Number of shares 2017	Weighted average grant date fair value (USD)
Outstanding, at the beginning of the year	404,720	15	512,185	16
Shares awarded during the year	26,005	13	117,082	14
Distributions during the year	(228,932)	15	(212,984)	17
Forfeited during the year	0	0	(11,563)	15
Outstanding, at the end of the year	201,793	15	404,720	15
<i>of which: shares vested for accounting purposes</i>	<i>133,225</i>		<i>132,117</i>	

The total carrying amount of the liability related to cash-settled share-based awards as of 31 December 2018 and 31 December 2017 was USD 2 million and USD 5 million, respectively.

### d) Valuation

#### Share awards

UBS AG measures compensation expense based on the average market price of the UBS 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 weighted average discount for share and performance share awards granted during 2018 was approximately 18.0% (2017: 20.2%) of the market price of the UBS share. 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 31 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 2018. 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. Share capital is provided in the currency of the legally registered office.

#### Individually significant subsidiaries as of 31 December 2018<sup>1</sup>

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 <sup>2</sup>	100.0
UBS Asset Management AG	Zurich, Switzerland	Asset Management	CHF 43.2	100.0
UBS Bank USA	Salt Lake City, Utah, USA	Global Wealth Management	USD 0.0	100.0
UBS Europe SE	Frankfurt, Germany	Global Wealth Management	EUR 446.0	100.0
UBS Financial Services Inc.	Wilmington, Delaware, USA	Global Wealth Management	USD 0.0	100.0
UBS Limited	London, United Kingdom	Investment Bank	GBP 226.6	100.0
UBS Securities LLC	Wilmington, Delaware, USA	Investment Bank	USD 1,283.1 <sup>3</sup>	100.0
UBS Switzerland AG	Zurich, Switzerland	Personal & Corporate Banking	CHF 10.0	100.0

<sup>1</sup> Includes direct and indirect subsidiaries of UBS AG. <sup>2</sup> Comprised of common share capital of USD 1,000 and non-voting preferred share capital of USD 2,250,000,000. <sup>3</sup> Comprised of common share capital of USD 100,000 and non-voting preferred share capital of USD 1,283,000,000.

## Note 31 Interests in subsidiaries and other entities (continued)

### Other subsidiaries

The table below lists other direct and indirect 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 2018

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 (Hong Kong) Limited	Hong Kong, Hong Kong	Asset Management	HKD 254.0	100.0
UBS Asset Management (Japan) Ltd	Tokyo, Japan	Asset Management	JPY 2,200.0	100.0
UBS Business Solutions US LLC	Wilmington, Delaware, USA	Corporate Center	USD 0.0	100.0
UBS Credit Corp.	Wilmington, Delaware, USA	Global Wealth Management	USD 0.0	100.0
UBS (France) S.A.	Paris, France	Global Wealth Management	EUR 133.0	100.0
UBS Fund Advisor, L.L.C.	Wilmington, Delaware, USA	Global Wealth Management	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 (Monaco) S.A.	Monte Carlo, Monaco	Global Wealth Management	EUR 49.2	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 <sup>1</sup>	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 Asset Management Life Ltd	London, United Kingdom	Asset Management	GBP 15.0	100.0

<sup>1</sup> Includes a nominal amount relating to redeemable preference shares.

### 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 2018 and 2017, UBS AG did not enter into any contractual obligation that could require UBS AG to provide financial support to consolidated SEs. In addition, UBS AG did not provide support, financial or otherwise, to a consolidated SE when UBS AG was not contractually obligated to do so, nor 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 31 Interests in subsidiaries and other entities (continued)

### b) Interests in associates and joint ventures

As of 31 December 2018 and 2017, 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.

UBS Securities China is no longer recognized as an investment in associate as of 31 December 2018 as this entity was consolidated following an increase in stake from 24.99% to 51% and UBS AG acquiring control in December 2018.

→ Refer to Note 32 for more information

In November 2018, SIX and Worldline entered into a strategic partnership in the cards business under which SIX transferred its existing cards business to Worldline and received a 27% stake in Worldline. UBS AG recognized a gain of USD 460 million in the income statement, proportional to UBS AG's 17.31% equity ownership in SIX.

#### Investments in associates and joint ventures

<i>USD million</i>	31.12.18	31.12.17
Carrying amount at the beginning of the year	1,045	947
Additions	3	3
Disposals <sup>1</sup>	(431)	0
Reclassifications <sup>2</sup>	(21)	0
Share of comprehensive income	529	100
<i>of which: share of net profit<sup>3</sup></i>	529	76
<i>of which: share of other comprehensive income<sup>4</sup></i>	1	24
Dividends received	(42)	(53)
Impairment	0	(7)
Foreign currency translation	16	55
<b>Carrying amount at the end of the year</b>	<b>1,099</b>	<b>1,045</b>
<i>of which: associates</i>	<i>1,066</i>	<i>1,014</i>
<i>of which: UBS Securities China<sup>1</sup></i>	<i>0</i>	<i>412</i>
<i>of which: SIX Group AG, Zurich<sup>5</sup></i>	<i>952</i>	<i>476</i>
<i>of which: other associates</i>	<i>114</i>	<i>127</i>
<i>of which: joint ventures</i>	<i>33</i>	<i>30</i>

<sup>1</sup> In December 2018, UBS AG increased its shareholding in UBS Securities China from 24.99% to 51%, acquiring control of the entity in accordance with IFRS 10, Consolidated Financial Statements. Upon acquisition of control, UBS AG derecognized its former investment in associate. Refer to Note 32 for more information. <sup>2</sup> Reflects reclassifications to Properties and other non-current assets held for sale. <sup>3</sup> For 2018, consists of USD 511 million from associates, of which USD 460 million reflected a valuation gain on the equity ownership in SIX related to the sale of SIX Payment Services to Worldline, and USD 18 million from joint ventures. For 2017, consists of USD 61 million from associates and USD 15 million from joint ventures. <sup>4</sup> For 2018, the total of USD 1 million is from associates. For 2017, consists of USD 24 million from associates and negative USD 1 million from joint ventures. <sup>5</sup> In 2018, UBS AG's equity interest amounts to 17.31%. UBS AG is represented on the Board of Directors.

## Note 31 Interests in subsidiaries and other entities (continued)

### c) Interests in unconsolidated structured entities

During 2018, 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, that UBS did not consolidate as of 31 December 2018 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

USD million, except where indicated	31.12.18				Maximum exposure to loss <sup>1</sup>
	Securitization vehicles	Client vehicles	Investment funds	Total	
Financial assets at fair value held for trading	420	174	7,297	7,890	7,890
Derivative financial instruments	8	35	1	44	44
Loans and advances to customers			179	179	179
Financial assets at fair value not held for trading	87	48 <sup>2</sup>	85 <sup>3</sup>	220	1,796
Financial assets measured at fair value through other comprehensive income		3,931		3,931	3,931
Other financial assets measured at amortized cost	312	25 <sup>2</sup>		337	1,423
<b>Total assets</b>	<b>826<sup>4</sup></b>	<b>4,212</b>	<b>7,562</b>	<b>12,600</b>	
Derivative financial instruments	3 <sup>5</sup>	123	32	158	3
<b>Total liabilities</b>	<b>3</b>	<b>123</b>	<b>32</b>	<b>158</b>	
<b>Assets held by the unconsolidated structured entities in which UBS had an interest (USD billion)<sup>9</sup></b>	<b>63<sup>6</sup></b>	<b>69<sup>7</sup></b>	<b>385<sup>8</sup></b>		

USD million, except where indicated	31.12.17				Maximum exposure to loss <sup>1</sup>
	Securitization vehicles	Client vehicles	Investment funds	Total	
Financial assets at fair value held for trading	373	316	6,302	6,991	6,991
Derivative financial instruments	22	70	23	114	114
Loans and advances to customers			100	100	100
Financial assets at fair value not held for trading	86	68 <sup>2</sup>		154	1,718
Financial assets measured at fair value through other comprehensive income		3,965	46 <sup>3</sup>	4,011	4,011
Other financial assets measured at amortized cost	299	30 <sup>2</sup>		328	1,443
<b>Total assets</b>	<b>779<sup>4</sup></b>	<b>4,449</b>	<b>6,470</b>	<b>11,698</b>	
Derivative financial instruments	21 <sup>5</sup>	54	208	283	14
<b>Total liabilities</b>	<b>21</b>	<b>54</b>	<b>208</b>	<b>283</b>	
<b>Assets held by the unconsolidated structured entities in which UBS had an interest (USD billion)<sup>9</sup></b>	<b>58<sup>6</sup></b>	<b>80<sup>7</sup></b>	<b>422<sup>8</sup></b>		

<sup>1</sup> For the purpose of this disclosure, maximum exposure to loss amounts do not consider the risk-reducing effects of collateral or other credit enhancements. <sup>2</sup> Represents the carrying value of loan commitments. The maximum exposure to loss for these instruments is equal to the notional amount. <sup>3</sup> Upon adoption of IFRS 9 on 1 January 2018, investment fund units that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information. <sup>4</sup> As of 31 December 2018, USD 0.6 billion of the USD 0.8 billion (31 December 2017: USD 0.7 billion of the USD 0.8 billion) was held in Corporate Center – Non-core and Legacy Portfolio. <sup>5</sup> Comprised of credit default swap liabilities and other swap liabilities. The maximum exposure to loss for credit default swap liabilities 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. <sup>6</sup> Represents the principal amount outstanding. <sup>7</sup> Represents the market value of total assets. <sup>8</sup> 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. <sup>9</sup> In 2018 UBS has refined the methodology applied to identify significant interests in the scope of disclosure under IFRS 12, Disclosure of Interests in Other Entities. This change has been applied prospectively as the effect on interests disclosed was not material in prior periods. Had this methodology been applied in 2017, the interests in unconsolidated structured entities at 31 December 2017 would have been USD 0.3 million and USD 0.2 million lower for securitization vehicles and client vehicles, respectively. Assets held by the unconsolidated structured entities in which UBS had an interest at 31 December 2017 would have been USD 26 billion lower for securitization vehicles and USD 22 billion lower for client vehicles.

### Note 31 Interests in subsidiaries and other entities (continued)

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 2018 and 2017, 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 2018 and 2017, income and expenses from interests in unconsolidated SEs primarily resulted from mark-to-market movements recognized in other net income from fair value changes on financial instruments, 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 2018 and 31 December 2017, 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. The numbers outlined in this table may

differ from the securitization positions presented in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at [www.ubs.com/investors](http://www.ubs.com/investors), for the following reasons: (i) exclusion from the table on the following pages of synthetic securitizations transacted with entities that are not SEs and transactions in which UBS AG did not have an interest because it did not absorb any risk, (ii) a different measurement basis in certain cases (e.g., IFRS carrying value within the table above compared with net exposure amount at default for Pillar 3 disclosures) and (iii) different classification of vehicles viewed as sponsored by UBS AG versus sponsored by third parties.

→ **Refer to Note 1a item 1 for more information on the Group's accounting policies regarding consolidation and sponsorship of securitization vehicles and other structured entities**

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at [www.ubs.com/investors](http://www.ubs.com/investors) for more information**

#### Interests in client vehicles

As of 31 December 2018 and 31 December 2017, 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 in order 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 and the jurisdiction of incorporation, as well as fee schedules negotiated with clients. These fee contracts represent an interest in the fund as they align UBS AG's exposure with investors, providing a variable return 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 2018 or as of 31 December 2017.

## Note 31 Interests in subsidiaries and other entities (continued)

### Interests in unconsolidated securitization vehicles<sup>1</sup>

	31.12.18				Total
	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities <sup>2</sup>	Re-securitization <sup>3</sup>	
<i>USD million, except where indicated</i>					
<b>Sponsored by UBS</b>					
Interests in senior tranches	87	196		8	291
<i>of which: rated investment grade</i>		196			196
<i>of which: rated sub-investment grade</i>	87			8	95
<i>of which: not rated</i>		0			0
Interests in mezzanine tranches		13			13
<i>of which: rated investment grade</i>		12			12
<i>of which: not rated</i>		0			0
Interests in junior tranches	8	1			9
<i>of which: not rated</i>	8	1			9
<b>Total</b>	95	210		8	313
<i>of which: financial assets at fair value held for trading</i>	8	210		8	226
<i>of which: financial assets at fair value not held for trading</i>	87				87
<b>Total assets held by the vehicles in which UBS had an interest (USD billion)</b>	0	24		1	25
<b>Not sponsored by UBS</b>					
Interests in senior tranches	1	33	25	126	185
<i>of which: rated investment grade</i>	1	33	0	126	160
<i>of which: not rated</i>		0	25		25
Interests in mezzanine tranches	1	7			8
<i>of which: rated investment grade</i>		2			2
<i>of which: rated sub-investment grade</i>	1				1
<i>of which: defaulted</i>	0				0
<i>of which: not rated</i>	0	5			5
Interests in junior tranches	1				1
<i>of which: rated sub-investment grade</i>	1				1
<i>of which: defaulted</i>	0				0
<b>Total</b>	3	41	25	126	194
<i>of which: financial assets at fair value held for trading</i>	3	41	25	126	194
<b>Total assets held by the vehicles in which UBS had an interest (USD billion)</b>	2	12	22	1	37



## Note 31 Interests in subsidiaries and other entities (continued)

### Interests in unconsolidated securitization vehicles (continued)<sup>1</sup>

	31.12.17				Total
	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities <sup>2</sup>	Re-securitization <sup>3</sup>	
<i>USD million, except where indicated</i>					
<b>Sponsored by UBS</b>					
Interests in senior tranches	86	24	0	11	121
<i>of which: rated investment grade</i>	0	24	0		24
<i>of which: rated sub-investment grade</i>	86				86
<i>of which: defaulted</i>				11	11
Interests in junior tranches		9			9
<i>of which: rated investment grade</i>		9			9
<b>Total</b>	86	33	0	11	130
<i>of which: financial assets at fair value held for trading</i>		33	0	11	44
<i>of which: financial assets at fair value not held for trading</i>	86				86
<b>Total assets held by the vehicles in which UBS had an interest (USD billion)</b>	1	10	0	1	12
<b>Not sponsored by UBS</b>					
Interests in senior tranches	77	7	169	66	319
<i>of which: rated investment grade</i>	77	7	169	66	319
Interests in mezzanine tranches	9	1			9
<i>of which: rated investment grade</i>		1			1
<i>of which: defaulted</i>	9				9
Interests in junior tranches	1				1
<i>of which: rated sub-investment grade</i>	1				1
Tranche information not available	0				0
<i>of which: rated investment grade</i>	0				0
<i>of which: not rated</i>	0				0
<b>Total</b>	87	7	169	66	330
<i>of which: financial assets at fair value held for trading</i>	87	7	169	66	330
<b>Total assets held by the vehicles in which UBS had an interest (USD billion)<sup>4</sup></b>	19	5	20	0	44

<sup>1</sup> This table excludes receivables and derivative transactions with securitization vehicles. <sup>2</sup> Includes credit card, auto and student loan structures. <sup>3</sup> Includes collateralized debt obligations. <sup>4</sup> In 2018 UBS has refined the methodology applied to identify significant interests in the scope of disclosure under IFRS 12, Disclosure of Interests in Other Entities. This change has been applied prospectively as the effect on interests disclosed was not material in prior periods. Had this methodology been applied in 2017, the interests in unconsolidated securitization vehicles at 31 December 2017 would have been USD 0.3 million lower and the assets held by these unconsolidated securitization vehicles would have been USD 26 billion lower.

## Note 31 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 AG 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 other net income from fair value changes on financial instruments 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 2018, UBS AG and third parties transferred assets of USD 1 billion and USD 1 billion, respectively, into sponsored securitization vehicles created in the year (2017: USD 2 billion and USD 8 billion, respectively). UBS and third parties also transferred assets of USD 2 billion and USD 0 billion, respectively, into sponsored client vehicles created in the year (2017: USD 3 billion and USD 1 billion, respectively). For sponsored investment funds, transfers arose during the period as investors invested and redeemed positions, thereby changing the overall size of the funds, which, when combined with market movements, resulted in a total closing net asset value of USD 18 billion (31 December 2017: USD 15 billion).

### Sponsored unconsolidated structured entities in which UBS did not have an interest at year-end<sup>1</sup>

	As of or for the year ended			
	31.12.18			
	Securitization vehicles	Client vehicles	Investment funds	Total
<i>USD million, except where indicated</i>				
Net interest income	0	(6)	1	(5)
Net fee and commission income		16	39	54
Other net income from fair value changes on financial instruments	0	8	20	29
<b>Total income</b>	<b>1</b>	<b>18</b>	<b>60</b>	<b>78</b>
<b>Asset information (USD billion)</b>	<b>2<sup>2</sup></b>	<b>2<sup>3</sup></b>	<b>18<sup>4</sup></b>	

	As of or for the year ended			
	31.12.17			
	Securitization vehicles	Client vehicles	Investment funds	Total
<i>USD million, except where indicated</i>				
Net interest income	2	(9)	0	(7)
Net fee and commission income			41	41
Other net income from fair value changes on financial instruments	(8)	(50)	2	(56)
<b>Total income</b>	<b>(6)</b>	<b>(59)</b>	<b>43</b>	<b>(22)</b>
<b>Asset information (USD billion)</b>	<b>10<sup>2</sup></b>	<b>4<sup>3</sup></b>	<b>15<sup>4</sup></b>	

<sup>1</sup> For the year ended 31 December 2018, no profit attributable to non-controlling interests was excluded from the table (31 December 2017: USD 73 million). <sup>2</sup> Represents the amount of assets transferred to the respective securitization vehicles. <sup>3</sup> Represents the amount of assets transferred to the respective client vehicles. Information in the comparative period has been restated. Asset information as of 31 December 2017 has decreased by USD 3 billion as a result. <sup>4</sup> Represents the total net asset value of the respective investment funds.

## Note 32 Changes in organization and acquisitions and disposals of subsidiaries and businesses

### Changes in Group structure and organization

#### UBS Business Solutions AG

In 2015, UBS Business Solutions AG was established as a direct subsidiary of UBS Group AG to act as the Group service company and UBS AG transferred the ownership of the majority of its existing service subsidiaries outside the US to UBS Business Solutions AG. In 2017, shared services functions in Switzerland and the UK were transferred from UBS AG to UBS Business Solutions AG. In 2017, UBS AG also completed the transfer of the shared services employees in the US to its US service company, UBS Business Solutions US LLC, a wholly owned subsidiary of UBS Americas Holding LLC.

#### UBS Europe SE

In 2016, 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, in order to establish UBS AG's new European legal entity, which is headquartered in Frankfurt, Germany.

The previously announced combined UK business transfer and cross-border merger of UBS Limited into UBS Europe SE took place on 1 March 2019.

#### Transfer of assets and liabilities from UBS Limited to UBS AG, London Branch

In the fourth quarter of 2018, clients and other counterparties of UBS Limited who can be serviced by UBS AG, London Branch were generally migrated to UBS AG, London Branch. Transactions affecting the businesses that were transferred which occurred on or after the transfer date were recorded in UBS AG, London Branch.

#### UBS Asset Management AG

In 2016, UBS AG transferred the majority of the operating subsidiaries of Asset Management to UBS Asset Management AG.

### Increase of stake in and consolidation of UBS Securities China

In December 2018, UBS AG increased its shareholding in UBS Securities China from 24.99% to 51%, acquiring control of the entity in accordance with IFRS 10, *Consolidated Financial Statements*. Upon acquisition of control, UBS AG remeasured its former 24.99% holding at fair value, resulting in a pre-tax loss of USD 270 million, recognized in *Other income*. In addition, a net foreign currency translation gain of USD 46 million was recognized upon derecognition of the former investment in associate, also in *Other income*.

The cost of acquisition of the additional 26.01% stake was USD 125 million. Upon consolidation, UBS AG recognized USD 102 million of goodwill and USD 278 million of other net assets. In addition, a non-controlling interest of USD 136 million was recognized.

### Acquisitions

In October 2018, UBS AG acquired certain assets and liabilities from Nordea's Luxembourg-based private banking business for a consideration of approximately EUR 120 million. As a result of the transaction, UBS AG recognized a total of EUR 1.1 billion of loans (mortgages, Lombard loans, overdrafts), EUR 1.3 billion of cash and EUR 2.4 billion of deposits, as well as approximately EUR 75 million of intangible assets and approximately EUR 50 million of goodwill, recognized in Global Wealth Management. In addition, UBS AG reported an increase of approximately EUR 9.5 billion in client assets, of which approximately EUR 6.1 billion count as invested assets.

### Sales and disposals of subsidiaries and businesses

In 2018, 2017 and 2016, no significant subsidiaries were removed from the scope of consolidation as a result of sales or disposals.

In the third quarter of 2018, UBS AG completed the sale of Widder Hotel, resulting in a pre-tax gain on sale of subsidiaries and businesses of USD 25 million and a pre-tax gain on sale of real estate of USD 31 million.

In 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 USD 153 million. Also in 2017, UBS AG completed the sale of a life insurance subsidiary within Global Wealth Management. A loss on sale of USD 24 million was recognized in 2016 relating to this transaction.

## Note 33 Operating leases and finance leases

Information on lease contracts classified as operating leases where UBS AG is the lessee is provided in Note 33a and information on finance leases where UBS AG acts as a lessor is provided in Note 33b.

### a) Operating lease commitments

As of 31 December 2018, 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.

→ Refer to Note 1d for more information on the expected effects of adoption of IFRS 16, *Leases*, effective 1 January 2019

<i>USD million</i>	31.12.18
<b>Expenses for operating leases to be recognized in:</b>	
2019	658
2020	622
2021	528
2022	474
2023	434
2024 and thereafter	1,830
Subtotal commitments for minimum payments under operating leases	4,546
Less: Sublease rental income commitments	250
<b>Net commitments for minimum payments under operating leases</b>	<b>4,296</b>

<i>USD million</i>	31.12.18	31.12.17	31.12.16
<b>Gross operating lease expense recognized in the income statement</b>	<b>663</b>	697	745
Sublease rental income	52	68	79
<b>Net operating lease expense recognized in the income statement</b>	<b>611</b>	629	666

### 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 2018, unguaranteed residual values of USD 156 million had been accrued, and the ECL stage 3 allowance for uncollectible minimum lease payments receivable amounted to USD 7 million. No contingent rents were received in 2018. Amounts in the table below are disclosed on a gross basis. The finance lease receivable in Note 17a of USD 1,091 million is presented net of expected credit loss allowances.

#### Lease receivables

<i>USD million</i>	31.12.18		
	Total minimum lease payments	Unearned finance income	Present value
2019	359	22	337
2020–2023	703	35	669
Thereafter	103	2	102
<b>Total</b>	<b>1,166</b>	<b>58</b>	<b>1,107</b>

### Note 34 Guarantees, commitments and forward starting transactions

The table below shows the maximum irrevocable amount of guarantees, commitments and forward starting transactions.

<i>USD million</i>	31.12.18				31.12.17			
	Gross		Sub-participations	Net	Gross		Sub-participations	Net
	Measured at fair value	Not measured at fair value			Measured at fair value	Not measured at fair value		
<b>Total guarantees</b>	<b>1,639</b>	<b>18,146</b>	<b>(2,803)</b>	<b>16,982</b>	1,662	17,680	(2,942)	16,400
<b>Loan commitments</b>	<b>3,535</b>	<b>31,212</b>	<b>(647)</b>	<b>34,099</b>	7,954	32,125	(1,102)	38,977
<b>Forward starting transactions<sup>1</sup></b>								
Reverse repurchase agreements	<b>8,117</b>	<b>925</b>				13,011		
Securities borrowing agreements		<b>12</b>				24		
Repurchase agreements	<b>7,926</b>	<b>400</b>				8,399		

<sup>1</sup> Cash to be paid in the future by either UBS AG or the counterparty. Certain reverse repurchase agreements and repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information.

## Note 35 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

<i>USD million, except where indicated</i>	31.12.18	31.12.17	31.12.16
Base salaries and other cash payments <sup>1</sup>	25	24	24
Incentive awards – cash <sup>2</sup>	14	13	10
Annual incentive award under DCCP	21	20	20
Employer's contributions to retirement benefit plans	3	3	2
Benefits in kind, fringe benefits (at market value)	2	2	2
Equity-based compensation <sup>3</sup>	38	36	39
<b>Total</b>	<b>102</b>	<b>98</b>	<b>98</b>
<b>Total (CHF million)<sup>4</sup></b>	<b>100</b>	<b>98</b>	<b>97</b>

<sup>1</sup> Includes role-based allowances in line with market practice in response to regulatory requirements. <sup>2</sup> The cash portion may also include blocked shares in line with regulatory requirements. <sup>3</sup> Expenses for shares granted are calculated at grant date of the respective award and allocated over the vesting period of generally 5 years. Refer to Note 30 for more information. In 2018, 2017 and 2016, equity-based compensation was entirely comprised of EOP awards. <sup>4</sup> Swiss franc amounts disclosed represent the respective US dollar amounts translated at the applicable performance award currency exchange rates (2018: CHF / USD 0.98; 2017: CHF / USD 1.00; 2016: CHF / USD 0.99).

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 USD 7.6 million (CHF 7.4 million) in 2018, USD 7.1 million (CHF 7.1 million) in 2017 and USD 7.2 million (CHF 7.2 million) in 2016.

### b) Equity holdings of key management personnel

#### Equity holdings of key management personnel

	31.12.18	31.12.17
Number of stock options from equity participation plans held by non-independent members of the BoD and the EB members <sup>1</sup>	0	398,867
Number of shares held by members of the BoD, EB and parties closely linked to them <sup>2</sup>	5,676,989	3,709,539

<sup>1</sup> Refer to Note 30 for more information. <sup>2</sup> 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 2018 and 31 December 2017. 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 2018 and 31 December 2017. Refer to Note 30 for more information. As of 31 December 2018, no member of the BoD or EB was the beneficial owner of more than 1% of UBS Group AG's shares.

## Note 35 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<sup>1</sup>

<i>USD million, except where indicated</i>	2018	2017
Balance at the beginning of the year	34	34
Additions	15	2
Reductions	(22)	(1)
Balance at the end of the year <sup>2</sup>	28	35
Balance at the end of the year (CHF million) <sup>2,3</sup>	27	34

<sup>1</sup> All loans are secured loans. <sup>2</sup> Excludes unused uncommitted credit facilities for one EB member of USD 3,000,000 (CHF 2,949,690) as of 31 December 2018 and for two EB and one BoD member of USD 5,330,670 (CHF 5,196,294) as of 31 December 2017. <sup>3</sup> Swiss franc amounts disclosed represent the respective US dollar amounts translated at the relevant year-end closing exchange rate.

### d) Other related-party transactions with entities controlled by key management personnel

In 2018 and 2017, 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 2018, 31 December 2017 and 31 December 2016, there were no outstanding balances related to such transactions. Furthermore,

in 2018 and 2017, 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 2018 and 2017, and therefore also received no fees.

## Note 35 Related parties (continued)

### e) Transactions with associates and joint ventures

#### Loans to and outstanding receivables from associates and joint ventures

<i>USD million</i>	2018	2017
Carrying value at the beginning of the year	565	464
Additions	276	83
Reductions	(13)	(3)
Foreign currency translation	0	21
Carrying value at the end of the year	829	565
<i>of which: unsecured loans</i>	<i>818</i>	<i>554</i>

#### Other transactions with associates and joint ventures

<i>USD million</i>	As of or for the year ended	
	31.12.18	31.12.17
Payments to associates and joint ventures for goods and services received	177	180
Fees received for services provided to associates and joint ventures	4	2
Commitments and contingent liabilities to associates and joint ventures	4	4

→ Refer to Note 31 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

<i>USD million</i>	31.12.18	31.12.17
<b>Receivables</b>		
Loans and advances to customers	1,161	2,208
Financial assets at fair value held for trading	139	101
Other financial assets measured at amortized cost	105	116
<b>Payables</b>		
Customer deposits	2,152	3,489
Funding from UBS Group AG and its subsidiaries	41,202	35,648
Other financial liabilities measured at amortized cost	1,711	1,587



## Note 36 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 2018 and 2017.

### Invested assets and net new money

	As of or for the year ended	
<i>USD billion</i>	<b>31.12.18</b>	31.12.17
Fund assets managed by UBS	<b>342</b>	339
Discretionary assets	<b>999</b>	1,052
Other invested assets	<b>1,760</b>	1,871
<b>Total invested assets<sup>1</sup></b>	<b>3,101</b>	3,262
<i>of which: double counts</i>	<b>213</b>	209
<b>Net new money<sup>1</sup></b>	<b>59</b>	106

<sup>1</sup> Includes double counts.

### Development of invested assets

	2018	2017
<i>USD billion</i>		
Total invested assets at the beginning of the year <sup>1</sup>	<b>3,262</b>	2,761
Net new money	<b>59</b>	106
Market movements <sup>2</sup>	<b>(180)</b>	322
Foreign currency translation	<b>(35)</b>	77
Other effects	<b>(5)</b>	(3)
<i>of which: acquisitions / (divestments)</i>	<b>7</b>	4
<b>Total invested assets at the end of the year<sup>1</sup></b>	<b>3,101</b>	3,262

<sup>1</sup> Includes double counts. <sup>2</sup> Includes interest and dividend income.

## Note 37 Currency translation rates

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

	Closing exchange rate		Average rate <sup>1</sup>		
	As of		For the year ended		
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.16
1 CHF	1.02	1.03	1.02	1.02	1.01
1 EUR	1.15	1.20	1.18	1.14	1.10
1 GBP	1.28	1.35	1.33	1.30	1.34
100 JPY	0.91	0.89	0.91	0.89	0.92

<sup>1</sup> Monthly income statement items of operations with a functional currency other than the US dollar are translated with month-end rates into US dollars. Disclosed average rates for a year represent an average of 12 month-end rates, weighted according to the income and expense volumes of all operations of UBS AG with the same functional currency for each month. Weighted average rates for individual business divisions may deviate from the weighted average rates for UBS AG.

## Note 38 Events after the reporting period

### Events subsequent to the publication of the unaudited fourth quarter 2018 report

The 2018 results and the balance sheet as of 31 December 2018 differ from those presented in the unaudited fourth quarter 2018 report published on 22 January 2019 as a result of events adjusted for after the balance sheet date. Provisions for litigation, regulatory and similar matters increased, which reduced 2018 operating profit before tax and 2018 net profit attributable to shareholders each by USD 382 million.

→ Refer to Note 21 for more information on provisions for litigation, regulatory and similar matters

## Note 39 Main differences between IFRS and Swiss GAAP

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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. Classification and measurement of financial assets

Under IFRS, financial assets are classified as measured at amortized cost, fair value through other comprehensive income (FVOCI) or fair value through profit or loss (FVTPL). Whereas all equity instruments are accounted for at FVTPL by UBS AG, the classification and measurement of debt instruments depends on the nature of the business model within which the asset is held and the characteristics of the contractual cash flows of the asset.

Under Swiss GAAP, debt instruments are generally measured at amortized cost. The classification and measurement of financial assets in the form of securities depend on the nature of the asset: debt instruments that are not held to maturity (available for sale), as well as equity instruments with no permanent holding intent, are classified as *Financial investments* and measured at the lower of (amortized) cost or market value. Market value adjustments up to the original cost amount and realized gains or losses upon disposal of the investment are recorded in the income statement as *Other income from ordinary activities*. Equity instruments with a permanent holding intent are classified as participations in *Non-consolidated investments in subsidiaries and other participations* and 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. Fair value option applied to financial liabilities

Under IFRS, UBS AG applies the fair value option to certain financial liabilities not held for trading. Instruments for which the fair value option is applied are accounted for at FVTPL. The amount of change in the fair value that is attributable to changes in UBS AG's own credit is presented in *Other comprehensive income* directly within *Retained earnings*. The fair value option is applied primarily to issued structured debt instruments; certain non-structured debt instruments; certain payables under repurchase agreements and cash collateral on securities lending agreements; amounts due under unit-linked investment contracts; brokerage payables; and certain 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, unrealized changes in fair value attributable to changes in UBS AG's own credit are not recognized, whereas realized own credit is recognized in *Net trading income*.

### 4. Allowances and provisions for credit losses

Under IFRS, allowances and provisions for credit losses are estimated based on an expected credit loss model. Expected credit losses (ECL) are recognized for financial assets measured at amortized cost, financial assets measured at FVOCI, fee and lease receivables, financial guarantees, loan commitments and certain other credit facilities. Maximum 12-month ECL are recognized from initial recognition of instruments in stage 1. Lifetime ECL are recognized for instruments in stage 2 if a significant increase in credit risk is detected subsequent to the instrument's initial recognition. Lifetime ECL are also recognized for credit-impaired financial instruments, referred to as instruments in stage 3. Determination of whether an instrument is credit impaired is based on the occurrence of one or more loss events.

## Note 39 Main differences between IFRS and Swiss GAAP (continued)

Under Swiss GAAP, 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 effect on 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 as a result of credit deterioration of the issuer or counterparty. Impairment under the incurred loss approach is in line with ECL for credit-impaired claims in stage 3 under IFRS. A claim can be a loan or receivable or other debt instrument held to maturity carried at amortized cost, a debt instrument available for sale carried at the lower of amortized cost or market value, 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*.

### 5. 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.

### 6. 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. In addition, these assets are tested annually for impairment.

### 7. 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 which 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).

## Note 39 Main differences between IFRS and Swiss GAAP (continued)

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### 8. 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.

### 9. 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.

### 10. 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 40 Supplemental guarantor information required under SEC regulations

### Joint liability of UBS Switzerland AG

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

The joint liability of UBS Switzerland AG for contractual obligations of UBS AG decreased by USD 45 billion in 2018 to USD 26 billion as of 31 December 2018, mainly as the joint liability related to demand obligations booked in foreign branches expired three years after the effective date of the asset transfer.

### 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. failed to make any timely payment under the Debt Securities agreements, the holders of the Debt Securities or the Debt Securities trustee could have demanded payment from UBS AG without first proceeding against UBS Americas Inc. These Debt Securities matured in May 2018 and the guarantee ceased to exist. UBS Americas Inc. is therefore no longer presented in a separate column in the tables on the following pages.

### Adoption of IFRS 9

Effective 1 January 2018, UBS AG adopted IFRS 9, *Financial Instruments*. The adoption of IFRS 9 has resulted in changes to the classification and measurement of certain financial instruments, which have been applied prospectively in the balance sheet from 1 January 2018.

Although the effect of IFRS 9 classification and measurement changes has been applied prospectively, UBS AG has made a series of changes to the presentation of its IFRS balance sheet to facilitate comparability and prior-period information is presented for periods ending before 1 January 2018 in this revised structure.

→ Refer to "Note 1c Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 *Financial Instruments*" in the "Consolidated financial statements" section of this report for more information

### Transfer of shared services functions to Group service companies

Amounts presented in the following pages for UBS AG standalone for the years ended 31 December 2017 and 2016 include the results of shared services functions in Switzerland, the UK and the US, which were substantially transferred to Group service companies during 2017. Following the transfer, these Group service companies charge other legal entities within the Group for services provided, including a markup on costs incurred.

→ Refer to the 2017 standalone financial statements of UBS AG, available under "Holding company and significant regulated subsidiaries and sub-groups" at [www.ubs.com/investors](http://www.ubs.com/investors) for more information on the transfer of shared services functions in 2017

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated income statement

<i>USD million</i>					
	UBS AG (standalone) <sup>1</sup>	UBS Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	UBS AG (consolidated)
For the year ended 31 December 2018					
<b>Operating income</b>					
Interest income	10,259	4,266	5,533	(2,963)	17,095
Interest expense	(9,924)	(901)	(3,323)	3,001	(11,147)
Net interest income	336	3,365	2,210	38	5,949
Other net income from fair value changes on financial instruments	4,372	887	828	(110)	5,977
Credit loss (expense) / recovery	(37)	(52)	(9)	(19)	(117)
Fee and commission income	2,655	4,474	13,159	(656)	19,632
Fee and commission expense	(851)	(391)	(1,109)	648	(1,703)
Net fee and commission income	1,804	4,083	12,050	(8)	17,930
Other income	4,722	198	2,110	(6,125)	905
<b>Total operating income</b>	<b>11,196</b>	<b>8,480</b>	<b>17,189</b>	<b>(6,223)</b>	<b>30,642</b>
<b>Operating expenses</b>					
Personnel expenses	3,592	1,890	8,510	0	13,992
General and administrative expenses	4,691	3,471	5,403	(3,490)	10,075
Depreciation and impairment of property, equipment and software	715	21	316	0	1,052
Amortization and impairment of intangible assets	3	0	62	0	65
<b>Total operating expenses</b>	<b>9,001</b>	<b>5,382</b>	<b>14,291</b>	<b>(3,490)</b>	<b>25,184</b>
<b>Operating profit / (loss) before tax</b>	<b>2,195</b>	<b>3,098</b>	<b>2,898</b>	<b>(2,733)</b>	<b>5,458</b>
Tax expense / (benefit)	25	670	577	73	1,345
Net profit / (loss)	2,170	2,428	2,321	(2,806)	4,113
Net profit / (loss) attributable to non-controlling interests	0	0	7	0	7
<b>Net profit / (loss) attributable to shareholders</b>	<b>2,170</b>	<b>2,428</b>	<b>2,314</b>	<b>(2,806)</b>	<b>4,107</b>

<sup>1</sup> 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](http://www.ubs.com/investors) for information prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated statement of comprehensive income

<i>USD million</i>	UBS AG (standalone) <sup>1</sup>	UBS Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	UBS AG (consolidated)
For the year ended 31 December 2018					
<b>Comprehensive income attributable to shareholders</b>					
Net profit / (loss)	2,170	2,428	2,314	(2,806)	4,107
<b>Other comprehensive income</b>					
<b>Other comprehensive income that may be reclassified to the income statement</b>					
Foreign currency translation, net of tax	(369)	(109)	215	(252)	(515)
Financial assets measured at fair value through other comprehensive income, net of tax	0	0	(45)	0	(45)
Cash flow hedges, net of tax	(277)	2	19	(13)	(269)
<b>Total other comprehensive income that may be reclassified to the income statement, net of tax</b>	<b>(646)</b>	<b>(107)</b>	<b>189</b>	<b>(265)</b>	<b>(829)</b>
<b>Other comprehensive income that will not be reclassified to the income statement</b>					
Defined benefit plans, net of tax	89	(126)	212	0	175
Own credit on financial liabilities designated at fair value, net of tax	509				509
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>598</b>	<b>(126)</b>	<b>212</b>	<b>0</b>	<b>684</b>
<b>Total other comprehensive income</b>	<b>(48)</b>	<b>(233)</b>	<b>401</b>	<b>(265)</b>	<b>(145)</b>
<b>Total comprehensive income attributable to shareholders</b>	<b>2,122</b>	<b>2,195</b>	<b>2,715</b>	<b>(3,071)</b>	<b>3,961</b>
Total comprehensive income attributable to non-controlling interests			5		5
<b>Total comprehensive income</b>	<b>2,122</b>	<b>2,195</b>	<b>2,721</b>	<b>(3,071)</b>	<b>3,967</b>

<sup>1</sup> 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](http://www.ubs.com/investors) for information prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.



## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated balance sheet

<i>USD million</i>	UBS				
As of 31 Dec 2018	UBS AG (standalone) <sup>1</sup>	Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	UBS AG (consolidated)
<b>Assets</b>					
Cash and balances at central banks	36,350	53,490	18,530	0	108,370
Loans and advances to banks	34,063	7,405	21,151	(45,978)	16,642
Receivables from securities financing transactions	70,028	28,637	51,617	(54,932)	95,349
Cash collateral receivables on derivative instruments	23,136	559	12,148	(12,240)	23,603
Loans and advances to customers	93,141	188,013	62,166	(21,838)	321,482
Other financial assets measured at amortized cost	4,696	8,564	11,247	(1,869)	22,637
<b>Total financial assets measured at amortized cost</b>	<b>261,415</b>	<b>286,667</b>	<b>176,858</b>	<b>(136,857)</b>	<b>588,084</b>
Financial assets at fair value held for trading	92,784	62	15,578	(3,911)	104,513
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>	<i>49,509</i>	<i>0</i>	<i>7,326</i>	<i>(24,714)</i>	<i>32,121</i>
Derivative financial instruments	119,590	3,834	38,760	(35,972)	126,212
Brokerage receivables	11,063		5,779	(2)	16,840
Financial assets at fair value not held for trading	50,592	7,177	41,184	(16,566)	82,387
<b>Total financial assets measured at fair value through profit or loss</b>	<b>274,030</b>	<b>11,073</b>	<b>101,300</b>	<b>(56,451)</b>	<b>329,953</b>
<b>Financial assets measured at fair value through other comprehensive income</b>	<b>171</b>	<b>0</b>	<b>6,495</b>	<b>0</b>	<b>6,667</b>
Investments in subsidiaries and associates	50,971	20	31	(49,922)	1,099
Property, equipment and software	6,546	242	1,714	(24)	8,479
Goodwill and intangible assets	308		6,395	(56)	6,647
Deferred tax assets	533	198	9,282	52	10,066
Other non-financial assets	4,623	1,659	766	14	7,062
<b>Total assets</b>	<b>598,598</b>	<b>299,860</b>	<b>302,842</b>	<b>(243,244)</b>	<b>958,055</b>
<b>Liabilities</b>					
Amounts due to banks	36,430	24,774	44,377	(94,618)	10,962
Payables from securities financing transactions	36,840	1,167	27,297	(55,008)	10,296
Cash collateral payables on derivative instruments	28,096	35	12,894	(12,118)	28,906
Customer deposits	77,180	245,452	82,360	16,994	421,986
Funding from UBS Group AG and its subsidiaries	41,202				41,202
Debt issued measured at amortized cost	82,653	8,578	587	(573)	91,245
Other financial liabilities measured at amortized cost	4,170	1,454	3,790	(1,838)	7,576
<b>Total financial liabilities measured at amortized cost</b>	<b>306,571</b>	<b>281,460</b>	<b>171,305</b>	<b>(147,161)</b>	<b>612,174</b>
Financial liabilities at fair value held for trading	23,455	493	8,829	(3,828)	28,949
Derivative financial instruments	119,131	3,510	39,107	(36,025)	125,723
Brokerage payables designated at fair value	26,559		11,875	(14)	38,420
Debt issued designated at fair value	55,378		1,670	(17)	57,031
Other financial liabilities designated at fair value	10,936		28,618	(5,959)	33,594
<b>Total financial liabilities measured at fair value through profit or loss</b>	<b>235,458</b>	<b>4,004</b>	<b>90,098</b>	<b>(45,843)</b>	<b>283,717</b>
Provisions	1,361	163	1,850	83	3,457
Other non-financial liabilities	1,676	929	3,623	47	6,275
<b>Total liabilities</b>	<b>545,067</b>	<b>286,556</b>	<b>266,876</b>	<b>(192,875)</b>	<b>905,624</b>
<b>Equity attributable to shareholders</b>	<b>53,531</b>	<b>13,304</b>	<b>35,790</b>	<b>(50,369)</b>	<b>52,256</b>
Equity attributable to non-controlling interests			176		176
<b>Total equity</b>	<b>53,531</b>	<b>13,304</b>	<b>35,966</b>	<b>(50,369)</b>	<b>52,432</b>
<b>Total liabilities and equity</b>	<b>598,598</b>	<b>299,860</b>	<b>302,842</b>	<b>(243,244)</b>	<b>958,055</b>

<sup>1</sup> 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](http://www.ubs.com/investors) for information prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated statement of cash flows

<i>USD million</i>				
For the year ended 31 December 2018 <sup>1</sup>	UBS AG <sup>2</sup>	UBS Switzerland AG <sup>2</sup>	Other subsidiaries <sup>2</sup>	UBS AG (consolidated)
<b>Net cash flow from / (used in) operating activities</b>	<b>(652)</b>	<b>14,887</b>	<b>13,509</b>	<b>27,744</b>
<b>Cash flow from / (used in) investing activities</b>				
Purchase of subsidiaries, associates and intangible assets	(124)	(5)	(158)	(287)
Disposal of subsidiaries, associates and intangible assets <sup>3</sup>	97	0	40	137
Purchase of property, equipment and software	(822)	(170)	(481)	(1,473)
Disposal of property, equipment and software	111	0	3	114
Purchase of financial assets measured at fair value through other comprehensive income	(170)	0	(1,829)	(1,999)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	20	15	1,325	1,361
Net (purchase) / redemption of debt securities measured at amortized cost	(1,000)	2,111	(4,881)	(3,770)
<b>Net cash flow from / (used in) investing activities</b>	<b>(1,888)</b>	<b>1,951</b>	<b>(5,982)</b>	<b>(5,918)</b>
<b>Cash flow from / (used in) financing activities</b>				
Net short-term debt issued / (repaid)	(12,295)	(3)	53	(12,245)
Distributions paid on UBS AG shares	(3,098)	0	0	(3,098)
Issuance of long-term debt, including debt issued designated at fair value	53,294	872	560	54,726
Repayment of long-term debt, including debt issued designated at fair value	(42,759)	(812)	(772)	(44,344)
Funding from UBS Group AG and its subsidiaries	5,956			5,956
Net changes in non-controlling interests	0	0	(31)	(31)
Net activity related to group internal capital transactions and dividends	3,000	(2,372)	(628)	0
<b>Net cash flow from / (used in) financing activities</b>	<b>4,098</b>	<b>(2,315)</b>	<b>(820)</b>	<b>963</b>
<b>Total cash flow</b>				
<b>Cash and cash equivalents at the beginning of the year</b>	<b>41,570</b>	<b>40,961</b>	<b>22,256</b>	<b>104,787</b>
Net cash flow from / (used in) operating, investing and financing activities	1,559	14,523	6,707	22,789
Effects of exchange rate differences on cash and cash equivalents	(234)	(726)	(762)	(1,722)
<b>Cash and cash equivalents at the end of the year<sup>4</sup></b>	<b>42,895</b>	<b>54,757</b>	<b>28,201</b>	<b>125,853</b>
<i>of which: cash and balances at central banks</i>	<i>36,248</i>	<i>53,490</i>	<i>18,530</i>	<i>108,268</i>
<i>of which: loans and advances to banks</i>	<i>4,849</i>	<i>1,249</i>	<i>9,354</i>	<i>15,452</i>
<i>of which: money market paper<sup>5</sup></i>	<i>1,798</i>	<i>18</i>	<i>318</i>	<i>2,133</i>

<sup>1</sup> Upon adoption of IFRS 9 on 1 January 2018, cash flows from certain financial assets previously classified as available-for-sale assets have been reclassified from investing to operating activities as the assets are accounted for at fair value through profit or loss effective 1 January 2018. Refer to Note 1c for more information. <sup>2</sup> Cash flows generally represent a third-party view from a UBS AG consolidated perspective. <sup>3</sup> Includes dividends received from associates. <sup>4</sup> USD 5,245 million of cash and cash equivalents were restricted. <sup>5</sup> Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated income statement

<i>USD million</i>	UBS AG (standalone) <sup>1</sup>	UBS Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	UBS AG (consolidated)
For the year ended 31 December 2017					
<b>Operating income</b>					
Interest income	8,806	4,065	3,959	(2,338)	14,492
Interest expense	(7,259)	(680)	(2,192)	2,245	(7,886)
Net interest income	1,547	3,385	1,767	(93)	6,607
Other net income from fair value changes on financial instruments	3,397	918	688	64	5,067
Credit loss (expense) / recovery	(139)	(23)	(9)	40	(131)
Fee and commission income	2,561	4,424	13,315	(911)	19,390
Fee and commission expense	(968)	(380)	(1,357)	865	(1,840)
Net fee and commission income	1,594	4,045	11,958	(46)	17,550
Other income	4,382	170	3,017	(6,616)	952
<b>Total operating income</b>	<b>10,780</b>	<b>8,495</b>	<b>17,420</b>	<b>(6,651)</b>	<b>30,044</b>
<b>Operating expenses</b>					
Personnel expenses	4,488	2,060	8,403	0	14,952
General and administrative expenses	4,922	3,400	5,760	(5,081)	9,001
Depreciation and impairment of property, equipment and software	664	11	270	0	945
Amortization and impairment of intangible assets	8	0	63	0	71
<b>Total operating expenses</b>	<b>10,082</b>	<b>5,472</b>	<b>14,496</b>	<b>(5,081)</b>	<b>24,969</b>
<b>Operating profit / (loss) before tax</b>	<b>698</b>	<b>3,023</b>	<b>2,924</b>	<b>(1,570)</b>	<b>5,076</b>
Tax expense / (benefit)	458	628	3,156	0	4,242
Net profit / (loss)	240	2,395	(232)	(1,570)	834
Net profit / (loss) attributable to preferred noteholders	73	0	0	0	73
Net profit / (loss) attributable to non-controlling interests	0	0	4	0	4
<b>Net profit / (loss) attributable to shareholders</b>	<b>168</b>	<b>2,395</b>	<b>(236)</b>	<b>(1,569)</b>	<b>758</b>

<sup>1</sup> 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](http://www.ubs.com/investors) for information prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated statement of comprehensive income

<i>USD million</i>	UBS AG (standalone) <sup>1</sup>	UBS Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	UBS AG (consolidated)
For the year ended 31 December 2017					
<b>Comprehensive income attributable to shareholders</b>					
Net profit / (loss)	168	2,395	(236)	(1,569)	758
<b>Other comprehensive income</b>					
<b>Other comprehensive income that may be reclassified to the income statement</b>					
Foreign currency translation, net of tax	2,177	500	(2,473)	1,318	1,522
Financial assets measured at fair value through other comprehensive income, net of tax	(10)	2	11	(93)	(91)
Cash flow hedges, net of tax	(474)	(162)	(1)	2	(635)
<b>Total other comprehensive income that may be reclassified to the income statement, net of tax</b>	<b>1,693</b>	<b>340</b>	<b>(2,463)</b>	<b>1,226</b>	<b>797</b>
<b>Other comprehensive income that will not be reclassified to the income statement</b>					
Defined benefit plans, net of tax	284	(22)	27	26	314
Own credit on financial liabilities designated at fair value, net of tax	(317)				(317)
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>(33)</b>	<b>(22)</b>	<b>27</b>	<b>26</b>	<b>(3)</b>
<b>Total other comprehensive income</b>	<b>1,660</b>	<b>318</b>	<b>(2,436)</b>	<b>1,252</b>	<b>794</b>
<b>Total comprehensive income attributable to shareholders</b>	<b>1,828</b>	<b>2,713</b>	<b>(2,672)</b>	<b>(317)</b>	<b>1,552</b>
Total comprehensive income attributable to preferred noteholders	320				320
Total comprehensive income attributable to non-controlling interests			6		6
<b>Total comprehensive income</b>	<b>2,148</b>	<b>2,713</b>	<b>(2,665)</b>	<b>(317)</b>	<b>1,878</b>

<sup>1</sup> 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](http://www.ubs.com/investors) for information prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated balance sheet

<i>USD million</i>	UBS				UBS AG
As of 31 Dec 2017	UBS AG (standalone) <sup>1</sup>	Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	(consolidated)
<b>Assets</b>					
Cash and balances at central banks	37,497	39,461	13,086	0	90,045
Loans and advances to banks	31,254	4,080	73,206	(94,494)	14,047
Receivables from securities financing transactions	62,783	35,731	58,481	(65,043)	91,951
Cash collateral receivables on derivative instruments	22,924	714	13,292	(12,890)	24,040
Loans and advances to customers	109,196	188,038	77,781	(46,064)	328,952
Other financial assets measured at amortized cost	17,460	10,610	13,197	(3,376)	37,890
<b>Total financial assets measured at amortized cost</b>	<b>281,115</b>	<b>278,634</b>	<b>249,044</b>	<b>(221,868)</b>	<b>586,925</b>
Financial assets at fair value held for trading	103,799	94	33,540	(7,923)	129,509
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>	<i>60,038</i>	<i>0</i>	<i>9,966</i>	<i>(33,727)</i>	<i>36,277</i>
Derivative financial instruments	116,993	4,229	34,947	(34,883)	121,286
Financial assets at fair value not held for trading	34,982	13,098	14,535	(2,546)	60,070
<b>Total financial assets measured at fair value through profit or loss</b>	<b>255,775</b>	<b>17,421</b>	<b>83,021</b>	<b>(45,352)</b>	<b>310,865</b>
<b>Financial assets measured at fair value through other comprehensive income</b>	<b>3,698</b>	<b>810</b>	<b>7,608</b>	<b>(3,226)</b>	<b>8,889</b>
Investments in subsidiaries and associates	50,915	16	29	(49,916)	1,045
Property, equipment and software	6,550	94	1,548	0	8,191
Goodwill and intangible assets	302	0	6,320	(59)	6,563
Deferred tax assets	1,285	432	8,276	0	9,993
Other non-financial assets	5,179	1,758	711	(101)	7,548
<b>Total assets</b>	<b>604,818</b>	<b>299,166</b>	<b>356,559</b>	<b>(320,522)</b>	<b>940,020</b>
<b>Liabilities</b>					
Amounts due to banks	24,991	21,264	56,499	(95,027)	7,728
Payables from securities financing transactions	49,407	1,687	31,435	(65,043)	17,485
Cash collateral payables on derivative instruments	28,486	62	15,371	(12,890)	31,029
Customer deposits	86,105	247,554	137,590	(48,192)	423,058
Funding from UBS Group AG and its subsidiaries	35,648				35,648
Debt issued measured at amortized cost	99,069	8,583	535	(730)	107,458
Other financial liabilities measured at amortized cost	29,178	1,453	10,850	(3,388)	38,092
<b>Total financial liabilities measured at amortized cost</b>	<b>352,885</b>	<b>280,604</b>	<b>252,280</b>	<b>(225,270)</b>	<b>660,498</b>
Financial liabilities at fair value held for trading	24,988	257	13,336	(7,329)	31,251
Derivative financial instruments	114,331	3,770	35,920	(34,883)	119,138
Debt issued designated at fair value	48,743		2,327	(288)	50,782
Other financial liabilities designated at fair value	6,173		13,015	(2,546)	16,643
<b>Total financial liabilities measured at fair value through profit or loss</b>	<b>194,235</b>	<b>4,027</b>	<b>64,598</b>	<b>(45,046)</b>	<b>217,814</b>
Provisions	1,084	149	1,930	0	3,164
Other non-financial liabilities	2,039	851	3,736	(128)	6,499
<b>Total liabilities</b>	<b>550,243</b>	<b>285,631</b>	<b>322,544</b>	<b>(270,443)</b>	<b>887,974</b>
<b>Equity attributable to shareholders</b>	<b>54,574</b>	<b>13,536</b>	<b>33,956</b>	<b>(50,078)</b>	<b>51,987</b>
Equity attributable to non-controlling interests			59		59
<b>Total equity</b>	<b>54,574</b>	<b>13,536</b>	<b>34,015</b>	<b>(50,078)</b>	<b>52,046</b>
<b>Total liabilities and equity</b>	<b>604,818</b>	<b>299,166</b>	<b>356,559</b>	<b>(320,522)</b>	<b>940,020</b>

<sup>1</sup> Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the "UBS AG standalone financial information" section of this report for UBS AG standalone financial information prepared in accordance with Swiss GAAP. Refer to "Holding company and significant regulated subsidiaries and sub-groups" at [www.ubs.com/investors](http://www.ubs.com/investors) for UBS Switzerland AG standalone interim financial statements prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated statement of cash flows

<i>USD million</i>		UBS	Other	UBS AG
For the year ended 31 December 2017	UBS AG <sup>1</sup>	Switzerland AG <sup>1</sup>	subsidiaries <sup>1</sup>	(consolidated)
<b>Net cash flow from / (used in) operating activities</b>	(35,057)	(8,742)	(9,348)	(53,147)
<b>Cash flow from / (used in) investing activities</b>				
Purchase of subsidiaries, associates and intangible assets	0	(2)	(104)	(106)
Disposal of subsidiaries, associates and intangible assets <sup>2</sup>	291	0	48	339
Purchase of property, equipment and software	(1,054)	(86)	(393)	(1,532)
Disposal of property, equipment and software	1	0	209	210
Purchase of financial assets measured at fair value through other comprehensive income	(234)	0	(8,393)	(8,626)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	3,489	1,580	10,181	15,250
Net (purchase) / redemption of financial assets held to maturity	(455)	364	0	(91)
<b>Net cash flow from / (used in) investing activities</b>	2,039	1,856	1,548	5,444
<b>Cash flow from / (used in) financing activities</b>				
Net short-term debt issued / (repaid)	24,556	(5)	(50)	24,500
Distributions paid on UBS AG shares	(2,219)	0	0	(2,219)
Issuance of long-term debt, including debt issued designated at fair value	39,232	631	409	40,270
Repayment of long-term debt, including debt issued designated at fair value	(43,605)	(589)	(993)	(45,187)
Funding from UBS Group AG and its subsidiaries	11,180			11,180
Dividends paid and repayments of preferred notes	(782)	0	0	(782)
Net changes in non-controlling interests	0	0	(5)	(5)
Net activity related to group internal capital transactions and dividends	1,264	(194)	(1,071)	0
<b>Net cash flow from / (used in) financing activities</b>	29,625	(158)	(1,710)	27,758
<b>Total cash flow</b>				
<b>Cash and cash equivalents at the beginning of the year</b>	43,495	45,815	29,674	118,984
Net cash flow from / (used in) operating, investing and financing activities	(3,393)	(7,043)	(9,510)	(19,944)
Effects of exchange rate differences on cash and cash equivalents	1,466	2,189	2,094	5,749
<b>Cash and cash equivalents at the end of the year<sup>3</sup></b>	41,570	40,961	22,256	104,787
<i>of which: cash and balances at central banks</i>	37,420	39,461	13,086	89,968
<i>of which: loans and advances to banks</i>	2,344	1,492	8,890	12,726
<i>of which: money market paper<sup>4</sup></i>	1,806	7	280	2,093

<sup>1</sup> Cash flows generally represent a third-party view from a UBS AG consolidated perspective. <sup>2</sup> Includes dividends received from associates. <sup>3</sup> USD 2,497 million of cash and cash equivalents were restricted. <sup>4</sup> Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated income statement

<i>USD million</i>	UBS AG (standalone) <sup>1</sup>	UBS Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	UBS AG (consolidated)
For the year ended 31 December 2016					
<b>Operating income</b>					
Interest income	8,605	4,207	3,229	(2,086)	13,954
Interest expense	(6,778)	(724)	(1,895)	1,900	(7,497)
Net interest income	1,827	3,483	1,334	(187)	6,457
Other net income from fair value changes on financial instruments	3,774	790	777	(323)	5,018
Credit loss (expense) / recovery	(25)	(3)	(10)	0	(38)
Fee and commission income	2,356	4,192	12,681	(804)	18,425
Fee and commission expense	(839)	(363)	(1,342)	763	(1,781)
Net fee and commission income	1,517	3,828	11,339	(41)	16,644
Other income	8,305	352	1,917	(9,825)	749
<b>Total operating income</b>	<b>15,399</b>	<b>8,450</b>	<b>15,357</b>	<b>(10,375)</b>	<b>28,831</b>
<b>Operating expenses</b>					
Personnel expenses	5,761	2,070	7,952	0	15,782
General and administrative expenses	5,278	3,549	5,659	(6,710)	7,776
Depreciation and impairment of property, equipment and software	708	12	272	0	992
Amortization and impairment of intangible assets	22	0	70	0	93
<b>Total operating expenses</b>	<b>11,769</b>	<b>5,631</b>	<b>13,953</b>	<b>(6,710)</b>	<b>24,643</b>
<b>Operating profit / (loss) before tax</b>	<b>3,630</b>	<b>2,819</b>	<b>1,404</b>	<b>(3,665)</b>	<b>4,188</b>
Tax expense / (benefit)	917	597	(753)	(7)	753
Net profit / (loss)	2,713	2,222	2,157	(3,658)	3,435
Net profit / (loss) attributable to preferred noteholders	80	0	0	0	80
Net profit / (loss) attributable to non-controlling interests	0	0	4	0	4
<b>Net profit / (loss) attributable to shareholders</b>	<b>2,633</b>	<b>2,222</b>	<b>2,153</b>	<b>(3,658)</b>	<b>3,351</b>

<sup>1</sup> 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](http://www.ubs.com/investors) for information prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated statement of comprehensive income

<i>USD million</i>	UBS AG (standalone) <sup>1</sup>	UBS Switzerland AG (standalone) <sup>1</sup>	Other subsidiaries <sup>2</sup>	Elimination entries	UBS AG (consolidated)
For the year ended 31 December 2016					
<b>Comprehensive income attributable to shareholders</b>					
Net profit / (loss)	2,633	2,222	2,153	(3,658)	3,351
<b>Other comprehensive income</b>					
<b>Other comprehensive income that may be reclassified to the income statement</b>					
Foreign currency translation, net of tax	(467)	(228)	765	(474)	(404)
Financial assets measured at fair value through other comprehensive income, net of tax	0	(36)	(25)	3	(58)
Cash flow hedges, net of tax	(815)	102	0	30	(684)
<b>Total other comprehensive income that may be reclassified to the income statement, net of tax</b>	<b>(1,282)</b>	<b>(163)</b>	<b>739</b>	<b>(441)</b>	<b>(1,146)</b>
<b>Other comprehensive income that will not be reclassified to the income statement</b>					
Defined benefit plans, net of tax	(659)	(49)	(97)	(25)	(829)
Own credit on financial liabilities designated at fair value, net of tax	(130)				(130)
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>(788)</b>	<b>(49)</b>	<b>(97)</b>	<b>(25)</b>	<b>(959)</b>
<b>Total other comprehensive income</b>	<b>(2,070)</b>	<b>(211)</b>	<b>643</b>	<b>(467)</b>	<b>(2,105)</b>
<b>Total comprehensive income attributable to shareholders</b>	<b>563</b>	<b>2,011</b>	<b>2,796</b>	<b>(4,124)</b>	<b>1,246</b>
Total comprehensive income attributable to preferred noteholders	59				59
Total comprehensive income attributable to non-controlling interests			3		3
<b>Total comprehensive income</b>	<b>622</b>	<b>2,011</b>	<b>2,799</b>	<b>(4,124)</b>	<b>1,308</b>

<sup>1</sup> 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](http://www.ubs.com/investors) for information prepared in accordance with Swiss GAAP. <sup>2</sup> Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.



## Note 40 Supplemental guarantor information required under SEC regulations (continued)

### Supplemental guarantor consolidated statement of cash flows

<i>USD million</i>				
For the year ended 31 December 2016	UBS AG <sup>1</sup>	UBS Switzerland AG <sup>1</sup>	Other subsidiaries <sup>1</sup>	UBS AG (consolidated)
<b>Net cash flow from / (used in) operating activities</b>	(28,636)	(3,918)	13,383	(19,172)
<b>Cash flow from / (used in) investing activities</b>				
Purchase of subsidiaries, associates and intangible assets	0	(3)	(24)	(27)
Disposal of subsidiaries, associates and intangible assets <sup>2</sup>	94	0	0	95
Purchase of property, equipment and software	(1,351)	(16)	(414)	(1,782)
Disposal of property, equipment and software	178	0	3	182
Purchase of financial assets measured at fair value through other comprehensive income	(568)	(988)	(5,465)	(7,022)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	25,034	22,136	7,263	54,433
Net (purchase) / redemption of financial assets held to maturity	(518)	(8,706)		(9,224)
<b>Net cash flow from / (used in) investing activities</b>	22,868	12,424	1,364	36,655
<b>Cash flow from / (used in) financing activities</b>				
Net short-term debt issued / (repaid)	8,454	(7)	(2,973)	5,474
Distributions paid on UBS AG shares	(3,589)	0	0	(3,589)
Issuance of long-term debt, including debt issued designated at fair value	17,991	742	1,053	19,786
Repayment of long-term debt, including debt issued designated at fair value	(32,219)	(677)	(1,006)	(33,902)
Funding from UBS Group AG and its subsidiaries	13,917			13,917
Dividends paid and repayments of preferred notes	(1,382)	0	0	(1,382)
Net changes in non-controlling interests	0	0	(5)	(5)
Net activity related to group internal capital transactions and dividends	(1,356)	(2,019)	3,374	0
<b>Net cash flow from / (used in) financing activities</b>	1,817	(1,961)	444	299
<b>Total cash flow</b>				
<b>Cash and cash equivalents at the beginning of the year</b>	47,822	40,180	14,795	102,797
Net cash flow from / (used in) operating, investing and financing activities	(3,951)	6,544	15,190	17,783
Effects of exchange rate differences on cash and cash equivalents	(378)	(909)	(310)	(1,596)
<b>Cash and cash equivalents at the end of the year<sup>3</sup></b>	43,495	45,815	29,674	118,984
<i>of which: cash and balances at central banks</i>	39,779	43,750	22,304	105,832
<i>of which: loans and advances to banks</i>	2,787	2,058	6,874	11,719
<i>of which: money market paper<sup>4</sup></i>	930	7	497	1,433

<sup>1</sup> Cash flows generally represent a third-party view from a UBS AG consolidated perspective. <sup>2</sup> Includes dividends received from associates. <sup>3</sup> USD 2,615 million of cash and cash equivalents were restricted.

<sup>4</sup> Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

**APPENDIX III**

**RISK FACTORS RELATING TO  
THE OPERATING ENVIRONMENT AND STRATEGY OF UBS AG**

*This section supersedes in its entirety Appendix 2 of the Base Listing Document.*

# Risk factors

Certain risks, including those described below, may affect our ability to execute our strategy or our business activities, financial condition, results of operations and prospects. We are inherently exposed to multiple risks, many of which may become apparent only with the benefit of hindsight. As a result, risks that we do not consider to be material or of which we are not currently aware could also adversely affect us. 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 and macroeconomic risks

### Performance in the financial services industry is affected by market conditions and the macroeconomic climate

Our businesses are materially affected by market and macroeconomic conditions. 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 effects 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, or be unable to effectively manage our risks.

We could be materially affected if a crisis develops, regionally or globally, as a result of disruptions in markets as a result of macroeconomic or 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.

We have material exposures to a number of markets, and our businesses have regional exposures and concentrations that differ from certain of our peers. Global Wealth Management derives revenues from all the principal regions, but has a greater concentration in Asia than many peers and a substantial presence in the US, unlike many European peers. The Investment Bank's Equities business is more heavily weighted to Europe and Asia than our peers, and within this business its derivatives business is more heavily weighted to structured products for wealth management clients, in particular with European and Asian underlyings. Our performance may therefore be more affected by political, economic and market developments in these regions and businesses than some other financial service providers.

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 Global Wealth Management and the Investment Bank, as we experienced in the fourth quarter of 2018 and in 2016. A market downturn is likely to reduce the volume and valuations of assets that we manage on behalf of clients, which would reduce recurring fee income that is charged based on invested asset and performance-based fees in Asset Management. Such a downturn may 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 may limit trading opportunities and may therefore reduce transaction-based fees and may also impede our ability to manage risks.

In addition, the implementation of the expected credit loss (ECL) regime, as required by IFRS 9, is intended to result in fewer pro-cyclical charges for credit impairment by ensuring that impairment charges would be recognized earlier through anticipating a downturn using appropriate forward-looking measures and, conversely, an expected positive development once the trough of a downturn has been reached. There is a material risk that these expectations will not materialize, and that ECL under IFRS 9 will prove to be pro-cyclical. Provision requirements under IFRS 9 may in practice increase rapidly at the onset of an economic downturn as a result of higher levels of credit impairment (stage 3) as well as higher ECL from stages 1 and 2, only gradually diminishing once the economic outlook improves. Substantial increases in ECL could exceed expected loss for regulatory capital purposes and adversely affect our common equity tier 1 (CET1) capital and regulatory capital ratios. The effect of pro-cyclical ECL requirements will be assessed in our stress testing outputs.

### **We are exposed to the credit risk of our clients, trading counterparties and other financial institutions**

Credit risk is an integral part of many of our activities, including lending, underwriting and derivatives activities. Failure to properly assess and manage credit risk or adverse economic or market conditions may lead to impairments and defaults on credit exposures. Losses may be exacerbated by declines in the value of collateral securing loans and other exposures. In our prime brokerage, securities finance and Lombard lending businesses we extend substantial amounts of credit against securities collateral, the value or liquidity of which may decline rapidly. Our Swiss mortgage and corporate lending portfolios are a large part of our overall lending. We are therefore exposed to the risk of adverse economic developments in Switzerland, including the strength of the Swiss franc and its effect on Swiss exports, prevailing negative interest rates by the Swiss National Bank, economic conditions within the eurozone or the EU, and the evolution of agreements between Switzerland and the EU and European Economic Area, which represent Switzerland's largest export market.

The aforementioned developments have in the past affected, and going forward could materially affect, our overall financial performance and the financial performance of our individual businesses.

### **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 the Personal & Corporate Banking and Global Wealth Management businesses. Our performance is also affected by the cost of maintaining the high-quality liquid assets required to cover regulatory outflow assumptions embedded in the liquidity coverage ratio.

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 funding for us), net new money outflows and a declining market share in our Swiss lending business.

Our shareholders' equity and capital are also affected by changes in interest rates. In particular, the calculation of our

Swiss pension plan's net defined benefit assets and liabilities is sensitive to the discount rate applied and to fluctuations in the value of pension plan assets. Any further reduction in interest rates may lower the discount rates and result in pension plan deficits as a result of the long duration of corresponding liabilities. This could lead to a corresponding reduction in our equity and common equity tier 1 capital.

#### **Currency fluctuation**

We are subject to currency fluctuation risks. Effective 1 October 2018, the functional currency of UBS Group AG and UBS AG's Head Office in Switzerland has changed from Swiss francs to US dollars and the functional currency of UBS AG's London Branch operations has changed from British pounds to US dollars. In line with these changes, we have changed the presentation currency of UBS Group AG's and UBS AG's consolidated financial statements from Swiss francs to US dollars effective from our fourth quarter 2018 reporting. Although this change reduces our exposure to currency fluctuation risks against Swiss francs, a substantial portion of our assets and liabilities are denominated in currencies other than the US dollar. Accordingly, changes in foreign exchange rates may continue to adversely affect our profits, balance sheet and capital leverage and liquidity coverage ratios.

In order to hedge our CET1 capital ratio, our CET1 capital must have foreign currency exposure, which leads to currency sensitivity. As a consequence, it is not possible to simultaneously fully hedge both the amount of capital and the capital ratio. Our change to the US dollar as our presentation currency has reduced, but not eliminated the exposure of our CET1 capital and capital ratios to currency fluctuations.

#### **Regulatory and legal risks**

##### **Substantial changes in the regulation may adversely affect our businesses 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. The changes are intended to address the perceived causes of the crisis and to limit the systemic risks posed by major financial institutions. They have caused us to make significant changes in our businesses, strategy and legal structure. We have moved significant operations into subsidiaries to improve resolvability and meet other regulatory requirements, and this has resulted in substantial implementation costs, increased our capital and funding costs and reduced operational flexibility. Although many of the regulatory changes have been completed, some continue to be phased in over time or require further rulemaking or guidance for implementation, and other changes are still under consideration.

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. Swiss regulatory changes with regard to such matters as capital and liquidity have often proceeded more quickly than those in other major jurisdictions, and Switzerland's requirements for major international banks are among the strictest of the major financial centers. This could put Swiss banks such as UBS at a disadvantage when competing with peer financial institutions subject to more lenient regulation or with unregulated non-bank competitors.

*Banking structure and activity limitations:* We have made significant changes to 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 have transferred substantially all the operations of Personal & Corporate Banking and Global Wealth Management booked in Switzerland to UBS Switzerland AG, to improve resolvability. These changes, particularly the transfer of operations to subsidiaries, 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 Group. Further, 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 affects our ability to benefit from synergies between business units and to distribute earnings to the Group.

We have incurred substantial costs in implementing a compliance and monitoring framework in connection with the Volcker Rule under the Dodd-Frank Act and have modified our business activities both inside and outside the US to conform to the Volcker Rule's activity limitations. We may incur additional costs in the short term if aspects of the Volcker Rule are modified in ways that would require changes to the operation of our Volcker compliance program, even if those changes may reduce the long-term burden on our operations. We may also become subject to other similar regulations substantively limiting the types of activities in which we may engage or the way we conduct our operations.

*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.

We expect our risk-weighted assets (RWA) to increase in 2019 as a result of changes in methodology and add-ons in the calculation of RWA, as well as implementation of new accounting standards. 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.

*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 this framework and similar regulations in the US, the UK, the EU and other jurisdictions in which we operate, we are required to prepare credible recovery and resolution plans detailing the measures that would be taken to recover in 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. If a recovery or resolution plan we produce is determined by the relevant authority to be inadequate or not credible, relevant regulation may permit the authority to place limitations on the scope or size of our business in that jurisdiction, or oblige us to hold higher amounts of capital or liquidity or to change our legal structure or business in order to remove the relevant impediments to resolution.

The Swiss Banking Act and implementing ordinances provide the Swiss Financial Market Supervisory Authority (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 directly or indirectly require us, 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.

*Substantial changes in market regulation have affected and will continue to affect how we conduct our business:* The revised Markets in Financial Instruments Directive (MiFID II) became effective in 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, including UBS. For example, the changes introduced by MiFID II appear to have reduced commission rates and trading margins; these reductions may not be fully offset by charges for research services. Also, these changes may have a material effect on the market infrastructure that we use and the way we interact with clients, and may result in additional material implementation costs.

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 US Securities and Exchange Commission (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 duplicate or may 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. For example, the EU has provided only a temporary equivalence determination for Swiss exchanges, which has caused Switzerland to adopt regulations that may result in limitations on trading Swiss listed securities on EU markets. 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.

#### Material legal and regulatory risks arise in the conduct of our business

As a global financial services firm operating in more than 50 countries, we are subject to many different legal, tax and regulatory regimes, including extensive regulatory oversight, and 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.

We may be subject to adverse preliminary determinations or court decisions that may negatively affect public perception and our reputation, result in prudential actions from regulators, and cause us to record additional provisions for the matter even when we believe we have substantial defenses and expect to ultimately achieve a more favorable outcome. This risk is illustrated by the award of aggregate penalties and damages of EUR 4.5 billion by the court in France.

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 adverse consequences for us.

Our settlements with governmental authorities in connection with foreign exchange, London Interbank Offered Rates (LIBOR) and other benchmark interest rates starkly illustrate the significantly increased level of financial and reputational risk now associated with regulatory matters in major jurisdictions. In connection with investigations related to LIBOR and other benchmark rates and to foreign exchange and precious metals, very large fines and disgorgement amounts were assessed against us, and we were required to enter guilty pleas despite our full cooperation with the authorities in the investigations, and despite our receipt of conditional leniency or conditional immunity from 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 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, as well as on 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. Our implementation of additional regulatory requirements and changes in supervisory standards, as well as our compliance with existing laws and regulations, continue to receive heightened scrutiny from supervisors. If we do not meet supervisory expectations in relation to these or other matters, or if additional supervisory or regulatory issues arise, we would likely be subject to further regulatory scrutiny as well as measures that might further constrain our strategic flexibility. We are in active dialog with regulators concerning the actions 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.



**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 in excess of anticipated amortization. This would have the effect of increasing our effective tax rate in the year in which any write-downs are taken. Conversely, if we expect the performance of entities in which we have unrecognized tax losses to improve, particularly in the US or the UK, we could potentially recognize additional DTAs. The effect of doing so would be to reduce our effective tax rate in years in which additional DTAs are recognized and to increase our effective tax rate in future years. Our effective tax rate is also sensitive to any future reductions in statutory tax rates, particularly in the US 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 USD 2.9 billion net write-down in the Group's DTAs in the fourth quarter of 2017.

We generally revalue our DTAs in the fourth quarter of the financial year based on a reassessment of future profitability taking into account our updated business plans. We consider the performance of our businesses and the accuracy of historical forecasts, tax rates and other factors in evaluating the recoverability of our DTAs, including the remaining tax loss carry-forward period and our assessment of expected future taxable profits over the life of DTAs. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

Our results in recent periods have demonstrated that changes in the recognition of DTAs can have a very significant effect on our reported results. Any future change in the manner in which UBS remeasures DTAs could affect UBS's effective tax rate, particularly in the year in which the change is made.

Our full-year effective tax rate could change if aggregate tax expenses in respect of profits from branches and subsidiaries without loss coverage differ from what is expected. In particular, losses at entities that cannot be offset for tax purposes by net operating losses may increase our effective tax rate. 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 may be required to be written down through the income statement.

Changes in tax law may materially affect our effective tax rate and in some cases may substantially affect the profitability of certain activities. In addition, statutory and regulatory changes, as well as changes to the way in which courts and tax authorities interpret tax laws including assertions that we are required to pay taxes in a jurisdiction as a result of activities connected to that jurisdiction constituting a permanent establishment or similar theory, and changes in our assessment of uncertain tax positions, could cause the amount of taxes we ultimately pay to materially differ from the amount accrued.

**Discontinuance of, or changes to, benchmark rates may require adjustments to our agreements with clients and other market participants, as well as to our systems and processes**

Since April 2013, the UK Financial Conduct Authority (FCA) has regulated LIBOR and regulators in other jurisdictions have increased oversight of other interbank offered rates (IBORs) and similar benchmark rates. Efforts to transition from IBORs to alternative benchmark rates are underway in several jurisdictions. The FCA announced in July 2017 that it will not continue beyond 2021 to regulate LIBOR or take other actions to sustain LIBOR, and urged users to plan the transition to alternative reference rates. As a result, there can be no guarantee that LIBOR will be determined after 2021 on the same basis as at present, if at all.

In the third quarter of 2018, the private-sector working group on euro risk-free rates recommended ESTER (euro short-term rate) as the replacement for EONIA (Euro OverNight Index Average), which will be prohibited by the EU Benchmark Regulation after 1 January 2020. Futures contracts referenced to the Secured Overnight Financing Rate (SOFR), the recommended successor to US dollar LIBOR, have begun trading on the Chicago Mercantile Exchange. The Bank of England consulted on the development of Term SONIA (Sterling Overnight Index Average) Reference Rates, which are expected to become available in the second half of 2019. The International Swaps and Derivatives Association, as part of a Financial Conduct Authority (FCA) mandate, consulted on preferred options for LIBOR transition fallbacks for derivatives. The FCA and the Prudential Regulation Authority have written to the CEOs of banks and insurance companies in the UK, including us, seeking assurance that senior managers and boards understand the risks associated with the transition away from IBORs and are taking appropriate preparatory action to transition to alternative rates before the end of 2021. In July 2018, the International Swaps and Derivatives Association launched a market-wide consultation on technical issues related to new benchmark fallbacks for derivatives contracts that reference certain IBORs.

We have a substantial number of contracts linked to IBORs. The new risk-free alternative reference rates do not provide a term structure and will therefore require a change in the contractual terms of products currently indexed on terms other than overnight. In some cases contracts may contain provisions intended to provide a fall-back interest rate in the event of a brief unavailability of the relevant IBOR. These provisions may not be effective or may produce arbitrary results in the event of a permanent cessation of the relevant IBOR. In addition, numerous of our internal systems, limits and processes make use of IBORs as reference rates. Transition to replacement reference rates will require significant effort.

#### UK withdrawal from the EU

We have planned our response to the UK withdrawal from the EU assuming that the UK will leave the EU in March 2019 and that any transition arrangements will only become legally binding close to the exit date. Given the continuing uncertainty on transition arrangements and the potential future restrictions on providing financial services into the EU from the UK, we have completed the merger of UBS Limited, our UK-based subsidiary, into UBS Europe SE, a German-headquartered European subsidiary. As a result, we expect that UBS Europe SE will become subject to direct supervision by the European Central Bank.

Clients and counterparties of UBS Limited who can be serviced by UBS AG, London Branch following the exit of the UK from the EU have generally been migrated to that branch. The remaining clients and other counterparties of UBS Limited were transferred to UBS Europe SE upon completion of a UK business transfer proceeding on 1 March 2019 and the merger of the two entities.

In connection with the merger, a small number of roles are being relocated from the UK to other European locations. We also expect to increase the loss-absorbing capacity of UBS Europe SE to reflect the additional activities it would acquire.

#### If we experience financial difficulties, FINMA has the power to open restructuring or liquidation proceedings or impose protective measures in relation to UBS Group AG, UBS AG or UBS Switzerland AG, and such proceedings or measures may have a material adverse effect on our shareholders and creditors

Under the Swiss Banking Act, FINMA is able to exercise broad statutory powers with respect to Swiss banks and Swiss parent companies of financial groups, such as UBS Group AG, UBS AG and UBS Switzerland AG, if there is justified concern that the entity is over-indebted, has serious liquidity problems or, after the expiration of any relevant deadline, no longer 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, 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 and shareholders 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 a. the termination of, or the exercise of rights to terminate, netting rights, b. rights to enforce or dispose of certain types of collateral or c. rights to transfer claims, liabilities or certain collateral, under contracts to which the entity subject to proceedings is a party, and / or (iii) partially or fully write down the equity capital and, 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 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 of the restructured entity in the event of a subsequent winding up, liquidation or dissolution of the restructured entity, which would increase the risk that investors would lose all or some of their investment.



FINMA has significant discretion in the exercise of its powers in connection with restructuring proceedings. Furthermore, certain categories of debt obligations, such as certain types of deposits, are subject to preferential treatment. As a result, holders of obligations of an entity subject to a Swiss restructuring proceeding may have their obligations written down or converted into equity even though obligations ranking on par with or junior to such obligations are not written down or converted.

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 affect 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.

## Liquidity risks

### Liquidity and funding management are critical to our ongoing performance

The viability of our business depends on the availability of funding sources, and our success depends on our ability to obtain funding at times, in amounts, for tenors and at rates that enable us to efficiently support our asset base in all market conditions. Our funding sources have generally been stable, but could change in the future because of, among other things, general market disruptions or widening credit spreads, which could also influence the cost of funding. A substantial part of our liquidity and funding requirements are met using short-term unsecured funding sources, including retail and wholesale deposits and the regular issuance of money market securities. A change in the availability of short-term funding could occur quickly.

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 our holding company and at subsidiaries, 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, in the absence of other changes in our business.

Reductions in our credit ratings may adversely affect the market value of the securities and other obligations and increase our funding costs, in particular with regard to funding

from wholesale unsecured sources, and could affect the availability of certain kinds of funding. In addition, as we experienced in connection with Moody's downgrade of our long-term debt rating in June 2012, rating downgrades can require us to post additional collateral or make additional cash payments under trading agreements. Our credit ratings, together with our capital strength and reputation, also contribute to maintaining client and counterparty confidence, and it is possible that rating changes could influence the performance of some of our businesses.

*Liquidity and funding:* The requirement to maintain a liquidity coverage ratio of high-quality liquid assets to estimated stressed short-term net cash outflows, the proposed requirement to maintain a net stable funding ratio, and other similar liquidity and funding requirements, oblige us to maintain high levels of overall liquidity, limit our ability to optimize interest income and expense, make certain lines of business less attractive and reduce our overall ability to generate profits. The liquidity coverage ratio and net stable funding ratio requirements are intended to ensure that we are not overly reliant on short-term funding and that we have sufficient long-term funding for illiquid assets. The relevant calculations make assumptions about the relative likelihood and amount of outflows of funding and available sources of additional funding in market-wide and firm-specific stress situations. 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 these subsidiaries. These funds are available to meet funding and collateral needs in the relevant entities, but are generally not readily available for use by the Group as a whole.

## Strategy, management and operations risks

### We may not be successful in the ongoing execution of our strategic plans

Over the last seven years, we have transformed our business to focus on our Global Wealth Management business and our universal bank in Switzerland, complemented by Asset Management and a significantly smaller and more capital efficient Investment Bank; we have substantially reduced the risk-weighted assets and leverage ratio denominator usage in Corporate Center – Non-core and Legacy Portfolio; and made significant cost reductions. We have recently provided an update on the execution of our strategy, updated our performance targets and provided guidance on capital and resources. Risk remains that we may not succeed in executing our strategy or achieving 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 and ambitions in the past and we may need to do so again in the future.

To achieve our strategic plans, we expect to continue to make significant expenditures on technology and infrastructure to improve client experience, improve and further enable digital offerings and increase efficiency. Our investments in new technology may not fully achieve our objectives or improve our ability to attract and retain customers. In addition, we will likely 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.

As part of our strategy, we seek to improve our operating efficiency, in part by controlling our costs. We may not be able to identify feasible cost reduction opportunities that are consistent with our business goals and cost reductions may be realized later or may be smaller than we anticipate. Higher temporary and permanent regulatory costs and higher business demand than anticipated have partly offset cost reductions and delayed the achievement of our past cost reduction targets, and we could continue to be challenged in the execution of our ongoing efforts to improve operating efficiency.

Changes in our workforce as a result of outsourcing, nearshoring, offshoring, insourcing or staff reductions may introduce new operational risks that, if not effectively addressed, could affect our ability to achieve 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 effectiveness and efficiency programs, we may also experience unintended consequences, such as the unintended 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.

#### 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 substantial loss we incurred 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. These attacks may be attempted through the introduction of viruses or malware, phishing and other forms of social engineering, distributed denial of service attacks and other means. These attempts may occur directly, or using equipment or security passwords of our employees, third party service providers or other users. In addition to external attacks, we have experienced loss of client data from failure by employees and others to follow internal policies and procedures and from misappropriation of our data by employees and others. We may not be able to anticipate, detect or recognize threats to our systems or data and our preventative measures may not be effective to prevent an attack or a security breach. In the event of a security breach notwithstanding our preventative measures, we may not immediately detect a particular breach or attack. 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.

We are subject to complex and frequently changing laws and regulations governing the protection of client and personal data, such as the EU General Data Privacy Regulation. Ensuring that we comply with applicable laws and regulations when we collect, use and transfer personal information requires substantial resources and may affect the ways in which we conduct our business. In the event that we fail to comply with applicable laws, we may be exposed to regulatory fines and penalties and other sanctions. We may also incur such penalties if our vendors or other service providers or clients or counterparties fail to comply with these laws or to maintain appropriate controls over protected data. In addition, any loss or exposure of client or other data, may adversely damage our reputation and adversely affect our business.

A major focus of US and other countries' governmental policies relating to financial institutions in recent years has been on fighting money laundering and terrorist financing. We are required to maintain effective policies, procedures and controls to detect, prevent and report money laundering and terrorist financing, and to verify the identity of our clients under the laws of many of the countries in which we operate. We are also subject to laws and regulations related to corrupt and illegal payments to government officials by others, such as the US Foreign Corrupt Practices Act and the UK Bribery Act. We have implemented policies, procedures and internal controls that are designed to comply with such laws and regulations. Notwithstanding this, US regulators have found deficiencies in the design and operation of anti-money laundering programs in our US operations. We have undertaken a significant program to address these regulatory findings with the objective of fully meeting regulatory expectations for our programs. Failure to maintain and implement adequate programs to combat money laundering, terrorist financing or corruption, or any failure of our programs in these areas, could have serious consequences both from legal enforcement action and from damage to our reputation. Frequent changes in sanctions imposed and increasingly complex sanctions imposed on countries, entities and individuals increase our cost of monitoring and complying with sanctions requirements and increase the risk that we will not timely identify previously permissible client activity that is subject to a sanction.

As a result of new and changed regulatory requirements and the changes we have made in our legal structure, the volume, frequency and complexity of our regulatory and other reporting has significantly increased. Regulators have also significantly increased expectations for our internal reporting and data aggregation, as well as management reporting. We have incurred and continue to incur significant costs to implement infrastructure to meet these requirements. Failure to timely and accurately meet external reporting requirements or to meet regulatory expectations for internal reporting, data aggregation and management 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 operate. This may include a disruption due to natural disasters, pandemics, civil unrest, war or terrorism and involve electrical, communications, transportation or other services we use or used by third parties with whom we conduct business.

**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 SEC proposed a new regulation and interpretation intended to enhance and clarify the duties of brokers and investment advisers to retail customers. The proposed requirements, if adopted, would apply to a large portion of Global Wealth Management's business in the US, and 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, if and 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.

UBS experienced cross-border outflows over a number of years as a result of heightened focus by fiscal authorities on cross-border investment and fiscal amnesty programs, in anticipation of the implementation in Switzerland of the global automatic exchange of tax information, and as a result of the measures UBS has 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, Global Wealth Management's 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 Global 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 Global Wealth Management, in particular. 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.

**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 CET1 capital ratio of around 13% and a 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 CET1 ratios, the imposition of risk add-ons or capital buffers, and the application of additional capital, liquidity and similar requirements to subsidiaries. The results of our businesses may be adversely affected by events arising from other factors described herein. In some cases, such as litigation and regulatory risk and operational risk events, losses may be sudden and large. These risks could reduce the amount of capital available for return to shareholders and hinder our ability to achieve our capital returns target of a progressive cash dividend coupled with a share repurchase program.

**Failure to maintain our capital strength may adversely affect our ability to execute our strategy, our client franchise and our competitive position**

Our capital strength is a key component of our strategy. Capital strength enables us to grow our businesses, and absorb increases in regulatory and capital requirements. It reassures our clients and stakeholders, forms the basis for our capital return policy and contributes to our credit ratings. Our capital ratios are driven primarily by RWA, leverage ratio denominator and eligible capital, 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, adverse currency movements, increased counterparty risk, deterioration in the economic environment or increased operational risk could result in an increase 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.

The leverage ratio is a balance sheet-driven measure and therefore limits balance sheet-intensive activities, such as lending, more than activities that are less balance sheet intensive, and it may constrain our business even if we satisfy other risk-based capital requirements. Our leverage ratio denominator 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 of our control.

**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 such trends and developments by devising and implementing adequate business strategies, do not adequately develop or update our technology including our digital channels and tools, or are unable to attract or retain the qualified people needed.

The amount and structure of our employee compensation is affected not only by our business results but also by competitive factors and regulatory considerations.

In 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 other stakeholders, we have increased average deferral periods for stock awards, expanded forfeiture provisions and, to a more limited extent, introduced clawback provisions for certain awards linked to business performance. We have also introduced individual caps on the proportion of fixed to variable pay for the Group Executive Board (GEB) members, as well as certain other employees.

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 could seriously compromise our ability to execute our strategy and to successfully improve our operating and control environment, and could affect our business performance. Swiss law requires that shareholders approve the compensation of the Board of Directors (BoD) and the 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 generated. Therefore we must diligently identify, assess, manage and control our risks, not only in normal market conditions but also as they might develop under more extreme, stressed conditions, when concentrations of exposures can lead to severe losses.

As seen during the financial crisis of 2007–2009, we have not always been able to prevent serious losses arising from extreme or sudden market events that are not anticipated by our risk measures and systems. Our risk measures, concentration controls and the dimensions in which we aggregated risk to identify correlated exposures proved inadequate in a historically severe deterioration in financial markets. As a result, we recorded substantial losses on fixed income trading positions, particularly in 2008 and 2009. We have substantially revised and strengthened our risk management and control framework and increased the capital we hold relative to the risks we take. Nonetheless, we could suffer further losses in the future if, for example:

- we do not fully identify the risks in our portfolio, in particular risk concentrations and correlated risks;
- our assessment of the risks identified, or our response to negative trends, proves to be untimely, inadequate, insufficient or incorrect;
- markets move in ways that we do not expect – in terms of their speed, direction, severity or correlation – and our ability to manage risks in the resulting environment is, therefore, affected;
- third parties to whom we have credit exposure or whose securities we hold are severely affected by events and we suffer defaults and impairments beyond the level implied by our risk assessment; or
- collateral or other security provided by our counterparties proves inadequate to cover their obligations at the time of default.

We have exposures related to real estate in various countries, including a substantial Swiss mortgage portfolio. Although we believe this portfolio is prudently managed, we could nevertheless be exposed to losses if a substantial deterioration in the Swiss real estate market were to occur. We also hold legacy risk positions, primarily in Corporate Center, that, in many cases, are illiquid and may again deteriorate in value.

We also manage risk on behalf of our clients. The performance of assets we hold for our clients may be adversely affected by the same 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. Deteriorations in the fair value of these positions would have a negative effect on our earnings.

**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 affect 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 Comprehensive Capital Analysis and Review process requires that our US intermediate holding company demonstrate that it can continue to meet minimum capital standards over a hypothetical nine-quarter 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 would 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.

### Reputational risk

#### Our reputation is critical to our success

Our reputation is critical to the success of our strategic plans, business and prospects. Reputational damage is difficult to reverse, and improvements tend to be slow and difficult to measure. 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. New events that cause reputational damage could have a material adverse effect on our results of operation and financial condition, as well as our ability to achieve our strategic goals and financial targets.

### Estimation and valuation risk

#### 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 International Financial Reporting Standards (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, the assessment of the impairment of goodwill and estimation of provisions for contingencies, including litigation, regulatory and similar matters. Such judgments, including the underlying estimates and assumptions, which encompass historical experience, expectations of the future and other factors, are regularly evaluated to determine their continuing relevance based on current conditions. Using different assumptions could cause the reported results to differ. Changes in assumptions, or failure to make the changes necessary to reflect evolving market conditions, may have a significant effect on the financial statements in the periods when changes occur. Estimates of provisions for contingencies may be subject to a wide range of potential outcomes and significant uncertainty. For example, the broad range of potential outcomes in our proceeding in France increases the uncertainty associated with assessing the appropriate provision. If the estimates and assumptions in future periods deviate from the current outlook, our financial results may also be negatively affected.

Changes to IFRS or interpretations thereof may cause future reported results and financial position to differ from current expectations, or historical results to differ from those previously reported due to the adoption of accounting standards on a retrospective basis. Such changes may also affect our regulatory capital and ratios. For example, we adopted IFRS 9 effective on 1 January 2018, which required us to change the accounting treatment of financial instruments measured at amortized cost and certain other positions, to record loans from 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 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.

**APPENDIX IV**

**EXTRACT OF  
THE UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS OF  
UBS AG AND ITS SUBSIDIARIES  
FOR THE FIRST QUARTER ENDED 31 MARCH 2019**

# UBS AG interim consolidated financial statements (unaudited)

## Income statement

<i>USD million</i>	Note	For the quarter ended		
		31.3.19	31.12.18	31.3.18
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3	2,674	2,691	2,389
Interest expense from financial instruments measured at amortized cost	3	(1,912)	(1,810)	(1,409)
Interest income from financial instruments measured at fair value through profit or loss	3	1,346	1,338	1,114
Interest expense from financial instruments measured at fair value through profit or loss	3	(1,006)	(1,013)	(677)
Net interest income	3	1,101	1,207	1,417
Other net income from financial instruments measured at fair value through profit or loss		1,936	1,294	1,973
Credit loss (expense) / recovery	9	(20)	(53)	(26)
Fee and commission income	4	4,566	4,709	5,197
Fee and commission expense	4	(409)	(439)	(433)
Net fee and commission income	4	4,157	4,270	4,764
Other income	5	169	365	174
Total operating income		7,343	7,083	8,301
Personnel expenses	6	3,468	3,262	3,771
General and administrative expenses	7	2,026	3,094	2,371
Depreciation and impairment of property, equipment and software		379	293	246
Amortization and impairment of intangible assets		16	17	16
Total operating expenses		5,890	6,667	6,404
Operating profit / (loss) before tax		1,454	416	1,897
Tax expense / (benefit)	8	387	143	484
Net profit / (loss)		1,067	273	1,413
Net profit / (loss) attributable to non-controlling interests		(2)	1	2
<b>Net profit / (loss) attributable to shareholders</b>		<b>1,069</b>	<b>272</b>	<b>1,412</b>



**Statement of comprehensive income**

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
<b>Comprehensive income attributable to shareholders</b>			
<b>Net profit / (loss)</b>	<b>1,069</b>	272	1,412
<b>Other comprehensive income that may be reclassified to the income statement</b>			
<b>Foreign currency translation</b>			
Foreign currency translation movements related to net assets of foreign operations, before tax	(151)	(129)	643
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax	26	21	106
Foreign currency translation differences on foreign operations reclassified to the income statement	1	(7)	0
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement	0	2	0
Income tax relating to foreign currency translations, including the impact of net investment hedges	1	0	0
Subtotal foreign currency translation, net of tax	(122)	(112)	749
<b>Financial assets measured at fair value through other comprehensive income</b>			
Net unrealized gains / (losses), before tax	81	68	(80)
Impairment charges reclassified to the income statement from equity	0	0	0
Realized gains reclassified to the income statement from equity	(1)	0	0
Realized losses reclassified to the income statement from equity	0	0	0
Income tax relating to net unrealized gains / (losses)	(17)	(23)	24
Subtotal financial assets measured at fair value through other comprehensive income, net of tax	62	44	(57)
<b>Cash flow hedges of interest rate risk</b>			
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	588	816	(476)
Net (gains) / losses reclassified to the income statement from equity	(21)	(43)	(134)
Income tax relating to cash flow hedges	(107)	(157)	122
Subtotal cash flow hedges, net of tax	459	616	(488)
<b>Total other comprehensive income that may be reclassified to the income statement, net of tax</b>	<b>399</b>	548	205
<b>Other comprehensive income that will not be reclassified to the income statement</b>			
<b>Defined benefit plans</b>			
Gains / (losses) on defined benefit plans, before tax	(160)	(240)	(36)
Income tax relating to defined benefit plans	(16)	218	22
Subtotal defined benefit plans, net of tax	(176)	(22)	(14)
<b>Own credit on financial liabilities designated at fair value</b>			
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	(326)	376	180
Income tax relating to own credit on financial liabilities designated at fair value	8	(8)	(2)
Subtotal own credit on financial liabilities designated at fair value, net of tax	(318)	368	178
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>(494)</b>	346	164
<b>Total other comprehensive income</b>	<b>(94)</b>	894	369
<b>Total comprehensive income attributable to shareholders</b>	<b>974</b>	1,166	1,781

## Statement of comprehensive income (continued)

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
<b>Comprehensive income attributable to non-controlling interests</b>			
Net profit / (loss)	(2)	1	2
<b>Other comprehensive income that will not be reclassified to the income statement</b>			
Foreign currency translation movements, before tax	4	1	2
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	4	1	2
<b>Total other comprehensive income that will not be reclassified to the income statement, net of tax</b>	<b>4</b>	<b>1</b>	<b>2</b>
<b>Total comprehensive income attributable to non-controlling interests</b>	<b>2</b>	<b>2</b>	<b>3</b>
<b>Total comprehensive income</b>			
Net profit / (loss)	1,067	273	1,413
Other comprehensive income	(90)	895	371
<i>of which: other comprehensive income that may be reclassified to the income statement</i>	<i>399</i>	<i>548</i>	<i>205</i>
<i>of which: other comprehensive income that will not be reclassified to the income statement</i>	<i>(489)</i>	<i>347</i>	<i>166</i>
<b>Total comprehensive income</b>	<b>977</b>	<b>1,168</b>	<b>1,784</b>

**Balance sheet**

<i>USD million</i>	Note	<b>31.3.19</b>	31.12.18
<b>Assets</b>			
Cash and balances at central banks		<b>110,618</b>	108,370
Loans and advances to banks		<b>16,777</b>	16,642
Receivables from securities financing transactions		<b>100,222</b>	95,349
Cash collateral receivables on derivative instruments	11	<b>25,164</b>	23,603
Loans and advances to customers	9	<b>320,466</b>	321,482
Other financial assets measured at amortized cost	12	<b>22,495</b>	22,637
<b>Total financial assets measured at amortized cost</b>		<b>595,744</b>	588,084
Financial assets at fair value held for trading	10	<b>109,683</b>	104,513
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>		<b>33,828</b>	32,121
Derivative financial instruments	10, 11	<b>111,161</b>	126,212
Brokerage receivables	10	<b>16,275</b>	16,840
Financial assets at fair value not held for trading	10	<b>80,973</b>	82,387
<b>Total financial assets measured at fair value through profit or loss</b>		<b>318,092</b>	329,953
<b>Financial assets measured at fair value through other comprehensive income</b>	10	<b>7,168</b>	6,667
Investments in associates		<b>1,095</b>	1,099
Property, equipment and software		<b>11,642</b>	8,479
Goodwill and intangible assets		<b>6,621</b>	6,647
Deferred tax assets		<b>9,799</b>	10,066
Other non-financial assets	12	<b>6,577</b>	7,062
<b>Total assets</b>		<b>956,737</b>	958,055

**Balance sheet (continued)**

<i>USD million</i>	Note	31.3.19	31.12.18
<b>Liabilities</b>			
Amounts due to banks		9,083	10,962
Payables from securities financing transactions		5,246	10,296
Cash collateral payables on derivative instruments	11	30,319	28,906
Customer deposits		428,129	421,986
Funding from UBS Group AG and its subsidiaries		44,354	41,202
Debt issued measured at amortized cost	14	83,894	91,245
Other financial liabilities measured at amortized cost	12	10,770	7,576
<b>Total financial liabilities measured at amortized cost</b>		<b>611,795</b>	<b>612,174</b>
Financial liabilities at fair value held for trading	10	34,259	28,949
Derivative financial instruments	10, 11	110,809	125,723
Brokerage payables designated at fair value	10	39,326	38,420
Debt issued designated at fair value	10, 13	66,919	57,031
Other financial liabilities designated at fair value	10, 12	32,394	33,594
<b>Total financial liabilities measured at fair value through profit or loss</b>		<b>283,706</b>	<b>283,717</b>
Provisions	15	3,165	3,457
Other non-financial liabilities	12	4,682	6,275
<b>Total liabilities</b>		<b>903,348</b>	<b>905,624</b>
<b>Equity</b>			
Share capital		338	338
Share premium		24,651	24,655
Retained earnings		23,886	23,317
Other comprehensive income recognized directly in equity, net of tax		4,341	3,946
<b>Equity attributable to shareholders</b>		<b>53,216</b>	<b>52,256</b>
Equity attributable to non-controlling interests		173	176
<b>Total equity</b>		<b>53,389</b>	<b>52,432</b>
<b>Total liabilities and equity</b>		<b>956,737</b>	<b>958,055</b>

**Statement of changes in equity**

<i>USD million</i>	Share capital	Share premium	Retained earnings
<b>Balance as of 1 January 2018</b>	<b>338</b>	<b>24,633</b>	<b>21,646</b>
Issuance of share capital			
Premium on shares issued and warrants exercised		19	
Tax (expense) / benefit			
Dividends			
Translation effects recognized directly in retained earnings			(22)
New consolidations / (deconsolidations) and other increases / (decreases)		14	
Total comprehensive income for the period			1,576
<i>of which: net profit / (loss)</i>			<i>1,412</i>
<i>of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax</i>			
<i>of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans</i>			<i>(14)</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – own credit</i>			<i>178</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation</i>			
<b>Balance as of 31 March 2018</b>	<b>338</b>	<b>24,666</b>	<b>23,200</b>
<b>Balance as of 1 January 2019 before the adoption of IFRIC 23</b>	<b>338</b>	<b>24,655</b>	<b>23,317</b>
Effect of adoption of IFRIC 23			(11)
<b>Balance as of 1 January 2019 after the adoption of IFRIC 23</b>	<b>338</b>	<b>24,655</b>	<b>23,306</b>
Issuance of share capital			
Premium on shares issued and warrants exercised			
Tax (expense) / benefit		2	
Dividends			
Translation effects recognized directly in retained earnings			4
New consolidations / (deconsolidations) and other increases / (decreases)		(6)	
Total comprehensive income for the period			575
<i>of which: net profit / (loss)</i>			<i>1,069</i>
<i>of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax</i>			
<i>of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans</i>			<i>(176)</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – own credit</i>			<i>(318)</i>
<i>of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation</i>			
<b>Balance as of 31 March 2019</b>	<b>338</b>	<b>24,651</b>	<b>23,886</b>

<sup>1</sup> Excludes defined benefit plans and own credit that are recorded directly in Retained earnings.

<i>Other comprehensive income recognized directly in equity, net of tax<sup>1</sup></i>	<i>foreign currency translation</i>	<i>of which: financial assets measured at fair value through OCI</i>	<i>of which: cash flow hedges</i>	Total equity attributable to shareholders	Non-controlling interests	Total equity
4,754	4,455	(61)	360	51,370	59	51,429
				0		0
				19		19
				0		0
				0	(4)	(4)
22		3	20	0		0
				14	8	22
205	749	(57)	(488)	1,781	3	1,784
				1,412	2	1,413
205	749	(57)	(488)	205		205
				(14)		(14)
				178		178
				0	2	2
4,981	5,205	(115)	(108)	53,185	65	53,250
3,946	3,940	(103)	109	52,256	176	52,432
				(11)		(11)
3,946	3,940	(103)	109	52,245	176	52,421
				0		0
				0		0
				2		2
				0	(4)	(4)
(4)			(4)	0		0
				(6)	0	(7)
399	(122)	62	459	974	2	977
				1,069	(2)	1,067
399	(122)	62	459	399		399
				(176)		(176)
				(318)		(318)
				0	4	4
4,341	3,818	(40)	564	53,216	173	53,389

**Statement of cash flows**

	Year-to-date	
<i>USD million</i>	<b>31.3.19</b>	31.3.18
<b>Cash flow from / (used in) operating activities</b>		
Net profit / (loss)	1,067	1,413
<b>Non-cash items included in net profit and other adjustments:</b>		
Depreciation and impairment of property, equipment and software	379	246
Amortization and impairment of intangible assets	16	16
Credit loss expense / (recovery)	20	26
Share of net profits of associates / joint ventures and impairment of associates	(15)	(16)
Deferred tax expense / (benefit)	228	288
Net loss / (gain) from investing activities	(73)	157
Net loss / (gain) from financing activities	4,272	(3,911)
Other net adjustments	178	(604)
<b>Net change in operating assets and liabilities:</b>		
Loans and advances to banks / amounts due to banks	(1,696)	1,785
Securities financing transactions	(9,997)	5,254
Cash collateral on derivative instruments	(131)	(1,866)
Loans and advances to customers	(1,570)	(7,194)
Customer deposits	9,797	(3,959)
Financial assets and liabilities at fair value held for trading and derivative financial instruments	1,697	15,394
Brokerage receivables and payables	1,473	4,015
Financial assets at fair value not held for trading, other financial assets and liabilities	(1,266)	(7,005)
Provisions, other non-financial assets and liabilities	(639)	(986)
Income taxes paid, net of refunds	(204)	(141)
<b>Net cash flow from / (used in) operating activities</b>	<b>3,535</b>	<b>2,913</b>
<b>Cash flow from / (used in) investing activities</b>		
Purchase of subsidiaries, associates and intangible assets	(1)	(6)
Disposal of subsidiaries, associates and intangible assets <sup>1</sup>	27	30
Purchase of property, equipment and software	(314)	(344)
Disposal of property, equipment and software	2	28
Purchase of financial assets measured at fair value through other comprehensive income	(1,033)	(450)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	610	253
Net (purchase) / redemption of debt securities measured at amortized cost	629	(1,124)
<b>Net cash flow from / (used in) investing activities</b>	<b>(79)</b>	<b>(1,613)</b>

Table continues on the next page.

## Statement of cash flows (continued)

Table continued from previous page.

	Year-to-date	
<i>USD million</i>	<b>31.3.19</b>	31.3.18
<b>Cash flow from / (used in) financing activities</b>		
Net short-term debt issued / (repaid)	<b>(6,858)</b>	(4,650)
Issuance of long-term debt, including debt issued designated at fair value	<b>14,704</b>	18,458
Repayment of long-term debt, including debt issued designated at fair value	<b>(10,263)</b>	(10,541)
Funding from UBS Group AG and its subsidiaries	<b>2,938</b>	1,936
Net changes in non-controlling interests	<b>(4)</b>	17
<b>Net cash flow from / (used in) financing activities</b>	<b>515</b>	5,221
<b>Total cash flow</b>		
<b>Cash and cash equivalents at the beginning of the period</b>	<b>125,853</b>	104,787
Net cash flow from / (used in) operating, investing and financing activities	<b>3,972</b>	6,521
Effects of exchange rate differences on cash and cash equivalents	<b>(1,292)</b>	2,111
<b>Cash and cash equivalents at the end of the period<sup>2</sup></b>	<b>128,534</b>	113,419
<i>of which: cash and balances at central banks</i>	<b>110,514</b>	97,260
<i>of which: loans and advances to banks</i>	<b>15,735</b>	12,774
<i>of which: money market paper<sup>3</sup></i>	<b>2,285</b>	3,385
<b>Additional information</b>		
Net cash flow from / (used in) operating activities includes:		
Interest received in cash	<b>1,342</b>	1,696
Interest paid in cash	<b>2,301</b>	1,440
Dividends on equity investments, investment funds and associates received in cash <sup>4</sup>	<b>1,238</b>	571

<sup>1</sup> Includes dividends received from associates. <sup>2</sup> USD 4,678 million and USD 3,596 million of cash and cash equivalents (mainly reflected in Loans and advances to banks) were restricted as of 31 March 2019 and 31 March 2018, respectively. Refer to "Note 26 Restricted and transferred financial assets" in the "Consolidated financial statements" section in the Annual Report 2018 for more information. <sup>3</sup> Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost. <sup>4</sup> Includes dividends received from associates reported within Net cash flow from / (used in) investing activities.



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

## Note 1 Basis of accounting

### Basis of preparation

The consolidated financial statements (the financial statements) of UBS AG and its subsidiaries (together "UBS AG") are prepared in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB), and are presented in US dollars (USD), which is also the functional currency of UBS AG, UBS AG's Head Office, UBS AG's London Branch and UBS AG's US-based operations. These interim financial statements are prepared in accordance with IAS 34, *Interim Financial Reporting*.

In preparing these interim financial statements, the same accounting policies and methods of computation have been applied as in the UBS AG consolidated annual financial statements for the period ended 31 December 2018, except for the changes described in this note. These interim financial statements are unaudited and should be read in conjunction with UBS AG's audited consolidated financial statements included in the Annual Report 2018. In the opinion of management, all necessary adjustments were made for a fair presentation of UBS AG's financial position, results of operations and cash flows.

Preparation of these interim financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, income, expenses and disclosures of contingent assets and liabilities. These estimates and assumptions are based on the best available information. Actual results in the future could differ from such estimates and such differences may be material to the financial statements. Revisions to estimates, based on regular reviews, are recognized in the period in which they occur. For more information on areas of estimation uncertainty that are considered to require critical judgment, refer to "Note 1a Significant accounting policies" in the "Consolidated financial statements" section of the Annual Report 2018.

### Adoption of IFRS 16, Leases

#### Application and transition effect

Effective from 1 January 2019, UBS AG adopted IFRS 16, *Leases*, which replaced IAS 17, *Leases*, and sets out the principles for the recognition, measurement, presentation and disclosure of leases.

IFRS 16 introduces a single lessee accounting model and fundamentally changes how UBS AG accounts for operating leases when acting as a lessee, with a requirement to record a right-of-use asset and lease liability on the balance sheet. UBS AG is a lessee in a number of leases, primarily of real estate, including offices, retail branches and sales offices, with a smaller number of IT hardware leases. As permitted by the transitional provisions of IFRS 16, UBS AG elected to apply the modified retrospective approach and has not restated comparative figures. Overall, adoption of IFRS 16 resulted in a USD 3.4 billion increase in both total assets and total liabilities in UBS AG's consolidated financial statements. There was no effect on equity.

→ Refer to the table below for more information

UBS AG applied the following practical expedients that are permitted on transition to IFRS 16 where UBS AG is the lessee in a lease previously classified as an operating lease:

- to not reassess whether or not a contract contained a lease;
- to rely on previous assessments of whether such contracts were considered onerous;
- to rely on previous sale-and-leaseback assessments;
- adjust lease terms with the benefit of hindsight with respect to whether extension or termination options are reasonably certain of being exercised;
- to discount lease liabilities using UBS AG's incremental borrowing rate in each currency as at 1 January 2019;
- to initially measure the right-of-use asset at an amount equal to the lease liability for leases previously classified as operating leases, adjusted for existing lease balances such as rent prepayments, rent accruals, lease incentives and onerous lease provisions, but excluding initial direct costs; and
- to not apply IFRS 16 to leases whose remaining term will end within 12 months from the transition date.

## Note 1 Basis of accounting (continued)

The measurement of leases previously classified as finance leases, where UBS AG acts as lessee, has not changed on transition to IFRS 16. Similarly UBS AG has made no adjustments where UBS AG acts as lessor, in either a finance or operating lease, of physical assets it owns. Where UBS AG acts as an intermediate lessor, i.e., enters into a head lease and subleases the asset to a third party, the sublease has been classified as either a

finance or operating lease based primarily on whether the sublease term consumes the majority of the remaining useful life of the right-of-use asset arising from the head lease as at the transition date.

The following table reconciles the obligations in respect of operating leases as at 31 December 2018 to the opening lease liabilities recognized on 1 January 2019:

### Reconciliation between operating lease commitments disclosed under IAS 17 and lease liabilities recognized under IFRS 16

<i>USD million</i>	
<b>Total undiscounted operating lease commitments as of 31 December 2018</b>	<b>4,546</b>
Leases with a remaining term of less than one year as of 1 January 2019	(18)
Excluded service components	(296)
Reassessment of lease term for extension or termination options	424
<b>Total undiscounted lease payments</b>	<b>4,657</b>
Discounted at a weighted average incremental borrowing rate of 3.07%	(720)
<b>IFRS 16 transition adjustment</b>	<b>3,937</b>
Finance lease liabilities as of 31 December 2018	19
<b>Carrying amount of total lease liabilities as of 1 January 2019</b>	<b>3,956</b>

The following table provides details on the determination of right-of-use assets on transition:

### Determination of right-of-use assets on transition

<i>USD million</i>	<i>Carrying amount</i>
<b>Other financial assets measured at amortized cost (finance lease assets recognized under IAS 17 as of 31 December 2018)</b>	<b>19</b>
IFRS 16 transition adjustment	3,937
Other non-financial assets (prepaid rent)	19
Other non-financial liabilities (lease incentives)	(204)
Other financial liabilities at amortized cost (rent accruals)	(180)
Provisions (onerous lease provisions)	(131)
Other financial assets at amortized cost (finance lease receivables from subleases as intermediate lessor)	(176)
<b>Property, equipment and software (total right-of-use assets as of 1 January 2019)<sup>1</sup></b>	<b>3,284</b>

<sup>1</sup> Upon adoption of IFRS 16 on 1 January 2019, total liabilities for UBS AG increased by USD 3,422 million, representing USD 3,937 million in newly recognized lease liabilities, less USD 515 million liabilities from lease incentives, rent accruals and onerous lease provisions which were reclassified and presented as part of the right-of-use assets carrying amount. Total assets for UBS AG increased by USD 3,422 million, representing USD 3,246 million in right-of-use assets and USD 176 million in additional finance lease receivables from subleases.

Lease liabilities are presented within *Other financial liabilities measured at amortized cost* and right-of-use assets within *Property, equipment and software*. Finance lease receivables are included within *Other financial assets measured at amortized cost*. Due to the practical expedients taken on transition there was no effect on equity.

During the first quarter of 2019, the weighted average lease term was approximately 9 years and the depreciation charge for right-of-use assets presented within *Depreciation and impairment of property, equipment and software* was USD 113

million. The interest charge on lease liabilities presented within *Interest expense from financial instruments measured at amortized cost* was USD 30 million and other rental expenses (including non-lease components paid to landlords) presented within *General and administrative expenses* were USD 16 million during the first quarter of 2019. This compares with a total rental expense presented in *General and administrative expenses* of USD 147 million and USD 135 million for the quarters ended 31 March 2018 and 31 December 2018, respectively.

**Note 1 Basis of accounting (continued)****Update to significant accounting policy – Leasing (disclosed in Note 1a, item 15, *Leasing in the financial statements 2018*)**

UBS AG predominantly enters into lease contracts, or contracts that include lease components, as a lessee of real estate, including offices, retail branches and sales offices, with a small number of IT hardware leases. UBS AG identifies non-lease components of a contract and accounts for them separately from lease components.

When UBS AG is lessee in a lease arrangement, UBS AG recognizes a lease liability and corresponding right-of-use (RoU) asset at the commencement of the lease term when UBS AG acquires control of the physical use of the asset. Lease liabilities are presented within *Other financial liabilities measured at amortized cost* and RoU assets within *Property, equipment and software*. The lease liability is measured based on the present value of the lease payments over the lease term, discounted using UBS AG's unsecured borrowing rate given the rate implicit in a lease is generally not observable to the lessee. Interest expense on the lease liability is presented within *Interest expense from financial instruments measured at amortized cost*. The RoU asset is recorded at an amount equal to the lease liability but is adjusted for rent prepayments, initial direct costs, any costs to refurbish the leased asset or lease incentives received. The RoU asset is depreciated over the shorter of the lease term or the useful life of the underlying asset, with the depreciation presented within *Depreciation and impairment of property, equipment and software*.

Lease payments generally include fixed payments and variable payments that depend on an index (such as an inflation index). When the lease contains an extension or termination option that UBS AG considers reasonably certain to be exercised, the expected rental payments or costs of termination are included within the lease payments used to generate the lease liability. UBS AG does not typically enter into leases with purchase options or residual value guarantees.

Where UBS AG acts as lessor or sublessor under a finance lease, a receivable is recognized in *Other financial assets measured at amortized cost* at an amount equal to the present value of the aggregate of the 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 as repayments of the outstanding receivable. Interest income reflects a constant periodic rate of return on UBS AG's net investment using the interest rate implicit in the lease (or for subleases, the rate for the head 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. Where UBS AG acts as a lessor or sublessor in an operating lease of owned real estate, UBS AG recognizes the operating lease income on a straight-line basis over the lease term.

Lease receivables are subject to impairment requirements as set out in point g. in "Note 1a item 3, *Financial instruments*". Expected credit losses (ECL) on lease receivables are determined following the general impairment model within IFRS 9, *Financial Instruments*, without utilizing the simplified approach of always measuring impairment at the amount of lifetime ECL.

**Other changes to accounting policies****Changes in Corporate Center cost allocations and equity attribution to business divisions**

In order to further align UBS AG and divisional performance, UBS AG adjusted the methodology for the allocation of Corporate Center – Group Asset and Liability Management (Group ALM) and Corporate Center – Services funding costs and expenses to the business divisions. At the same time, UBS AG updated its funds transfer pricing framework to better reflect the sources and usage of funding. All of these changes are effective as of 1 January 2019 and prior-period segment information has been restated. Together, these changes have decreased the business divisions' operating results and thereby increased their adjusted cost / income ratios by 1–2 percentage points, with an offsetting effect of USD 0.7 billion in Corporate Center's operating profit / (loss) before tax.

Corporate Center has retained funding costs for deferred tax assets, costs relating to UBS AG's legal entity transformation program and other costs not attributable to or representative of the performance of the business divisions.

Alongside the update to allocations and UBS AG's funds transfer pricing framework, UBS AG has increased the allocation of balance sheet resources from Corporate Center to the business divisions, resulting in USD 223 billion of assets allocated from Corporate Center to the business divisions in restated 2018 numbers, predominantly from high-quality liquid assets and certain other assets centrally managed on behalf of the business divisions.

Upon adoption of IFRS 16, *Leases*, as of 1 January 2019, UBS AG additionally allocated approximately USD 3.4 billion of newly recognized right-of-use assets and finance lease receivables to the business divisions.

→ Refer to "Note 2 Segment reporting" for more information

## Note 1 Basis of accounting (continued)

### Changes to Corporate Center segment reporting

As announced in the Annual Report 2018, there has been a substantial reduction in the size and resource consumption of the Non-core and Legacy Portfolio. In addition, following the aforementioned changes to UBS AG's methodology for allocating funding costs and expenses from Corporate Center – Services and Corporate Center – Group Asset and Liability Management (Group ALM) to the business divisions, the operating loss retained in Corporate Center – Services and Corporate Center – Group ALM has been significantly reduced. As a consequence and in compliance with IFRS 8, *Operating Segments*, beginning with the first quarter 2019 report, UBS AG provides results for total Corporate Center only and does not separately report Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, UBS AG has operationally combined Group Treasury with Group ALM and calls this combined unit Group Treasury. Prior-period information has been restated.

→ Refer to “Note 2 Segment reporting” for more information

### Presentation of dividend income and expense from financial instruments measured at fair value through profit or loss

Effective from the first quarter of 2019, UBS AG refined the presentation of dividend income and expense. This resulted in a reclassification of dividends from *Interest income (expense) from financial instruments measured at fair value through profit or loss* into *Other net income from financial instruments measured at fair value through profit or loss* (prior to 1 January 2019: *Other net income from fair value changes on financial instruments*). The change aligns the presentation of dividends with related fair value changes from the equity instruments and economic hedges removing volatility that has historically arisen within both *Net interest income* and *Other net income from fair value changes on financial instruments*. There is no effect on *Total operating income* or *Net profit / (loss)*. Prior periods have been restated for this presentational change and the effect on the respective reporting lines is outlined in the table below.

### Changes to the presentation of dividend income and expense from financial instruments measured at fair value through profit or loss

USD million	For the quarter ended				Year-to-date
	31.3.18	30.6.18	30.9.18	31.12.18	31.12.18
Interest income from financial instruments measured at fair value through profit or loss	(572)	(636)	(699)	(401)	(2,308)
Interest expense from financial instruments measured at fair value through profit or loss	160	846	175	151	1,331
<b>Net interest income</b>	<b>(412)</b>	<b>210</b>	<b>(524)</b>	<b>(250)</b>	<b>(976)</b>
<b>Other net income from financial instruments measured at fair value through profit or loss</b>	<b>412</b>	<b>(210)</b>	<b>524</b>	<b>250</b>	<b>976</b>

### IFRIC 23, Uncertainty over Income Tax Treatments

Effective 1 January 2019, UBS AG adopted IFRIC Interpretation 23, *Uncertainty over Income Tax Treatments* (IFRIC 23), which addresses how uncertain tax positions should be accounted for under IFRS. 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.

Upon adoption of IFRIC 23, on 1 January 2019 UBS AG recognized a net tax expense of USD 11 million in retained earnings.

### Amendments to IAS 19, Employee Benefits

Effective 1 January 2019, UBS AG adopted 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. Adoption on 1 January 2019 had no effect on UBS AG's financial statements.

### Annual Improvements to IFRS Standards 2015–2017 Cycle

Effective 1 January 2019, UBS AG adopted *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*. Adoption of these amendments on 1 January 2019 had no material effect on UBS AG's financial statements.

## Note 2 Segment reporting

### Overview and changes in Corporate Center segment reporting

UBS AG's businesses are organized globally into four business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank, all of which are supported by Corporate Center. The four business divisions qualify as reportable segments for the purpose of segment reporting and, together with Corporate Center, reflect the management structure of UBS AG.

→ Refer to "Note 1a Significant accounting policies item 2" and "Note 2 Segment reporting" in the "Consolidated financial statements" section of the Annual Report 2018 for more information on UBS AG's reporting segments

As outlined in Note 1, beginning with the first quarter 2019 report, UBS AG provides results for total Corporate Center only and does not separately report Corporate Center – Services, Group Asset and Liability Management and Non-core and Legacy Portfolio.

→ Refer to Note 1 for more information

### Changes in Corporate Center cost and resource allocation to business divisions

In order to further align UBS AG and divisional performance, UBS AG has adjusted its methodology for the allocation of Corporate Center funding costs and expenses to the business divisions. At the same time, it has updated its funds transfer pricing framework to better reflect the sources and usage of funding. Prior-period information for the first quarter of 2018 has been restated, resulting in a decrease in *Operating profit / (loss) before tax* for Global Wealth Management of USD 97 million, for Personal & Corporate Banking of USD 37 million, for Asset Management of USD 8 million and for the Investment Bank of USD 51 million, with a corresponding increase in Corporate Center of USD 193 million.

Additionally, UBS AG has increased the allocation of balance sheet resources from Corporate Center to the business divisions. Prior-period information for the fourth quarter of 2018 has been restated, resulting in an increase of *Total assets* in Global Wealth Management of USD 114 billion, in Personal & Corporate Banking of USD 62 billion, in Asset Management of USD 4 billion and in the Investment Bank of USD 44 billion, with a corresponding decrease of assets in Corporate Center of USD 223 million.

These changes had no effect on the reported results or financial position of UBS AG.

→ Refer to Note 1 for more information

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center	UBS AG
<b>For the quarter ended 31 March 2019<sup>1</sup></b>						
Net interest income	1,009	494	(7)	(188)	(207)	1,101
Non-interest income	2,994	462	453	1,975	379	6,262
Income	4,003	956	446	1,787	172	7,363
Credit loss (expense) / recovery	1	2	0	(22)	0	(20)
Total operating income	4,004	958	446	1,764	172	7,343
Personnel expenses	1,900	218	178	701	471	3,468
General and administrative expenses	267	55	48	165	1,491	2,026
Services (to) / from CC and other BDs	975	296	116	706	(2,093)	0
<i>of which: services from Corporate Center</i>	<i>938</i>	<i>320</i>	<i>128</i>	<i>720</i>	<i>(2,106)</i>	<i>0</i>
Depreciation and impairment of property, equipment and software	1	3	0	2	373	379
Amortization and impairment of intangible assets	14	0	0	2	0	16
Total operating expenses	3,156	571	343	1,577	242	5,890
<b>Operating profit / (loss) before tax</b>	<b>848</b>	<b>386</b>	<b>103</b>	<b>187</b>	<b>(71)</b>	<b>1,454</b>
Tax expense / (benefit)						387
<b>Net profit / (loss)</b>						<b>1,067</b>
<b>As of 31 March 2019</b>						
<b>Total assets</b>	<b>322,330</b>	<b>199,009</b>	<b>31,033</b>	<b>295,365</b>	<b>109,002</b>	<b>956,737</b>

## Note 2 Segment reporting (continued)

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center	UBS AG
<b>For the quarter ended 31 March 2018<sup>1</sup></b>						
Net interest income <sup>2</sup>	1,021	516	(7)	10	(123)	1,417
Non-interest income <sup>2</sup>	3,384	478	472	2,420	155	6,910
Income	4,405	994	466	2,430	32	8,327
Credit loss (expense) / recovery	3	(14)	0	(16)	0	(26)
Total operating income	4,409	981	466	2,415	31	8,301
Personnel expenses	1,971	186	177	951	486	3,771
General and administrative expenses	319	64	53	167	1,769	2,371
Services (to) / from CC and other BDs	1,015	319	130	729	(2,192)	0
<i>of which: services from Corporate Center</i>	<i>981</i>	<i>350</i>	<i>142</i>	<i>737</i>	<i>(2,210)</i>	<i>0</i>
Depreciation and impairment of property, equipment and software	1	3	0	2	239	246
Amortization and impairment of intangible assets	13	0	0	3	0	16
Total operating expenses	3,319	572	360	1,851	302	6,404
<b>Operating profit / (loss) before tax</b>	<b>1,090</b>	<b>409</b>	<b>106</b>	<b>564</b>	<b>(271)</b>	<b>1,897</b>
Tax expense / (benefit)						484
<b>Net profit / (loss)</b>						<b>1,413</b>
<b>As of 31 December 2018</b>						
<b>Total assets</b>	<b>313,737</b>	<b>200,767</b>	<b>28,140</b>	<b>302,434</b>	<b>112,977</b>	<b>958,055</b>

<sup>1</sup> Comparative figures in this table have been restated for the changes in Corporate Center cost and resource allocation to the business divisions and the changes in the equity attribution framework. Refer to further discussion in this note and in Note 1. <sup>2</sup> Effective from the first quarter of 2019, UBS AG refined the presentation of dividend income and expense, reclassifying dividends from financial instruments measured at fair value through profit or loss from Net interest income to Non-interest income. Prior-period information was restated accordingly, with virtually all of the effect on UBS AG arising from the Investment Bank. Refer to Note 1 for more information.

## Note 3 Net interest income<sup>1</sup>

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
<b>Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income</b>			
Interest income from loans and deposits <sup>2</sup>	2,028	2,055	1,870
Interest income from securities financing transactions <sup>3</sup>	498	468	305
Interest income from other financial instruments measured at amortized cost	96	90	31
Interest income from debt instruments measured at fair value through other comprehensive income	26	30	38
Interest income from derivative instruments designated as cash flow hedges	26	49	145
<b>Total interest income from financial instruments measured at amortized cost and fair value through other comprehensive income</b>	<b>2,674</b>	<b>2,691</b>	<b>2,389</b>
Interest expense on loans and deposits <sup>4</sup>	1,137	1,053	721
Interest expense on securities financing transactions <sup>5</sup>	288	282	253
Interest expense on debt issued	457	475	435
Interest expense on lease liabilities <sup>6</sup>	30		
<b>Total interest expense from financial instruments measured at amortized cost</b>	<b>1,912</b>	<b>1,810</b>	<b>1,409</b>
<b>Total net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income</b>	<b>762</b>	<b>881</b>	<b>980</b>
<b>Net interest income from financial instruments measured at fair value through profit or loss</b>			
Net interest income from financial instruments at fair value held for trading	434	359	279
Net interest income from brokerage balances	77	104	179
Interest income from financial instruments at fair value not held for trading	522	540	351
Other interest income	46	49	73
Interest expense on financial instruments designated at fair value	(740)	(727)	(444)
<b>Total net interest income from financial instruments measured at fair value through profit or loss</b>	<b>339</b>	<b>325</b>	<b>437</b>
<b>Total net interest income</b>	<b>1,101</b>	<b>1,207</b>	<b>1,417</b>

<sup>1</sup> Effective from the first quarter of 2019, UBS AG refined the presentation of dividend income and expense, reclassifying dividends from Interest income (expense) from financial instruments measured at fair value through profit or loss into Other net income from financial instruments measured at fair value through profit or loss. Prior-period information was restated accordingly. Refer to Note 1 for more information. <sup>2</sup> Consists of interest income from cash and balances at central banks, loans and advances to banks, and negative interest on amounts due to banks and customer deposits. <sup>3</sup> Includes interest income on receivables from securities financing transactions and negative interest, including fees, on payables from securities financing transactions. <sup>4</sup> Consists of interest expense on amounts due to banks and customer deposits, and negative interest on cash and balances at central banks, loans and advances to banks. <sup>5</sup> Includes interest expense on payables from securities financing transactions and negative interest, including fees, on receivables from securities financing transactions. <sup>6</sup> Relates to lease liabilities recognized upon adoption of IFRS 16 on 1 January 2019. Refer to Note 1 for more information.



**Note 4 Net fee and commission income**

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
Underwriting fees	180	184	257
<i>of which: equity underwriting fees</i>	48	118	127
<i>of which: debt underwriting fees</i>	132	66	131
M&A and corporate finance fees	117	122	206
Brokerage fees	828	822	1,026
Investment fund fees	1,177	1,228	1,279
Portfolio management and related services	1,804	1,937	1,949
Other	460	415	481
<b>Total fee and commission income<sup>1</sup></b>	<b>4,566</b>	<b>4,709</b>	<b>5,197</b>
<i>of which: recurring</i>	<i>2,998</i>	<i>3,220</i>	<i>3,257</i>
<i>of which: transaction-based</i>	<i>1,541</i>	<i>1,456</i>	<i>1,922</i>
<i>of which: performance-based</i>	<i>27</i>	<i>33</i>	<i>18</i>
Brokerage fees paid	79	88	90
Other	329	352	344
<b>Total fee and commission expense</b>	<b>409</b>	<b>439</b>	<b>433</b>
<b>Net fee and commission income</b>	<b>4,157</b>	<b>4,270</b>	<b>4,764</b>
<i>of which: net brokerage fees</i>	<i>748</i>	<i>735</i>	<i>937</i>

<sup>1</sup> Reflects third-party fee and commission income for the first quarter of 2019 of USD 2,817 million for Global Wealth Management (fourth quarter of 2018: USD 2,897 million; first quarter of 2018: USD 3,204 million), USD 325 million for Personal & Corporate Banking (fourth quarter of 2018: USD 321 million; first quarter of 2018: USD 342 million), USD 619 million for Asset Management (fourth quarter of 2018: USD 657 million; first quarter of 2018: USD 646 million), USD 783 million for the Investment Bank (fourth quarter of 2018: USD 809 million; first quarter of 2018: USD 972 million) and USD 22 million for Corporate Center (fourth quarter of 2018: USD 26 million; first quarter of 2018: USD 33 million).

**Note 5 Other income**

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
<b>Associates, joint ventures and subsidiaries</b>			
Net gains / (losses) from acquisitions and disposals of subsidiaries <sup>1</sup>	1	(311)	0
Net gains / (losses) from disposals of investments in associates	4	46	0
Share of net profits of associates and joint ventures	15	481	16
<b>Total</b>	<b>19</b>	<b>216</b>	<b>16</b>
<b>Financial assets measured at fair value through other comprehensive income</b>			
Dividend income	1	0	0
Net gains / (losses) from disposals	1	0	0
<b>Total</b>	<b>2</b>	<b>1</b>	<b>1</b>
Income from properties <sup>2</sup>	7	6	6
Net gains / (losses) from disposals of properties held for sale	0	9	0
Income from shared services provided to UBS Group AG or its subsidiaries	120	129	127
Other	21	6	24
<b>Total other income</b>	<b>169</b>	<b>365</b>	<b>174</b>

<sup>1</sup> Includes foreign exchange gains / (losses) reclassified from other comprehensive income related to disposed foreign subsidiaries and branches. <sup>2</sup> Includes rent received from third parties.

## Note 6 Personnel expenses

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
Salaries and variable compensation	2,027	1,803	2,346
Financial advisor variable compensation <sup>1</sup>	960	999	1,032
Contractors	36	48	43
Social security	170	122	201
Pension and other post-employment benefit plans	170	122	21 <sup>2</sup>
Other personnel expenses	105	168	127
<b>Total personnel expenses</b>	<b>3,468</b>	<b>3,262</b>	<b>3,771</b>

<sup>1</sup> Financial advisor variable compensation consists of grid-based compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated on the basis of 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. <sup>2</sup> Changes to the Pension Fund of UBS in Switzerland in the first quarter of 2018 resulted in a reduction in the pension obligation recognized by UBS. As a consequence, a pre-tax gain of USD 132 million was recognized in the income statement in the first quarter of 2018, with no overall effect on total equity. Refer to "Note 5 Personnel expenses" in the "Consolidated financial statements" section of the first quarter 2018 report for more information.

## Note 7 General and administrative expenses

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
Occupancy	89	210	217
Rent and maintenance of IT and other equipment	87	91	80
Communication and market data services	131	133	131
Administration	1,269	1,482	1,371
<i>of which: shared services costs charged by UBS Group AG or its subsidiaries</i>	<i>1,136</i>	<i>1,237</i>	<i>1,224</i>
<i>of which: UK and German bank levy</i>	<i>15</i>	<i>87</i>	<i>0</i>
Marketing and public relations	50	81	74
Travel and entertainment	77	97	84
Professional fees	156	252	207
Outsourcing of IT and other services	146	181	187
Litigation, regulatory and similar matters <sup>1</sup>	(8)	533	(11)
Other	29	33	31
<b>Total general and administrative expenses</b>	<b>2,026</b>	<b>3,094</b>	<b>2,371</b>

<sup>1</sup> Reflects the net increase / (release) in provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to Note 15 for more information. Also includes recoveries from third parties (first quarter of 2019: USD 7 million; fourth quarter of 2018: USD 1 million; first quarter of 2018: USD 17 million).

## Note 8 Income taxes

UBS AG recognized income tax expenses of USD 387 million for the first quarter of 2019, compared with USD 484 million for the first quarter of 2018.

Current tax expenses were USD 159 million, compared with USD 197 million, and related to taxable profits of UBS Switzerland AG and other entities.

Deferred tax expenses were USD 228 million, compared with USD 287 million. These include expenses of USD 209 million relating to profits for the current quarter, which primarily reflect the amortization of deferred tax assets (DTAs) previously recognized in relation to tax losses carried forward and

deductible temporary differences to reflect their offset against profits for the quarter, including the amortization of US tax loss DTAs at the level of UBS Americas Inc. In addition, deferred tax expenses in the first quarter of 2019 included a net expense of USD 19 million mainly relating to a decrease in temporary difference DTAs of USD 29 million as the expected value of future tax deductions for deferred compensation awards decreased. This deferred tax expense was partially offset by a tax loss DTA increase of USD 10 million for locations affected by our UK business transfer activity during the quarter.



## Note 9 Expected credit loss measurement

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### a) Expected credit losses in the period

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Total net credit loss expenses were USD 20 million in the first quarter of 2019, reflecting expenses of USD 5 million in expected credit losses (ECL) from stage 1 and 2 positions and losses of USD 15 million from credit-impaired (stage 3) positions.

A USD 5 million increase in stage 1 and 2 ECL during the period was primarily the result of updates to macroeconomic and market data in the Investment Bank portfolio, partly offset by recoveries in Global Wealth Management and Personal & Corporate Banking, reflecting improvements in collateral and credit scores.

Stage 3 losses of USD 15 million were recognized, predominantly in the Investment Bank, as well as across a number of defaulted positions in Global Wealth Management and Personal & Corporate Banking.

There have not been any material changes to the models used to calculate ECL and to determine stage allocation in the quarter.

UBS AG uses four different economic scenarios in the ECL calculation: an upside, a baseline, a mild downside and a severe downside scenario. The scenario narratives and weights were reviewed and remain unchanged from those applied as of 31 December 2018. Macroeconomic data and market data was updated across all scenarios, as well as the baseline scenario shocks, as of 31 March 2019.

→ Refer to **"Note 1a Significant accounting policies item g"** and **"Note 23 Expected credit loss measurement"** in the **"Consolidated financial statements"** section of the **Annual Report 2018 for more information**

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

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

carrying value of these financial assets. The carrying value of financial assets measured at FVOCI represents the maximum exposure to credit risk.

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

## Note 9 Expected credit loss measurement (continued)

USD million	31.3.19							
Financial instruments measured at amortized cost	Carrying amount <sup>1</sup>				ECL allowance			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Cash and balances at central banks	110,618	110,618	0	0	0	0	0	0
Loans and advances to banks	16,777	16,727	50	0	(5)	(2)	0	(3)
Receivables from securities financing transactions	100,222	100,222	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	25,164	25,164	0	0	0	0	0	0
Loans and advances to customers	320,466	299,382	19,465	1,619	(760)	(74)	(142)	(545)
<i>of which: Private clients with mortgages</i>	126,412	116,432	9,217	763	(129)	(16)	(77)	(36)
<i>of which: Real estate financing</i>	36,670	28,945	7,687	39	(61)	(5)	(38)	(18)
<i>of which: Large corporate clients</i>	12,070	11,525	468	77	(109)	(12)	(5)	(91)
<i>of which: SME clients</i>	9,775	8,163	996	616	(262)	(14)	(8)	(240)
<i>of which: Lombard</i>	110,142	110,117	0	24	(20)	(3)	0	(17)
<i>of which: Credit cards</i>	1,446	1,136	294	16	(31)	(7)	(13)	(11)
<i>of which: Commodity trade finance</i>	2,867	2,427	422	19	(81)	(4)	0	(76)
Other financial assets measured at amortized cost	22,495	21,712	292	491	(150)	(40)	(6)	(104)
<i>of which: Loans to financial advisors</i>	3,158	2,942	107	109	(108)	(31)	(3)	(74)
<b>Total financial assets measured at amortized cost</b>	<b>595,744</b>	<b>573,826</b>	<b>19,807</b>	<b>2,110</b>	<b>(917)</b>	<b>(118)</b>	<b>(148)</b>	<b>(651)</b>
Financial assets measured at fair value through other comprehensive income	7,168	7,168	0	0	0	0	0	0
<b>Total on-balance sheet financial assets in scope of ECL requirements</b>	<b>602,912</b>	<b>580,994</b>	<b>19,807</b>	<b>2,110</b>	<b>(917)</b>	<b>(118)</b>	<b>(148)</b>	<b>(651)</b>

Off-balance sheet (in scope of ECL)	Total exposure				ECL provision			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	17,434	16,713	506	215	(48)	(6)	(2)	(40)
<i>of which: Large corporate clients</i>	3,505	3,247	118	140	(7)	(1)	(1)	(5)
<i>of which: SME clients</i>	1,205	948	188	69	(30)	0	0	(29)
<i>of which: Financial intermediaries and hedge funds</i>	6,995	6,959	36	0	(3)	(3)	0	0
<i>of which: Lombard</i>	666	666	0	0	0	0	0	0
<i>of which: Commodity trade finance</i>	1,936	1,774	156	6	(1)	(1)	0	0
Irrevocable loan commitments	27,919	27,321	583	15	(44)	(36)	(8)	0
<i>of which: Large corporate clients</i>	19,051	18,660	389	1	(38)	(32)	(7)	0
Forward starting reverse repurchase and securities borrowing agreements	2,058	2,058	0	0	0	0	0	0
Committed unconditionally revocable credit lines	35,569	34,085	1,392	92	(39)	(19)	(20)	0
<i>of which: Real estate financing</i>	2,636	2,239	397	0	(19)	(3)	(17)	0
<i>of which: Large corporate clients</i>	4,124	4,055	52	16	(1)	(1)	0	0
<i>of which: SME clients</i>	4,331	4,006	264	62	(7)	(6)	(1)	0
<i>of which: Lombard</i>	4,537	4,537	0	0	0	0	0	0
<i>of which: Credit cards</i>	7,587	7,281	306	0	(6)	(4)	(2)	0
<i>of which: Commodity trade finance</i>	4,154	3,823	321	10	(2)	(2)	0	0
Irrevocable committed prolongation of existing loans	3,450	3,393	52	5	(4)	(2)	(2)	0
<b>Total off-balance sheet financial instruments and other credit lines</b>	<b>86,430</b>	<b>83,570</b>	<b>2,533</b>	<b>328</b>	<b>(134)</b>	<b>(64)</b>	<b>(31)</b>	<b>(40)</b>
<b>Total allowances and provisions</b>					<b>(1,052)</b>	<b>(182)</b>	<b>(179)</b>	<b>(691)</b>

<sup>1</sup> The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances.

**Note 9 Expected credit loss measurement (continued)**

USD million	31.12.18							
	Carrying amount <sup>1</sup>				ECL allowance			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
<b>Financial instruments measured at amortized cost</b>								
Cash and balances at central banks	108,370	108,370	0	0	0	0	0	0
Loans and advances to banks	16,642	16,440	202	0	(7)	(4)	(1)	(3)
Receivables from securities financing transactions	95,349	95,349	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	23,603	23,603	0	0	0	0	0	0
Loans and advances to customers	321,482	299,378	20,357	1,748	(772)	(69)	(155)	(549)
<i>of which: Private clients with mortgages</i>	<i>126,335</i>	<i>115,679</i>	<i>9,859</i>	<i>796</i>	<i>(138)</i>	<i>(16)</i>	<i>(83)</i>	<i>(39)</i>
<i>of which: Real estate financing</i>	<i>36,474</i>	<i>28,578</i>	<i>7,858</i>	<i>38</i>	<i>(59)</i>	<i>(3)</i>	<i>(40)</i>	<i>(16)</i>
<i>of which: Large corporate clients</i>	<i>11,390</i>	<i>10,845</i>	<i>457</i>	<i>88</i>	<i>(95)</i>	<i>(9)</i>	<i>(4)</i>	<i>(82)</i>
<i>of which: SME clients</i>	<i>9,924</i>	<i>8,029</i>	<i>1,263</i>	<i>632</i>	<i>(281)</i>	<i>(13)</i>	<i>(12)</i>	<i>(256)</i>
<i>of which: Lombard</i>	<i>111,722</i>	<i>111,707</i>	<i>0</i>	<i>14</i>	<i>(21)</i>	<i>(4)</i>	<i>0</i>	<i>(17)</i>
<i>of which: Credit cards</i>	<i>1,529</i>	<i>1,216</i>	<i>297</i>	<i>16</i>	<i>(30)</i>	<i>(6)</i>	<i>(13)</i>	<i>(11)</i>
<i>of which: Commodity trade finance</i>	<i>3,260</i>	<i>2,798</i>	<i>445</i>	<i>16</i>	<i>(86)</i>	<i>(5)</i>	<i>(3)</i>	<i>(78)</i>
Other financial assets measured at amortized cost	22,637	21,936	223	478	(155)	(43)	(4)	(109)
<i>of which: Loans to financial advisors</i>	<i>3,291</i>	<i>3,104</i>	<i>62</i>	<i>125</i>	<i>(113)</i>	<i>(34)</i>	<i>(2)</i>	<i>(77)</i>
<b>Total financial assets measured at amortized cost</b>	<b>588,084</b>	<b>565,076</b>	<b>20,782</b>	<b>2,226</b>	<b>(937)</b>	<b>(117)</b>	<b>(159)</b>	<b>(660)</b>
Financial assets measured at fair value through other comprehensive income	6,667	6,667	0	0	0	0	0	0
<b>Total on-balance sheet financial assets in scope of ECL requirements</b>	<b>594,750</b>	<b>571,743</b>	<b>20,782</b>	<b>2,226</b>	<b>(937)</b>	<b>(117)</b>	<b>(159)</b>	<b>(660)</b>
		Total exposure				ECL provision		
<b>Off-balance sheet (in scope of ECL)</b>	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	18,146	17,321	611	215	(43)	(7)	(2)	(34)
<i>of which: Large corporate clients</i>	<i>3,862</i>	<i>3,599</i>	<i>136</i>	<i>127</i>	<i>(8)</i>	<i>(1)</i>	<i>(1)</i>	<i>(6)</i>
<i>of which: SME clients</i>	<i>1,298</i>	<i>1,057</i>	<i>164</i>	<i>77</i>	<i>(26)</i>	<i>0</i>	<i>0</i>	<i>(25)</i>
<i>of which: Financial intermediaries and hedge funds</i>	<i>7,193</i>	<i>7,125</i>	<i>67</i>	<i>0</i>	<i>(4)</i>	<i>(3)</i>	<i>0</i>	<i>0</i>
<i>of which: Lombard</i>	<i>834</i>	<i>834</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>of which: Commodity trade finance</i>	<i>2,097</i>	<i>1,851</i>	<i>236</i>	<i>11</i>	<i>(1)</i>	<i>(1)</i>	<i>0</i>	<i>0</i>
Irrevocable loan commitments	31,212	30,590	568	53	(37)	(32)	(5)	0
<i>of which: Large corporate clients</i>	<i>22,019</i>	<i>21,492</i>	<i>519</i>	<i>7</i>	<i>(31)</i>	<i>(26)</i>	<i>(4)</i>	<i>0</i>
Forward starting reverse repurchase and securities borrowing agreements	937	937	0	0	0	0	0	0
Committed unconditionally revocable credit lines	38,851	37,338	1,420	93	(36)	(19)	(16)	0
<i>of which: Real estate financing</i>	<i>2,562</i>	<i>2,150</i>	<i>401</i>	<i>11</i>	<i>(17)</i>	<i>(4)</i>	<i>(12)</i>	<i>0</i>
<i>of which: Large corporate clients</i>	<i>4,260</i>	<i>4,152</i>	<i>91</i>	<i>17</i>	<i>(2)</i>	<i>(1)</i>	<i>0</i>	<i>0</i>
<i>of which: SME clients</i>	<i>4,505</i>	<i>4,163</i>	<i>285</i>	<i>57</i>	<i>(7)</i>	<i>(6)</i>	<i>(1)</i>	<i>0</i>
<i>of which: Lombard</i>	<i>7,402</i>	<i>7,402</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>(1)</i>	<i>0</i>	<i>0</i>
<i>of which: Credit cards</i>	<i>7,343</i>	<i>7,035</i>	<i>309</i>	<i>0</i>	<i>(6)</i>	<i>(4)</i>	<i>(2)</i>	<i>0</i>
<i>of which: Commodity trade finance</i>	<i>3,467</i>	<i>3,209</i>	<i>254</i>	<i>4</i>	<i>(2)</i>	<i>(2)</i>	<i>0</i>	<i>0</i>
Irrevocable committed prolongation of existing loans	3,339	2,861	456	22	(1)	(1)	0	0
<b>Total off-balance sheet financial instruments and other credit lines</b>	<b>92,486</b>	<b>89,048</b>	<b>3,055</b>	<b>383</b>	<b>(116)</b>	<b>(59)</b>	<b>(23)</b>	<b>(34)</b>
<b>Total allowances and provisions</b>					<b>(1,054)</b>	<b>(176)</b>	<b>(183)</b>	<b>(695)</b>

<sup>1</sup> The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances.

## Note 10 Fair value measurement

This Note provides fair value measurement information for both financial and non-financial instruments and should be read in conjunction with "Note 24 Fair value measurement" in the "Consolidated financial statements" section of the Annual Report 2018, which provides more information on valuation

principles, valuation governance, fair value hierarchy classification, valuation adjustments, valuation techniques and inputs, sensitivity of fair value measurements and methods applied to calculate fair values for financial instruments not measured at fair value.

### a) Fair value hierarchy

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

#### Determination of fair values from quoted market prices or valuation techniques<sup>1</sup>

USD million	31.3.19				31.12.18			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value on a recurring basis</b>								
Financial assets at fair value held for trading	94,772	12,592	2,319	109,683	88,455	14,096	1,962	104,513
<i>of which:</i>								
Government bills / bonds	11,866	1,671	0	13,537	9,554	1,607	0	11,161
Corporate and municipal bonds	483	6,232	417	7,132	558	5,699	651	6,908
Loans	0	1,701	1,451	3,152	0	2,886	680	3,566
Investment fund units	7,308	1,445	247	9,000	6,074	3,200	442	9,716
Asset-backed securities	1	313	138	451	0	248	144	392
Equity instruments	75,114	1,231	54	76,399	72,270	455	46	72,771
Derivative financial instruments	715	109,052	1,394	111,161	753	124,035	1,424	126,212
<i>of which:</i>								
Interest rate contracts	0	39,708	431	40,139	0	36,658	418	37,076
Credit derivative contracts	0	1,617	529	2,146	0	1,444	476	1,920
Foreign exchange contracts	346	43,916	22	44,284	311	53,151	30	53,492
Equity / index contracts	7	22,523	406	22,937	3	30,905	496	31,404
Commodity contracts	0	1,185	0	1,185	0	1,768	2	1,769
Brokerage receivables	0	16,275	0	16,275	0	16,840	0	16,840
Financial assets at fair value not held for trading	36,799	40,439	3,735	80,973	35,458	42,516	4,413	82,387
<i>of which:</i>								
Government bills / bonds	16,729	4,270	0	20,998	17,687	4,806	0	22,493
Corporate and municipal bonds	779	15,534	0	16,313	781	16,455	0	17,236
Financial assets for unit-linked investment contracts	19,049	4,914	0	23,963	16,694	4,751	0	21,446
Loans	0	8,547	1,084	9,631	0	6,380	1,752	8,132
Securities financing transactions	0	6,927	25	6,952	0	9,899	39	9,937
Auction rate securities	0	0	1,636	1,636	0	0	1,664	1,664
Investment fund units	168	154	113	434	173	125	109	407
Equity instruments	75	60	542	677	123	62	517	702
Other	0	35	335	370	0	38	331	369
<b>Financial assets measured at fair value through other comprehensive income on a recurring basis</b>								
Financial assets measured at fair value through other comprehensive income	2,219	4,949	0	7,168	2,319	4,347	0	6,667
<i>of which:</i>								
Government bills / bonds	2,173	13	0	2,186	2,171	69	0	2,239
Corporate and municipal bonds	47	456	0	503	149	348	0	497
Asset-backed securities	0	4,480	0	4,480	0	3,931	0	3,931
<b>Non-financial assets measured at fair value on a recurring basis</b>								
Precious metals and other physical commodities	3,816	0	0	3,816	4,298	0	0	4,298
<b>Non-financial assets measured at fair value on a non-recurring basis</b>								
Other non-financial assets <sup>2</sup>	0	57	1	58	0	82	0	82
<b>Total assets measured at fair value</b>	<b>138,321</b>	<b>183,365</b>	<b>7,448</b>	<b>329,133</b>	<b>131,283</b>	<b>201,916</b>	<b>7,800</b>	<b>340,999</b>

**Note 10 Fair value measurement (continued)****Determination of fair values from quoted market prices or valuation techniques (continued)<sup>1</sup>**

USD million	31.3.19				31.12.18			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
<b>Financial liabilities measured at fair value on a recurring basis</b>								
Financial liabilities at fair value held for trading	28,642	5,519	98	34,259	24,413	4,468	69	28,949
<i>of which:</i>								
Government bills / bonds	3,944	464	0	4,408	2,423	416	0	2,839
Corporate and municipal bonds	64	3,986	63	4,113	126	3,377	27	3,530
Investment fund units	480	436	0	916	551	137	0	689
Equity instruments	24,154	627	35	24,816	21,313	537	42	21,892
Derivative financial instruments	758	107,904	2,146	110,809	580	122,933	2,210	125,723
<i>of which:</i>								
Interest rate contracts	6	35,203	211	35,419	7	32,511	226	32,743
Credit derivative contracts	0	2,628	579	3,207	0	2,203	519	2,722
Foreign exchange contracts	315	44,364	84	44,763	322	52,964	86	53,372
Equity / index contracts	6	24,662	1,270	25,939	1	33,669	1,371	35,041
Commodity contracts	0	988	1	989	0	1,487	0	1,487
<b>Financial liabilities designated at fair value on a recurring basis</b>								
Brokerage payables designated at fair value	0	39,326	0	39,326	0	38,420	0	38,420
Debt issued designated at fair value	0	54,543	12,376	66,919	0	46,074	10,957	57,031
Other financial liabilities designated at fair value	0	31,716	678	32,394	0	32,569	1,025	33,594
<i>of which:</i>								
Amounts due under unit-linked investment contracts	0	24,317	0	24,317	0	21,679	0	21,679
Securities financing transactions	0	6,190	0	6,190	0	9,461	0	9,461
Over-the-counter debt instruments	0	1,205	676	1,882	0	1,427	1,023	2,450
<b>Total liabilities measured at fair value</b>	<b>29,400</b>	<b>239,008</b>	<b>15,298</b>	<b>283,706</b>	<b>24,992</b>	<b>244,465</b>	<b>14,260</b>	<b>283,717</b>

<sup>1</sup> Bifurcated embedded derivatives are presented on the same balance sheet lines as their host contracts and are not included in this table. The fair value of these derivatives was not material for the periods presented. <sup>2</sup> Other non-financial assets primarily consist of properties and other non-current assets held for sale, which are measured at the lower of their net carrying amount or fair value less costs to sell.

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.

## Note 10 Fair value measurement (continued)

### b) Valuation adjustments

#### Deferred day-1 profit or loss reserves

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

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

In the first quarter of 2019, a deferred day-1 profit or loss reserve release of USD 126 million was recognized in the income statement, mainly related to loans which are reported within *Financial assets at fair value not held for trading* on the balance sheet, following an increase in observability.

#### Deferred day-1 profit or loss reserves

USD million	For the quarter ended		
	31.3.19	31.12.18	31.3.18
Reserve balance at the beginning of the period	255	250	338
Profit / (loss) deferred on new transactions	33	48	197
(Profit) / loss recognized in the income statement	(126)	(41)	(56)
Foreign currency translation	(1)	(2)	1
Reserve balance at the end of the period	161	255	479

### c) Transfers between Level 1 and Level 2

The amounts disclosed in this section reflect transfers between Level 1 and Level 2 for instruments that were held for the entire reporting period.

Assets totaling approximately USD 1.8 billion, which were mainly comprised of investment fund units presented in the line *Financial assets at fair value held for trading* on the balance sheet, were transferred from Level 2 to Level 1 during the first

quarter of 2019, generally due to increased levels of trading activity observed within the market for these instruments. Liabilities transferred from Level 2 to Level 1 during the first quarter of 2019 were not material. Assets and liabilities transferred from Level 1 to Level 2 during the first quarter of 2019 were also not material.

**Note 10 Fair value measurement (continued)****d) 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.

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. Furthermore, the ranges and weighted averages of unobservable inputs may differ

across other financial institutions due to the diversity of the products in each firm's inventory.

The significant unobservable inputs disclosed in the table below are consistent with those included in "Note 24 Fair value measurement" in the "Consolidated financial statements" section of the Annual Report 2018. A description of 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, is also provided in "Note 24 Fair value measurement" in the "Consolidated financial statements" section of the Annual Report 2018.

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

USD billion	Fair value				Valuation technique(s)	Significant unobservable input(s) <sup>1</sup>	Range of inputs						unit <sup>1</sup>
	Assets		Liabilities				31.3.19			31.12.18			
	31.3.19	31.12.18	31.3.19	31.12.18			low	high	weighted average <sup>2</sup>	low	high	weighted average <sup>2</sup>	
<b>Financial assets and liabilities at fair value held for trading and Financial assets at fair value not held for trading</b>													
<i>Corporate and municipal bonds</i>	0.4	0.7	0.1	0.0	Relative value to market comparable	Bond price equivalent	0	134	92	0	134	89	points
<i>Traded loans, loans designated at fair value, loan commitments and guarantees</i>	2.8	2.7	0.0	0.0	Relative value to market comparable	Loan price equivalent	0	101	99	0	100	99	points
					Discounted expected cash flows	Credit spread	301	700		301	513		basis points
					Market comparable and securitization model	Discount margin	1	14	2	1	14	2	%
<i>Auction rate securities</i>	1.6	1.7	0.0	0.0	Relative value to market comparable	Bond price equivalent	79	99	89	79	99	89	points
<i>Investment fund units<sup>3</sup></i>	0.4	0.6	0.0	0.0	Relative value to market comparable	Net asset value							
<i>Equity instruments<sup>3</sup></i>	0.6	0.6	0.0	0.0	Relative value to market comparable	Price							
<b>Debt issued designated at fair value<sup>4</sup></b>			12.4	11.0									
<b>Other financial liabilities designated at fair value<sup>4</sup></b>			0.7	1.0									
<b>Derivative financial instruments</b>													
<i>Interest rate contracts</i>	0.4	0.4	0.2	0.2	Option model	Volatility of interest rates	46	69		50	81		basis points
					Discounted expected cash flows	Credit spreads	4	574		4	545		basis points
						Bond price equivalent	3	99		3	99		points
<i>Equity / index contracts</i>	0.4	0.5	1.3	1.4	Option model	Equity dividend yields	0	9		0	12		%
						Volatility of equity stocks, equity and other indices	0	109		4	93		%
						Equity-to-FX correlation	(45)	64		(39)	67		%
						Equity-to-equity correlation	(50)	98		(50)	97		%

<sup>1</sup> 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). <sup>2</sup> 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. <sup>3</sup> The range of inputs is not disclosed as there is a dispersion of values given the diverse nature of the investments. <sup>4</sup> Valuation techniques, significant unobservable inputs and the respective input ranges for Debt issued designated at fair value and Other financial liabilities designated at fair value, which mainly include over-the-counter debt instruments, are the same as the equivalent derivative or structured financing instruments presented elsewhere in this table.



## Note 10 Fair value measurement (continued)

### e) 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 of fair value measurements for debt issued designated at fair value and over-the-counter debt instruments designated at fair value is reported with the equivalent derivative or structured financing instrument within the table below.

The sensitivity data shown below presents an estimation of valuation uncertainty based on reasonably possible alternative values for Level 3 inputs at the balance sheet date and does not represent the estimated effect of stress scenarios. Typically, these financial assets and liabilities are sensitive to a combination of inputs from Levels 1–3. Although well-defined interdependencies may exist between 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. Furthermore, direct interrelationships between the Level 3 parameters are not a significant element of the valuation uncertainty.

#### Sensitivity of fair value measurements to changes in unobservable input assumptions

USD million	31.3.19		31.12.18	
	Favorable changes	Unfavorable changes	Favorable changes	Unfavorable changes
Traded loans, loans designated at fair value, loan commitments and guarantees	92	(20)	99	(44)
Securities financing transactions	32	(18)	17	(11)
Auction rate securities	80	(80)	81	(81)
Asset-backed securities	32	(28)	27	(23)
Equity instruments	176	(77)	155	(94)
Interest rate derivative contracts, net	6	(26)	8	(39)
Credit derivative contracts, net	32	(37)	33	(37)
Foreign exchange derivative contracts, net	11	(6)	10	(5)
Equity / index derivative contracts, net	188	(217)	213	(225)
Other	17	(17)	19	(19)
<b>Total</b>	<b>667</b>	<b>(527)</b>	<b>661</b>	<b>(578)</b>

### f) 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.

Upon adoption of IFRS 9 on 1 January 2018, certain financial assets and liabilities were newly classified as measured at fair

value through profit or loss and designated as Level 3 in the fair value hierarchy. Certain assets were also reclassified from *Financial assets measured at fair value through other comprehensive income* to *Financial assets at fair value not held for trading*. Refer to "Note 24 Fair value measurement" in the "Consolidated financial statements" section of the Annual Report 2018 for more information.

In the first quarter of 2019, loans reported within *Financial assets at fair value not held for trading* on the balance sheet, were transferred from Level 3 to Level 2 in the fair value hierarchy, reflecting increased observability.



## Note 10 Fair value measurement (continued)

### Movements of Level 3 instruments

USD billion	Balance as of 31 December 2017	Reclassifications and remeasurements upon adoption of IFRS 9	Balance as of 1 January 2018	Total gains / (losses) included in comprehensive income		Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation	Balance as of 31 March 2018
				Net gains / (losses) included in income <sup>1</sup>	of which: related to Level 3 instruments held at the end of the reporting period								
<b>Financial assets at fair value held for trading</b>	<b>2.0</b>	<b>0.4</b>	<b>2.4</b>	<b>(0.2)</b>	<b>(0.1)</b>	<b>0.5</b>	<b>(1.5)</b>	<b>0.5</b>	<b>0.0</b>	<b>0.3</b>	<b>0.0</b>	<b>0.1</b>	<b>2.0</b>
<i>of which:</i>													
<i>Corporate and municipal bonds</i>	0.6		0.6	0.0	0.0	0.1	(0.5)	0.0	0.0	0.1	0.0	0.0	0.2
<i>Loans</i>	0.5	0.4	0.9	(0.1)	0.0	0.1	(0.8)	0.5	0.0	0.0	0.0	0.0	0.6
<i>Investment fund units</i>	0.6		0.6	(0.2)	(0.2)	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.7
<i>Other</i>	0.4		0.4	0.1	0.1	0.1	(0.1)	0.0	0.0	0.0	0.0	0.0	0.4
<b>Financial assets at fair value not held for trading</b>	<b>1.5</b>	<b>3.0</b>	<b>4.4</b>	<b>(0.3)</b>	<b>(0.3)</b>	<b>0.9</b>	<b>(0.4)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.3</b>	<b>4.9</b>
<i>of which:</i>													
<i>Loans</i>	0.8	0.6	1.4	(0.3)	(0.3)	0.8	(0.2)	0.0	0.0	0.1	0.0	0.2	2.0
<i>Auction rate securities</i>		1.9	1.9	0.0	0.0	0.0	(0.2)	0.0	0.0	0.0	0.0	0.1	1.8
<i>Equity instruments</i>		0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
<i>Other</i>	0.7	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(0.1)	0.7
<b>Financial assets measured at fair value through other comprehensive income</b>	<b>0.5</b>	<b>(0.5)</b>											
<b>Derivative financial instruments – assets</b>	<b>1.6</b>		<b>1.6</b>	<b>(0.1)</b>	<b>(0.1)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>(0.4)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>1.4</b>
<i>of which:</i>													
<i>Interest rate contracts</i>	0.1		0.1	0.0	0.0	0.0	0.0	0.0	(0.1)	0.0	0.0	0.0	0.0
<i>Credit derivative contracts</i>	0.6		0.6	(0.1)	0.0	0.0	0.0	0.0	(0.1)	0.0	0.0	0.0	0.5
<i>Equity / index contracts</i>	0.7		0.7	0.0	(0.1)	0.0	0.0	0.2	(0.2)	0.0	0.0	0.0	0.6
<i>Other</i>	0.2		0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
<b>Derivative financial instruments – liabilities</b>	<b>2.9</b>	<b>0.0</b>	<b>2.9</b>	<b>(0.2)</b>	<b>(0.2)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.5</b>	<b>(0.6)</b>	<b>0.2</b>	<b>(0.1)</b>	<b>0.2</b>	<b>2.8</b>
<i>of which:</i>													
<i>Credit derivative contracts</i>	0.6		0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
<i>Equity / index contracts</i>	2.0		2.0	(0.3)	(0.3)	0.0	0.0	0.4	(0.4)	0.1	(0.1)	0.2	1.8
<i>Other</i>	0.3	0.0	0.3	0.1	0.1	0.0	0.0	0.0	(0.2)	0.1	0.0	0.0	0.3
<b>Debt issued designated at fair value</b>	<b>11.2</b>		<b>11.2</b>	<b>(0.3)</b>	<b>(0.3)</b>	<b>0.0</b>	<b>0.0</b>	<b>2.7</b>	<b>(1.6)</b>	<b>0.4</b>	<b>(0.6)</b>	<b>0.7</b>	<b>12.4</b>
<b>Other financial liabilities designated at fair value</b>	<b>2.0</b>		<b>2.0</b>	<b>(0.3)</b>	<b>(0.3)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>(0.6)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>1.4</b>

<sup>1</sup> Net gains / (losses) included in comprehensive income are comprised of Net interest income, Other net income from financial instruments measured at fair value through profit or loss and Other income. <sup>2</sup> Total Level 3 assets as of 31 March 2019 were USD 7.4 billion (31 December 2018: USD 7.8 billion). Total Level 3 liabilities as of 31 March 2019 were USD 15.3 billion (31 December 2018: USD 14.3 billion).

## Note 10 Fair value measurement (continued)

Balance as of 31 December 2018	Net gains / (losses) included in income <sup>1</sup>	Total gains / (losses) included in comprehensive income		Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation	Balance as of 31 March 2019 <sup>2</sup>
		of which: related to Level 3 instruments held at the end of the reporting period									
2.0	(0.1)	0.0	0.4	(1.5)	1.6	0.0	0.2	(0.2)	0.0	2.3	
0.7	0.0	0.0	0.2	(0.4)	0.0	0.0	0.0	(0.1)	0.0	0.4	
0.7	(0.1)	0.0	0.1	(0.9)	1.6	0.0	0.0	0.0	0.0	1.5	
0.4	0.0	0.0	0.0	(0.2)	0.0	0.0	0.1	(0.1)	0.0	0.2	
0.2	0.0	0.0	0.1	(0.1)	0.0	0.0	0.0	0.0	0.0	0.2	
4.4	0.1	0.2	0.5	(0.4)	0.0	0.0	0.0	(0.9)	0.0	3.7	
1.8	0.1	0.1	0.4	(0.3)	0.0	0.0	0.0	(0.9)	0.0	1.1	
1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	
0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	
0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	
1.4	(0.1)	(0.1)	0.0	0.0	0.5	(0.4)	0.1	(0.1)	0.0	1.4	
0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	
0.5	0.0	0.0	0.0	0.0	0.2	(0.1)	0.0	0.0	0.0	0.5	
0.5	(0.1)	(0.1)	0.0	0.0	0.2	(0.2)	0.0	(0.1)	0.0	0.4	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2.2	0.1	0.1	0.0	0.0	0.4	(0.4)	0.1	(0.2)	0.0	2.1	
0.5	0.0	0.0	0.0	0.0	0.1	(0.1)	0.0	0.0	0.0	0.6	
1.4	0.1	0.1	0.0	0.0	0.2	(0.3)	0.0	(0.2)	0.0	1.3	
0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
11.0	0.5	0.4	0.0	0.0	2.8	(1.2)	0.3	(1.0)	0.0	12.4	
1.0	0.1	0.1	0.0	0.0	0.1	(0.5)	0.0	0.0	0.0	0.7	

**Note 10 Fair value measurement (continued)**

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 in the first quarter of 2019 totaled USD 0.3 billion and USD 1.1 billion, respectively. Transfers into Level 3 were primarily comprised of investment fund units reflecting decreased observability of the relevant net asset value inputs. Transfers out of Level 3 were

primarily comprised of loans due to increased observability of the relevant valuation inputs.

Liabilities transferred into and out of Level 3 in the first quarter of 2019 totaled USD 0.4 billion and USD 1.1 billion, respectively. Transfers into and out of Level 3 were primarily comprised of equity-linked issued debt instruments (presented within *Debt issued designated at fair value*) due to decreased or increased observability, respectively, of the embedded derivative inputs.

**g) Financial instruments not measured at fair value**

The table below reflects the estimated fair values of financial instruments not measured at fair value.

**Financial instruments not measured at fair value**

USD billion	31.3.19		31.12.18	
	Carrying value	Fair value	Carrying value	Fair value
<b>Assets</b>				
Cash and balances at central banks	110.6	110.6	108.4	108.4
Loans and advances to banks	16.8	16.8	16.6	16.6
Receivables from securities financing transactions	100.2	100.2	95.3	95.4
Cash collateral receivables on derivative instruments	25.2	25.2	23.6	23.6
Loans and advances to customers	320.5	322.6	321.5	322.0
Other financial assets measured at amortized cost	22.5	22.5	22.6	22.5
<b>Liabilities</b>				
Amounts due to banks	9.1	9.1	11.0	11.0
Payables from securities financing transactions	5.2	5.2	10.3	10.3
Cash collateral payables on derivative instruments	30.3	30.3	28.9	28.9
Customer deposits	428.1	428.2	422.0	422.0
Funding from UBS Group AG and its subsidiaries	44.4	45.1	41.2	41.7
Debt issued measured at amortized cost	83.9	85.4	91.2	93.5
Other financial liabilities measured at amortized cost	10.8	10.8	7.6	7.6

The fair values included in the table above have been calculated for disclosure purposes only. The fair value valuation techniques and assumptions relate only to the fair value of UBS AG's financial instruments not measured at fair value. Other

institutions may use different methods and assumptions for their fair value estimation, and therefore such fair value disclosures cannot necessarily be compared from one financial institution to another.

## Note 11 Derivative instruments

### a) Derivative instruments

<i>As of 31.3.19, USD billion</i>	Derivative financial assets	Notional values related to derivative financial assets <sup>3</sup>	Derivative financial liabilities	Notional values related to derivative financial liabilities <sup>3</sup>	Other notional values <sup>4</sup>
<b>Derivative financial instruments<sup>1,2</sup></b>					
Interest rate contracts	40.1	1,114	35.4	1,115	11,049
Credit derivative contracts	2.1	74	3.2	78	0
Foreign exchange contracts	44.3	2,892	44.8	2,752	1
Equity / index contracts	22.9	430	25.9	527	122
Commodity contracts	1.2	50	1.0	40	8
Unsettled purchases of non-derivative financial instruments <sup>5</sup>	0.2	29	0.2	17	
Unsettled sales of non-derivative financial instruments <sup>5</sup>	0.2	27	0.3	22	
<b>Total derivative financial instruments, based on IFRS netting<sup>6</sup></b>	<b>111.2</b>	<b>4,617</b>	<b>110.8</b>	<b>4,550</b>	<b>11,180</b>
Further netting potential not recognized on the balance sheet <sup>7</sup>	(100.9)		(97.5)		
<i>of which: netting of recognized financial liabilities / assets</i>	<i>(81.4)</i>		<i>(81.4)</i>		
<i>of which: netting with collateral received / pledged</i>	<i>(19.5)</i>		<i>(16.0)</i>		
<b>Total derivative financial instruments, after consideration of further netting potential</b>	<b>10.2</b>		<b>13.3</b>		

*As of 31.12.18, USD billion*

<i>As of 31.12.18, USD billion</i>	Derivative financial assets	Notional values related to derivative financial assets <sup>3</sup>	Derivative financial liabilities	Notional values related to derivative financial liabilities <sup>3</sup>	Other notional values <sup>4</sup>
<b>Derivative financial instruments<sup>1,2</sup></b>					
Interest rate contracts	37.1	1,051	32.7	1,021	10,779
Credit derivative contracts	1.9	74	2.7	78	0
Foreign exchange contracts	53.5	2,626	53.4	2,517	0
Equity / index contracts	31.4	409	35.0	489	106
Commodity contracts	1.8	46	1.5	39	9
Unsettled purchases of non-derivative financial instruments <sup>5</sup>	0.2	17	0.1	6	
Unsettled sales of non-derivative financial instruments <sup>5</sup>	0.4	15	0.2	13	
<b>Total derivative financial instruments, based on IFRS netting<sup>6</sup></b>	<b>126.2</b>	<b>4,239</b>	<b>125.7</b>	<b>4,163</b>	<b>10,894</b>
Further netting potential not recognized on the balance sheet <sup>7</sup>	(114.8)		(111.7)		
<i>of which: netting of recognized financial liabilities / assets</i>	<i>(90.8)</i>		<i>(90.8)</i>		
<i>of which: netting with collateral received / pledged</i>	<i>(24.0)</i>		<i>(20.9)</i>		
<b>Total derivative financial instruments, after consideration of further netting potential</b>	<b>11.4</b>		<b>14.0</b>		

<sup>1</sup> Derivative financial liabilities as of 31 March 2019 include USD 18 million related to derivative loan commitments (31 December 2018: USD 17 million). No notional amounts related to these commitments are included in this table, but they are disclosed in Note 16 under Loan commitments. <sup>2</sup> Includes certain forward starting repurchase and reverse repurchase agreements that are classified as measured at fair value through profit or loss and are recognized within derivative instruments. The fair value of these derivative instruments was not material as of 31 March 2019 or 31 December 2018. No notional amounts related to these instruments are included in this table, but they are disclosed within Note 16 under Forward starting transactions. <sup>3</sup> In cases where derivative financial instruments are presented on a net basis on the balance sheet, the respective notional values of the netted derivative financial instruments are still presented on a gross basis. <sup>4</sup> Other notional values relate to derivatives that are cleared through either a central counterparty or an exchange. The fair value of these derivatives is presented on the balance sheet net of the corresponding cash margin under Cash collateral receivables on derivative instruments and Cash collateral payables on derivative instruments and was not material for all periods presented. <sup>5</sup> Changes in the fair value of purchased and sold non-derivative financial instruments between trade date and settlement date are recognized as derivative financial instruments. <sup>6</sup> Financial assets and liabilities are presented net on the balance sheet if UBS AG has the unconditional and legally enforceable right to offset the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of the entity and all of the counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. <sup>7</sup> Reflects the netting potential in accordance with enforceable master netting and similar arrangements where not all criteria for a net presentation on the balance sheet have been met. Refer to "Note 25 Offsetting financial assets and financial liabilities" in the "Consolidated financial statements" section of the Annual Report 2018 for more information.

**Note 11 Derivative instruments (continued)****b) Cash collateral on derivative instruments**

<i>USD billion</i>	Receivables 31.3.19	Payables 31.3.19	Receivables 31.12.18	Payables 31.12.18
Cash collateral on derivative instruments, based on IFRS netting <sup>1</sup>	25.2	30.3	23.6	28.9
Further netting potential not recognized on the balance sheet <sup>2</sup>	(14.1)	(15.0)	(14.5)	(15.4)
<i>of which: netting of recognized financial liabilities / assets</i>	(12.2)	(13.7)	(13.5)	(14.2)
<i>of which: netting with collateral received / pledged</i>	(1.9)	(1.4)	(1.0)	(1.2)
<b>Cash collateral on derivative instruments, after consideration of further netting potential</b>	<b>11.1</b>	<b>15.3</b>	<b>9.1</b>	<b>13.5</b>

<sup>1</sup> Financial assets and liabilities are presented net on the balance sheet if UBS has the unconditional and legally enforceable right to offset the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS or its counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. <sup>2</sup> Reflects the netting potential in accordance with enforceable master netting and similar arrangements where not all criteria for a net presentation on the balance sheet have been met. Refer to "Note 25 Offsetting financial assets and financial liabilities" in the "Consolidated financial statements" section of the Annual Report 2018 for more information.

**Note 12 Other assets and liabilities****a) Other financial assets measured at amortized cost**

<i>USD million</i>	31.3.19	31.12.18
Debt securities	12,938	13,562
<i>of which: government bills / bonds</i>	8,094	8,778
Loans to financial advisors <sup>1</sup>	3,158	3,291
Fee- and commission-related receivables	1,816	1,644
Finance lease receivables <sup>2</sup>	1,224	1,091
Settlement and clearing accounts	702	1,039
Accrued interest income	733	700
Other	1,924	1,310
<b>Total other financial assets measured at amortized cost</b>	<b>22,495</b>	<b>22,637</b>

<sup>1</sup> Related to financial advisors in the US and Canada. <sup>2</sup> Upon adoption of IFRS 16 on 1 January 2019, Finance lease receivables increased by USD 176 million. Refer to Note 1 for more information.

**b) Other non-financial assets**

<i>USD million</i>	31.3.19	31.12.18
Precious metals and other physical commodities	3,816	4,298
Bail deposit <sup>1</sup>	1,286	1,312
Prepaid expenses	769	731
Net defined benefit pension and post-employment assets	3	0
VAT and other tax receivables	232	282
Properties and other non-current assets held for sale	58	82
Other	413	358
<b>Total other non-financial assets</b>	<b>6,577</b>	<b>7,062</b>

<sup>1</sup> Refer to item 1 in Note 15b for more information.

## Note 12 Other assets and liabilities (continued)

### c) Other financial liabilities measured at amortized cost

<i>USD million</i>	<b>31.3.19</b>	31.12.18
Other accrued expenses	<b>1,670</b>	1,911
Accrued interest expenses	<b>1,326</b>	1,501
Settlement and clearing accounts	<b>1,160</b>	1,477
Lease liabilities <sup>1</sup>	<b>3,873</b>	
Other	<b>2,741</b>	2,688
<b>Total other financial liabilities measured at amortized cost</b>	<b>10,770</b>	7,576

<sup>1</sup> Relates to lease liabilities of USD 3,956 million recognized upon adoption of IFRS 16 on 1 January 2019. Refer to Note 1 for more information.

### d) Other financial liabilities designated at fair value

<i>USD million</i>	<b>31.3.19</b>	31.12.18
Amounts due under unit-linked investment contracts	<b>24,317</b>	21,679
Securities financing transactions	<b>6,190</b>	9,461
Over-the-counter debt instruments	<b>1,882</b>	2,450
<i>of which: life-to-date own credit (gain) / loss</i>	<i>(27)</i>	<i>(51)</i>
Other	<b>5</b>	5
<b>Total other financial liabilities designated at fair value</b>	<b>32,394</b>	33,594

### e) Other non-financial liabilities

<i>USD million</i>	<b>31.3.19</b>	31.12.18
Compensation-related liabilities	<b>2,998</b>	4,645
<i>of which: accrued expenses</i>	<i>878</i>	<i>2,400</i>
<i>of which: deferred compensation plans</i>	<i>1,213</i>	<i>1,473</i>
<i>of which: net defined benefit pension and post-employment liabilities</i>	<i>907</i>	<i>773</i>
Current and deferred tax liabilities	<b>953</b>	915
VAT and other tax payables	<b>458</b>	403
Deferred income	<b>170</b>	215
Other	<b>103</b>	98
<b>Total other non-financial liabilities</b>	<b>4,682</b>	6,275

**Note 13 Debt issued designated at fair value**

<i>USD million</i>	<b>31.3.19</b>	31.12.18
<b>Issued debt instruments</b>		
Equity-linked <sup>1</sup>	<b>41,033</b>	34,392
Rates-linked	<b>14,430</b>	12,073
Credit-linked	<b>3,389</b>	3,282
Fixed-rate	<b>5,681</b>	5,099
Other	<b>2,386</b>	2,185
<b>Total debt issued designated at fair value</b>	<b>66,919</b>	57,031
<i>of which: life-to-date own credit (gain) / loss</i>	<b>33</b>	(270)

<sup>1</sup> Includes investment fund unit-linked instruments issued.

**Note 14 Debt issued measured at amortized cost**

<i>USD million</i>	<b>31.3.19</b>	31.12.18
Certificates of deposit	<b>6,869</b>	7,980
Commercial paper	<b>21,711</b>	27,514
Other short-term debt	<b>3,453</b>	3,531
<b>Short-term debt<sup>1</sup></b>	<b>32,033</b>	39,025
Senior unsecured debt	<b>31,964</b>	32,135
Covered bonds	<b>3,815</b>	3,947
Subordinated debt	<b>7,521</b>	7,511
<i>of which: low-trigger loss-absorbing tier 2 capital instruments</i>	<b>6,821</b>	6,808
<i>of which: non-Basel III-compliant tier 2 capital instruments</i>	<b>700</b>	703
Debt issued through the Swiss central mortgage institutions	<b>8,505</b>	8,569
Other long-term debt	<b>55</b>	58
<b>Long-term debt<sup>2</sup></b>	<b>51,861</b>	52,220
<b>Total debt issued measured at amortized cost<sup>3</sup></b>	<b>83,894</b>	91,245

<sup>1</sup> Debt with an original maturity of less than one year. <sup>2</sup> 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. <sup>3</sup> Net of bifurcated embedded derivatives, the fair value of which was not material for the periods presented.

## Note 15 Provisions and contingent liabilities

### a) Provisions

The table below presents an overview of total provisions recognized under both IAS 37 and IFRS 9.

<i>USD million</i>	31.3.19	31.12.18
Provisions recognized under IAS 37	3,030	3,341
Provisions for off-balance sheet financial instruments	91	79
Provisions for other credit lines	43	37
<b>Total provisions</b>	<b>3,165</b>	<b>3,457</b>

The following table presents additional information for provisions recognized under IAS 37.

<i>USD million</i>	Operational risks <sup>2</sup>	Litigation, regulatory and similar matters <sup>3</sup>	Restructuring	Real estate	Employee benefits <sup>6</sup>	Other	Total
<b>Balance as of 31 December 2018</b>	45	2,827	215	122	55	77	3,341
Adjustment from adoption of IFRS 16 <sup>1</sup>	0	0	(103)	(28)	0	0	(131)
<b>Balance as of 1 January 2019</b>	45	2,827	112	94	55	77	<b>3,210</b>
Increase in provisions recognized in the income statement	4	16	5	0	1	2	<b>28</b>
Release of provisions recognized in the income statement	0	(17)	(4)	0	(2)	0	<b>(23)</b>
Provisions used in conformity with designated purpose	(4)	(134)	(19)	(4)	0	(6)	<b>(167)</b>
Foreign currency translation / unwind of discount	(2)	(15)	1	(1)	0	(1)	<b>(17)</b>
<b>Balance as of 31 March 2019</b>	<b>43</b>	<b>2,677</b>	<b>95<sup>4</sup></b>	<b>90<sup>5</sup></b>	<b>54</b>	<b>72</b>	<b>3,030</b>

<sup>1</sup> Refer to Note 1 for more information. <sup>2</sup> Comprises provisions for losses resulting from security risks and transaction processing risks. <sup>3</sup> Comprises provisions for losses resulting from legal, liability and compliance risks. <sup>4</sup> Primarily consists of personnel-related restructuring provisions of USD 25 million as of 31 March 2019 (31 December 2018: USD 40 million) and provisions for onerous contracts of USD 64 million as of 31 March 2019 (31 December 2018: USD 170 million). <sup>5</sup> Consists of reinstatement costs for leasehold improvements of USD 81 million as of 31 March 2019 (31 December 2018: USD 83 million) and provisions for onerous contracts of USD 9 million as of 31 March 2019 (31 December 2018: USD 40 million). <sup>6</sup> Includes provisions for sabbatical and anniversary awards.

Restructuring provisions primarily relate to onerous contracts and severance payments. Onerous contracts for property are recognized when UBS AG is committed to pay for non-lease components, such as utilities, when a property is vacated or not fully recovered from subtenants. 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 event 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 15b. 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. Developments relating to a matter that occur after the relevant reporting period, but prior to the issuance of financial statements, which affect management's assessment of the provision for such matter (because, for example, the developments provide evidence of conditions that existed at the end of the reporting period), are adjusting events after the reporting period under IAS 10 and must be recognized in the financial statements for the reporting period.



**Note 15 Provisions and contingent liabilities (continued)**

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.

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

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

The aggregate amount provisioned for litigation, regulatory and similar matters as a class is disclosed in the "Provisions" table in Note 15a above. It is not practicable to provide an aggregate estimate of liability for our litigation, regulatory and similar matters as a class of contingent liabilities. Doing so would require 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 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 the UBS Group first quarter 2019 report.

**Provisions for litigation, regulatory and similar matters by business division and in Corporate Center<sup>1</sup>**

<i>USD million</i>	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center	UBS
<b>Balance as of 31 December 2018</b>	1,003	117	0	269	1,438	2,827
Increase in provisions recognized in the income statement	14	0	0	2	0	16
Release of provisions recognized in the income statement	(13)	0	0	(2)	(2)	(17)
Provisions used in conformity with designated purpose	(49)	(1)	0	(66)	(18)	(134)
Foreign currency translation / unwind of discount	(12)	(2)	0	(2)	1	(15)
<b>Balance as of 31 March 2019</b>	<b>943</b>	<b>114</b>	<b>0</b>	<b>201</b>	<b>1,419</b>	<b>2,677</b>

<sup>1</sup> Provisions, if any, for the matters described in this disclosure are recorded in Global Wealth Management (item 3 and item 4) and Corporate Center (item 2). Provisions, if any, for the matters described in items 1 and 6 of this disclosure are allocated between Global Wealth Management and Personal & Corporate Banking, and provisions, if any, for the matters described in this disclosure in item 5 are allocated between the Investment Bank and Corporate Center.

## Note 15 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. On 30 July 2018, the Swiss Federal Administrative Court granted UBS's appeal by holding the French administrative assistance request inadmissible. The FTA filed a final appeal with the Swiss Federal Supreme Court.

Since 2013, UBS (France) S.A., UBS AG and certain former employees have been under investigation in France for alleged complicity in having illicitly solicited clients on French territory, regarding the laundering of proceeds of tax fraud, and 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.

A trial in the court of first instance took place from 8 October 2018 until 15 November 2018. On 20 February 2019, the court announced a verdict finding UBS AG guilty of illicitly soliciting clients on French territory and aggravated laundering of the proceeds of tax fraud, and UBS France S.A. guilty of aiding and abetting unlawful solicitation and laundering the proceeds of tax fraud. The court imposed fines aggregating EUR 3.7 billion on UBS AG and UBS France S.A. and awarded EUR 800 million of civil damages to the French state. UBS has appealed the decision. Under French law, the judgment is

suspended while the appeal is pending. The Court of Appeal will retry the case de novo as to both the law and the facts, and the fines and penalties can be greater than or less than those imposed by the court of first instance. A subsequent appeal to the Cour de Cassation, France's highest court, is possible with respect to questions of law.

UBS believes that based on both the law and the facts the judgment of the court of first instance should be reversed. UBS believes it followed its obligations under Swiss and French law as well as the European Savings Tax Directive. Even assuming liability, which it contests, UBS believes the penalties and damage amounts awarded greatly exceed the amounts that could be supported by the law and the facts. In particular, UBS believes the court incorrectly based the penalty on the total regularized assets rather than on any unpaid taxes on those assets for which a fraud has been characterized and further incorrectly awarded damages based on costs that were not proven by the civil party. Notwithstanding that UBS believes it should be acquitted, our balance sheet at 31 March 2019 reflected provisions with respect to this matter in an amount of USD 516 million. The wide range of possible outcomes in this case contributes to a high degree of estimation uncertainty. The provision reflected on our balance sheet at 31 March 2019 reflects our best estimate of possible financial implications, although it is reasonably possible that actual penalties and civil damages could exceed the provision amount.

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, of banking and financial solicitation by unauthorized persons, and of serious tax fraud. In 2018, tax authorities and a prosecutor's office in Italy asserted that UBS is potentially liable for taxes and penalties as a result of its activities in Italy from 2012 to 2017.

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 March 2019 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.

## Note 15 Provisions and contingent liabilities (continued)

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

From 2002 through 2007, prior to the crisis in the US residential loan market, UBS was a substantial issuer and underwriter of US residential mortgage-backed securities (RMBS) and was a purchaser and seller of US residential mortgages. 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 in the US District Court for the Southern District of New York seeking to enforce UBS RESI's obligation to repurchase loans in the collateral pools for three RMBS securitizations issued and underwritten by UBS with an original principal balance of approximately USD 2 billion. In July 2018, UBS and the trustee entered into an agreement under which UBS will pay USD 850 million to resolve this matter. A significant portion of this amount will be borne by other parties that indemnified UBS. The settlement remains subject to court approval and proceedings to determine how the settlement funds will be distributed to RMBS holders. After giving effect to this settlement, 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:* Since 2014, the US Attorney's Office for the Eastern District of New York has sought information from UBS pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA), related to UBS's RMBS business from 2005 through 2007. On 8 November 2018, the DOJ filed a civil complaint in the District Court for the Eastern District of New York. The complaint seeks unspecified civil monetary penalties under FIRREA related to UBS's issuance, underwriting and sale of 40 RMBS transactions in 2006 and 2007. UBS moved to dismiss the civil complaint on 6 February 2019.

Our balance sheet at 31 March 2019 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. Those inquiries concerned two third-party funds established under Luxembourg law, substantially all assets of which were with BMIS, as well as certain funds established in offshore jurisdictions with either direct or indirect exposure to BMIS. These funds faced severe losses, and the Luxembourg funds are in liquidation. The documentation establishing both funds identifies UBS entities in various roles, including custodian, administrator, manager, distributor and promoter, and indicates that UBS employees serve as board members.

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

## Note 15 Provisions and contingent liabilities (continued)

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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 approximately USD 125 million of payments alleged to be fraudulent conveyances and preference payments. In 2016, the bankruptcy court dismissed these claims against the UBS entities. The BMIS Trustee appealed. In February 2019, the Court of Appeals reversed the dismissal of the BMIS Trustee's remaining claims and remanded the case to the bankruptcy court for further proceedings. The defendants, including UBS, filed a petition for rehearing in March 2019.

### 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 2.9 billion, of which claims with aggregate claimed damages of USD 1.9 billion have been resolved through settlements, arbitration or withdrawal of the claim. The claims have been 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 and a request for permission to appeal that ruling was denied by 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. Following denial of the plaintiffs' motion for class certification, the case was dismissed in October 2018.

In 2014 and 2015, UBS entered into settlements with the Office of the Commissioner of Financial Institutions for the Commonwealth of Puerto Rico, the US Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority in relation to their examinations of UBS's operations.

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 2015, and continuing through 2017, certain agencies and public corporations of the Commonwealth of Puerto Rico (Commonwealth) defaulted on certain interest payments on Puerto Rico bonds. 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 has imposed a stay on the exercise of certain creditors' rights. In 2017, the oversight board placed certain of the bonds into a bankruptcy-like proceeding under the supervision of a Federal District Judge. These events, further defaults or 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 March 2019 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.

**Note 15 Provisions and contingent liabilities (continued)****5. Foreign exchange, LIBOR and benchmark rates, and other trading practices**

*Foreign exchange-related regulatory matters:* Beginning in 2013, numerous authorities commenced investigations concerning possible manipulation of foreign exchange markets and precious metals prices. 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 2015, the DOJ's Criminal Division terminated the 2012 non-prosecution agreement 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. UBS has ongoing obligations to cooperate with these authorities and to undertake certain remediation measures. UBS has also been granted conditional immunity by the Antitrust Division of the DOJ and by authorities in other jurisdictions in connection with potential competition law violations relating to foreign exchange and precious metals businesses. Investigations relating to foreign exchange 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. UBS has resolved US federal court class actions relating to foreign currency transactions with the defendant banks and persons who transacted in foreign exchange futures contracts and options on such futures under a settlement agreement that provides for UBS to pay an aggregate of USD 141 million and provide cooperation to the settlement classes. Certain class members have excluded themselves from that settlement and have filed individual actions in US and English courts against UBS and other banks, alleging violations of US and European competition laws and unjust enrichment.

In 2015, a putative class action was filed in federal court against UBS and numerous other banks on behalf of persons and businesses in the US who directly purchased foreign

currency from the defendants and alleged co-conspirators for their own end use. In 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 March 2018, the court denied the defendants' motions to dismiss the amended complaint.

In 2017, two putative class actions were filed in federal court in New York against UBS and numerous other banks on behalf of persons and entities who had indirectly purchased foreign exchange instruments from a defendant or co-conspirator in the US, and a consolidated complaint was filed in June 2017. In March 2018, the court dismissed the consolidated complaint. In October 2018, the court granted plaintiffs' motion seeking leave to file an amended complaint.

*LIBOR and other benchmark-related regulatory matters:* Numerous government agencies, including the SEC, the CFTC, the DOJ, the FCA, the UK Serious Fraud Office, the Monetary Authority of Singapore, the Hong Kong Monetary Authority, 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 UK Financial Services Authority, 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 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 measures with respect to benchmark interest rate submissions. In December 2018, UBS entered into a settlement agreement with the New York and other state attorneys general under which it will pay USD 68 million to resolve claims by the attorneys general related to LIBOR. 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.

## Note 15 Provisions and contingent liabilities (continued)

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

*USD LIBOR class and individual actions in the US:* In 2013 and 2015, the district court in the USD LIBOR actions dismissed, in whole or in part, certain plaintiffs' antitrust claims, federal racketeering claims, CEA claims, and state common law claims. Although the Second Circuit vacated the district court's judgment dismissing antitrust claims, the district court again dismissed antitrust claims against UBS in 2016. Certain plaintiffs have appealed that decision to the Second Circuit. Separately, in 2018, the Second Circuit reversed in part the district court's 2015 decision dismissing certain individual plaintiffs' claims. UBS entered into an agreement in 2016 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. In 2018, the district court denied plaintiffs' motions for class certification in the USD class actions for claims pending against UBS, and plaintiffs sought permission to appeal that ruling to the Second Circuit. In July 2018, the Second Circuit denied the petition to appeal of the class of USD lenders and in November 2018 denied the petition of the USD exchange class. In January 2019, a putative class action was filed in the District Court for the Southern District of New York against UBS and numerous other banks on behalf of US residents who, since 1 February 2014, directly transacted with a defendant bank in USD LIBOR instruments. The complaint asserts antitrust and unjust enrichment claims.

*Other benchmark class actions in the US:* In 2014, the court in one of the Euroyen TIBOR lawsuits dismissed certain of the plaintiffs' claims, including a federal antitrust claim, for lack of standing. In 2015, this court dismissed the plaintiffs' federal racketeering claims on the same basis and affirmed its previous

dismissal of the plaintiffs' antitrust claims against UBS. In 2017, this 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 lawsuit dismissed the cases as to UBS and certain other foreign defendants for lack of personal jurisdiction. In October 2018, the court in the SIBOR / SOR action dismissed all but one of plaintiffs' claims against UBS. Plaintiffs in the CHF LIBOR and SIBOR / SOR actions have filed amended complaints following the dismissals, which UBS and other defendants have moved to dismiss. In November 2018, the court in the BBSW lawsuit dismissed the case as to UBS and certain other foreign defendants for lack of personal jurisdiction. Following that dismissal, plaintiffs in the BBSW action moved in January 2019 to file an amended complaint seeking to re-name UBS and certain other banks as defendants. UBS and other defendants also moved to dismiss the GBP LIBOR action in December 2016, but that motion was denied as to UBS in December 2018. UBS moved for reconsideration of that decision in January 2019.

*Government bonds:* Putative class actions have been filed since 2015 in US federal courts against UBS and other banks on behalf of persons who participated in markets for US Treasury securities since 2007. A consolidated complaint was filed in 2017 in the US District Court for the Southern District of New York alleging that the banks colluded with respect to, and manipulated prices of, US Treasury securities sold at auction and in the secondary market and asserting claims under the antitrust laws and for unjust enrichment. Defendants' motions to dismiss the consolidated complaint are pending.

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 March 2019 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.



**Note 15 Provisions and contingent liabilities (continued)****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 March 2019 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.

**Note 16 Guarantees, commitments and forward starting transactions**

The table below presents the maximum irrevocable amount of guarantees, commitments and forward starting transactions.

USD million	31.3.19				31.12.18			
	Gross		Sub-participations	Net	Gross		Sub-participations	Net
	Measured at fair value	Not measured at fair value			Measured at fair value	Not measured at fair value		
<b>Total guarantees</b>	<b>1,840</b>	<b>17,434</b>	<b>(2,760)</b>	<b>16,514</b>	1,639	18,146	(2,803)	16,982
<b>Loan commitments</b>	<b>6,401</b>	<b>27,919</b>	<b>(690)</b>	<b>33,630</b>	3,535	31,212	(647)	34,099
<b>Forward starting transactions<sup>1</sup></b>								
Reverse repurchase agreements	29,284	2,038			8,117	925		
Securities borrowing agreements		20				12		
Repurchase agreements	15,321	629			7,926	400		

<sup>1</sup> Cash to be paid in the future by either UBS or the counterparty.

**Note 17 Currency translation rates**

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

	Closing exchange rate			Average rate <sup>1</sup>		
	As of			For the quarter ended		
	31.3.19	31.12.18	31.12.18	31.3.19	31.12.18	31.3.18
1 CHF	1.00	1.02	1.05	1.00	1.00	1.06
1 EUR	1.12	1.15	1.23	1.14	1.14	1.23
1 GBP	1.30	1.28	1.40	1.31	1.28	1.40
100 JPY	0.90	0.91	0.94	0.91	0.89	0.93

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

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