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This document, for which we accept full responsibility, includes particulars given in compliance with the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited (the “**Rules**”) for the purpose of giving information with regard to us. We, having made all reasonable enquiries, confirm that to the best of our knowledge and belief the information contained in this document is accurate and complete in all material respects and not misleading or deceptive, and there are no other matters the omission of which would make any statement herein or this document misleading.

This document is for information purposes only and does not constitute an invitation or offer to acquire, purchase or subscribe for the CBBCs.

The CBBCs are complex products. Investors should exercise caution in relation to them. Investors are warned that the price of the CBBCs may fall in value as rapidly as it may rise and holders may sustain a total loss of their investment. Prospective purchasers should therefore ensure that they understand the nature of the CBBCs and carefully study the risk factors set out in the Base Listing Document (as defined below) and this document and, where necessary, seek professional advice, before they invest in the CBBCs.

The CBBCs constitute general unsecured contractual obligations of us as the Issuer and of no other person and will rank equally among themselves and with all our other unsecured obligations (save for those obligations preferred by law) upon liquidation. If you purchase the CBBCs, you are relying upon the creditworthiness of us, and have no rights under the CBBCs against the Index Compiler or any other person. If we become insolvent or default on our obligations under the CBBCs, you may not be able to recover all or even part of the amount due under the CBBCs (if any).

Non-collateralised Structured Products

Launch Announcement and Supplemental Listing Document for Callable Bull/Bear Contracts over Index



Issuer: UBS AG
(incorporated with limited liability in Switzerland)
acting through its London Branch

Sponsor: UBS Securities Asia Limited

Key Terms

CBBCs Stock code	69821	69827	69830	69831	69832
Liquidity Provider broker ID	9695	9695	9695	9695	9695
Issue size	200,000,000 CBBCs	200,000,000 CBBCs	200,000,000 CBBCs	200,000,000 CBBCs	200,000,000 CBBCs
Style / Category	European style cash settled category R	European style cash settled category R	European style cash settled category R	European style cash settled category R	European style cash settled category R
Type	Bull	Bull	Bull	Bull	Bear
Index	Hang Seng Index	Hang Seng Index	Hang Seng Index	Hang Seng Index	Hang Seng Index
Board Lot	10,000 CBBCs	10,000 CBBCs	10,000 CBBCs	10,000 CBBCs	10,000 CBBCs
Issue Price per CBBC	HKD 0.250	HKD 0.250	HKD 0.250	HKD 0.250	HKD 0.250
Funding Cost per CBBC as of Launch Date ¹	HKD 0.2368	HKD 0.2185	HKD 0.2035	HKD 0.1835	HKD 0.2238
	The funding cost will fluctuate throughout the life of the CBBCs				
Strike Level	26,933.00	26,750.00	26,600.00	26,400.00	26,850.00
Call Level	27,033.00	26,850.00	26,700.00	26,500.00	26,750.00
Cash Settlement Amount per Board Lot (if any) payable at expiry	<p>Subject to no occurrence of a Mandatory Call Event:</p> <p>For a series of bull CBBCs:</p> $\frac{(\text{Closing Level} - \text{Strike Level}) \times \text{one Board Lot} \times \text{Index Currency Amount}}{\text{Divisor}}$ <p>For a series of bear CBBCs:</p> $\frac{(\text{Strike Level} - \text{Closing Level}) \times \text{one Board Lot} \times \text{Index Currency Amount}}{\text{Divisor}}$				
Closing Level	The final settlement price for settling the Hang Seng Index Futures Contracts that are scheduled to expire during the month in which the Expiry Date of the relevant series of the CBBCs is scheduled to fall (the “Index Futures Contracts”) ²				
Index Exchange (for all series)	The Stock Exchange of Hong Kong Limited				
Index Currency Amount	HKD 1.00	HKD 1.00	HKD 1.00	HKD 1.00	HKD 1.00
Divisor	10,000	10,000	10,000	10,000	10,000
Launch Date (for all series)	13 November 2019				
Issue Date (for all series)	19 November 2019				
Listing Date (for all series)	20 November 2019				
Observation Commencement Date (for all series)	20 November 2019				
Valuation Date ³	28 January 2022	28 January 2022	29 November 2021	29 November 2021	30 March 2020
Expiry Date ³	28 January 2022	28 January 2022	29 November 2021	29 November 2021	30 March 2020
Settlement Date (for all series)	The third CCASS Settlement Day after (i) the end of the MCE Valuation Period or (ii) the later of: (a) the Expiry Date; and (b) the day on which the Closing Level is determined in accordance with the Conditions (as the case may be)				
Settlement Currency	Hong Kong Dollars	Hong Kong Dollars	Hong Kong Dollars	Hong Kong Dollars	Hong Kong Dollars
Effective Gearing ⁴	10.83x	10.83x	10.83x	10.83x	10.64x
Gearing ⁴	10.83x	10.83x	10.83x	10.83x	10.64x
Premium ⁴	8.75%	8.07%	7.52%	6.78%	8.42%

¹ The funding cost is calculated in accordance with the following formula:

$$\text{Funding Cost} = \frac{\text{Strike Level} \times \text{funding rate} \times n / 365 \times \text{Index Currency Amount}}{\text{Divisor}}$$

Where,

- (i) “n” is the number of days remaining to expiration; initially, “n” is the number of days from (and including) the Launch Date to (and including) the trading day immediately preceding the Expiry Date; and
- (ii) the funding rate will fluctuate throughout the term of the CBBCs as further described in the “Key Risk Factors” section in this document. As of the Launch Date, the funding rates were 3.9717% for stock code 69821, 3.6899% for stock code 69827, 3.7331% for stock code 69830, 3.3917% for stock code 69831 and 22.0460% for stock code 69832.

² Determined pursuant to Regulation 012 of the Regulations for Trading Stock Index Futures Contracts and the Contract Specifications for Hang Seng Index Futures (as amended from time to time) of the Hong Kong Futures Exchange Limited (or its successor or assign), subject to our right to determine the Closing Level in good faith on the Valuation Date upon the occurrence of a Market Disruption Event as described further in Condition 4(G).

³ If such day is not the day on which the relevant Index Futures Contracts expire on Hong Kong Futures Exchange Limited (or its successor or assign), the day on which the relevant Index Futures Contracts will expire on the Hong Kong Futures Exchange Limited (or its successor or assign).

⁴ This data may fluctuate during the life of the CBBCs and may not be comparable to similar information provided by other issuers of callable bull/bear contracts. Each issuer may use different pricing models.

Key Terms

CBBCs Stock code	69837	69838	69840
Liquidity Provider broker ID	9695	9695	9695
Issue size	200,000,000 CBBCs	200,000,000 CBBCs	200,000,000 CBBCs
Style / Category	European style cash settled category R	European style cash settled category R	European style cash settled category R
Type	Bear	Bear	Bear
Index	Hang Seng Index	Hang Seng Index	Hang Seng Index
Board Lot	10,000 CBBCs	10,000 CBBCs	10,000 CBBCs
Issue Price per CBBC	HKD 0.250	HKD 0.250	HKD 0.250
Funding Cost per CBBC as of Launch Date ¹	HKD 0.1988	HKD 0.1788	HKD 0.2399
	The funding cost will fluctuate throughout the life of the CBBCs		
Strike Level	27,100.00	27,300.00	26,672.00
Call Level	27,000.00	27,200.00	26,572.00
Cash Settlement Amount per Board Lot (if any) payable at expiry	<p>Subject to no occurrence of a Mandatory Call Event:</p> <p>For a series of bull CBBCs:</p> <p style="text-align: center;">$\frac{(\text{Closing Level} - \text{Strike Level}) \times \text{one Board Lot} \times \text{Index Currency Amount}}{\text{Divisor}}$</p> <p>For a series of bear CBBCs:</p> <p style="text-align: center;">$\frac{(\text{Strike Level} - \text{Closing Level}) \times \text{one Board Lot} \times \text{Index Currency Amount}}{\text{Divisor}}$</p>		
Closing Level	The final settlement price for settling the Hang Seng Index Futures Contracts that are scheduled to expire during the month in which the Expiry Date of the relevant series of the CBBCs is scheduled to fall (the “Index Futures Contracts”) ²		
Index Exchange (for all series)	The Stock Exchange of Hong Kong Limited		
Index Currency Amount	HKD 1.00	HKD 1.00	HKD 1.00
Divisor	10,000	10,000	10,000
Launch Date (for all series)	13 November 2019		
Issue Date (for all series)	19 November 2019		
Listing Date (for all series)	20 November 2019		
Observation Commencement Date (for all series)	20 November 2019		
Valuation Date ³	30 March 2020	30 March 2020	27 February 2020
Expiry Date ³	30 March 2020	30 March 2020	27 February 2020
Settlement Date (for all series)	The third CCASS Settlement Day after (i) the end of the MCE Valuation Period or (ii) the later of: (a) the Expiry Date; and (b) the day on which the Closing Level is determined in accordance with the Conditions (as the case may be)		
Settlement Currency	Hong Kong Dollars	Hong Kong Dollars	Hong Kong Dollars
Effective Gearing ⁴	10.64x	10.64x	10.63x
Gearing ⁴	10.64x	10.64x	10.63x
Premium ⁴	7.48%	6.72%	9.03%

¹ The funding cost is calculated in accordance with the following formula:

$$\text{Funding Cost} = \frac{\text{Strike Level} \times \text{funding rate} \times n / 365 \times \text{Index Currency Amount}}{\text{Divisor}}$$

Where,

- (i) “n” is the number of days remaining to expiration; initially, “n” is the number of days from (and including) the Launch Date to (and including) the trading day immediately preceding the Expiry Date; and
- (ii) the funding rate will fluctuate throughout the term of the CBBCs as further described in the “Key Risk Factors” section in this document. As of the Launch Date, the funding rates were 19.4026% for stock code 69837, 17.3228% for stock code 69838 and 30.9715% for stock code 69840.

² Determined pursuant to Regulation 012 of the Regulations for Trading Stock Index Futures Contracts and the Contract Specifications for Hang Seng Index Futures (as amended from time to time) of the Hong Kong Futures Exchange Limited (or its successor or assign), subject to our right to determine the Closing Level in good faith on the Valuation Date upon the occurrence of a Market Disruption Event as described further in Condition 4(G).

³ If such day is not the day on which the relevant Index Futures Contracts expire on Hong Kong Futures Exchange Limited (or its successor or assign), the day on which the relevant Index Futures Contracts will expire on the Hong Kong Futures Exchange Limited (or its successor or assign).

⁴ This data may fluctuate during the life of the CBBCs and may not be comparable to similar information provided by other issuers of callable bull/bear contracts. Each issuer may use different pricing models.

IMPORTANT INFORMATION

The CBBCs are listed structured products which involve derivatives. Do not invest in them unless you fully understand and are willing to assume the risks associated with them.

What documents should you read before investing in the CBBCs?

You must read this document together with our base listing document dated 3 April 2019 (the “**Base Listing Document**”), as supplemented by any addendum thereto (together, the “**Listing Documents**”), in particular the section “Terms and Conditions of Cash Settled Callable Bull/Bear Contracts over an Index” (the “**Conditions**”) set out in our Base Listing Document. This document (as read in conjunction with our Base Listing Document and each addendum referred to in the section headed “**Product Summary Statement**”) is accurate as at the date of this document. You should carefully study the risk factors set out in the Listing Documents. You should also consider your financial position and investment objectives before deciding to invest in the CBBCs. We cannot give you investment advice. You must decide whether the CBBCs meet your investment needs before investing in the CBBCs.

Is there any guarantee or collateral for the CBBCs?

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

What are the Issuer’s credit ratings?

The Issuer’s long term credit ratings are:

<i>Rating agency</i>	<i>Rating as of the Launch Date</i>
Moody’s Deutschland GmbH	Aa3 (stable outlook)
S&P Global Ratings Europe Limited	A+ (stable outlook)

Rating agencies usually receive a fee from the companies that they rate. When evaluating our creditworthiness, you should not solely rely on our credit ratings because:

- a credit rating is not a recommendation to buy, sell or hold the CBBCs;
- ratings of companies may involve difficult-to-quantify factors such as market competition, the success or failure of new products and markets and managerial competence;
- a high credit rating is not necessarily indicative of low risk. Our credit ratings as of the Launch Date are for reference only. Any downgrading of our credit ratings could result in a reduction in the value of the CBBCs;
- a credit rating is not an indication of the liquidity or volatility of the CBBCs; and
- a credit rating may be downgraded if our credit quality declines.

The CBBCs are not rated.

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

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

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

Is the Issuer subject to any litigation?

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

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

There has been no material adverse change in our financial or trading position since 31 December 2018.

PRODUCT SUMMARY STATEMENT

The CBBCs are listed structured products which involve derivatives. This statement provides you with key information about the CBBCs. You should not invest in the CBBCs based on the information contained in this statement alone. You should read and understand the remaining sections of this document, together with the other Listing Documents, before deciding whether to invest.

Overview of the CBBCs

- **What is a CBBC?**

A CBBC linked to an index is an instrument which tracks the performance of the underlying index.

The trading price of the CBBCs tends to mirror the movement of the Index level in dollar value.

Similar to a derivative warrant, a CBBC may provide a leveraged return to you. Conversely, such leverage could also magnify your losses.

A bull CBBC is designed for an investor holding a view that the level of the underlying index will increase during the term of the CBBC.

A bear CBBC is designed for an investor holding a view that the level of the underlying index will decrease during the term of the CBBC.

- **How do the CBBCs work?**

The CBBCs are European style cash settled callable bull/bear contracts linked to the Index. Subject to no occurrence of a Mandatory Call Event (see “Mandatory call feature” below), the CBBCs can only be exercised on the Expiry Date.

Mandatory call feature

A Mandatory Call Event occurs if the Spot Level is at or below (in respect of a series of bull CBBCs) or at or above (in respect of a series of bear CBBCs) the Call Level at any time during an Index Business Day in the Observation Period.

The Observation Period commences from the Observation Commencement Date to the Trading Day immediately preceding the Expiry Date (both dates inclusive). “**Trading Day**” means any day on which the Stock Exchange is scheduled to open for trading for its regular trading sessions.

Upon the occurrence of a Mandatory Call Event, trading in the CBBCs will be suspended immediately and, subject to the limited circumstances set out in the Conditions in which a Mandatory Call Event may be reversed, the CBBCs will be terminated and all Post MCE Trades will be invalid and will be cancelled and will not be recognised by us or the Stock Exchange. The term “**Post MCE Trades**” means subject to such modification and amendment prescribed by the Stock Exchange from time to time, (a) in the case where the Mandatory Call Event occurs during a continuous trading session, all trades in the CBBCs concluded via auto-matching or manually after the time of the occurrence of a Mandatory Call Event, and (b) in the case where the Mandatory Call Event occurs during a pre-opening session or a closing auction session (if applicable), all auction trades in the CBBCs concluded in such session and all manual trades concluded after the end of the pre-order matching period in such session.

The time at which a Mandatory Call Event occurs will be determined by reference to the time the relevant Index level is published by the Index Compiler.

Residual Value calculation

The CBBCs are Category R as the Call Level is different from the Strike Level. Upon the occurrence of a Mandatory Call Event, the holder may be entitled to a cash amount called the “**Residual Value**” net of any Exercise Expenses (as defined under the heading “Exercise Expenses” in the sub-section titled “What are the fees and charges?” below).

The Residual Value will be calculated in accordance with a formula by reference to the lowest Spot Level (in respect of a series of bull CBBCs) or the highest Spot Level (in respect of a series of bear CBBCs) of the Index in the trading session during which a Mandatory Call Event occurs and in the following session, subject to potential extension as further described in Condition 2.

The Residual Value per Board Lot (if any) payable is calculated as follows:

In respect of a series of bull CBBCs:

$$\frac{(\text{Minimum Index Level} - \text{Strike Level}) \times \text{one Board Lot} \times \text{Index Currency Amount}}{\text{Divisor}}$$

In respect of a series of bear CBBCs:

$$\frac{(\text{Strike Level} - \text{Maximum Index Level}) \times \text{one Board Lot} \times \text{Index Currency Amount}}{\text{Divisor}}$$

Where:

“Minimum Index Level” means, in respect of a series of bull CBBCs, the lowest Spot Level of the Index during the MCE Valuation Period;

“Maximum Index Level” means, in respect of a series of bear CBBCs, the highest Spot Level of the Index during the MCE Valuation Period;

“MCE Valuation Period” means, subject to any extension (as described in further detail in the Conditions), the period commencing from and including the moment upon which the Mandatory Call Event occurs and up to the end of the following trading session on the Index Exchange; and

“Spot Level” means the spot level of the Index as compiled and published by the Index Compiler.

If the Residual Value is equal to or less than the Exercise Expenses (if any), you will lose all of your investment.

At expiry

If a Mandatory Call Event has not occurred during the Observation Period, the CBBCs will be terminated on the Expiry Date.

A bull CBBC will be automatically exercised at expiry without the need for the holder to deliver an exercise notice if the Closing Level is above the Strike Level. The more the Closing Level is above the Strike Level, the higher the payoff at expiry. If the Closing Level is at or below the Strike Level, you will lose all of your investment in the bull CBBC.

A bear CBBC will be automatically exercised at expiry without the need for the holder to deliver an exercise notice if the Closing Level is below the Strike Level. The more the Closing Level is below the Strike Level, the higher the payoff at expiry. If the Closing Level is at or above the Strike Level, you will lose all of your investment in the bear CBBC.

Upon the automatic exercise of the CBBCs, the holder is entitled to a cash amount called the **“Cash Settlement Amount”** net of any Exercise Expenses (as defined under the heading “Exercise Expenses” in the sub-section titled “What are the fees and charges?” below) according to the terms and conditions in the Listing Documents. **If the Cash Settlement Amount is equal to or less than the Exercise Expenses (if any), you will lose all of your investment in the CBBCs.**

• Can you sell the CBBCs before the Expiry Date?

Yes. We have made an application for listing of, and permission to deal in, the CBBCs on the Stock Exchange. All necessary arrangements have been made to enable the CBBCs to be admitted into the Central Clearing and Settlement System (“CCASS”). Issue of the CBBCs is conditional upon listing approval being granted. From the Listing Date up to the Trading Day immediately preceding the Expiry Date (both dates inclusive), you may sell or buy the CBBCs on the Stock Exchange. No application has been made to list the CBBCs on any other stock exchange.

The CBBCs may only be transferred in a Board Lot (or integral multiples thereof). Where a transfer of CBBCs takes place on the Stock Exchange, currently settlement must be made not later than two CCASS Settlement Days after such transfer.

The Liquidity Provider will make a market in the CBBCs by providing bid and/or ask prices. See the section headed “Liquidity” below.

• What is your maximum loss?

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

• What are the factors determining the price of a CBBC?

The price of a CBBC linked to an index generally depends on the level of the underlying index (being the Index for the CBBCs). However, throughout the term of the CBBCs, the price of the CBBCs will be influenced by a number of factors, including:

- the Strike Level and Call Level of the CBBCs;
- the likelihood of the occurrence of a Mandatory Call Event;
- the probable range of Residual Value (if any) upon the occurrence of a Mandatory Call Event;
- the time remaining to expiry;
- the interim interest rates and expected dividend payments or other distributions on any components comprising the Index;
- the liquidity of the futures contracts relating to the Index;
- the supply and demand for the CBBCs;
- the probable range of the Cash Settlement Amount;
- our related transaction costs; and
- the creditworthiness of the Issuer.

Although the price of the CBBCs tends to mirror the movement of the Index level in dollar value, movements in the price of the CBBCs may not always correspond with the movements in the Index level, especially when the Spot Level is close to the Call Level. It is possible that the price of the CBBCs does not increase as much as the increase (in respect of the bull CBBCs) or decrease (in respect of the bear CBBCs) in the level of the Index.

Risks of investing in the CBBCs

You must read the section headed “Key Risk Factors” in this document together with the risk factors set out in our Base Listing Document. You should consider all these factors collectively when making your investment decision.

Liquidity

- **How to contact the Liquidity Provider for quotes?**

Liquidity Provider:	UBS Securities Hong Kong Limited
Address:	52/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong
Telephone Number:	+ 852 2971 6628

The Liquidity Provider is regulated by the Stock Exchange and the Securities and Futures Commission. It is an affiliate of the Issuer and will act as our agent in providing quotes. You can request a quote by calling the Liquidity Provider at the telephone number above.

- **What is the Liquidity Provider’s maximum response time for a quote?**

The Liquidity Provider will respond within 10 minutes and the quote will be displayed on the Stock Exchange’s designated stock page for the CBBCs.

- **Maximum spread between bid and ask prices:** 20 spreads

- **Minimum quantity for which liquidity will be provided:** 20 Board Lots

- **What are the circumstances under which the Liquidity Provider is not obliged to provide liquidity?**

There will be circumstances under which the Liquidity Provider is not obliged to provide liquidity. Such circumstances include:

- (i) upon the occurrence of a Mandatory Call Event;
- (ii) during the first 5 minutes of each morning trading session or the first 5 minutes after trading commences for the first time on a trading day;
- (iii) during a pre-opening session or a closing auction session (if applicable) or any other circumstances as may be prescribed by the Stock Exchange;
- (iv) when the CBBCs are suspended from trading for any reason;
- (v) if there occurs or exists any suspension of or limitation imposed on trading of options or futures contracts relating to the Index or if the Index level is not calculated or published as scheduled for any reason;
- (vi) when there are no CBBCs available for market making activities. In such event, the Liquidity Provider shall continue to provide bid prices. CBBCs held by us or any of our affiliates in a fiduciary or agency capacity are not CBBCs available for market making activities;
- (vii) when there are operational and technical problems beyond the control of the Liquidity Provider hindering the ability of the Liquidity Provider to provide liquidity;
- (viii) if the stock market experiences exceptional price movement and high volatility over a short period of time which materially affects the Liquidity Provider’s ability to source a hedge or unwind an existing hedge; or
- (ix) if the theoretical value of the CBBCs is less than HK\$0.01. If the Liquidity Provider chooses to provide liquidity under this circumstance, both bid and ask prices will be made available.

You should read the sub-section entitled “Possible limited secondary market” under the “Key Risk Factors” section for further information on the key risks when the Liquidity Provider is not able to provide liquidity.

How can you obtain further information?

- **Information about the Index**

You may obtain information on the Index by visiting the Index Compiler’s website at www.hsi.com.hk.

- **Information about the CBBCs after issue**

You may visit the Stock Exchange’s website at www.hkex.com.hk/products/securities/callable-bull-bear-contracts?sc_lang=en or our website at http://warrants.ubs.com/home/html/cbbc_e.html to obtain information on the CBBCs or any notice given by us or the Stock Exchange in relation to the CBBCs.

- **Information about us**

You should read the section “Updated Information about Us” in this document. You may visit <http://www.ubs.com> to obtain general corporate information about us.

We have included references to websites in this document to indicate how further information may be obtained. Information appearing on those websites does not form part of the Listing Documents. We accept no responsibility for the accuracy or completeness of the information appearing on those websites. You should conduct your own due diligence (including without limitation web searches) to ensure that you are viewing the most up-to-date information.

What are the fees and charges?

- **Trading Fees and Levies**

The Stock Exchange charges a trading fee of 0.005 per cent. and the Securities and Futures Commission charges a transaction levy of 0.0027 per cent. for each transaction effected on the Stock Exchange payable by each of the seller and the buyer and calculated on the value of the consideration for the CBBCs. The levy for the investor compensation fund is currently suspended.

- **Exercise Expenses**

You are responsible for any Exercise Expenses. Exercise Expenses mean any charges or expenses including any taxes or duties which are incurred in respect of the early termination of the CBBCs upon the occurrence of a Mandatory Call Event or the exercise of the CBBCs at expiry. Any Exercise Expenses will be deducted from the Residual Value or the Cash Settlement Amount payable at expiry (if any, as the case may be). If the Residual Value or the Cash Settlement Amount payable at expiry (as the case may be) is equal to or less than the Exercise Expenses, no amount is payable. As at the date of this document, no Exercise Expenses are payable for cash settled callable bull/bear contracts (including the CBBCs).

- **Stamp Duty**

No stamp duty is currently payable in Hong Kong on transfer of cash settled callable bull/bear contracts (including the CBBCs).

You should note that any transaction cost will reduce your gain or increase your loss under your investment in the CBBCs.

What is the legal form of the CBBCs?

Each series of the CBBCs will be represented by a global certificate in the name of HKSCC Nominees Limited that is the only legal owner of the CBBCs. We will not issue definitive certificates for the CBBCs. You may arrange for your broker to hold the CBBCs in a securities account on your behalf, or if you have a CCASS Investor Participant securities account, you may arrange for the CBBCs to be held in such account. You will have to rely on the records of CCASS and/or the statements you receive from your brokers as evidence of your beneficial interest in the CBBCs.

Can we adjust the terms or early terminate the CBBCs?

The occurrence of certain events (including, without limitation, a succession of the Index or Index Compiler, modification or cessation of calculation of the Index) may entitle us to adjust the terms and conditions of the CBBCs. However, we are not obliged to adjust the terms and conditions of the CBBCs for every event that affects the Index.

We may early terminate the CBBCs if it becomes illegal or impracticable for us (i) to perform our obligations under the CBBCs as a result of a change in law event, or (ii) to maintain our hedging arrangement with respect to the CBBCs due to a change in law event. In such event, the amount payable by us (if any) will be the fair market value of the CBBCs less our cost of unwinding any related hedging arrangements as determined by us, which may be substantially less than your initial investment and may be zero.

Please refer to Conditions 3 and 6 for details about adjustments or early termination events. Such events may negatively affect your investment and you may suffer a loss.

Mode of settlement for the CBBCs

Subject to early termination upon the occurrence of a Mandatory Call Event, the CBBCs will be automatically exercised on the Expiry Date in integral multiples of the Board Lot if the Cash Settlement Amount is positive. If the Cash Settlement Amount is zero or negative, or is equal to or less than the Exercise Expenses, you will lose all of your investment.

Upon the occurrence of a Mandatory Call Event, the CBBCs will be early terminated and the holder is entitled to the Residual Value (if any) net of any Exercise Expenses.

We will deliver a cash amount in the Settlement Currency equal to the Residual Value or the Cash Settlement Amount payable at expiry net of any Exercise Expenses (if any) no later than the Settlement Date to HKSCC Nominees Limited (as the registered holder of the CBBCs), which will then distribute such amount to the securities account of your broker (and if applicable, its custodian) or to your CCASS Investor Participant securities account (as the case may be). You may have to rely on your broker (and if applicable, its custodian) to ensure that the Residual Value or the Cash Settlement Amount payable at expiry (if any) is credited to your account maintained with your broker. Once we make the payment to HKSCC Nominees Limited, who operates CCASS, you will have no further right against us for that payment, even if CCASS or your broker (and if applicable, its custodian) does not transfer your share of payment to you, or is late in making such payment transfer.

Payment of the Residual Value or the Cash Settlement Amount payable at expiry (if any) may be delayed if a Settlement Disruption Event occurs on the Settlement Date, as a result of which we are unable to deliver such amount through CCASS on such day. See Condition 4(G) for further information.

Where can you inspect the relevant documents of the CBBCs?

The following documents are available for inspection during usual business hours on any weekday (Saturdays, Sundays and holidays excepted) until the Expiry Date at 52/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong:

- each of the Listing Documents (in separate English and Chinese versions), including:
 - this document
 - our Base Listing Document
 - the addendum to the Base Listing Document dated 27 August 2019
- our latest audited consolidated financial statements and any interim or quarterly financial statements;
- the consent letter of our Auditors; and
- the instrument executed by us on 10 April 2006.

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

各上市文件亦可於香港交易所披露易網站(www.hkexnews.hk) 以及本公司網站http://warrants.ubs.com/home/html/cbbc_c.html瀏覽。

Are there any dealings in the CBBCs before the Listing Date?

It is possible that there may have been dealings in the CBBCs before the Listing Date. If there are any dealings in the CBBCs by us or any of our subsidiaries or associated companies from the Launch Date prior to the Listing Date, we will report those dealings to the Stock Exchange by the Listing Date and such report will be released on the website of the Stock Exchange.

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

Our auditors (“**Auditors**”) have given and have not since withdrawn their written consent to the inclusion of their report dated 14 March 2019 and/or the references to their name in our Base Listing Document, in the form and context in which they are included. Their report was not prepared exclusively for incorporation into our Base Listing Document. The Auditors do not own any of our shares or shares in any member of our group, nor do they have the right (whether legally enforceable or not) to subscribe for or to nominate persons to subscribe for our securities or securities of any member of our group.

Authorisation of the CBBCs

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

Selling restrictions

The CBBCs have not been and will not be registered under the United States Securities Act of 1933, as amended (the “**Securities Act**”), and will not be offered, sold, delivered or traded, at any time, indirectly or directly, in the United States or to, or for the account or benefit of, any U.S. person (as defined in the Securities Act).

The offer or transfer of the CBBCs is also subject to the selling restrictions specified in our Base Listing Document.

Capitalised terms and inconsistency

Unless otherwise specified, capitalised terms used in this document have the meanings set out in the Conditions. If this document is inconsistent with our Base Listing Document, this document shall prevail.

INFORMATION ON THE INDEX

The information on the Index set out below is extracted from or based on publicly available information and, in particular, information from the Index Compiler. We do not give any representation whatsoever as to the truth, accuracy, completeness, adequacy or reasonableness of any of the information contained therein whether as at the date of this document or any other time, save that we have taken reasonable care to correctly extract, summarise and/or reproduce such information.

Who is the Index Compiler?

Hang Seng Indexes Company Limited. The Index is managed and compiled by the Index Compiler, which is a wholly-owned subsidiary of Hang Seng Bank Limited.

How is the Index level disseminated?

The Index level is disseminated through the website of the Index Compiler at <http://www.hsi.com.hk> and various information vendors. You should contact your stockbroker for further information.

Index disclaimer

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 CBBCs (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.

KEY RISK FACTORS

You must read these key risk factors together with the risk factors set out in our Base Listing Document. These key risk factors do not necessarily cover all risks related to the CBBCs. If you have any concerns or doubts about the CBBCs, you should obtain independent professional advice.

Non-collateralised structured products

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

Credit risk

If you invest in the CBBCs, you are relying on our creditworthiness and of no other person. If we become insolvent or default on our obligations under the CBBCs, you can only claim as our unsecured creditor regardless of the performance of the Index and may not be able to recover all or even part of the amount due under the CBBCs (if any). You have no rights under the terms of the CBBCs against the Index Compiler or any company which has issued any constituent securities of the Index.

Resolution and recovery regime

We, UBS AG, are incorporated in Switzerland. Under the Swiss Banking Act, the Swiss Financial Market Supervisory Authority FINMA is able to exercise broad statutory powers with respect to Swiss banks and Swiss parent companies of financial groups, such as UBS AG and UBS Group AG (i.e. our holding company), 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. These powers include powers to (i) transfer all or some of our liabilities under the CBBCs to another entity and (ii) convert into equity or write down our liabilities under the CBBCs. The exercise of any resolution power by the relevant resolution authorities in respect of UBS AG could materially adversely affect the value of, or your potential return under, the CBBCs. In the worst case scenario, you may get nothing back and you could lose all of your investment.

Financial Institutions (Resolution) Ordinance

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

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

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

CBBCs are not principal protected and may become worthless

Given the gearing effect inherent in the CBBCs, a small change in the Index level may lead to a substantial price movement in the CBBCs.

Unlike stocks, the CBBCs have a limited life and will be early terminated upon the occurrence of a Mandatory Call Event or expire on the Expiry Date. In the worst case, the CBBCs may be early terminated or expire with no value and you will lose all of your investment. The CBBCs may only be suitable for experienced investors who are willing to accept the risk that they may lose all their investment.

The CBBCs can be volatile

Prices of the CBBCs may rise or fall rapidly. You should carefully consider, among other things, the following factors before dealing in the CBBCs:

- (i) the Strike Level and Call Level of the CBBCs;
- (ii) the likelihood of the occurrence of a Mandatory Call Event;
- (iii) the probable range of Residual Value (if any) upon the occurrence of a Mandatory Call Event;
- (iv) the time remaining to expiry;
- (v) the interim interest rates and expected dividend payments or other distributions on any components comprising the Index;
- (vi) the liquidity of the futures contracts relating to the Index;
- (vii) the supply and demand for the CBBCs;
- (viii) the probable range of the Cash Settlement Amount;
- (ix) the related transaction cost (including the Exercise Expenses, if any); and
- (x) the creditworthiness of the Issuer.

The value of the CBBCs may not correspond with the movements in the level of the Index. If you buy the CBBCs with a view to hedge against your exposure to any futures contract relating to the Index, it is possible that you could suffer loss in your investment in that futures contract and the CBBCs.

In particular, you should note that when the Spot Level of the Index is close to the Call Level, the trading price of the CBBCs will be more volatile. The change in the trading price of the CBBCs may not be comparable and may be disproportionate with the change in the Index level. In such case, a small change in the Index level may lead to a substantial price movement in the CBBCs.

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

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

Mandatory Call Event is irrevocable

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

- (i) report of system malfunction or other technical errors of HKEX (such as the setting up of wrong Call Level or other parameters) by the Stock Exchange to us; or
- (ii) report of manifest errors caused by the relevant third party price source where applicable by us to the Stock Exchange,

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

In such case, the Mandatory Call Event so triggered will be reversed and all trades cancelled (if any) will be reinstated and the trading of the CBBCs will resume.

Delay in Mandatory Call Event notification

We will notify the market as soon as reasonably practicable after the occurrence of a Mandatory Call Event. You should be aware that there may be a delay in our announcement of a Mandatory Call Event due to technical errors, system failures and other factors that are beyond the reasonable control of the Stock Exchange and us.

Non-Recognition of Post MCE Trades

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

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

Fluctuation in the Funding Cost

The Issue Price of the CBBCs is set by reference to the difference between the initial reference spot level of the Index and the Strike Level, plus the applicable Funding Cost as of the Launch Date. The initial Funding Cost applicable to the CBBCs is specified in the section headed “Key Terms” in this document. It will fluctuate throughout the life of the CBBCs as the funding rate may change from time to time. The funding rate is a rate determined by us based on one or more of the following factors, including but not limited to the Strike Level, the prevailing interest rate, the expected life of the CBBCs, any expected notional dividends in respect of any securities comprising the Index and the margin financing provided by us.

Residual Value will not include residual Funding Cost

The Residual Value (if any) payable by us following the occurrence of a Mandatory Call Event will not include the residual Funding Cost for the CBBCs. When a Mandatory Call Event occurs, the investors will lose the Funding Cost for the full period.

Our hedging activities

Our trading and/or hedging activities or those of our related parties related to the CBBCs and/or other financial instruments issued by us from time to time may have an impact on the Index level and may trigger a Mandatory Call Event.

In particular, when the Spot Level of the Index is close to the Call Level, our unwinding activities in relation to the Index may cause a fall or rise (as the case may be) in the Index level leading to a Mandatory Call Event as a result of such unwinding activities.

Before the occurrence of a Mandatory Call Event, we or our related party may unwind our hedging transactions relating to the CBBCs in proportion to the amount of the CBBCs we repurchase from the market from time to time. Upon the occurrence of a Mandatory Call Event, we or our related party may unwind any hedging transactions relating to the CBBCs. Such unwinding activities after the occurrence of a Mandatory Call Event may affect the Index level and consequently the Residual Value for the CBBCs.

Time decay

All other factors being equal, the value of a CBBC is likely to decrease over time. Therefore, the CBBCs should not be viewed as a product for long term investments.

Possible limited secondary market

The Liquidity Provider may be the only market participant for the CBBCs and therefore the secondary market for the CBBCs may be limited. The more limited the secondary market, the more difficult it may be for you to realise the value in the CBBCs prior to expiry.

You should also be aware that the Liquidity Provider may not be able to provide liquidity when there are operational and technical problem hindering its ability to do so. Even if the Liquidity Provider is able to provide liquidity in such circumstances, its performance of liquidity provision may be adversely affected. For example:

- (i) the spread between bid and ask prices quoted by the Liquidity Provider may be significantly wider than its normal standard;
- (ii) the quantity for which liquidity will be provided by the Liquidity Provider may be significantly smaller than its normal standard; and/or
- (iii) the Liquidity Provider’s response time for a quote may be significantly longer than its normal standard.

Change of calculation methodology or failure to publish the Index

If there is a material change in the calculation of the Index level or a failure to publish the Index, we may determine the Closing Level on the basis of the method last in effect prior to such change or failure.

Publication of Index level when component shares are not trading

The Index Compiler may publish the Index level at a time when one or more shares comprising the Index are not trading.

Adjustment related risk

The occurrence of certain events (including, without limitation, a succession of the Index or Index Compiler, modification or cessation of calculation of the Index) may entitle us to adjust the terms and conditions of the CBBCs. However, we are not obliged to adjust the terms and conditions of the CBBCs for every event that affects the Index. Any adjustment or decision not to make any adjustment may adversely affect the value of the CBBCs. Please refer to Condition 6 for details about adjustments.

Possible early termination

We may early terminate the CBBCs if it becomes illegal or impracticable for us (i) to perform our obligations under the CBBCs as a result of a change in law event, or (ii) to maintain our hedging arrangement with respect to the CBBCs due to a change in law event. In such event, the amount payable by us (if any) will be the fair market value of the CBBCs less our costs of unwinding any related hedging arrangements as determined by us, which may be substantially less than your initial investment and may be zero. Please refer to Condition 3 for details about our early termination rights.

Time lag between early termination or exercise and settlement of the CBBCs

There is a time lag between the early termination or exercise of the CBBCs and payment of the Residual Value or the Cash Settlement Amount payable at expiry net of Exercise Expenses (if any). There may be delays in the electronic settlement or payment through CCASS.

Conflict of interest

We and our subsidiaries and affiliates engage in a wide range of commercial and investment banking, brokerage, funds management, hedging, investment and other activities and may possess material information about the Index or issue or update research reports on the Index. Such activities, information and/or research reports may involve or affect the Index and may cause consequences adverse to you or otherwise create conflicts of interests in connection with the issue of the CBBCs. We have no obligation to disclose such information and may issue research reports and engage in any such activities without regard to the issue of the CBBCs.

In the ordinary course of our business, we and our subsidiaries and affiliates may effect transactions for our own account or for the account of our customers and may enter into one or more transactions with respect to the Index or related derivatives. This may indirectly affect your interests.

No direct contractual rights

The CBBCs are issued in global registered form and are held within CCASS. You will not receive any definitive certificate and your name will not be recorded in the register of the CBBCs. The evidence of your interest in the CBBCs, and the efficiency of the ultimate payment of the Residual Value or the Cash Settlement Amount payable at expiry net of Exercise Expenses (if any), are subject to the CCASS Rules. You will have to rely on your broker (or, if applicable, its direct or indirect custodians) and the statements you receive from it as evidence of your interest in the CBBCs. You do not have any direct contractual rights against us. To assert your rights as an investor in the CBBCs, you will have to rely on your broker (and, if applicable, its direct or indirect custodian) to take action on your behalf. If your broker or, if applicable, its direct or indirect custodian:

- (i) fails to take action in accordance with your instructions;
- (ii) becomes insolvent; or
- (iii) defaults on its obligations,

you will need to take action against your broker in accordance with the terms of arrangement between you and your broker to establish your interest in the CBBCs first before you can assert your right of claim against us. You may experience difficulties in taking such legal proceedings. This is a complicated area of law and you should seek independent legal advice for further information.

The Listing Documents should not be relied upon as the sole basis for your investment decision

The Listing Documents do not take into account your investment objectives, financial situation or particular needs. Nothing in the Listing Documents should be construed as a recommendation by us or our affiliates to invest in the CBBCs or any futures contracts relating to the Index.

Updated Information about Us

We, UBS AG, released our third quarter 2019 report for the quarterly period ended on 30 September 2019 on 25 October 2019. You may visit the website <https://www.ubs.com/global/en/investor-relations/financial-information/quarterly-reporting/2019.html> to access our third quarter 2019 report.

The information set out under this paragraph has been extracted without adjustment from our third quarter 2019 report. Page references under this paragraph refer to pages in such report.

UBS AG interim consolidated financial statements (unaudited)

Income statement

		For the quarter ended			Year-to-date	
USD million	Note	30.9.19	30.6.19	30.9.18	30.9.19	30.9.18
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3	2,704	2,755	2,542	8,133	7,430
Interest expense from financial instruments measured at amortized cost	3	(1,805)	(1,986)	(1,673)	(5,703)	(4,683)
Interest income from financial instruments measured at fair value through profit or loss	3	1,211	1,259	1,116	3,815	3,327
Interest expense from financial instruments measured at fair value through profit or loss	3	(1,043)	(1,025)	(823)	(3,074)	(2,309)
Net interest income	3	1,067	1,003	1,161	3,171	3,765
Other net income from financial instruments measured at fair value through profit or loss		1,585	1,936	1,691	5,457	5,659
Credit loss (expense) / recovery	9	(38)	(12)	(10)	(70)	(64)
Fee and commission income	4	4,822	4,908	4,875	14,296	14,923
Fee and commission expense	4	(396)	(434)	(409)	(1,238)	(1,263)
Net fee and commission income	4	4,426	4,474	4,466	13,057	13,660
Other income	5	147	232	218	547	540
Total operating income		7,187	7,632	7,526	22,162	23,559
Personnel expenses	6	3,438	3,571	3,398	10,478	10,730
General and administrative expenses	7	2,101	2,004	2,277	6,131	6,981
Depreciation and impairment of property, equipment and software		387	381	269	1,148	758
Amortization and impairment of intangible assets		16	18	15	50	48
Total operating expenses		5,942	5,975	5,960	17,807	18,517
Operating profit / (loss) before tax		1,245	1,657	1,566	4,355	5,042
Tax expense / (benefit)	8	276	349	421	1,012	1,202
Net profit / (loss)		969	1,308	1,145	3,343	3,840
Net profit / (loss) attributable to non-controlling interests		1	1	3	0	6
Net profit / (loss) attributable to shareholders		967	1,307	1,142	3,343	3,834

Statement of comprehensive income

	For the quarter ended			Year-to-date	
USD million	30.9.19	30.6.19	30.9.18	30.9.19	30.9.18
Comprehensive income attributable to shareholders					
Net profit / (loss)	967	1,307	1,142	3,343	3,834
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation					
Foreign currency translation movements related to net assets of foreign operations, before tax	(659)	294	31	(516)	(572)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax	300	(121)	107	205	160
Foreign currency translation differences on foreign operations reclassified to the income statement	45	3	5	49	11
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement	1	(13)	0	(12)	0
Income tax relating to foreign currency translations, including the impact of net investment hedges	0	(2)	(2)	0	(2)
Subtotal foreign currency translation, net of tax	(314)	161	141	(275)	(403)
Financial assets measured at fair value through other comprehensive income					
Net unrealized gains / (losses), before tax	30	90	(25)	201	(124)
Impairment charges reclassified to the income statement from equity	0	0	0	0	0
Realized gains reclassified to the income statement from equity	(26)	(2)	0	(30)	0
Realized losses reclassified to the income statement from equity	1	1	0	2	0
Income tax relating to net unrealized gains / (losses)	(4)	(24)	6	(45)	35
Subtotal financial assets measured at fair value through other comprehensive income, net of tax	0	65	(18)	128	(89)
Cash flow hedges of interest rate risk					
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	542	987	(257)	2,116	(859)
Net (gains) / losses reclassified to the income statement from equity	(49)	(24)	(46)	(93)	(251)
Income tax relating to cash flow hedges	(76)	(191)	65	(374)	224
Subtotal cash flow hedges, net of tax	417	773	(237)	1,649	(885)
Total other comprehensive income that may be reclassified to the income statement, net of tax	103	999	(115)	1,501	(1,378)
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans					
Gains / (losses) on defined benefit plans, before tax	1,459	18	(45)	1,317	171
Income tax relating to defined benefit plans	(283)	(7)	2	(306)	26
Subtotal defined benefit plans, net of tax	1,176	11	(43)	1,011	197
Own credit on financial liabilities designated at fair value					
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	1	72	(289)	(253)	141
Income tax relating to own credit on financial liabilities designated at fair value	0	0	2	8	0
Subtotal own credit on financial liabilities designated at fair value, net of tax	1	72	(288)	(245)	141
Total other comprehensive income that will not be reclassified to the income statement, net of tax	1,177	83	(331)	767	338
Total other comprehensive income	1,280	1,082	(446)	2,268	(1,040)
Total comprehensive income attributable to shareholders	2,248	2,389	696	5,611	2,795

Statement of comprehensive income (continued)

	For the quarter ended			Year-to-date	
<i>USD million</i>	30.9.19	30.6.19	30.9.18	30.9.19	30.9.18
Comprehensive income attributable to non-controlling interests					
Net profit / (loss)	1	1	3	0	6
Other comprehensive income that will not be reclassified to the income statement					
Foreign currency translation movements, before tax	(6)	(6)	1	(8)	(2)
Income tax relating to foreign currency translation movements	0	0	0	0	0
Subtotal foreign currency translation, net of tax	(6)	(6)	1	(8)	(2)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(6)	(6)	1	(8)	(2)
Total comprehensive income attributable to non-controlling interests	(5)	(5)	4	(8)	4
Total comprehensive income					
Net profit / (loss)	969	1,308	1,145	3,343	3,840
Other comprehensive income	1,274	1,076	(445)	2,260	(1,042)
of which: other comprehensive income that may be reclassified to the income statement	103	999	(115)	1,501	(1,378)
of which: other comprehensive income that will not be reclassified to the income statement	1,171	77	(330)	759	336
Total comprehensive income	2,243	2,384	700	5,603	2,798

Balance sheet

<i>USD million</i>	Note	30.9.19	30.6.19	31.12.18
Assets				
Cash and balances at central banks		91,292	101,457	108,370
Loans and advances to banks		12,938	12,682	16,642
Receivables from securities financing transactions		91,954	92,919	95,349
Cash collateral receivables on derivative instruments	11	25,659	23,774	23,603
Loans and advances to customers	9	321,666	324,288	321,482
Other financial assets measured at amortized cost	12	23,597	22,225	22,637
Total financial assets measured at amortized cost		567,107	577,345	588,084
Financial assets at fair value held for trading	10	116,020	120,232	104,513
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>		40,412	36,010	32,121
Derivative financial instruments	10, 11	134,242	121,687	126,212
Brokerage receivables	10	17,653	16,915	16,840
Financial assets at fair value not held for trading	10	92,869	89,269	82,387
Total financial assets measured at fair value through profit or loss		360,783	348,103	329,953
Financial assets measured at fair value through other comprehensive income	10	6,993	7,422	6,667
Investments in associates		1,009	1,049	1,099
Property, equipment and software		11,559	11,725	8,479
Goodwill and intangible assets		6,560	6,624	6,647
Deferred tax assets		9,456	9,545	10,066
Other non-financial assets	12	8,580	6,833	7,062
Total assets		972,048	968,645	958,055

Balance sheet (continued)

USD million	Note	30.9.19	30.6.19	31.12.18
Liabilities				
Amounts due to banks		8,235	9,494	10,962
Payables from securities financing transactions		5,570	6,798	10,296
Cash collateral payables on derivative instruments	11	32,291	31,449	28,906
Customer deposits		429,143	435,582	421,986
Funding from UBS Group AG and its subsidiaries		47,554	45,224	41,202
Debt issued measured at amortized cost	14	69,739	75,679	91,245
Other financial liabilities measured at amortized cost	12	11,062	10,927	7,576
Total financial liabilities measured at amortized cost		603,594	615,153	612,174
Financial liabilities at fair value held for trading	10	33,502	32,277	28,949
Derivative financial instruments	10, 11	131,435	121,087	125,723
Brokerage payables designated at fair value	10	38,260	36,929	38,420
Debt issued designated at fair value	10, 13	66,709	67,984	57,031
Other financial liabilities designated at fair value	10, 12	34,782	34,407	33,594
Total financial liabilities measured at fair value through profit or loss		304,689	292,684	283,717
Provisions	15	2,928	2,978	3,457
Other non-financial liabilities	12	6,059	5,301	6,275
Total liabilities		917,271	916,116	905,624
Equity				
Share capital		338	338	338
Share premium		24,660	24,654	24,655
Retained earnings		24,175	22,017	23,317
Other comprehensive income recognized directly in equity, net of tax		5,440	5,350	3,946
Equity attributable to shareholders		54,613	52,359	52,256
Equity attributable to non-controlling interests		163	170	176
Total equity		54,776	52,529	52,432
Total liabilities and equity		972,048	968,645	958,055

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