Supplemental Listing Document

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

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

15,000,000 European Style Cash Settled Long Certificates relating to

the ordinary shares of HSBC Holdings plc

with a Daily Leverage of 5x

UBS AG

(Incorporated with limited liability in Switzerland)

acting through its London Branch

Issue Price: S$0.50 per Certificate

This document is published for the purpose of obtaining a listing of all the above certificates (the "**Certificates**") to be issued by UBS AG (the "**Issuer**") acting through its London branch, and is supplemental to and should be read in conjunction with a base listing document dated 28 June 2021 (the "**Base Listing Document**"), including its supplements and addenda as executed from time to time, for the purpose of giving information with regard to the Issuer and the Certificates. Information relating to the Company (as defined below) is contained in this document.

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

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

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

For the purpose of section 309B(1) of the Securities and Futures Act (Chapter 289 of Singapore) (the "**SFA**"), the Issuer has determined, and hereby notifies all relevant persons (as defined in section 309A of the SFA) that the Certificates are classified as capital markets products other than prescribed capital markets products[1] and Specified Investment Products (SIPs)[2], and may only be sold to retail investors with enhanced safeguards, including an assessment of such investors' investment knowledge or experience.

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

Application has been made to the SGX-ST for permission to deal in and for quotation of the Certificates and the SGX-ST has agreed in principle to grant permission to deal in and for quotation of the Certificates. It is expected that dealings in the Certificates will commence on or about 21 April 2022.

As at the date hereof, the Issuer's long term credit rating by Standard & Poor's Credit Market Services Europe Limited is A+, by Moody's Deutschland GmbH is Aa3 and by Fitch Ratings Limited 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.

20 April 2022

[1] As defined in the Securities and Futures (Capital Markets Products) Regulations 2018.
[2] As defined in the MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products.

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

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

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

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

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

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

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RISK FACTORS

The following risk factors are relevant to the Certificates:-

(a) investment in Certificates involves substantial risks including market risk, liquidity risk, and the risk that the Issuer will be unable to satisfy its obligations under the Certificates. Investors should ensure that they understand the nature of all these risks before making a decision to invest in the Certificates. You should consider carefully whether Certificates are suitable for you in light of your experience, objectives, financial position and other relevant circumstances. Certificates are not suitable for inexperienced investors;

(b) the Certificates constitute direct, general and unsecured contractual obligations of the Issuer and if you purchase the Certificates you are relying upon the creditworthiness of the Issuer and have no rights under the Certificates against any other person. In particular, it should be noted that the Issuer issues a large number of financial instruments, including Certificates, on a global basis and, at any given time, the financial instruments outstanding may be substantial. If you purchase the Certificates you are relying upon the creditworthiness of the Issuer and have no rights under the Certificates against the Company which has issued the Underlying Stock (as defined below). The Issuer has substantially no obligation to a Certificate Holder (as defined in the Conditions) other than to pay amounts in accordance with the terms thereof as set forth herein and in the Base Listing Document. The Issuer does not in any respect underwrite or guarantee the performance of any Certificate. Any profit or loss realised by a Certificate Holder in respect of a Certificate upon exercise or otherwise due to changes in the value of such Certificate or the Underlying Stock is solely for the account of such Certificate Holder. In addition, the Issuer shall have the absolute discretion to put in place any hedging transaction or arrangement which it deems appropriate in connection with any Certificate or the Underlying Stock. A reduction in the rating, if any, accorded to outstanding debt securities of the Issuer by any one of its rating agencies could result in a reduction in the trading value of the Certificates;

(c) since the Certificates relate to the price of the Underlying Stock, certain events relating to the Underlying Stock may cause adverse movements in the value and the price of the Underlying Stock, as a result of which, the Certificate Holders may, in extreme circumstances, sustain a significant loss of their investment if the price of the Underlying Stock has fallen sharply;

(d) due to their nature, the Certificates can be volatile instruments and may be subject to considerable fluctuations in value. The price of the Certificates may fall in value as rapidly as it may rise due to, including but not limited to, variations in the frequency and magnitude of the changes in the price of the Underlying Stock, the time remaining to expiry and the creditworthiness of the Issuer;

(e) fluctuations in the price of the Underlying Stock will affect the price of the Certificates but not necessarily in the same magnitude and direction, therefore, prospective investors intending to purchase Certificates to hedge their market risk associated with investing in the Underlying Stock which may be specified herein, should recognise the complexities of utilising the Certificates in this manner;

(f) a Certificate Holder must tender a specified number of Certificates at any one time in order to exercise. Thus, Certificate Holders with fewer than the specified minimum number of Certificates in a particular series will either have to sell their Certificates or purchase additional Certificates, incurring transactions costs in each case, in order to realise their investment;

(g) if, whilst any of the Certificates remain unexercised, trading in the Underlying Stock is suspended or halted on the relevant stock exchange, trading in the Certificates may be suspended for a similar period;

(h) investors should note that the Issuer's obligations to pay amounts in accordance with the terms thereof as set forth herein shall be discharged by delivery of the aggregate Cash Settlement Amount (if positive) to all Certificate Holders in accordance with the agreement with the Warrant Agent;

(i) investors should note that in the event of there being a Market Disruption Event (as defined in the Conditions) determination or payment of the Cash Settlement Amount (as defined in the Conditions) may be delayed, all as more fully described in the Conditions;

(j) certain events relating to the Underlying Stock require or, as the case may be, permit the Issuer to make certain adjustments or amendments to the Conditions;

(k) the Certificates are only exercisable on the expiry date and may not be exercised by Certificate Holders prior to such expiry date. Accordingly, if on such expiry date the Cash Settlement Amount is zero, a Certificate Holder will lose the value of his investment;

(l) the total return on an investment in any Certificate may be affected by the Hedging Fee Factor (as defined below), Management Fee (as defined below) and Gap Premium (as defined below);

(m) investors holding their position overnight should note that they would be required to bear the annualised cost which consists of the Management Fee and Gap Premium, which are calculated daily and applied to the value of the Certificates, as well as certain costs embedded within the Leverage Strategy (as described below) including the Funding Cost (as defined below) and the Rebalancing Cost (as defined below);

(n) investors should note that there may be an exchange rate risk where the Cash Settlement Amount may be converted from a foreign currency into Singapore dollars. Exchange rates between currencies are determined by forces of supply and demand in the foreign exchange markets. These forces are, in turn, affected by factors such as international balances of payments and other economic and financial conditions, government intervention in currency markets and currency trading speculation. Fluctuations in foreign exchange rates, foreign political and economic developments, and the imposition of exchange controls or other foreign governmental laws or restrictions applicable to such investments may affect the foreign currency market price and the exchange rate-adjusted equivalent price of the Certificates. Fluctuations in the exchange rate of any one currency may be offset by fluctuations in the exchange rate of other relevant currencies;

(o) investors should note that there are leveraged risks because the Certificates integrate a leverage mechanism and the Certificates will amplify the movements in the increase, and in the decrease, of the value of the Underlying Stock and if the investment results in a loss, any such loss will be increased by the leverage factor of the Certificates. As such, investors could lose more than they would if they had invested directly in the Underlying Stock;

(p) when held for longer than a day, the performance of the Certificates could be more or less than the leverage factor that is embedded within the Certificates. The performance of the Certificates each day is locked in, and any subsequent returns are based on what was achieved the previous day. This process, referred to as compounding, may lead to a performance difference from 5 times the performance of the Underlying Stock over a period longer than one day. This difference may be amplified in a volatile market with a sideway trend, where market movements are not clear in direction, whereby investors may sustain substantial losses;

(q) the Air Bag Mechanism (as defined below) is triggered only when the Underlying Stock is calculated or traded, which may not be during the trading hours of the Relevant Stock Exchange for the Certificates (as defined below);

(r) investors should note that the Air Bag Mechanism reduces the impact on the Leverage Strategy if the Underlying Stock falls further, but will also maintain a reduced exposure to the Underlying Stock in the event the Underlying Stock starts to rise after the Air Bag Mechanism is triggered, thereby reducing its ability to recoup losses;

(s) there is no assurance that the Air Bag Mechanism will prevent investors from losing the entire value of their investment, in the event of (i) an overnight fall in the Underlying Stock, where there is a 20% or greater gap between the previous day closing price and the opening price of the Underlying Stock the following day, as the Air Bag Mechanism will only be triggered when market opens the following day or (ii) a sharp intraday fall in the Underlying Stock of 20% or greater during the observation period compared to the reference price, being: (a) if air bag event has not been previously triggered on the same day, the previous closing price of the Underlying Stock, or (b) if one or more air bag events have been previously triggered on the same day, the latest new observed price. Investors may refer to pages 42 to 43 of this document for more information;

(t) certain events may, pursuant to the terms and conditions of the Certificates, trigger (A) the implementation of methods of adjustment or (B) the early termination of the Certificates. The Issuer will give the investors reasonable notice of any early termination. If the Issuer terminates the Certificates early, then the Issuer will, if and to the extent permitted by applicable law, pay an amount to each Certificate Holder in respect of each Certificate held by such holder equal to the fair market value of the Certificate less the cost to the Issuer of unwinding any underlying related hedging arrangements, all as determined by the Issuer in its sole and absolute discretion. The performance of this commitment shall depend on (A) general market conditions and (B) the liquidity conditions of the underlying instrument(s) and, as the case may be, of any other hedging transactions. Investors should note that the amount repaid by the Issuer may be less than the amount initially invested. Investors may refer to Condition 13 on pages 29 to 30 of this document for more information;

(u) investors should note that it is not possible to predict the price at which the Certificates will trade in the secondary market or whether such market will be liquid or illiquid. To the extent Certificates of a particular issue are exercised, the number of Certificates of such issue outstanding will decrease, resulting in a diminished liquidity for the remaining Certificates of such issue. A decrease in the liquidity of an issue of Certificates may cause, in turn, an increase in the volatility associated with the price of such issue of Certificates. The Issuer may, but is not obligated to, at any time, purchase Certificates at any price in the open market or by tender or private agreement. Any Certificates so purchased may be held or resold or surrendered for cancellation. To the extent that an issue of Certificates becomes illiquid, an investor may have to exercise such Certificates to realise value;

(v) two or more risk factors may simultaneously have an effect on the value of a Certificate such that the effect of any individual risk factor may not be predicted. No assurance can be given as to the effect any combination of risk factors may have on the value of a Certificate;

(w) investors should note that they may be required to pay stamp taxes or other documentary charges in accordance with the laws and practices of the country where the Certificates are transferred. Investors who are in any doubt as to their tax position should consult their own independent tax advisers. In addition, investors should be aware that tax regulations and their application by the relevant taxation authorities change from time to time. Accordingly, it is not possible to predict the precise tax treatment which will apply at any given time. Investors should refer to the Taxation Section in the Base Listing Document;

(x) investors should note that the Issuer may enter into discount, commission or fee arrangements with brokers and/or any of its subsidiaries or affiliates with respect to the primary or secondary market in the Certificates. The arrangements may result in the benefit to investors in Certificates buying and selling Certificates through nominated brokers by reducing or eliminating the commission payable by such Certificate Holders. In the event that the commission payable by Certificate Holders is eliminated, fee arrangements between the Issuer and brokers and/or any of its subsidiaries or affiliates will continue to apply. Investors in the Certificates should note that any brokers with whom the Issuer has a commission arrangement does not, and cannot be expected to, deal exclusively in the Certificates, therefore any broker and/or any of its subsidiaries or affiliates may from time to time engage in transactions involving the Underlying Stock and/or structured products of other issuers over the Underlying Stock as the Certificates for their proprietary accounts and/or accounts of their clients. The fact that the same broker may deal simultaneously for different clients in competing products in the market place may affect the value of the Certificates and present certain conflicts of interests;

(y) various potential and actual conflicts of interest may arise from the overall activities of the Issuer and any of its subsidiaries and affiliates.

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

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

Stock and/or related derivatives which may affect the market price, liquidity or value of the Certificates and which may affect the interests of Certificate Holders;

(aa) the value of the Certificates depends on the Leverage Strategy performance built in the Certificate. The Calculation Agent will make the Leverage Strategy last closing level and a calculation tool available to the investors on a website;

(bb) certain risks relating to the Issuer’s operating environment and strategy, including those as set out in Appendix 2 of the Base Listing Document, may impact the Issuer’s ability to execute its strategy and directly affect its business activities, financial condition, results of operations and prospects. As a broad-based international financial services firm, the Issuer is inherently exposed to risks that become apparent only with the benefit of hindsight, risks of which it is not presently aware or which it currently does not consider to be material could also materially affect its business activities, financial condition, results of operations and prospects. The sequence in which the risk factors are set out in Appendix 2 of the Base Listing Document is not indicative of their likehood of occurrence or the potential magnitude of their financial consequences;

(cc) as the Certificates are represented by a global warrant certificate which will be deposited with The Central Depository (Pte) Limited (“**CDP**”):-

(i) investors should note that no definitive certificate will be issued in relation to the Certificates;

(ii) there will be no register of Certificate Holders and each person who is for the time being shown in the records maintained by CDP as entitled to a particular number of Certificates by way of interest (to the extent of such number) in the global warrant certificate in respect of those Certificates represented thereby shall be treated as the holder of such number of Certificates;

(iii) investors will need to rely on any statements received from their brokers/custodians as evidence of their interest in the Certificates; and

(iv) notices to such Certificate Holders will be published on the website of the SGX-ST. Investors will need to check the website of the SGX-ST regularly and/or rely on their brokers/custodians to obtain such notices;

(dd) Generally, investing in the Certificates may involve risks related to the discontinuance, changes or adjustments to benchmarks generally

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

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

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

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

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

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

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

TERMS AND CONDITIONS OF THE CERTIFICATES

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

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

Certificates:	15,000,000 European Style Cash Settled Long Certificates relating to the ordinary shares of HSBC Holdings plc (the "**Underlying Stock**" or the "**Underlying**")
ISIN:	CH1169123598
Company:	HSBC Holdings plc (RIC: 0005.HK)
Underlying Price[3] and Source:	HK$53.95 (Bloomberg)
Calculation Agent:	UBS AG acting through its London Branch
Strike Level:	Zero
Daily Leverage:	5x (within the Leverage Strategy as described below)
Notional Amount per Certificate:	SGD 0.50
Management Fee (p.a.)[4]:	0.40%
Gap Premium (p.a.)[5]:	4.60%, is a hedging cost against extreme market movements overnight.
Funding Cost[6]:	The annualised costs of funding, referencing a publically published interbank offered rate plus spread.
Rebalancing Cost[6]:	The transaction costs (if applicable), computed as a function of leverage and daily performance of the Underlying Stock.
Launch Date:	12 April 2022
Closing Date:	20 April 2022

[3] These figures are calculated as at, and based on information available to the Issuer on or about 20 April 2022. 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 20 April 2022.
[4] Please note that the Management Fee is calculated on a 360-day basis and may be increased up to a maximum of 3% p.a. on giving one month's notice to investors. Any increase in the Management Fee will be announced on the SGXNET. Please refer to "Fees and Charges" below for further details of the fees and charges payable and the maximum of such fees as well as other ongoing expenses that may be borne by the Certificates.
[5] Please note that the Gap Premium is calculated on a 360-day basis.
[6] These costs are embedded within the Leverage Strategy.

Expected Listing Date:	21 April 2022
Last Trading Date:	The date falling 5 Business Days immediately preceding the Expiry Date, currently being 21 February 2025
Expiry Date:	28 February 2025 (if the Expiry Date is not a Business Day, then the Expiry Date shall fall on the preceding Business Day and subject to adjustment of the Valuation Date upon the occurrence of Market Disruption Events as set out in the Conditions of the Certificates)
Board Lot:	100 Certificates
Valuation Date:	27 February 2025 or if such day is not an Exchange Business Day, the immediately preceding Exchange Business Day.
Exercise:	The Certificates may only be exercised on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, in a Board Lot or integral multiples thereof. Certificate Holders shall not be required to deliver an exercise notice. Exercise of Certificates shall be determined by whether the Cash Settlement Amount (less any Exercise Expenses) is positive. If the Cash Settlement Amount (less any Exercise Expenses) is positive, all Certificates shall be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Certificates shall be paid in the manner set out in Condition 4(c) of the Conditions. In the event the Cash Settlement Amount (less any Exercise Expenses) is zero, all Certificates shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Certificate Holders shall not be entitled to receive any payment from the Issuer in respect of the Certificates.
Cash Settlement Amount:	In respect of each Certificate, shall be an amount (if positive) payable in the Settlement Currency equal to: Closing Level multiplied by the Notional Amount per Certificate Please refer to the "Information relating to the European Style Cash Settled Long Certificates on Single Equities" section on pages 34 to 48 of this document for examples and illustrations of the calculation of the Cash Settlement Amount.
Hedging Fee Factor:	In respect of each Certificate, shall be an amount calculated as: Product (for t from Expected Listing Date to Valuation Date) of (1 – Management Fee x (ACT (t-1;t) ÷ 360)) x (1 – Gap Premium (t-1) x (ACT (t-1;t) ÷ 360)), where: "**t**" refers to "**Observation Date**" which means each Underlying Stock Business Day (subject to Market Disruption Event) from (and

including) the Underlying Stock Business Day immediately preceding the Expected Listing Date to the Valuation Date; and

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

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

Please refer to the "Information relating to the European Style Cash Settled Long Certificates on Single Equities" section on pages 34 to 48 of this document for examples and illustrations of the calculation of the Hedging Fee Factor.

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

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

Initial Reference Level: 1,000

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

The calculation of the closing level of the Leverage Strategy is set out in the "Specific Definitions relating to the Leverage Strategy" section on pages 15 to 20 below.

Initial Exchange Rate[3]: 0.1740546881

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

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

	Trading of Certificates is suspended for at least 30 minutes of continuous trading after the Air Bag is triggered. The resumption of trading is subject further to SGX-ST's requirements, including at least 30 minutes from the time of publication of an announcement on the exchange in respect of the Air Bag Mechanism being triggered, and at least 15 minutes after the SGX-ST grants an approval to resume trading, whichever is later, rounded to the next quarter of an hour. The Leverage Strategy is floored at 0 and the Certificates cannot be valued below zero. Please refer to the "Air Bag Mechanism" section on pages 19 to 20 below and the "Description of Air Bag Mechanism" section on pages 40 to 41 of this document for further information of the Air Bag Mechanism.
Adjustments and Extraordinary Events:	The Issuer has the right to make adjustments to the terms of the Certificates if certain events, including any capitalisation issue, rights issue, extraordinary distributions, merger, delisting, insolvency (as more specifically set out in the terms and conditions of the Certificates) occur in respect of the Underlying Stock. For the avoidance of doubt, no notice will be given if the Issuer determines that adjustments will not be made.
Underlying Stock Currency:	Hong Kong Dollar ("**HKD**")
Settlement Currency:	Singapore Dollar ("**SGD**")
Exercise Expenses:	Certificate Holders will be required to pay all charges which are incurred in respect of the exercise of the Certificates.
Relevant Stock Exchange for the Certificates:	The Singapore Exchange Securities Trading Limited ("**SGX-ST**")
Relevant Stock Exchange for the Underlying Stock:	HKEX
Business Day and Exchange Business Day:	A **"Business Day"** is a day (excluding Saturdays, Sundays and public holidays) on which the SGX-ST is open for dealings in Singapore during its normal trading hours and banks are open for business in Singapore. An "**Exchange Business Day**" is a day on which the SGX-ST and the HKEX are open for dealings in Singapore and Hong Kong respectively during its normal trading hours and banks are open for business in Singapore and Hong Kong.
Warrant Agent:	The Central Depository (Pte) Limited ("**CDP**")
Clearing System:	CDP

Fees and Charges:	Normal transaction and brokerage fees shall apply to the trading of the Certificates on the SGX-ST. Investors should note that they may be required to pay stamp taxes or other documentary charges in accordance with the laws and practices of the country where the Certificates are transferred. Investors who are in any doubt as to their tax position should consult their own independent tax advisers. In addition, investors should be aware that tax regulations and their application by the relevant taxation authorities change from time to time. Accordingly, it is not possible to predict the precise tax treatment which will apply at any given time. Investors holding position overnight would also be required to bear the Management Fee and Gap Premium, which are calculated daily and applied to the value of the Certificates, as well as certain costs embedded within the Leverage Strategy including the Funding Cost and the Rebalancing Cost. The Management Fee may be increased up to a maximum of 3% p.a. on giving one month's notice to investors in accordance with the terms and conditions of the Certificates. Any increase in the Management Fee will be announced on the SGXNET.
Further Information:	Please refer to the website at http://dlc.ubs.com for more information on the theoretical closing price of the Certificates on the previous trading day, the closing price of the Underlying Stock on the previous trading day, the Air Bag Trigger Price for each trading day and the Management Fee and Gap Premium.

In addition, the Conditions have been modified as follows:

1. Condition 1(a)(i) is deleted and replaced with the following:

   "(i) a master instrument by way of deed poll (the "**Master Instrument**") dated 7 January 2022, made by UBS AG (the "**Issuer**") acting through its London Branch; and"

2. All references to "Instrument" appearing therein are deleted and substituted with the word "Master Instrument".

Specific Definitions relating to the Leverage Strategy

Description of the Leverage Strategy

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

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

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

Leverage Strategy Formula

$\mathbf{LSL_t}$	means, the Leverage Strategy Level as at the Leverage Reset Time (t), calculated in accordance with the following formulae: On Leverage Reset Time (1): $\mathrm{LSL_1} = 1000$ On each subsequent Leverage Reset Time (t): $$\mathrm{LSL_t} = \mathrm{Max}\left[\mathrm{LSL_{r(t)}} \times \left(1 + \mathrm{LR_{r(t),t}} - \mathrm{FC_{r(t),t}} - \mathrm{RC_{r(t),t}}\right), 0\right]$$
Leverage Reset Time (t)	means 1) the scheduled closing time for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto) on any Observation Date; and 2) end of any Intraday Restrike Event Observation Period. Leverage Reset Time (1) is the scheduled close for the Relevant Stock Exchange for the Underlying Stock on Issue Date.
Leverage Reset Time r(t)	means the Leverage Reset Time immediately preceding the Leverage Reset Time (t).
$\mathbf{LR_{r(t),t}}$	means the Leveraged Return of the Underlying Stock between Leverage Reset Time r(t) and Leverage Reset Time (t), calculated as follows: $$\mathrm{LR_{r(t),t}} = \mathrm{Leverage} \times \left(\frac{\mathrm{S_t}}{\mathrm{S_{r(t)}} \times Rfactor_t} - 1\right)$$
$\mathbf{FC_{r(t),t}}$	means, the Funding Cost between the Leverage Reset Time r(t) (included) and the Leverage Reset Time (t) (excluded) calculated as follows: If the Leverage Reset Time r(t) is at the scheduled closing time for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto) on any Observation Date, $$\mathrm{FC_{r(t),t}} = (\mathrm{Leverage} - 1) \times \frac{\mathrm{Rate_{r(t)}} \times \mathrm{ACT(r(t), t)}}{\mathrm{DayCountBasisRate}}$$ Otherwise, $\mathrm{FC_{r(t),t}} = 0$
$\mathbf{RC_{r(t),t}}$	means the Rebalancing Cost of the Leverage Strategy as at Leverage Reset Time (t), calculated as follows: $$\mathrm{RC_{r(t),t}} = \mathrm{Leverage} \times (\mathrm{Leverage} - 1) \times \left(\left|\frac{\mathrm{S_t}}{\mathrm{S_{r(t)}} \times \mathrm{Rfactor_t}} - 1\right|\right) \times \mathrm{TC}$$

TC means the Transaction Costs applicable as determined by the Calculation Agent (including Stamp Duty and any other applicable taxes, levies and costs which may be levied on the stock transactions on the Relevant Stock Exchange for the Underlying Stock by the applicable regulatory authorities from time to time) that are currently equal to :

0.13%

"Stamp Duty" refers to the applicable rate of stamp duty on the stock transactions in the jurisdiction of the Relevant Stock Exchange for the Underlying Stock, which may be changed by the applicable regulatory authorities from time to time.

Leverage 5

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

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

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

Otherwise,

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

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

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

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

Otherwise,

$$\mathrm{Rfactor_t} = 1$$

Where

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

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

$$\mathrm{Rate_t} = \mathrm{CashRate_t} + \%\mathrm{SpreadLevel_t}$$

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

$\%\mathbf{SpreadLevel_t}$ means, in respect of the Observation Date of the Leverage Reset Time (t), a rate which shall be determined with respect to such Valuation Date(t) by the Calculation Agent as the difference between (1) the 12-month HKD Hong Kong Interbank Offered Rate (HIBOR) Fixing, as published on Reuters RIC HIHKD1YD= and (2) Overnight HKD Hong Kong Interbank Offered Rate (HIBOR) Fixing, as published on Reuters RIC HIHKDOND=or any successor page, each being the rate as of day (t), provided that if any of such rates is not available, then that rate shall be determined by reference to the latest available rate that was published on the relevant Reuters page. Upon the occurrence or likely occurrence, as determined by the Calculation Agent, of a Benchmark Event, the Calculation Agent may make adjustments as it may determine appropriate to account for the relevant event or circumstance, including but not limited to using any alternative rates from such date, with or without retroactive effect as the Calculation Agent may in its sole and absolute discretion determine.

Provided that if such difference is negative, $\%\mathbf{SpreadLevel_t}$ should be 0%.

Benchmark Event means:

(a) the relevant reference rate has ceased to be published on the relevant screen page as a result of such benchmark ceasing to be calculated or administered; or

(b) a public statement by the administrator of the relevant reference rate that (in circumstances where no successor administrator has been or will be appointed that will continue publication of such reference rate) it has ceased publishing such reference rate permanently or indefinitely or that it will cease to do so by a specified future date (the "**Specified Future Date**"); or

(c) a public statement by the supervisor of the administrator of the relevant reference rate that such reference rate has been or will, by a specified future date (the "**Specified Future Date**"), be permanently or indefinitely discontinued; or

(d) a public statement by the supervisor of the administrator of the relevant reference rate as a consequence of which Reference Rate will, by a specified future date (the "**Specified Future Date**"), be prohibited from being used, or that its use will be subject to restrictions or adverse consequences, either generally or in respect of the Certificates; or

(e) a public statement by the supervisor of the administrator of the relevant reference rate that, in the view of such supervisor, such reference rate is or will, by a specified future date (the "**Specified Future Date**"), be no longer representative of an underlying market or the methodology to calculate such reference rate has materially changed; or

(f) it has or will, by a specified date within the following six months, become unlawful for the Calculation Agent or the Issuer to calculate any payments due to be made to any holder of the Certificates using the relevant reference rate (including, without limitation, under the Benchmarks Regulation (EU) 2016/1011, if applicable).

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

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

DayCountBasisRate 365

Air Bag Mechanism

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

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

TimeReferenceOpening means the scheduled opening time (including pre-opening session) for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto).

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

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

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

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

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

TERMS AND CONDITIONS OF

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

1. Form, Status, Transfer and Title

(a) *Form*. The Certificates (which expression shall, unless the context otherwise requires, include any further certificates issued pursuant to Condition 11) are issued subject to and with the benefit of:-

(i) 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 Certificates.

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

(b) *Status*. The Certificates constitute direct, general and unsecured contractual obligations of the Issuer and rank, and will rank, equally among themselves and *pari passu* with all other present and future unsecured and unsubordinated obligations of the Issuer (save for statutorily preferred exceptions). The Certificates provide for cash settlement on exercise and, in particular, the Certificates will not be secured by any underlying assets. The Certificates do not entitle Certificate Holders to the delivery of any Underlying Stock, are not secured by the Underlying Stock and do not entitle Certificate Holders to any interest in any Underlying Stock.

(c) *Transfer*. The Certificates are represented by a global warrant certificate ("**Global Warrant**") which will be deposited with The Central Depository (Pte) Limited ("**CDP**"). Certificates in definitive form will not be issued. Transfers of Certificates may be effected only in Board Lots or integral multiples thereof. All transactions in (including transfers of) Certificates, in the open market or otherwise, must be effected through a securities account with CDP. Title will pass upon registration of the transfer in the records maintained by CDP.

(d) *Title*. Each person who is for the time being shown in the records maintained by CDP as entitled to a particular number of Certificates shall be treated by the Issuer and the Warrant Agent as the holder and absolute owner of such number of Certificates, notwithstanding any notice to the contrary. The expression "**Certificate Holder**" shall be construed accordingly.

2. Certificate Rights and Exercise Expenses

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

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

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

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

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

(i) that fifth Exchange Business Day or Underlying Stock Business Day, as the case may be, shall be deemed to be the Valuation Date or the Observation Date notwithstanding the Market Disruption Event; and

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

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

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

(c) No Rights. The purchase of Certificates does not confer on the Certificate Holders any right (whether in respect of voting, dividend or other distributions in respect of the Underlying Stock or otherwise) which the holder of an Underlying Stock may have.

3. Expiry Date

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

4. Exercise of Certificates

(a) *Exercise*. Certificates may only be exercised on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, in accordance with Condition 4(b).

(b) *Automatic Exercise*. Certificate Holders shall not be required to deliver an exercise notice. Exercise of Certificates shall be determined by whether the Cash Settlement Amount (less any Exercise Expenses) is positive. If the Cash Settlement Amount (less any Exercise Expenses) is positive, all Certificates shall be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Certificates shall be paid in the manner set out in Condition 4(c) below. In the event the Cash Settlement Amount (less any Exercise Expenses) is zero, all Certificates shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Certificate Holders shall not be entitled to receive any payment from the Issuer in respect of the Certificates.

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

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

(d) *CDP not liable*. CDP shall not be liable to any Certificate Holder with respect to any action taken or omitted to be taken by the Issuer or the Warrant Agent in connection with the exercise of the Certificates or otherwise pursuant to or in connection with these Conditions.

(e) *Business Day*. In these Conditions, a "**Business Day**" shall be a day (excluding Saturdays, Sundays and public holidays) on which the SGX-ST is open for dealings in Singapore during its normal trading hours and banks are open for business in Singapore.

5. Warrant Agent

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

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

6. Adjustments

(a) *Potential Adjustment Event.* Following the declaration by a Company of the terms of any Potential Adjustment Event (as defined below), the Issuer will determine whether such Potential Adjustment Event has a dilutive or concentrative or other effect on the theoretical value of the Underlying Stock and, if so, will (i) make the corresponding adjustment, if any, to any one or more of the Conditions as the Issuer determines appropriate to account for that dilutive or concentrative or other effect, and (ii) determine the effective date of that adjustment. The Issuer may, but need not, determine the appropriate adjustment by reference to the adjustment in respect of such Potential Adjustment Event made by an exchange on which options or futures contracts on the Underlying Stock are traded.

(b) *Definitions. "Potential Adjustment Event" means any of the following:*

(i) a subdivision, consolidation, reclassification or other restructuring of the Underlying Stock (excluding a Merger Event) or a free distribution or dividend of any such Underlying Stock to existing holders by way of bonus, capitalisation or similar issue;

(ii) a distribution or dividend to existing holders of the Underlying Stock of (1) such Underlying Stock, or (2) other share capital or securities granting the right to payment of dividends and/or the proceeds of liquidation of the Company equally or proportionately with such payments to holders of such Underlying Stock, or (3) share capital or other securities of another issuer acquired by the Company as a result of a "spin-off" or other similar transaction, or (4) any other type of securities, rights or warrants or other assets, in any case for payment (in cash or otherwise) at less than the prevailing market price as determined by the Issuer;

(iii) an extraordinary dividend;

(iv) a call by the Company in respect of the Underlying Stock that is not fully paid;

(v) a repurchase by the Company of the Underlying Stock whether out of profits or capital and whether the consideration for such repurchase is cash, securities or otherwise;

(vi) with respect to a Company an event that results in any shareholder rights pursuant to a shareholder rights agreement or other plan or arrangement of the type commonly referred to as a "poison pill" being distributed, or becoming separated from shares of common stock or other shares of the capital stock of such Company (provided that any adjustment effected as a result of such an event shall be readjusted upon any redemption of such rights); or

(vii) any other event that may have, in the opinion of the Issuer, a dilutive or concentrative or other effect on the theoretical value of the Underlying Stock.

(c) *Merger Event, Tender Offer, Nationalisation and Insolvency.* If a Merger Event, Tender Offer, Nationalisation or Insolvency occurs in relation to the Underlying Stock, the Issuer may take any action described below:

(i) determine the appropriate adjustment, if any, to be made to any one or more of the Conditions to account for the Merger Event, Tender Offer, Nationalisation or Insolvency, as the case may be, and determine the effective date of that adjustment. The Issuer may, but need not, determine the appropriate adjustment by reference to the adjustment in respect of the Merger Event, Tender Offer, Nationalisation or Insolvency made by an options exchange to options on the Underlying Stock traded on that options exchange;

(ii) cancel the Certificates by giving notice to the Certificate Holders in accordance with Condition 9. If the Certificates are so cancelled, the Issuer will pay an amount to each Certificate Holder in respect of each Certificate held by such Certificate Holder which amount shall be the fair market value of a Certificate taking into account the Merger Event, Tender Offer, Nationalisation or Insolvency, as the case may be, less the cost to the Issuer and/or any of its affiliates of unwinding any underlying related hedging arrangements, all as determined by the Issuer in its reasonable discretion. Payment will be made in such manner as shall be notified to the Certificate Holders in accordance with Condition 9; or

(iii) following any adjustment to the settlement terms of options on the Underlying Stock on such exchange(s) or trading system(s) or quotation system(s) as the Issuer in its reasonable discretion shall select (the "**Option Reference Source**") make a corresponding adjustment to any one or more of the Conditions, which adjustment will be effective as of the date determined by the Issuer to be the effective date of the corresponding adjustment made by the Option Reference Source. If options on the Underlying Stock are not traded on the Option Reference Source, the Issuer will make such adjustment, if any, to any one or more of the Conditions as the Issuer determines appropriate, with reference to the rules and precedents (if any) set by the Option Reference Source, to account for the Merger Event, Tender Offer, Nationalisation or Insolvency, as the case may be, that in the determination of the Issuer would have given rise to an adjustment by the Option Reference Source if such options were so traded.

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

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

(e) *Subdivision or Consolidation of the Certificates*. The Issuer reserves the right to subdivide or consolidate the Certificates, provided that such adjustment is considered by the Issuer not to be materially prejudicial to the Certificate Holders generally (without considering the circumstances of any individual Certificate Holder or the tax or other consequences of such adjustment or amendment in any particular jurisdiction).

(f) *Other Adjustments*. Except as provided in this Condition 6 and Conditions 10 and 12, adjustments will not be made in any other circumstances, subject to the right reserved by the Issuer (such right to be exercised in the Issuer's sole and unfettered discretion and without any obligation whatsoever) to make such adjustments and amendments as it believes appropriate in circumstances where an event or events (including the events as contemplated in Conditions 6(a) to 6(e)) occur which it believes in its sole discretion (and notwithstanding any prior adjustment made pursuant to the above) and irrespective of, in substitution for, or in addition to the provisions contemplated in Conditions 6(a) to 6(e) should, in the context of the issue of the Certificates and the obligations of the Issuer, give rise to such adjustment or as the case may be, amendment provided that such adjustment or as the case may be, amendment is considered by the Issuer not to be materially prejudicial to the Certificate Holders generally (without considering the circumstances of any individual Certificate Holder or the tax or other consequences of such adjustment or amendment in any particular jurisdiction).

(g) *Notice of Adjustments*. All determinations made by the Issuer pursuant hereto will be conclusive and binding on the Certificate Holders. The Issuer will give, or procure that there is given notice as soon as practicable of any adjustment and of the date from which such adjustment is effective in accordance with Condition 9. For the avoidance of doubt, no notice will be given if the Issuer determines that adjustments will not be made.

7. Purchases

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

8. Meetings of Certificate Holders; Modification

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

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

Such a meeting may be convened by the Issuer or by Certificate Holders holding not less than ten per cent. of the Certificates for the time being remaining unexercised.

The quorum at any such meeting for passing an Extraordinary Resolution will be two or more persons holding or representing not less than 25 per cent. of the Certificates for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Certificate Holders whatever the number of Certificates so held or represented.

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

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

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

9. Notices

(a) *Documents*. All cheques and other documents required or permitted by these Conditions to be sent to a Certificate Holder or to which a Certificate Holder is entitled or which the Issuer shall have agreed to deliver to a Certificate Holder may be delivered by hand or sent by post addressed to the Certificate Holder at his address appearing in the records maintained by CDP or, in the case of joint Certificate Holders, addressed to the joint holder first named at his address appearing in the records maintained by CDP, and airmail post shall be used if that address is not in Singapore. All documents delivered or sent in accordance with this paragraph shall be delivered or sent at the risk of the relevant Certificate Holder.

(b) *Notices.* All notices to Certificate Holders will be validly given if published in English on the website of the SGX-ST. Such notices shall be deemed to have been given on the date of the first such publication. If publication on the website of the SGX-ST is not practicable, notice will be given in such other manner as the Issuer may determine. The Issuer shall, at least one month prior to the expiry of any Certificate, give notice of the date of expiry of such Certificate in the manner prescribed above.

10. Liquidation

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

11. Further Issues

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

12. Delisting

(a) *Delisting*. If at any time, the Underlying Stock ceases to be listed on the Relevant Stock Exchange, the Issuer shall give effect to these Conditions in such manner and make such adjustments and amendments to the rights attaching to the Certificates as it shall, in its absolute discretion, consider appropriate to ensure, so far as it is reasonably able to do so, that the interests of the Certificate Holders generally are not materially prejudiced as a consequence of such delisting (without considering the individual circumstances of any Certificate Holder or the tax or other consequences that may result in any particular jurisdiction).

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

13. Early Termination

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

For the purposes of this Condition:

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

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

(b) *Early Termination for other reasons.* The Issuer reserves the right (such right to be exercised in the Issuer's sole and unfettered discretion and without any obligation whatsoever) to terminate the Certificates in accordance with Condition 13(c) where an event or events occur which it believes in its sole discretion should, in the context of the issue of the Certificates and the obligations of the Issuer, give rise to such termination provided that such termination is considered by the Issuer not to be materially prejudicial to the interests of Certificate Holders generally (without considering the circumstances of any individual Certificate Holder or the tax or other consequences of such termination in any particular jurisdiction).

(c) *Termination.* If the Issuer terminates the Certificates early, then the Issuer will give notice to the Certificate Holders in accordance with Condition 9. The Issuer will, if and to the extent permitted by the Applicable Law, pay to each Certificate Holder in respect of each Certificate held by such Certificate Holder an amount calculated by it as the fair market value of the Certificate immediately prior to such termination (ignoring such illegality) less the cost to the Issuer of unwinding any related hedging arrangements. Payment will be made to the Certificate Holder in such manner as shall be notified to the Certificate Holder in accordance with Condition 9.

14. Governing Law

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

15. Prescription

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

16. Contracts (Rights of Third Parties) Act, 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
Company:	HSBC Holdings plc
The Certificates:	European Style Cash Settled Long Certificates relating to the Underlying Stock
Number:	15,000,000 Certificates
Form:	The Certificates will be issued subject to, and with the benefit of, a master instrument by way of deed poll dated 7 January 2022 (the "**Master Instrument**") and executed by the Issuer and a master warrant agent agreement dated 27 February 2008 (the "**Master Warrant Agent Agreement**") and made between the Issuer and the Warrant Agent.
Cash Settlement Amount:	In respect of each Certificate, is the amount (if positive) equal to: Notional Amount per Certificate x Closing Level
Denominations:	Certificates are represented by a global warrant in respect of all the Certificates.
Exercise:	The Certificates may only be exercised on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, in a Board Lot or integral multiples thereof. Certificate Holders will not be required to deliver an exercise notice. If the Cash Settlement Amount (less any Exercise Expenses) is positive, all Certificates will be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Certificates shall be paid in the manner set out in Condition 4(c) of the Conditions. In the event the Cash Settlement Amount (less any Exercise Expenses) is zero, all Certificates shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Certificate Holders shall not be entitled to receive any payment from the Issuer in respect of the Certificates.
Exercise and Trading Currency:	SGD
Board Lot:	100 Certificates

Transfers of Certificates:	Certificates may only be transferred in Board Lots (or integral multiples thereof). All transfers in Certificates, in the open market or otherwise, must be effected through a securities account with CDP. Title will pass upon registration of the transfer in the records of CDP.
Listing:	Application has been made to the SGX-ST for permission to deal in and for quotation of the Certificates and the SGX-ST has agreed in principle to grant permission to deal in and for quotation of the Certificates. Issue of the Certificates is conditional on such listing being granted. It is expected that dealings in the Certificates on the SGX-ST will commence on or about 21 April 2022.
Governing Law:	The laws of Singapore
Warrant Agent:	The Central Depository (Pte) Limited 11 North Buona Vista Drive #06-07 The Metropolis Tower 2 Singapore 138589
Further Issues:	Further issues which will form a single series with the Certificates will be permitted.

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

INFORMATION RELATING TO

THE EUROPEAN STYLE CASH SETTLED LONG CERTIFICATES ON SINGLE EQUITIES

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

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

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

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

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

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

(1) is the Final Reference Level multiplied by the Final Exchange Rate;

(2) is the Initial Reference Level multiplied by the Initial Exchange Rate;

(3) is the Strike Level; and

(4) is the Hedging Fee Factor.

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

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

B) Trading the Certificates before Expiry

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

(i) <u>For Certificate Holders who trade the Certificates intraday</u>: shall pay normal transaction and brokerage fees for the trading of the Certificates on the SGX-ST, and may be required to pay stamp taxes or other documentary charges in accordance with the laws and practices of the country where the Certificates are transferred; and

(ii) <u>For Certificate Holders who hold the Certificates overnight</u>: in addition to the normal transaction and brokerage fees and applicable stamp taxes, would also be required to bear the Management Fee and Gap Premium as well as certain costs embedded within the Leverage Strategy including the Funding Cost and the Rebalancing Cost.

Illustration of the Calculation of Hedging Fee Factor

Hedging Fee Factor	=	Product of the Daily Fees

Daily Fees	=	**Daily Management Fee Adjustment**
		1 – Management Fee x ACT (t-1;t) / 360
		x
		Daily Gap Premium Adjustment
		1 – Gap Premium (t-1) x ACT (t-1;t) / 360

Illustration of the Calculation of Cash Settlement Amount

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

		t[7]=0		t=1				t=2				t=i		
Value of Certificates	=	Notional Amount	x	Leverage Strategy daily performance[8]	x	Daily Fees	x	Leverage Strategy daily performance	x	Daily Fees	x …	Leverage Strategy Daily performance	x	Daily Fees

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

		t=0				
Final Value of Certificates	=	Notional Amount	x	Final Reference Level x Final Exchange Rate ÷ Initial Reference Level x Initial Exchange Rate	x	Hedging Fee Factor

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

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

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

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

Example of Calculation of Hedging Fee Factor and Cash Settlement Amount

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

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

Underlying Stock:	**Ordinary shares of HSBC Holdings plc**
Expected Listing Date:	**01/02/2021**
Expiry Date:	**16/02/2021**
Initial Reference Level:	**1,000**
Initial Exchange Rate:	**1**
Final Reference Level:	**1,200**
Final Exchange Rate:	**1**
Issue Price:	**0.50 SGD**
Notional Amount per Certificate:	**0.50 SGD**
Management Fee (p.a.):	**0.40%**
Gap Premium (p.a.):	**4.60%**
Strike Level:	Zero

Hedging Fee Factor

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

HFF(0) = 100%

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

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

$$\mathrm{HFF}\,(1) = 100\% \times \left(1 - 0.40\% \times \frac{1}{360}\right) \times \left(1 - 4.60\% \times \frac{1}{360}\right)$$

$$\mathrm{HFF}\,(1) = 100\% \times 99.9989\% \times 99.9872\% \approx 99.9861\%$$

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

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

$$\mathrm{HFF}\ (2) = 99.9861\% \times \left(1 - 0.40\% \times \frac{3}{360}\right) \times \left(1 - 4.60\% \times \frac{3}{360}\right)$$

$$\mathrm{HFF}\ (2) = 99.9861\% \times 99.9967\% \times 99.9617\% \approx 99.9445\%$$

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

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

In this example, the Hedging Fee Factor as of the Valuation Date would be equal to 99.7919% as illustrated below:

Date	HFF
2/1/2021	100.0000%
2/2/2021	99.9861%
2/3/2021	99.9722%
2/4/2021	99.9583%
2/5/2021	99.9445%
2/8/2021	99.9028%
2/9/2021	99.8889%
2/10/2021	99.8751%
2/11/2021	99.8612%
2/12/2021	99.8473%
2/15/2021	99.8057%
2/16/2021	99.7919%

Cash Settlement Amount

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

Closing Level = [(Final Reference Level x Final Exchange Rate) / (Initial Reference Level x Initial Exchange Rate) – Strike Level] x Hedging Fee Factor

= [(1200 x 1) / (1000 x 1) – 0] x 99.7919%

= 119.75%

Cash Settlement Amount = Closing Level x Notional Amount per Certificate

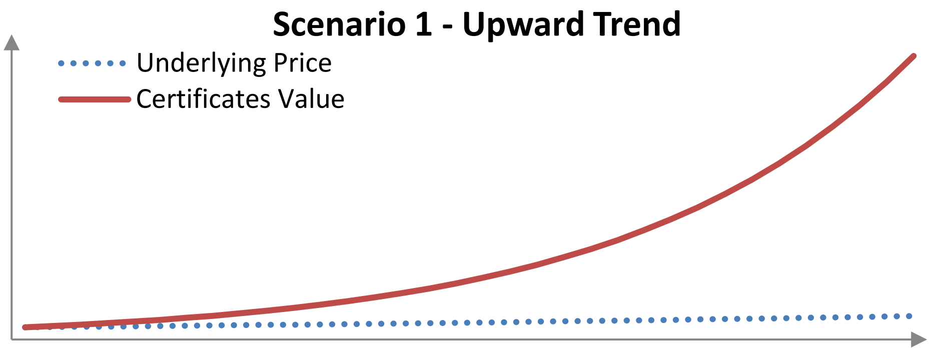
= 119.75% x 0.50 SGD

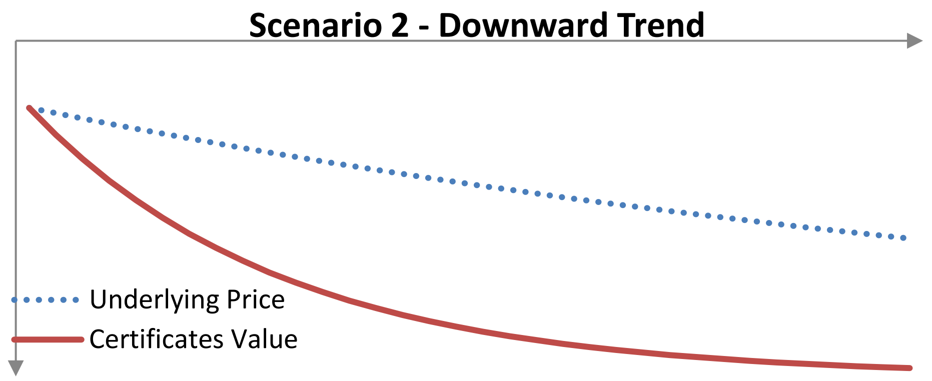
= 0.599 SGD

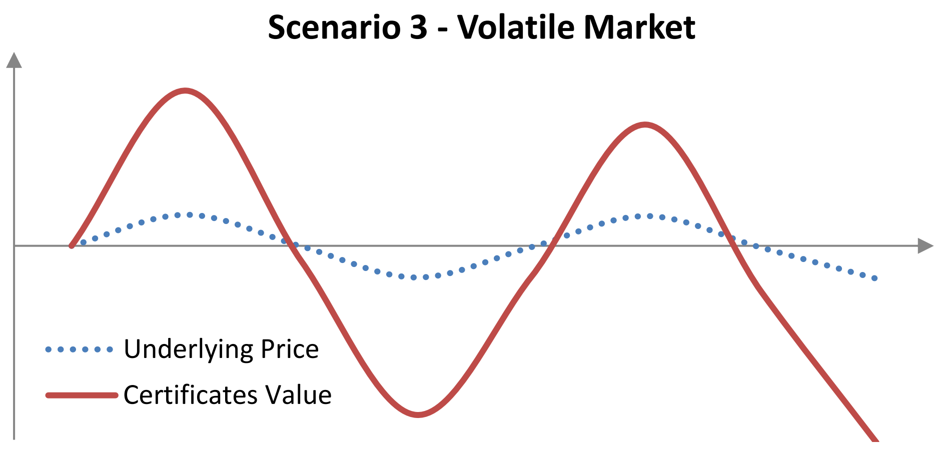
Illustration on how returns and losses can occur under different scenarios

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

1. <u>Illustrative examples</u>







2. Numerical Examples

Scenario 1 – Upward Trend

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

Value of the Certificates						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		10.00%	10.00%	10.00%	10.00%	10.00%
Price at end of day	0.50	0.55	0.61	0.67	0.73	0.81
Accumulated Return		10.00%	21.00%	33.10%	46.41%	61.05%

Scenario 2 – Downward Trend

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

Value of the Certificates						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		-10.00%	-10.00%	-10.00%	-10.00%	-10.00%
Price at end of day	0.50	0.45	0.41	0.36	0.33	0.30
Accumulated Return		-10.00%	-19.00%	-27.10%	-34.39%	-40.95%

Scenario 3 – Volatile Market

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

Value of the Certificates						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		10.00%	-10.00%	-10.00%	10.00%	10.00%
Price at end of day	0.50	0.55	0.50	0.45	0.49	0.54
Accumulated Return		10.00%	-1.00%	-10.90%	-1.99%	7.81%

Description of Air Bag Mechanism

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

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

- Observation Period: the price of the Underlying Stock is observed and its minimum price is recorded (i) during 15 minutes of continuous trading after the Air Bag is triggered, or (ii) until Market Close if there is 15 minutes (or less) of continuous trading until Market Close when the Air Bag is triggered; and

- Reset Period: thereafter, the Leverage Strategy is reset using the minimum price of the Underlying Stock during the Observation Period as the New Observed Price. The New Observed Price replaces the last closing price of the Underlying Stock in order to compute the performance of the Leverage Strategy.

  During the Observation Period and Reset Period, trading of Certificates is suspended for **at least** 30 minutes of continuous trading after the Air Bag is triggered. Investors cannot sell or purchase any Certificates during this period. The Reset Period (and consequently the resumption of trading) is subject further to SGX-ST's requirements, including at least 30 minutes from the time of publication of an announcement on the exchange in respect of the Air Bag Mechanism being triggered, and at least 15 minutes after the SGX-ST grants an approval to resume trading, whichever is later, rounded to the next quarter of an hour.

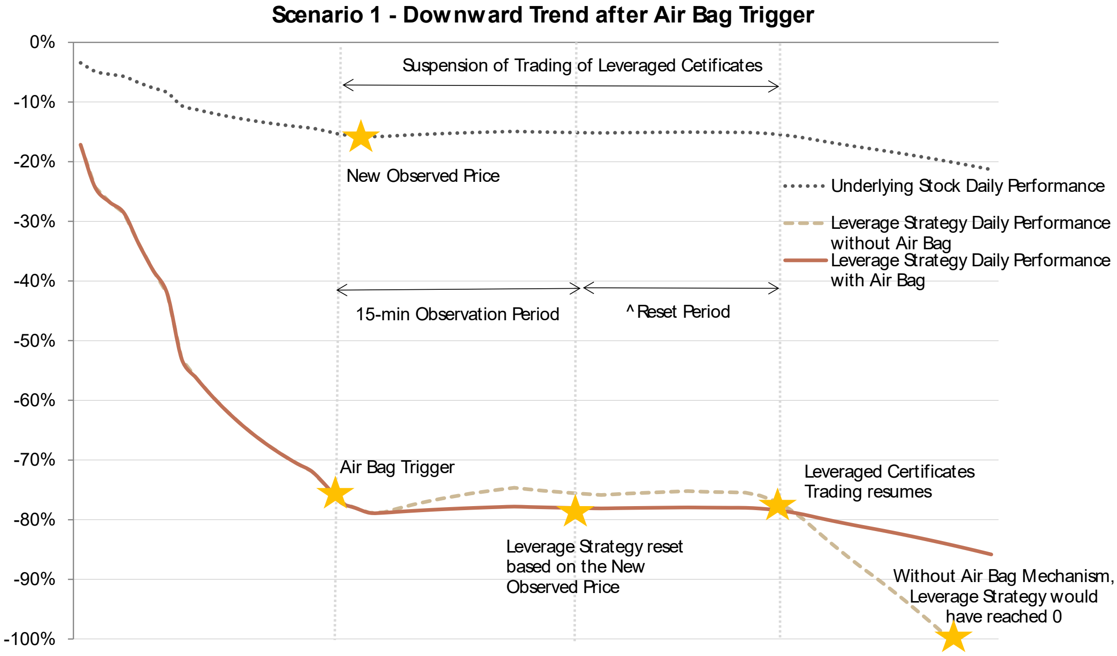
  For the avoidance of doubt, if the Air Bag Mechanism was triggered with more than 60 minutes of continuous trading before Market Close, trading of Certificates will resume the same trading day after the Reset Period has elapsed, subject to the SGX-ST's approval to resume trading. If the Air Bag Mechanism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

With **Market Close** defined as:

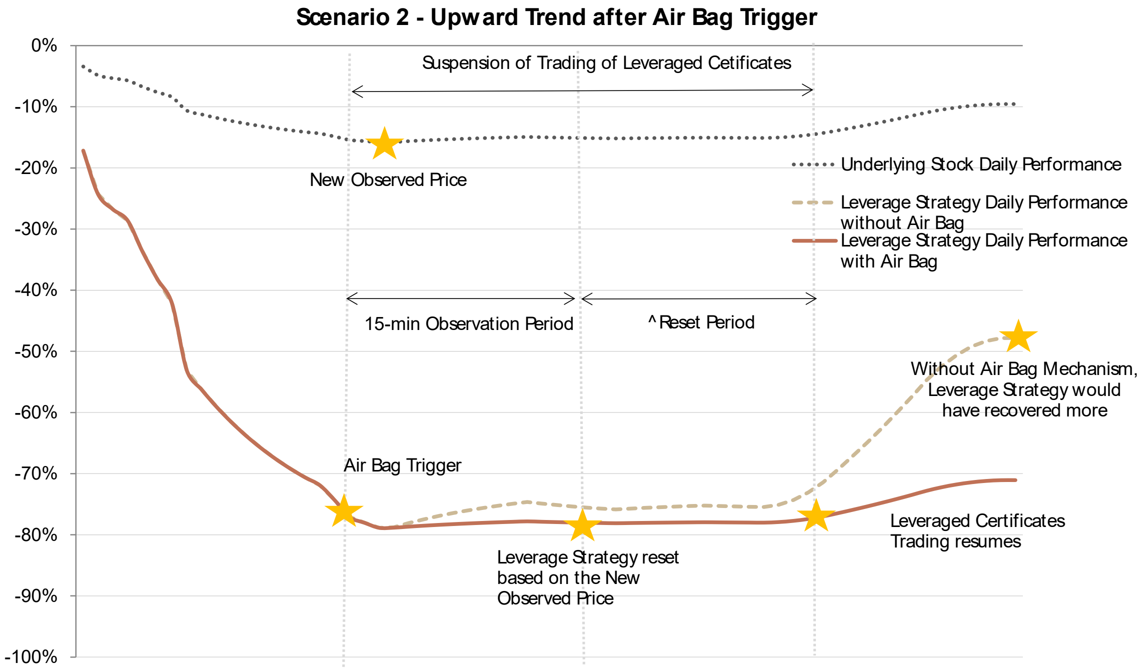
- Underlying Stock closing time with respect to the Observation Period including the closing auction session

- The sooner between Underlying Stock closing time of continuous trading and SGX-ST closing time of continuous trading with respect to the resumption of trading

Illustrative examples of the Air Bag Mechanism[9]



^ The Reset Period (and consequently the resumption of trading) is subject further to SGX-ST's requirements, including at least 30 minutes from the time of publication of an announcement on the exchange in respect of the Air Bag Mechanism being triggered, and at least 15 minutes after the SGX-ST grants an approval to resume trading, whichever is later, rounded to the next quarter of an hour.



^ The Reset Period (and consequently the resumption of trading) is subject further to SGX-ST's requirements, including at least 30 minutes from the time of publication of an announcement on the exchange in respect of the Air Bag Mechanism being triggered, and at least 15 minutes after the SGX-ST grants an approval to resume trading, whichever is later, rounded to the next quarter of an hour.

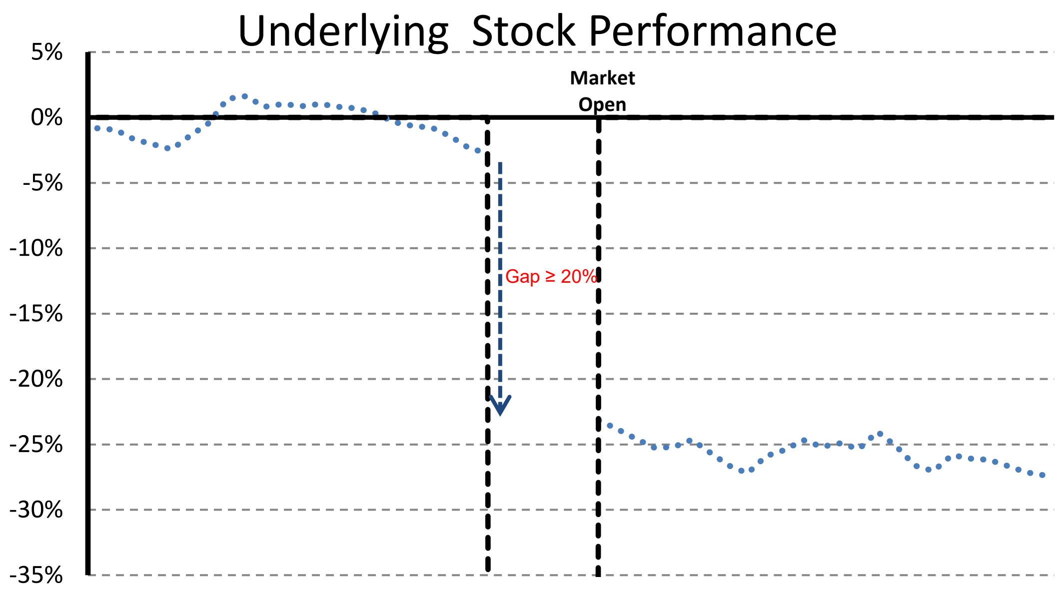
[9] The illustrative examples are not exhaustive.

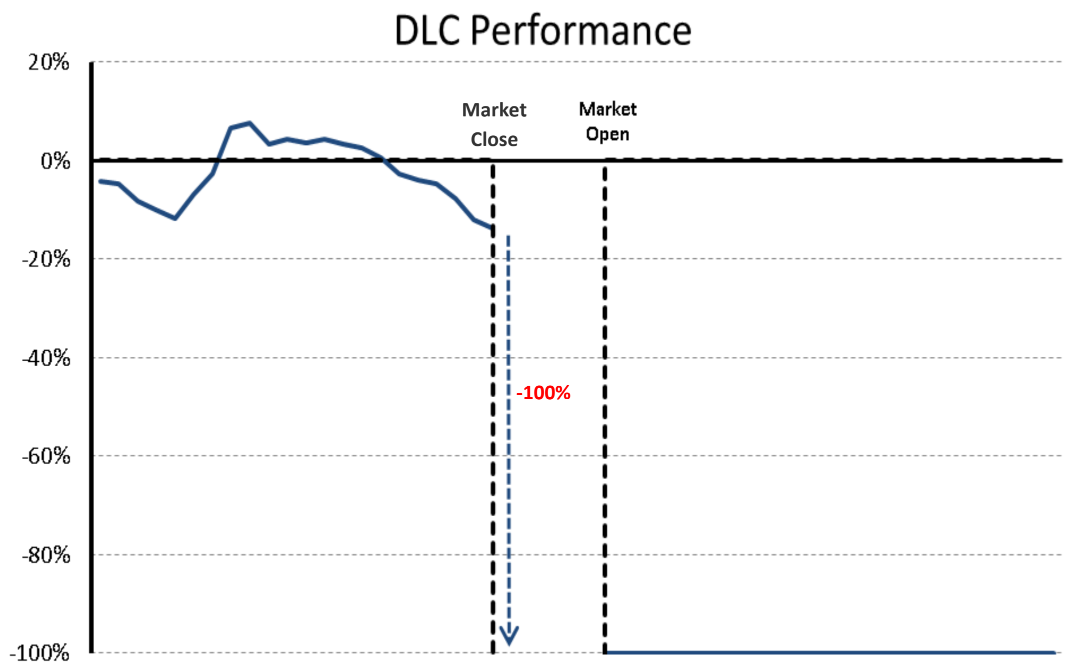
Scenarios where the investor may lose the entire value of the investment

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

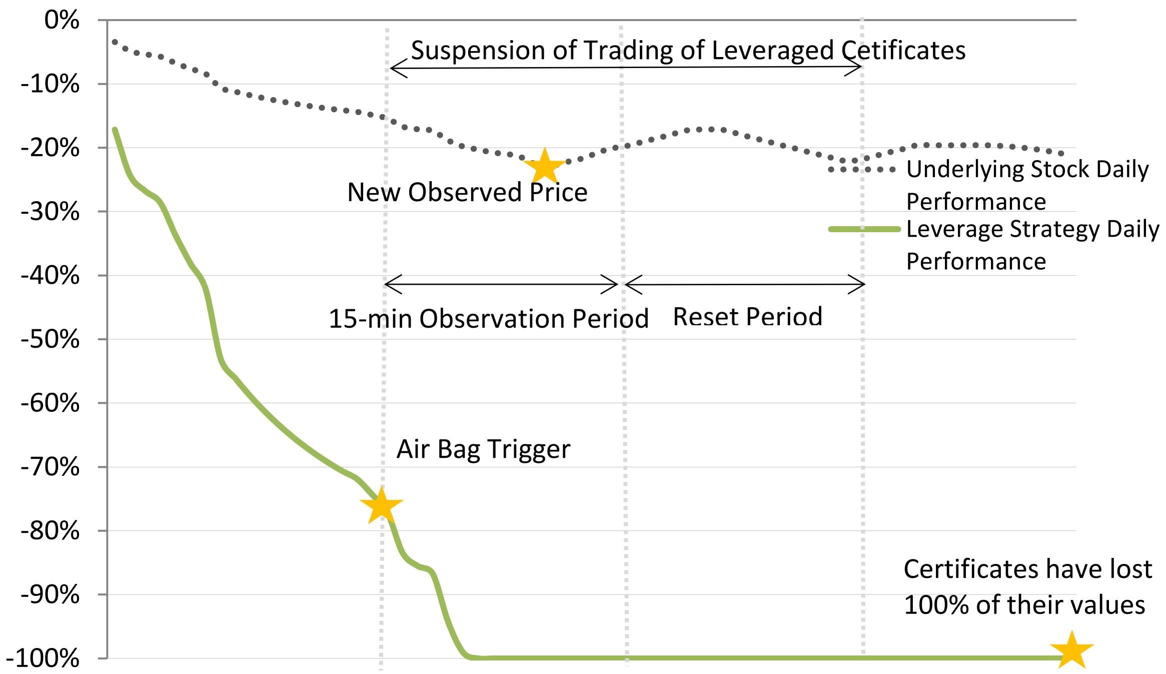
Scenario 1 – Overnight fall of the Underlying Stock

On any business day, the opening price of the Underlying Stock may be higher or lower than the closing price on the previous day. The difference between the previous closing price and the opening price of the Underlying Stock is termed a "gap". If the opening price of the Underlying Stock is 20% or more below the previous day closing price, the Air Bag Mechanism would only be triggered when the market opens the following day, and the Certificates would lose their entire value in such event.





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



Examples and illustrations of adjustments due to certain corporate actions

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

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

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

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

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

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

Where:

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

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

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

1. <u>Stock split</u>

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

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

$\mathrm{S_t}$ = \$51

$\mathrm{Div_t} = \$0$

$\mathrm{DivExc_t} = \$0$

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

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

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

As a consequence:

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

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

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.50	0.55	10%

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

2. <u>Share Consolidation</u>

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

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

$\mathrm{S_t}$ = $202

$\mathrm{Div_t} = \$0$

$\mathrm{DivExc_t} = \$0$

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

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

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

As a consequence:

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

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

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.50	0.525	5%

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

3. Rights Issues

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

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

$\mathrm{S_t}$ = $84

$\mathrm{Div_t} = \$0$

$\mathrm{DivExc_t} = \$0$

R = $40 (i.e. subscription price of $40)

M = 0.5 (i.e. 1 new share for every 2 existing shares)

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

As a consequence:

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

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

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.50	0.625	25%

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

4. <u>Bonus Issues</u>

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

$\mathrm{S}_{\mathrm{r(t)}}$ = $100

S_{t} = $85

$\mathrm{Div}_{\mathrm{t}} = \$0$

$\mathrm{DivExc}_{\mathrm{t}} = \$0$

R = $0

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

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

As a consequence:

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

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

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.50	0.55	10%

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

5. <u>Extraordinary Dividend</u>

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

$\mathrm{S}_{\mathrm{r(t)}}$ = $100

$\mathrm{S_t}$ = \$84

$\mathrm{Div_t} = \$0$

$\mathrm{DivExc_t} = \$20$

R = \$0

M = 0

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

As a consequence:

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

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

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.50	0.625	25%

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

INFORMATION RELATING TO THE COMPANY

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

HSBC Holdings plc (the "**Company**") is a banking and financial services company. The Company manages its products and services through three businesses: Wealth and Personal Banking (WPB), Commercial Banking (CMB), and Global Banking and Markets (GBM). It operates across various geographical regions, which include Europe, Asia, Middle East and North Africa, North America, and Latin America. WPB business offers Retail Banking, Wealth Management, Asset Management and Insurance. CMB products and services to serve the needs of commercial customers, including small and medium-sized enterprises, mid-market enterprises and corporates. It includes credit and lending, international trade and receivables finance, treasury management and liquidity solutions, commercial insurance and investments. GBM supports government, corporate and institutional clients, and private investors across the world.

The information set out in Appendix I of this document relates to the audited consolidated financial statements of the Company and its subsidiaries for the year ended 31 December 2021 and has been extracted and reproduced from an announcement by the Company dated 22 February 2022 in relation to the same. Further information relating to the Company may be located on the web-site of the HKExCL at http://www.hkex.com.hk.

INFORMATION RELATING TO THE DESIGNATED MARKET MAKER

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

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

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

(i) during the pre-market opening and five minutes following the opening of the SGX-ST on any trading day;

(ii) if the Certificates are valueless (where the Issuer's bid price is below the minimum bid size for such securities as prescribed by the SGX-ST);

(iii) before the Relevant Stock Exchange for the Underlying Stock has opened and after the Relevant Stock Exchange for the Underlying Stock has closed on any trading day;

(iv) when trading in the Underlying Stock is suspended or limited in a material way for any reason, for the avoidance of doubt, the DMM is not obliged to provide quotations for the Certificates at any time when the Underlying Stock is not negotiated/traded for any reason;

(v) where the Certificates are suspended from trading for any reason;

(vi) market disruption events, including, without limitation, any suspension of or limitation imposed on trading (including but not limited to unforeseen circumstances such as by reason of movements in price exceeding limits permitted by the SGX-ST or any act of God, war, riot, public disorder, explosion, terrorism or otherwise) in the Underlying Stock;

(vii) where the Issuer or the DMM faces technical problems affecting the ability of the DMM to provide bids and offer quotations;

(viii) where the ability of the Issuer to source a hedge or unwind an existing hedge, as determined by the Issuer in good faith, is materially affected by the prevailing market conditions, and the Issuer informs the SGX-ST of its inability to do so as soon as practicable;

(ix) in cases where the Issuer has no Certificates to sell, then the DMM will only provide the bid price;

(x) if the stock market experiences exceptional price movement and volatility;

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

(xii) during the suspension of trading of Certificates after an Air Bag Mechanism has been triggered.

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

PLACING AND SALE

General

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

United Kingdom

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

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

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

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

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

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

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

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

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

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

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

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

(ii) a customer within the meaning of the provisions of the FSMA and any rules or regulations made under the FSMA which were relied on immediately before exit day to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or

(iii) not a qualified investor as defined in Article 2 of Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA; and

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

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

a) if the Supplemental Listing Document in relation to the Certificates specifies an offer of those Certificates may be made other than pursuant to Article 1(4) of the UK Prospectus Regulation in the United Kingdom (a "**Public Offer**"), following the date of publication of a prospectus in relation to such Certificates which either (i) has been approved by the UK Financial Conduct Authority ("**FCA**"), or (ii) is to be treated as if it had been approved by the FCA in accordance with the transitional provision in Regulation 74 of the Prospectus (Amendment etc.) (EU Exit) Regulations 2019, provided that any such prospectus has subsequently been completed by final terms contemplating such Public Offer, in the period beginning and ending on the dates specified in such prospectus or final terms, as applicable, and the Issuer has consented in writing to its use for the purpose of that Public Offer;

b) at any time to any legal entity which is a qualified investor as defined in Article 2 of the UK Prospectus Regulation;

c) at any time to fewer than 150 natural or legal persons (other than qualified investors as defined in Article 2 of the UK Prospectus Regulation); or

d) at any time in any other circumstances falling within section 86 of the FSMA, provided that no such offer of Certificates to the public referred to in (a) to (c) above shall require the publication of a prospectus pursuant to section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation,

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

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

United States of America

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

Prohibition of Sales to European Economic Area

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

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

(i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "**MiFID II**");

(ii) a customer within the meaning of Directive 2016/97 (as amended), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or

(iii) not a qualified investor as defined in Regulation (EU) 2017/1129 (as amended, the "**Prospectus Regulation**"); and

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

PUBLIC OFFER SELLING RESTRICTION UNDER THE PROSPECTUS REGULATION

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

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

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

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

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

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

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

Singapore

This document has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this document and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of Certificates may not be circulated or distributed, nor may Certificates be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than pursuant to, and in accordance with the conditions of, any applicable provision of the Securities and Futures Act, 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 Certificates, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong other than with respect to Certificates which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571) of the Laws of Hong Kong and any rules made thereunder.

SUPPLEMENTAL INFORMATION RELATING TO THE ISSUER

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

The information set out in Appendix III 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 2021.

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

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

SUPPLEMENTAL GENERAL INFORMATION

The information set out herein is supplemental to, and should be read in conjunction with, the information set out on page 281 of the Base Listing Document.

1. Save as disclosed in the Base Listing Document and herein, there is no litigation, arbitration or administrative proceedings relating to claims or amounts which are material in the context of the issue of the Certificates to which the Issuer is a party nor, to the best of its knowledge and belief, is there any threatened litigation, arbitration or administrative proceedings relating to claims or amounts which are material in the context of the issue of the Certificates which would in either case jeopardise its ability to discharge its obligations in respect of the Certificates.

2. UBS AG, Singapore Branch at 9 Penang Road, Singapore 238459, has been authorised to accept, on behalf of the Issuer, service of process and any other notices required to be served on the Issuer. Any notices required to be served on the Issuer should be sent to UBS AG, Singapore Branch at the above address for the attention of Han-Kiat Tan, Legal & Compliance.

3. Settlement of trades done on a normal “ready basis” on the SGX-ST generally take place on the second Business Day following the transaction. Dealing in the Certificates will take place in board lots of 100 Certificates in Singapore dollars. For further details on the transfer of Certificates and their exercise, please refer to the section headed “Summary of the Issue” above.

4. It is not the current intention of the Issuer to apply for a listing of the Certificates on any stock exchange other than the SGX-ST.

5. There has been no adverse change, material in the context of the issue of the Certificates, in the financial position of the Issuer since 31 December 2021.

6. The following contracts, relating to the issue of the Certificates, have been or will be entered into by the Issuer and may be material to the issue of the Certificates:

    (a) the Master Instrument; and

    (b) the Master Warrant Agent Agreement.

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

7. The Issuer has appropriate risk management capabilities to manage the issue of the Certificates.

8. Copies of the following documents may be inspected during usual business hours on any weekday (Saturdays, Sundays and holidays excepted) at the office of Allen & Gledhill LLP at One Marina Boulevard #28-00, Singapore 018989, during the period of 14 days from the date of this document:

(a) the articles of association of the Issuer;

(b) the latest financial reports (including the notes thereto) of the Issuer;

(c) the Base Listing Document; and

(d) this document.

APPENDIX I

REPRODUCTION OF THE AUDITED CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2021 OF HSBC HOLDINGS PLC AND ITS SUBSIDIARIES

Independent auditors' report to the members of HSBC Holdings plc

Report on the audit of the financial statements

Opinion

In our opinion, HSBC Holdings plc's group financial statements[1] and company financial statements (the 'financial statements'):

- give a true and fair view of the state of the group's and of the company's affairs as at 31 December 2021 and of the group's and company's profit and the group's and company's cash flows for the year then ended;
- have been properly prepared in accordance with UK-adopted international accounting standards; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Our opinion is consistent with our reporting to the Group Audit Committee ('GAC').

Separate opinion in relation to international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union

As explained in note 1.1(a) to the financial statements, the group and company, in addition to applying UK-adopted international accounting standards, have also applied international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union.

In our opinion, the group and company financial statements have been properly prepared in accordance with international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union.

Separate opinion in relation to IFRSs as issued by the IASB

As explained in note 1.1(a) to the financial statements, the group and company, in addition to applying UK-adopted international accounting standards, have also applied international financial reporting standards ('IFRSs') as issued by the International Accounting Standards Board ('IASB').

In our opinion, the group and company financial statements have been properly prepared in accordance with IFRSs as issued by the IASB.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ('ISAs (UK)'), International Standards on Auditing issued by the International Auditing and Assurance Standards Board ('ISAs') and applicable law. Our responsibilities under ISAs (UK) and ISAs are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

During the period, we identified that PricewaterhouseCoopers provided an impermissible training service via a publicly available seminar in respect of the implementation of a new Indonesian IT security regulation. The attendees at this seminar included six members of staff from HSBC Indonesia. The HSBC staff who attended the course were not from the Finance function and were not in roles relevant to our audit. In addition, HSBC Indonesia is not within the scope of the group audit. We confirm that based on our assessment of the breach, nature and scope of the service and our communication with the GAC, that the provision of this service has not compromised our professional judgement or integrity and as such believe that an objective, reasonable and informed third party in possession of these facts would conclude that our integrity and objectivity has not been impaired and accordingly we remain independent for the purposes of the audit.

Other than the matter referred to above, to the best of our knowledge, we declare that no other non-audit services prohibited by the FRC's Ethical Standard were provided to the company or its controlled undertakings in the period under audit.

Other than those disclosed in Note 6, we have provided no non-audit services to the company or its controlled undertakings in the period under audit.

Our audit approach

Overview

Audit scope

- This was the third year that it has been my responsibility to form this opinion on behalf of PricewaterhouseCoopers LLP ('PwC'), who you first appointed on 31 March 2015 in relation to that year's audit. In addition to forming this opinion, in this report we have also provided information on how we approached the audit, how it changed from the previous year and details of the significant discussions that we had with the GAC.

1 We have audited the financial statements, included within the Annual Report and Accounts 2021 (the 'Annual Report'), which comprise: the consolidated and company balance sheets as at 31 December 2021, the consolidated and company income statements and the consolidated and company statements of comprehensive income for the year then ended, the consolidated and company statements of cash flows for the year then ended, the consolidated and company statements of changes in equity for the year then ended, and the notes to the financial statements, which include a summary of significant accounting policies and other explanatory information. Certain notes to the financial statements have been presented elsewhere in the Annual Report, rather than in the notes to the financial statements. These are cross-referenced from the financial statements and are identified as '(Audited)'. The relevant disclosures are included in the Risk review section on pages 127 to 216 and the Directors' remuneration report disclosures on pages 268 to 276.

Key audit matters

- Expected credit losses - Impairment of loans and advances (group)
- Investment in associate – Bank of Communications Co., Ltd ('BoCom') (group)
- Impairment of investments in subsidiaries (parent)
- Valuation of defined benefit pensions obligations (group)

Materiality

- Overall group materiality: US$970m (2020: US$900m) based on 5% of adjusted profit before tax.
- Overall company materiality: US$920m (2020: US$855m) based on 0.75% of total assets. This would result in an overall materiality of US$2bn and was therefore reduced below the group materiality.
- Performance materiality: US$725m (2020: US$675m) (group) and US$690m (2020: US$641m) (company).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

This is not a complete list of all risks identified by our audit.

Compared to last year the number of key audit matters has reduced from eight to four. The following are no longer considered to be key audit matters.

- Impact of Covid-19 (group and company) - Given the impact of Covid-19 on working practices and international travel, the majority of our interactions continued to be undertaken virtually, including those with the partners and teams for Significant Subsidiaries and operations centres, and with HSBC Board members and management. Similarly, a substantial part of our audit testing was performed remotely. We used established practices throughout 2021 for interacting and undertaking our audit testing virtually, consistent with the hybrid working models at both PwC network teams and HSBC.
- IT access management (group) - Management has remediated a number of the control deficiencies in relation to IT access management.
- Valuation of financial instruments (group) - The financial instruments where significant pricing inputs are unobservable, the most material of which are the private equity investments held by Global Banking and Markets and the Insurance business, experienced reduced market volatility during the year that impacted the determination of the fair value.
- Impairment of goodwill and intangible assets (group) - The risk of impairment at the period end is reduced due to the significant surplus between the recoverable amounts and the carrying value for the goodwill and intangible asset balances at the year end, after the full impairment recognised for the WPB LatAm goodwill in 2021.

The remaining four key audit matters are consistent with last year.

Expected credit losses - Impairment of loans and advances (group)

Nature of the key audit matter

Determining expected credit losses ('ECL') involves management judgement and is subject to a high degree of estimation uncertainty.

Management makes various assumptions when estimating ECL. The significant assumptions that we focused on in our audit included those with greater levels of management judgement and for which variations had the most significant impact on ECL. These included assumptions made in determining forward looking economic scenarios and their probability weightings and estimating material management judgemental adjustments.

The impact of Covid-19, including the nature and extent of government support, supply chain constraints and increasing energy prices, and more recent factors, including developments in China's commercial real estate sector, have resulted in unprecedented economic conditions that vary between territories and industries, leading to uncertainty around judgements made in determining the severity and probability weighting of macroeconomic variable ('MEV') forecasts across the different economic scenarios used in ECL models.

The modelling methodologies used to estimate ECL are developed using historical experience. The impact of the unprecedented economic conditions has also resulted in certain limitations in the reliability of these methodologies to forecast the extent and timing of future customer defaults and therefore estimate ECL. In addition, modelling methodologies do not incorporate all factors that are relevant to estimating ECL, such as differentiating the impact on industry sectors of economic conditions. These limitations are addressed with management judgemental adjustments, the measurement of which is inherently judgemental and subject to a high level of estimation uncertainty.

Management makes other assumptions which are less judgemental or for which variations have a less significant impact on ECL. These assumptions include:

- The methodologies used in quantitative scorecards for determining customer risk ratings ('CRRs');
- Estimating expected cash flows and collateral valuations for credit impaired wholesale exposures;
- Model methodologies themselves; and
- Quantitative and qualitative criteria used to assess significant increases in credit risk.

Matters discussed with the Group Audit Committee

We held discussions with the GAC covering governance and controls over ECL, with a significant focus on the continuing impact of Covid-19 and other economic conditions, including recent developments in China's commercial real estate sector. We discussed a number of areas, including:

- The severity of MEV forecasts in economic scenarios, and their related probability weightings, across territories;
- Management judgemental adjustments and the nature and extent of analysis used to support those adjustments;
- The criteria and conditions used to assess to what extent management judgemental adjustments continue to be needed;
- Management's policies, governance and controls over model validation and monitoring; and
- The disclosures made in relation to ECL, in particular the impact of adjustments on determining ECL and the resulting estimation uncertainty.

How our audit addressed the Key Audit Matter

We assessed the design and effectiveness of governance and controls over the estimation of ECL. We observed management's review and challenge in governance forums for (1) the determination of MEV forecasts and their probability weightings for different economic scenarios, and (2) the assessment of ECL for Retail and Wholesale portfolios, including the assessment of model limitations and any resulting management judgemental adjustments.

We also tested controls over:

- Model validation and monitoring;
- Credit reviews that determine customer risk ratings for wholesale customers;
- The identification of credit impaired events;
- The input of critical data into source systems and the flow and transformation of critical data from source systems to impairment models and management judgemental adjustments; and
- The calculation and approval of management judgemental adjustments to modelled outcomes.

We involved our economic experts in assessing the significant assumptions made in determining the severity and probability weighting of MEV forecasts. These assessments considered the sensitivity of ECL to variations in the severity and probability weighting of MEVs for different economic scenarios. We involved our modelling experts in assessing the appropriateness of the significant assumptions and methodologies used for models and management judgemental adjustments. We independently reperformed the calculations for a sample of those models and management judgemental adjustments. We further considered whether the judgements made in selecting the significant assumptions would give rise to indicators of possible management bias.

In addition, we performed substantive testing over:

- The compliance of ECL methodologies and assumptions with the requirements of IFRS 9;
- The appropriateness and application of the quantitative and qualitative criteria used to assess significant increases in credit risk;
- A sample of critical data used in ECL models and to estimate management judgemental adjustments as at 31 December 2021;
- Assumptions and critical data for a sample of credit impaired wholesale exposures; and
- A sample of CRRs applied to wholesale exposures.

We evaluated and tested the Credit Risk disclosures made in the Annual Report.

Relevant references in the *Annual Report and Accounts 2021*

- Credit risk disclosures, page 137.
- GAC Report, page 245.
- Note 1.2(d): Financial instruments measured at amortised cost, page 321.
- Note 1.2(i): Impairment of amortised cost and FVOCI financial assets, page 323.

Impairment of investment in associate - Bank of Communications Co., Ltd ('BoCom') (group)

Nature of the key audit matter

At 31 December 2021, the fair value of the investment in BoCom, based on the share price, was US$15.1bn lower than the carrying value ('CV') of US$23.6bn.

This is an indicator of potential impairment. An impairment test was performed by management, with supporting sensitivity analysis, using the higher of fair value and value in use ('VIU'). The VIU was US$1.2bn in excess of the CV. On this basis, management concluded no impairment was required.

The methodology in the VIU model is dependent on various assumptions, both short term and long term in nature. These assumptions, which are subject to estimation uncertainty, are derived from a combination of management's judgement, analysts' forecasts and market data. The significant assumptions that we focused our audit on were those with greater levels of management judgement and for which variations had the most significant impact on the VIU. Specifically, these included:

- The discount rate;
- Short term assumptions for operating income growth rate, cost-income ratio, expected credit losses and effective tax rates;
- Long term assumptions for profit and asset growth rates, expected credit losses, and effective tax rates; and
- Capital related assumptions (risk-weighted assets, capital adequacy ratio and tier 1 capital adequacy ratio).

Matters discussed with the Group Audit Committee

We discussed the appropriateness of the VIU methodology and significant assumptions with the GAC, giving consideration to the macroeconomic environment, the outlook for the Chinese banking market and the fair value, which has been lower than the carrying value for approximately 10 years. We also discussed the disclosures made in relation to BoCom, including reasonably possible alternatives for the significant assumptions, the use of sensitivity analysis to explain estimation uncertainty and the changes in certain assumptions that would result in the VIU being equal to the CV.

How our audit addressed the Key Audit Matter

We tested controls in place over significant assumptions and the model used to determine the VIU. We assessed the appropriateness of the methodology used, and the mathematical accuracy of the calculations, to estimate the VIU. In respect of the significant assumptions, our testing included the following:

- Challenging the appropriateness of the significant assumptions and, where relevant, their interrelationships;
- Obtaining evidence for data supporting significant assumptions including historic experience, external market information, third-party sources including analyst reports, information from BoCom management and historical publicly available BoCom financial information;
- Assessing the sensitivity of the VIU to reasonable variations in certain significant assumptions, both individually and in aggregate;
- Determining a reasonable range for the discount rate used within the model, with the assistance of our valuation experts, and comparing it to the discount rate used by management; and
- Assessing whether the judgements made in deriving the significant assumptions give rise to indicators of possible management bias.

We observed the quarterly meetings in March, May, September, and November 2021 between management and BoCom management, held specifically to identify facts and circumstances impacting assumptions relevant to the determination of the VIU.

Representations were obtained from management that assumptions used were consistent with information currently available to the group. .

We evaluated and tested the disclosures made in the Annual Report in relation to BoCom.

Relevant references in the *Annual Report and Accounts 2021*

- GAC Report, page 245.
- Note 1.2(a): Critical accounting estimates and judgements, page 320.
- Note 18 Interests in associates and joint ventures, page 359.

Impairment of investments in subsidiaries (company)

Nature of the key audit matter

The macroeconomic and geopolitical environment continues to be challenging, impacting both 2021 and the outlook into 2022 and beyond. These external factors, as well as HSBC's strategy, impact the financial position and performance of subsidiaries within the group. These factors were considered by management in determining if there were potential indicators of impairment that required an impairment assessment for investment in subsidiaries.

Management compared the net assets to the carrying value of each direct subsidiary of HSBC Holdings plc. Where the net assets did not support the carrying value or the subsidiary made a loss during the period, management estimated the recoverable amount using the higher of value in use ('VIU') or fair value less cost to sell. Management predominantly used VIU in its impairment tests, unless it believed that fair value would result in a higher recoverable amount for any subsidiary. The impairment test resulted in a partial reversal of an impairment charge of US$3.1bn in relation to the investment in HSBC Overseas Holdings (UK) Limited ('HOHU'). This resulted in investment in subsidiaries of US$163bn at 31 December 2021.

The methodology used to estimate the recoverable amount is dependent on various assumptions, both short term and long term in nature. These assumptions, which are subject to estimation uncertainty, are derived from a combination of management's judgement, experts engaged by management and market data. The significant assumptions that we focused our audit on were those with greater levels of management judgement and for which variations had the most significant impact on the recoverable amount. Specifically, these included HSBC's strategic planning cycle for 2022 to 2026 including revenue forecasts and cost reduction targets, regulatory capital requirements, long term growth rates and discount rates.

Matters discussed with the Group Audit Committee

We discussed the partial reversal of the impairment charge for HOHU, the appropriateness of methodologies used and significant assumptions with the GAC, giving consideration to the macroeconomic outlook and HSBC's strategy. We considered reasonably possible alternatives for significant assumptions.

How our audit addressed the Key Audit Matter

We tested controls in place over significant assumptions and the model used to determine the recoverable amounts. We assessed the appropriateness of the methodology used, and tested the mathematical accuracy of the calculations, to estimate the recoverable amounts. In respect of the significant assumptions, our testing included the following:

- Challenging the achievability of management's strategic planning cycle and the prospects for HSBC's businesses, as well as considering the achievement of historic forecasts;
- Obtaining and evaluating evidence where available for critical data relating to significant assumptions, from a combination of historic experience and external market and other financial information;
- Assessing whether the cash flows included in the model were in accordance with the relevant accounting standard;
- Assessing the sensitivity of the VIU to reasonable variations in significant assumptions, both individually and in aggregate; and
- Determining a reasonable range for the discount rate used within the model, with the assistance of our valuation experts, and comparing it to the discount rate used by management.

We evaluated and tested the disclosures made in the Annual Report in relation to investment in subsidiaries.

Relevant references in the *Annual Report and Accounts 2021*

- Note 19: Investments in subsidiaries, page 362.

Valuation of defined benefit pensions obligations (group)

Nature of the key audit matter

The group has a defined benefit obligation of US$42.8bn, of which US$32.3bn relates to HSBC Bank (UK) pension scheme.

The valuation of the defined benefit obligation for HSBC Bank (UK) pension scheme is dependent on a number of actuarial assumptions. Management uses an actuarial expert to determine the valuation of the defined benefit obligation. The valuation methodology uses a number of market based inputs and other financial and demographic assumptions. The significant assumptions that we focused our audit on were those with greater levels of management judgement and for which variations had the most significant impact on the liability. Specifically, these included the discount rate, inflation rate and mortality rate.

Matters discussed with the Group Audit Committee

We discussed with the GAC the methodologies and significant assumptions used by management to determine the value of the defined benefit obligation.

How our audit addressed the Key Audit Matter

We tested governance and controls in place over the methodologies and the significant assumptions, including those in relation to the use of management's experts. We also evaluated the objectivity and competence of management's expert involved in the valuation of the defined benefit obligation.

We assessed the appropriateness of the methodology used, and the mathematical accuracy of the calculations, to estimate the liability. In respect of the significant assumptions, we used our actuarial experts to understand the judgements made by management and their actuarial expert in determining the significant assumptions and compared these assumptions to our independently compiled expected ranges based on market observable indices and the knowledge and opinions of our actuarial experts.

We evaluated and tested the disclosures made in the Annual Report in relation to the defined benefit pension obligation.

Relevant references in the *Annual Report and Accounts 2021*

- GAC Report, page 246.
- Note 1.2(k): Critical accounting estimates and judgements, page 327.
- Note 5: Employee compensation and benefits, page 331.

How we tailored the audit scope

We performed a risk assessment, giving consideration to relevant external and internal factors, including Covid-19, climate change, geopolitical and economic risks, relevant accounting and regulatory developments, HSBC's strategy and the changes taking place across the group. We also considered our knowledge and experience obtained in prior year audits. As part of considering the impact of climate change in our risk assessment, we evaluated management's assessment of the impact of climate risk, which is set out on page 45, including their conclusion that there is no material impact on the financial statements. In particular, we considered management's assessment of the impact on ECL on loans and advances to customers, the financial statement line item we determined to be most likely to be impacted by climate risk. Management's assessment gave consideration to a number of matters, including the climate stress testing performed in 2021.

Using our risk assessment, we tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the group and the company, the accounting processes and controls, and the industry in which they operate. We continually assessed risks and changed the scope of our audit where necessary.

Our risk assessment and scoping identified certain entities (collectively the Significant Subsidiaries) for which we obtained audit opinions. We obtained full scope audit opinions for the consolidated financial position and performance of Hongkong and Shanghai Banking Corporation Limited, HSBC Bank plc, and HSBC North America Holdings Limited. We also obtained full scope audit opinions for the company financial position and performance of HSBC UK Bank plc, HSBC Bank Canada and HSBC Mexico S.A. We obtained audit opinions over specific balances for HSBC Bank Middle East Limited - UAE Operations. The audits for HSBC Bank plc and HSBC UK Bank plc were performed by other PwC teams in the UK. All other audits were performed by other PwC network firms.

We continued with our approach for rotating certain smaller locations in and out of scope over a number of reporting periods. These locations, which are subject to local external audits, are individually relatively small compared to the group. Notwithstanding their size, the rotational approach is designed to ensure that over time these locations are subject to audit work as part of the group audit. HSBC Bank Malaysia was removed from the scope of The Hongkong and Shanghai Banking Corporation Limited audit for 2021 and India was included.

Group-wide audit approach

HSBC has entity level controls that have a pervasive influence across the group, as well as other global and regional governance and controls over aspects of financial reporting, such as those operated by the Global Risk function for expected credit losses. A significant amount of IT and operational processes and controls relevant to financial reporting are undertaken in operations centres run by Digital Business Services ('DBS') across different locations. Financial reporting processes and controls are performed centrally in HSBC's Group Finance function and the four Finance operations centres, including the impairment assessment of goodwill and intangible assets, the consolidation of the group's results, the preparation of the financial statements, and management's oversight controls relevant to the group's financial reporting.

For these areas, we either performed audit work ourselves, or directed and provided oversight of the audit work performed by PwC teams in the UK, Poland, China, Sri Lanka, Malaysia, India and the Philippines. A substantial part of our audit testing in these locations was performed remotely. Some of this work was relied upon by the PwC teams auditing the Significant Subsidiaries. This audit work, together with analytical review procedures and assessing the outcome of local external audits, also mitigated the risk of material misstatement for balances in entities that were not part of a Significant Subsidiary.

Significant Subsidiaries audit approach

We asked the partners and teams reporting to us on the Significant Subsidiaries to work to assigned materiality levels reflecting the size of the operations they audited. The performance materiality levels ranged from US$48m to US$690m. Certain Significant Subsidiaries were audited to a local statutory audit materiality that was less than our overall group materiality.

We designed global audit approaches for the products and services that substantially make up HSBC's global businesses, such as lending, deposits and derivatives. These approaches were provided to the partners and teams performing audit testing for the Significant Subsidiaries.

We were in active dialogue throughout the year with the partners and teams responsible for the audits of the Significant Subsidiaries, including consideration of how they planned and performed their work. We attended Audit Committee meetings for some of the Significant Subsidiaries. We also attended meetings with management in each of these Significant Subsidiaries at the year-end. Given the impact of Covid-19 on working practices and international travel, the majority of our interactions continued to be undertaken virtually.

The audit of The Hongkong and Shanghai Banking Corporation Limited in Hong Kong relied upon work performed by other teams in Hong Kong and the PwC network firms in India, mainland China and Singapore. Similarly, the audit of HSBC Bank plc in the UK relied upon work performed by other teams in the UK and the PwC network firms in France and Germany. We considered how the audit partners and teams for the Significant Subsidiaries instructed and provided oversight to the work performed in these locations. Collectively, Significant Subsidiaries covered 85% of total assets and 75% of total operating income.

Using the work of others

We continued to make use of evidence provided by others. This included testing of controls performed by Global Internal Audit and management themselves in some low risk areas. We used the work of PwC experts, for example, economic experts for our work around the severity and probability weighting of macroeconomic variables used as part of the expected credit loss allowance and actuaries on the estimates used in determining pension liabilities. An increasing number of controls are operated on behalf of HSBC by third parties. We obtained audit evidence from work that is scoped and provided by other auditors that are engaged by those third parties. For example, we obtained a report evidencing the testing of external systems and controls supporting HSBC's payroll and HR processes.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Financial statements – group	Financial statements – company
Overall materiality	US$970m (2020: US$900m).	US$920m (2020: US$855m).
How we determined it	5% of adjusted profit before tax	0.75% of total assets. This would result in an overall materiality of US$2bn and was therefore reduced below the group materiality level.
Rationale for benchmark applied	We believe a standard benchmark of 5% of adjusted profit before tax is an appropriate quantitative indicator of materiality, although certain items could also be material for qualitative reasons. This benchmark is standard for listed entities and consistent with the wider industry. We selected adjusted profit because, as discussed on page 28, management believes it best reflects the performance of HSBC and how the group is run. We excluded the adjustments made by management on page 28 for certain customer redress programmes and fair value movements of financial instruments, as in our opinion they are recurring items that form part of ongoing business performance.	A benchmark of total assets has been used, as the company's primary purpose is to act as a holding company with investments in the group's subsidiaries, not to generate operating profits and therefore a profit based measure is not relevant.

We use performance materiality to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds overall materiality. Specifically, we use performance materiality in determining the scope of our audit and the nature and extent of our testing of account balances, classes of transactions and disclosures, for example in determining sample sizes. Our performance materiality was 75% of overall materiality, amounting to US$725m for the group financial statements and US$690m for the company financial statements.

In determining the performance materiality, we considered a number of factors, including the history of misstatements, our risk assessment and aggregation risk, and the effectiveness of controls. We concluded that an amount at the upper end of our normal range was appropriate.

We agreed with the GAC that we would report to them misstatements identified during our audit above US$48m (group audit) (2020: US$45m) and US$48m (company audit) (2020: US$45m) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

Our evaluation of the directors' assessment of the group's and the company's ability to continue to adopt the going concern basis of accounting included:

- Performing a risk assessment to identify factors that could impact the going concern basis of accounting, including the impact of external risks including geopolitical, Covid-19 and climate change risks.
- Understanding and evaluating the group's financial forecasts and the group's stress testing of liquidity and regulatory capital, including the severity of the stress scenarios that were used.
- Understanding and evaluating credit rating agency ratings and actions.
- Reading and evaluating the adequacy of the disclosures made in the financial statements in relation to going concern.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group's and the company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

However, because not all future events or conditions can be predicted, this conclusion is not a guarantee as to the group's and the company's ability to continue as a going concern.

In relation to the directors' reporting on how they have applied the UK Corporate Governance Code, we have nothing material to add or draw attention to in relation to the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information, which includes reporting based on the Task Force on Climate-related Financial Disclosures ('TCFD') recommendations. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information, including the TCFD reporting and other information related to climate change, is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. 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 based on these responsibilities.

With respect to the Strategic report and Report of the Directors, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on our work undertaken in the course of the audit, the Companies Act 2006 requires us also to report certain opinions and matters as described below.

Strategic Report and Report of the Directors'

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic report and Report of the Directors' for the year ended 31 December 2021 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

In light of the knowledge and understanding of the group and company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic report and Report of the Directors'.

Directors' Remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

Corporate governance statement

The Listing Rules require us to review the directors' statements in relation to going concern, longer-term viability and that part of the corporate governance statement relating to the company's compliance with the provisions of the UK Corporate Governance Code specified for our review. Our additional responsibilities with respect to the corporate governance statement as other information are described in the Reporting on other information section of this report.

Based on the work undertaken as part of our audit, we have concluded that each of the following elements of the corporate governance statement is materially consistent with the financial statements and our knowledge obtained during the audit, and we have nothing material to add or draw attention to in relation to:

- The directors' confirmation that they have carried out an assessment of the emerging and principal risks;
- The disclosures in the Annual Report that describe those principal risks, what procedures are in place to identify emerging risks and an explanation of how these are being managed or mitigated;
- The directors' statement in the financial statements about whether they considered it appropriate to adopt the going concern basis of accounting in preparing them, and their identification of any material uncertainties to the group's and company's ability to continue to do so over a period of at least twelve months from the date of approval of the financial statements;
- The directors' explanation as to their assessment of the group's and company's prospects, the period this assessment covers and why the period is appropriate; and
- The directors' statement as to whether they have a reasonable expectation that the company will be able to continue in operation and meet its liabilities as they fall due over the period of its assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

Our review of the directors' statement regarding the longer-term viability of the group was substantially less in scope than an audit and only consisted of making inquiries and considering the directors' process supporting their statement; checking that the statement is in alignment with the relevant provisions of the UK Corporate Governance Code; and considering whether the statement is consistent with the financial statements and our knowledge and understanding of the group and company and their environment obtained in the course of the audit.

In addition, based on the work undertaken as part of our audit, we have concluded that each of the following elements of the corporate governance statement is materially consistent with the financial statements and our knowledge obtained during the audit:

- The directors' statement that they consider the Annual Report, taken as a whole, is fair, balanced and understandable, and provides the information necessary for the members to assess the group's and company's position, performance, business model and strategy;
- The section of the Annual Report that describes the review of effectiveness of risk management and internal control systems; and
- The section of the Annual Report describing the work of the GAC.

We have nothing to report in respect of our responsibility to report when the directors' statement relating to the company's compliance with the Code does not properly disclose a departure from a relevant provision of the Code specified under the Listing Rules for review by the auditors.

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Directors' responsibility statement, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group's and the company'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 directors either intend to liquidate the group or the company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' 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 ISAs (UK) and ISAs 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 financial statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below.

Based on our understanding of the group and industry, we identified that the principal risks of non-compliance with laws and regulations related to breaches of financial crime laws and regulations and regulatory compliance, including regulatory reporting requirements and conduct of business, and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the financial statements such as the Companies Act 2006. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to posting inappropriate journal entries to increase revenue or reduce costs, creating fictitious trades to hide losses or to improve financial performance, and management bias in accounting estimates. The group engagement team shared this risk assessment with the Significant Subsidiaries auditors so that they could include appropriate audit procedures in response to such risks in their work. Audit procedures performed by the group engagement team and/or component auditors included:

- Review of correspondence with and reports from the regulators, including the Prudential Regulation Authority ('PRA') and Financial Conduct Authority ('FCA');
- Reviewed reporting to the GAC and GRC in respect of compliance and legal matters;
- Review a sample of legal correspondence with legal advisors;
- Enquiries of management and review of internal audit reports, insofar as they related to the financial statements;
- Obtain legal confirmations from legal advisors relating to material litigation and compliance matters;
- Assessment of matters reported on the group's whistleblowing programmes and the results of management's investigation of such matters; insofar as they related to the financial statements.
- Challenging assumptions and judgements made by management in its significant accounting estimates, in particular in relation to the determination of expected credit losses, the impairment assessments of the investment in BoCom, valuation of defined benefit pensions obligations and investment in subsidiaries (see related key audit matters);
- Obtaining confirmations from third parties to confirm the existence of a sample of transactions and balances; and
- Identifying and testing journal entries, including those posted with certain descriptions, posted and approved by the same individual, backdated journals or posted by infrequent and unexpected users.

There are inherent limitations in the audit procedures described above. We are less likely to become aware of instances of non-compliance with laws and regulations that are not closely related to events and transactions reflected in the financial statements. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Our audit testing might include testing complete populations of certain transactions and balances, possibly using data auditing techniques. However, it typically involves selecting a limited number of items for testing, rather than testing complete populations. We will often seek to target particular items for testing based on their size or risk characteristics. In other cases, we will use audit sampling to enable us to draw a conclusion about the population from which the sample is selected.

A further description of our responsibilities for the audit of the financial statements in accordance with ISAs (UK) is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

As part of an audit in accordance with ISAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group's and company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the group's and company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group and company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group and company audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Use of this report

This report, including the opinions, has been prepared for and only for the company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not obtained all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the GAC, we were appointed by the members on 31 March 2015 to audit the financial statements for the year ended 31 December 2015 and subsequent financial periods. The period of total uninterrupted engagement is seven years, covering the years ended 31 December 2015 to 31 December 2021.

Other matter

As required by the Financial Conduct Authority Disclosure Guidance and Transparency Rule 4.1.14R, these financial statements form part of the ESEF-prepared annual financial report filed on the National Storage Mechanism of the Financial Conduct Authority in accordance with the ESEF Regulatory Technical Standard ('ESEF RTS'). This auditors' report provides no assurance over whether the annual financial report has been prepared using the single electronic format specified in the ESEF RTS.

Scott Berryman (Senior Statutory Auditor)

for and on behalf of **PricewaterhouseCoopers LLP**

Chartered Accountants and Statutory Auditors

London

22 February 2022

Financial statements

Consolidated income statement

for the year ended 31 December

	Notes*	2021 $m	2020 $m	2019 $m
Net interest income		**26,489**	27,578	30,462
– interest income[1,2]		**36,188**	41,756	54,695
– interest expense[3]		**(9,699)**	(14,178)	(24,233)
Net fee income	2	**13,097**	11,874	12,023
– fee income		**16,788**	15,051	15,439
– fee expense		**(3,691)**	(3,177)	(3,416)
Net income from financial instruments held for trading or managed on a fair value basis	3	**7,744**	9,582	10,231
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	3	**4,053**	2,081	3,478
Changes in fair value of designated debt and related derivatives[4]	3	**(182)**	231	90
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	3	**798**	455	812
Gains less losses from financial investments		**569**	653	335
Net insurance premium income	4	**10,870**	10,093	10,636
Other operating income		**502**	527	2,957
Total operating income		**63,940**	63,074	71,024
Net insurance claims and benefits paid and movement in liabilities to policyholders	4	**(14,388)**	(12,645)	(14,926)
Net operating income before change in expected credit losses and other credit impairment charges		**49,552**	50,429	56,098
Change in expected credit losses and other credit impairment charges		**928**	(8,817)	(2,756)
Net operating income		**50,480**	41,612	53,342
Employee compensation and benefits	5	**(18,742)**	(18,076)	(18,002)
General and administrative expenses		**(11,592)**	(11,115)	(13,828)
Depreciation and impairment of property, plant and equipment and right-of-use assets[5]		**(2,261)**	(2,681)	(2,100)
Amortisation and impairment of intangible assets		**(1,438)**	(2,519)	(1,070)
Goodwill impairment	21	**(587)**	(41)	(7,349)
Total operating expenses		**(34,620)**	(34,432)	(42,349)
Operating profit		**15,860**	7,180	10,993
Share of profit in associates and joint ventures	19	**3,046**	1,597	2,354
Profit before tax		**18,906**	8,777	13,347
Tax expense	7	**(4,213)**	(2,678)	(4,639)
Profit for the year		**14,693**	6,099	8,708
Attributable to:				
– ordinary shareholders of the parent company		**12,607**	3,898	5,969
– preference shareholders of the parent company		**7**	90	90
– other equity holders		**1,303**	1,241	1,324
– non-controlling interests		**776**	870	1,325
Profit for the year		**14,693**	6,099	8,708
		$	$	$
Basic earnings per ordinary share	9	**0.62**	0.19	0.30
Diluted earnings per ordinary share	9	**0.62**	0.19	0.30

* *For Notes on the financial statements, see page 318.*
1 *Interest income includes $30,916m (2020: $35,293m) of interest recognised on financial assets measured at amortised cost and $4,337m (2020: $5,614m) of interest recognised on financial assets measured at fair value through other comprehensive income.*
2 *Interest revenue calculated using the effective interest method comprises interest recognised on financial assets measured at either amortised cost or fair value through other comprehensive income.*
3 *Interest expense includes $8,227m (2020: $12,426m) of interest on financial instruments, excluding interest on financial liabilities held for trading or designated or otherwise mandatorily measured at fair value.*
4 *The debt instruments, issued for funding purposes, are designated under the fair value option to reduce an accounting mismatch.*
5 *Includes depreciation of the right-of-use assets of $878m (2020: $1,029m).*

Consolidated statement of comprehensive income

for the year ended 31 December

	2021	2020	2019
	$m	$m	$m
Profit for the year	**14,693**	6,099	8,708
Other comprehensive income/(expense)			
Items that will be reclassified subsequently to profit or loss when specific conditions are met:			
Debt instruments at fair value through other comprehensive income	**(2,139)**	1,750	1,152
– fair value gains/(losses)	**(2,270)**	2,947	1,793
– fair value gains transferred to the income statement on disposal	**(464)**	(668)	(365)
– expected credit (recoveries)/losses recognised in the income statement	**(49)**	48	109
– income taxes	**644**	(577)	(385)
Cash flow hedges	**(664)**	471	206
– fair value gains/(losses)	**595**	(157)	551
– fair value (gains)/losses reclassified to the income statement	**(1,514)**	769	(286)
– income taxes	**255**	(141)	(59)
Share of other comprehensive income/(expense) of associates and joint ventures	**103**	(73)	21
– share for the year	**103**	(73)	21
Exchange differences	**(2,393)**	4,855	1,044
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of defined benefit asset/liability	**(274)**	834	13
– before income taxes	**(107)**	1,223	(17)
– income taxes	**(167)**	(389)	30
Changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	**531**	167	(2,002)
– before income taxes	**512**	190	(2,639)
– income taxes	**19**	(23)	637
Equity instruments designated at fair value through other comprehensive income	**(446)**	212	366
– fair value gains/(losses)	**(443)**	212	364
– income taxes	**(3)**	—	2
Effects of hyperinflation	**315**	193	217
Other comprehensive income/(expense) for the period, net of tax	**(4,967)**	8,409	1,017
Total comprehensive income for the year	**9,726**	14,508	9,725
Attributable to:			
– ordinary shareholders of the parent company	**7,765**	12,146	6,838
– preference shareholders of the parent company	**7**	90	90
– other equity holders	**1,303**	1,241	1,324
– non-controlling interests	**651**	1,031	1,473
Total comprehensive income for the year	**9,726**	14,508	9,725

Consolidated balance sheet

		At	
		31 Dec	31 Dec
		2021	2020
	*Notes**	**$m**	$m
Assets			
Cash and balances at central banks		**403,018**	304,481
Items in the course of collection from other banks		**4,136**	4,094
Hong Kong Government certificates of indebtedness		**42,578**	40,420
Trading assets	*11*	**248,842**	231,990
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	*14*	**49,804**	45,553
Derivatives	*15*	**196,882**	307,726
Loans and advances to banks		**83,136**	81,616
Loans and advances to customers		**1,045,814**	1,037,987
Reverse repurchase agreements – non-trading		**241,648**	230,628
Financial investments	*16*	**446,274**	490,693
Prepayments, accrued income and other assets	*22*	**139,982**	156,412
Current tax assets		**970**	954
Interests in associates and joint ventures	*18*	**29,609**	26,684
Goodwill and intangible assets	*21*	**20,622**	20,443
Deferred tax assets	*7*	**4,624**	4,483
Total assets		**2,957,939**	2,984,164
Liabilities and equity			
Liabilities			
Hong Kong currency notes in circulation		**42,578**	40,420
Deposits by banks		**101,152**	82,080
Customer accounts		**1,710,574**	1,642,780
Repurchase agreements – non-trading		**126,670**	111,901
Items in the course of transmission to other banks		**5,214**	4,343
Trading liabilities	*23*	**84,904**	75,266
Financial liabilities designated at fair value	*24*	**145,502**	157,439
Derivatives	*15*	**191,064**	303,001
Debt securities in issue	*25*	**78,557**	95,492
Accruals, deferred income and other liabilities	*26*	**123,778**	128,624
Current tax liabilities		**698**	690
Liabilities under insurance contracts	*4*	**112,745**	107,191
Provisions	*27*	**2,566**	3,678
Deferred tax liabilities	*7*	**4,673**	4,313
Subordinated liabilities	*28*	**20,487**	21,951
Total liabilities		**2,751,162**	2,779,169
Equity			
Called up share capital	*31*	**10,316**	10,347
Share premium account	*31*	**14,602**	14,277
Other equity instruments		**22,414**	22,414
Other reserves		**6,460**	8,833
Retained earnings		**144,458**	140,572
Total shareholders' equity		**198,250**	196,443
Non-controlling interests	*19*	**8,527**	8,552
Total equity		**206,777**	204,995
Total liabilities and equity		**2,957,939**	2,984,164

* *For Notes on the financial statements, see page 318.*

The accompanying notes on pages 318 to 396 and the audited sections in 'Risk' on pages 120 to 216 (including 'Measurement uncertainty and sensitivity analysis of ECL estimates' on pages 144 to 152), and 'Directors' remuneration report' on pages 254 to 287 form an integral part of these financial statements.

These financial statements were approved by the Board of Directors on 22 February 2022 and signed on its behalf by:

Mark E Tucker
Group Chairman

Ewen Stevenson
Group Chief Financial Officer

Consolidated statement of cash flows

for the year ended 31 December

	2021	2020	2019
	$m	$m	$m
Profit before tax	**18,906**	8,777	13,347
Adjustments for non-cash items:			
Depreciation, amortisation and impairment	**4,286**	5,241	10,519
Net gain from investing activities	**(647)**	(541)	(399)
Share of profits in associates and joint ventures	**(3,046)**	(1,597)	(2,354)
Gain on disposal of subsidiaries, businesses, associates and joint ventures	**—**	—	(929)
Change in expected credit losses gross of recoveries and other credit impairment charges	**(519)**	9,096	3,012
Provisions including pensions	**1,063**	1,164	2,423
Share-based payment expense	**467**	433	478
Other non-cash items included in profit before tax	**510**	(906)	(2,297)
Elimination of exchange differences[1]	**18,937**	(25,749)	(3,742)
Changes in operating assets and liabilities			
Change in net trading securities and derivatives	**(9,226)**	13,150	(18,910)
Change in loans and advances to banks and customers	**(11,014)**	(14,131)	(53,760)
Change in reverse repurchase agreements – non-trading	**552**	9,950	(7,390)
Change in financial assets designated and otherwise mandatorily measured at fair value	**(4,254)**	(1,962)	(2,308)
Change in other assets	**19,899**	(19,610)	(21,863)
Change in deposits by banks and customer accounts	**95,703**	226,723	79,163
Change in repurchase agreements – non-trading	**14,769**	(28,443)	(25,540)
Change in debt securities in issue	**(16,936)**	(9,075)	19,268
Change in financial liabilities designated at fair value	**(11,425)**	(6,630)	20,068
Change in other liabilities	**(10,935)**	20,323	23,124
Dividends received from associates	**808**	761	633
Contributions paid to defined benefit plans	**(509)**	(495)	(533)
Tax paid	**(3,077)**	(4,259)	(2,267)
Net cash from operating activities	**104,312**	182,220	29,743
Purchase of financial investments	**(493,042)**	(496,669)	(445,907)
Proceeds from the sale and maturity of financial investments	**521,190**	476,990	413,186
Net cash flows from the purchase and sale of property, plant and equipment	**(1,086)**	(1,446)	(1,343)
Net cash flows from purchase/(disposal) of customer and loan portfolios	**3,059**	1,362	1,118
Net investment in intangible assets	**(2,479)**	(2,064)	(2,289)
Net cash flow from acquisition and disposal of subsidiaries, businesses, associates and joint ventures	**(106)**	(603)	(83)
Net cash from investing activities	**27,536**	(22,430)	(35,318)
Issue of ordinary share capital and other equity instruments	**1,996**	1,497	—
Cancellation of shares	**(707)**	—	(1,000)
Net sales/(purchases) of own shares for market-making and investment purposes	**(1,386)**	(181)	141
Redemption of preference shares and other equity instruments	**(3,450)**	(398)	—
Subordinated loan capital repaid[2]	**(864)**	(3,538)	(4,210)
Dividends paid to shareholders of the parent company and non-controlling interests	**(6,383)**	(2,023)	(9,773)
Net cash from financing activities	**(10,794)**	(4,643)	(14,842)
Net increase/(decrease) in cash and cash equivalents	**121,054**	155,147	(20,417)
Cash and cash equivalents at 1 Jan	**468,323**	293,742	312,911
Exchange differences in respect of cash and cash equivalents	**(15,345)**	19,434	1,248
Cash and cash equivalents at 31 Dec[3]	**574,032**	468,323	293,742
Cash and cash equivalents comprise:			
– cash and balances at central banks	**403,018**	304,481	154,099
– items in the course of collection from other banks	**4,136**	4,094	4,956
– loans and advances to banks of one month or less	**55,705**	51,788	41,626
– reverse repurchase agreements with banks of one month or less	**76,658**	65,086	65,370
– treasury bills, other bills and certificates of deposit less than three months	**28,488**	30,023	20,132
– cash collateral and net settlement accounts	**11,241**	17,194	12,376
– less: items in the course of transmission to other banks	**(5,214)**	(4,343)	(4,817)
Cash and cash equivalents at 31 Dec[3]	**574,032**	468,323	293,742

Interest received was $40,175m (2020: $45,578m; 2019: $58,627m), interest paid was $12,695m (2020: $17,740m; 2019: $27,384m) and dividends received (excluding dividends received from associates, which are presented separately above) were $1,898m (2020: $1,158m; 2019: $2,369m).

1 *Adjustment to bring changes between opening and closing balance sheet amounts to average rates. This is not done on a line-by-line basis, as details cannot be determined without unreasonable expense.*

2 *Subordinated liabilities changes during the year are attributable to repayments of $(0.9)bn (2020: $(3.5)bn; 2019: $(4.2)bn) of securities. Non-cash changes during the year included foreign exchange gains/(losses) of $(0.3)bn (2020: $0.5bn; 2019: $0.6bn) and fair value gains/(losses) of $(1.0)bn (2020: $1.1bn; 2019: $1.4bn).*

3 *At 31 December 2021 $33,634m (2020: $41,912m; 2019: $35,735m) was not available for use by HSBC, of which $15,357m (2020: $16,935m; 2019: $19,353m) related to mandatory deposits at central banks.*

Consolidated statement of changes in equity

for the year ended 31 December

				Other reserves						
	Called up share capital and share premium	Other equity instru-ments	Retained earnings[3,4]	Financial assets at FVOCI reserve	Cash flow hedging reserve	Foreign exchange reserve	Merger and other reserves[4,5]	Total share-holders' equity	Non-controlling interests	Total equity
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2021	24,624	22,414	140,572	1,816	457	(20,375)	26,935	196,443	8,552	204,995
Profit for the year	—	—	13,917	—	—	—	—	13,917	776	14,693
Other comprehensive income (net of tax)	—	—	661	(2,455)	(654)	(2,394)	—	(4,842)	(125)	(4,967)
– debt instruments at fair value through other comprehensive income	—	—	—	(2,105)	—	—	—	(2,105)	(34)	(2,139)
– equity instruments designated at fair value through other comprehensive income	—	—	—	(350)	—	—	—	(350)	(96)	(446)
– cash flow hedges	—	—	—	—	(654)	—	—	(654)	(10)	(664)
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	—	—	531	—	—	—	—	531	—	531
– remeasurement of defined benefit asset/ liability	—	—	(288)	—	—	—	—	(288)	14	(274)
– share of other comprehensive income of associates and joint ventures	—	—	103	—	—	—	—	103	—	103
– effects of hyperinflation	—	—	315	—	—	—	—	315	—	315
– exchange differences	—	—	—	—	—	(2,394)	—	(2,394)	1	(2,393)
Total comprehensive income for the year	—	—	14,578	(2,455)	(654)	(2,394)	—	9,075	651	9,726
Shares issued under employee remuneration and share plans	354	—	(336)	—	—	—	—	18	—	18
Capital securities issued[1]	—	2,000	(4)	—	—	—	—	1,996	—	1,996
Dividends to shareholders	—	—	(5,790)	—	—	—	—	(5,790)	(593)	(6,383)
Redemption of securities[2]	—	(2,000)	—	—	—	—	—	(2,000)	—	(2,000)
Transfers[6]	—	—	(3,065)	—	—	—	3,065	—	—	—
Cost of share-based payment arrangements	—	—	467	—	—	—	—	467	—	467
Cancellation of shares[7]	(60)	—	(2,004)	—	—	—	60	(2,004)	—	(2,004)
Other movements	—	—	40	5	—	—	—	45	(83)	(38)
At 31 Dec 2021	24,918	22,414	144,458	(634)	(197)	(22,769)	30,060	198,250	8,527	206,777
At 1 Jan 2020	24,278	20,871	136,679	(108)	(2)	(25,133)	27,370	183,955	8,713	192,668
Profit for the year	—	—	5,229	—	—	—	—	5,229	870	6,099
Other comprehensive income (net of tax)	—	—	1,118	1,913	459	4,758	—	8,248	161	8,409
– debt instruments at fair value through other comprehensive income	—	—	—	1,746	—	—	—	1,746	4	1,750
– equity instruments designated at fair value through other comprehensive income	—	—	—	167		—	—	167	45	212
– cash flow hedges	—	—	—	—	459	—	—	459	12	471
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	—	—	167	—	—	—	—	167	—	167
– remeasurement of defined benefit asset/ liability	—	—	831	—	—	—	—	831	3	834
– share of other comprehensive income of associates and joint ventures	—	—	(73)	—	—	—	—	(73)	—	(73)
– effects of hyperinflation	—	—	193	—	—	—	—	193	—	193
– exchange differences	—	—	—	—	—	4,758	—	4,758	97	4,855
Total comprehensive income for the year	—	—	6,347	1,913	459	4,758	—	13,477	1,031	14,508
Shares issued under employee remuneration and share plans	346	—	(339)	—	—	—	—	7	—	7
Capital securities issued[1]	—	1,500	(3)	—	—	—	—	1,497	—	1,497
Dividends to shareholders	—	—	(1,331)	—	—	—	—	(1,331)	(692)	(2,023)
Redemption of securities[2]	—	—	(1,450)	—	—	—	—	(1,450)	—	(1,450)
Transfers[6]	—	—	435	—	—	—	(435)	—	—	—
Cost of share-based payment arrangements	—	—	434	—	—	—	—	434	—	434
Other movements	—	43	(200)	11	—	—	—	(146)	(500)	(646)
At 31 Dec 2020	24,624	22,414	140,572	1,816	457	(20,375)	26,935	196,443	8,552	204,995

Consolidated statement of changes in equity (continued)

for the year ended 31 December

	Called up share capital and share premium	Other equity instru-ments	Retained earnings[3,4]	Other reserves: Financial assets at FVOCI reserve	Other reserves: Cash flow hedging reserve	Other reserves: Foreign exchange reserve	Other reserves: Merger and other reserves[4,5]	Total share-holders' equity	Non-controlling interests	Total equity
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2019	23,789	22,367	138,191	(1,532)	(206)	(26,133)	29,777	186,253	7,996	194,249
Profit for the year	–	–	7,383	–	–	–	–	7,383	1,325	8,708
Other comprehensive income (net of tax)	–	–	(1,759)	1,424	204	1,000	–	869	148	1,017
– debt instruments at fair value through other comprehensive income	–	–	–	1,146	–	–	–	1,146	6	1,152
– equity instruments designated at fair value through other comprehensive income	–	–	–	278	–	–	–	278	88	366
– cash flow hedges	–	–	–	–	204	–	–	204	2	206
– changes in fair value of financial liabilities designated at fair value due to movement in own credit risk	–	–	(2,002)	–	–	–	–	(2,002)	–	(2,002)
– remeasurement of defined benefit asset/ liability	–	–	5	–	–	–	–	5	8	13
– share of other comprehensive income of associates and joint ventures	–	–	21	–	–	–	–	21	–	21
– effects of hyperinflation	–	–	217	–	–	–	–	217	–	217
– exchange differences	–	–	–	–	–	1,000	–	1,000	44	1,044
Total comprehensive income for the year	–	–	5,624	1,424	204	1,000	–	8,252	1,473	9,725
Shares issued under employee remuneration and share plans	557	–	(495)	–	–	–	–	62	–	62
Shares issued in lieu of dividends and amounts arising thereon	–	–	2,687	–	–	–	–	2,687	–	2,687
Dividends to shareholders	–	–	(11,683)	–	–	–	–	(11,683)	(777)	(12,460)
Redemption of securities[2]	–	(1,496)	(12)	–	–	–	–	(1,508)	–	(1,508)
Transfers[6]	–	–	2,475	–	–	–	(2,475)	–	–	–
Cost of share-based payment arrangements	–	–	478	–	–	–	–	478	–	478
Cancellation of shares[7]	(68)	–	(1,000)	–	–	–	68	(1,000)	–	(1,000)
Other movements	–	–	414	–	–	–	–	414	21	435
At 31 Dec 2019	24,278	20,871	136,679	(108)	(2)	(25,133)	27,370	183,955	8,713	192,668

1 *During 2021, HSBC Holdings issued $2,000m of additional tier 1 instruments on which there were $4m of external issue costs. In 2020, HSBC Holdings issued $1,500m of perpetual subordinated contingent convertible capital securities.*

2 *During 2021, HSBC Holdings redeemed $2,000m 6.875% perpetual subordinated contingent convertible capital securities. For further details, see Note 31 in the* Annual Report and Accounts 2021*. In 2020, HSBC Holdings called and later redeemed $1,450m 6.20% non-cumulative US dollar preference shares. In 2019, HSBC Holdings redeemed $1,500m 5.625% perpetual subordinated capital securities on which there were $12m of external issuance costs. Under IFRSs external issuance costs are classified as equity.*

3 *At 31 December 2021, retained earnings included 558,397,704 treasury shares (2020: 509,825,249; 2019: 432,108,782). In addition, treasury shares are also held within HSBC's Insurance business retirement funds for the benefit of policyholders or beneficiaries within employee trusts for the settlement of shares expected to be delivered under employee share schemes or bonus plans, and the market-making activities in Markets and Security Services.*

4 *Cumulative goodwill amounting to $5,138m has been charged against reserves in respect of acquisitions of subsidiaries prior to 1 January 1998, including $3,469m charged against the merger reserve arising on the acquisition of HSBC Bank plc. The balance of $1,669m has been charged against retained earnings.*

5 *Statutory share premium relief under section 131 of the Companies Act 1985 (the 'Act') was taken in respect of the acquisition of HSBC Bank plc in 1992, HSBC Continental Europe in 2000 and HSBC Finance Corporation in 2003, and the shares issued were recorded at their nominal value only. In HSBC's consolidated financial statements, the fair value differences of $8,290m in respect of HSBC Continental Europe and $12,768m in respect of HSBC Finance Corporation were recognised in the merger reserve. The merger reserve created on the acquisition of HSBC Finance Corporation subsequently became attached to HSBC Overseas Holdings (UK) Limited ('HOHU'), following a number of intra-Group reorganisations. During 2009, pursuant to section 131 of the Companies Act 1985, statutory share premium relief was taken in respect of the rights issue and $15,796m was recognised in the merger reserve.*

6 *Permitted transfers from the merger reserve to retained earnings were made when the investment in HSBC Overseas Holdings (UK) Limited was previously impaired. In the comparative periods, impairments (2020: $435m; 2019: $2,475m) were recognised and a permitted transfer of these amounts was made from the merger reserve to retained earnings. During 2021, a part reversal of these impairments resulted in a transfer from retained earnings back to the merger reserve of $3,065m.*

7 *For further details, see Note 31 in the* Annual Report and Accounts 2021*. In October 2021, HSBC announced a share buy-back of up to $2.0bn, which will be completed no later than April 2022. At 31 December 2021, 120,366,714 ordinary shares had been purchased and cancelled representing a nominal value of $60m, which has been transferred from share capital to capital redemption reserve within merger and other reserves. In August 2019, HSBC announced a share buy-back of up to $1.0bn, which was completed in September 2019.*

HSBC Holdings income statement

for the year ended 31 December

	Notes*	2021 $m	2020 $m	2019 $m
Net interest expense		**(2,367)**	(2,632)	(2,554)
– interest income		**380**	473	1,249
– interest expense		**(2,747)**	(3,105)	(3,803)
Fee (expense)/income		**(5)**	(12)	(2)
Net income from financial instruments held for trading or managed on a fair value basis	3	**110**	801	1,477
Changes in fair value of designated debt and related derivatives[1]	3	**349**	(326)	(360)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	3	**(420)**	1,141	1,659
Dividend income from subsidiaries		**11,404**	8,156	15,117
Other operating income		**230**	1,889	1,293
Total operating income		**9,301**	9,017	16,630
Employee compensation and benefits	5	**(30)**	(56)	(37)
General and administrative expenses		**(1,845)**	(4,276)	(4,772)
Impairment of subsidiaries		**3,065**	(435)	(2,562)
Total operating expenses		**1,190**	(4,767)	(7,371)
Profit before tax		**10,491**	4,250	9,259
Tax (charge)/credit		**343**	(165)	(218)
Profit for the year		**10,834**	4,085	9,041

* *For Notes on the financial statements, see page 318.*

1 *The debt instruments, issued for funding purposes, are designated under the fair value option to reduce an accounting mismatch.*

HSBC Holdings statement of comprehensive income

for the year ended 31 December

	2021 $m	2020 $m	2019 $m
Profit for the year	**10,834**	4,085	9,041
Other comprehensive income/(expense)			
Items that will not be reclassified subsequently to profit or loss:			
Changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	**267**	176	(396)
– before income taxes	**259**	176	(573)
– income taxes	**8**	—	177
Other comprehensive income/(expense) for the year, net of tax	**267**	176	(396)
Total comprehensive income for the year	**11,101**	4,261	8,645

HSBC Holdings balance sheet

	Notes*	31 Dec 2021 $m	31 Dec 2020 $m
Assets			
Cash and balances with HSBC undertakings		**2,590**	2,913
Financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value		**51,408**	65,253
Derivatives	15	**2,811**	4,698
Loans and advances to HSBC undertakings		**25,108**	10,443
Financial investments		**26,194**	17,485
Prepayments, accrued income and other assets		**1,513**	1,445
Current tax assets		**122**	—
Investments in subsidiaries		**163,211**	160,660
Intangible assets		**215**	276
Total assets at 31 Dec		**273,172**	263,173
Liabilities and equity			
Liabilities			
Amounts owed to HSBC undertakings		**111**	330
Financial liabilities designated at fair value	24	**32,418**	25,664
Derivatives	15	**1,220**	3,060
Debt securities in issue	25	**67,483**	64,029
Accruals, deferred income and other liabilities		**4,240**	4,865
Subordinated liabilities	28	**17,059**	17,916
Current tax liabilities		**—**	71
Deferred tax liabilities		**311**	438
Total liabilities		**122,842**	116,373
Equity			
Called up share capital	31	**10,316**	10,347
Share premium account		**14,602**	14,277
Other equity instruments		**22,414**	22,414
Merger and other reserves		**37,882**	34,757
Retained earnings		**65,116**	65,005
Total equity		**150,330**	146,800
Total liabilities and equity at 31 Dec		**273,172**	263,173

* *For Notes on the financial statements, see page 318.*

The accompanying notes on pages 318 to 396 and the audited sections in 'Risk' on pages 120 to 216 (including 'Measurement uncertainty and sensitivity analysis of ECL estimates' on pages 144 to 152), and 'Directors' remuneration report' on pages 254 to 287 form an integral part of these financial statements.

These financial statements were approved by the Board of Directors on 22 February 2022 and signed on its behalf by:

Mark E Tucker
Group Chairman

Ewen Stevenson
Group Chief Financial Officer

HSBC Holdings statement of cash flows

for the year ended 31 December

	2021	2020	2019
	$m	$m	$m
Profit before tax	**10,491**	4,250	9,259
Adjustments for non-cash items	**(2,954)**	442	2,657
– depreciation, amortisation and impairment/expected credit losses	**(2,976)**	87	72
– share-based payment expense	**2**	1	1
– other non-cash items included in profit before tax	**20**	354	2,584
Changes in operating assets and liabilities			
Change in loans to HSBC undertakings	**3,364**	(327)	41,471
Change in financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value	**(4,409)**	(3,289)	(38,451)
Change in net trading securities and net derivatives	**47**	(1,657)	(1,433)
Change in other assets	**(226)**	(633)	(437)
Change in financial investments	**20**	449	(70)
Change in debt securities in issue	**(2,833)**	3,063	1,899
Change in financial liabilities designated at fair value	**(1,396)**	1,258	1,227
Change in other liabilities	**(691)**	1,366	437
Tax received	**32**	270	459
Net cash from operating activities	**1,445**	5,192	17,018
Purchase of financial investments	**(16,966)**	(11,652)	(19,293)
Proceeds from the sale and maturity of financial investments	**16,074**	9,342	6,755
Net cash outflow from acquisition of or increase in stake of subsidiaries	**(1,337)**	(2,558)	(3,721)
Repayment of capital from subsidiaries	**2,000**	1,516	—
Net investment in intangible assets	**(26)**	(33)	(44)
Net cash from investing activities	**(255)**	(3,385)	(16,303)
Issue of ordinary share capital and other equity instruments	**2,334**	1,846	500
Redemption of preference shares and other equity instruments	**(3,450)**	—	—
Purchase of treasury shares	**(28)**	—	—
Cancellation of shares	**(707)**	—	(1,006)
Subordinated loan capital repaid	**—**	(1,500)	(4,107)
Debt securities issued	**19,379**	15,951	10,817
Debt securities repaid	**(5,569)**	(16,577)	—
Dividends paid on ordinary shares	**(4,480)**	—	(7,582)
Dividends paid to holders of other equity instruments	**(1,310)**	(1,331)	(1,414)
Net cash from financing activities	**6,169**	(1,611)	(2,792)
Net increase/(decrease) in cash and cash equivalents	**7,359**	196	(2,077)
Cash and cash equivalents at 1 January	**6,176**	5,980	8,057
Cash and cash equivalents at 31 Dec	**13,535**	6,176	5,980
Cash and cash equivalents comprise:			
– cash at bank with HSBC undertakings	**2,590**	2,913	2,382
– loans and advances to banks of one month or less	**93**	249	102
– treasury and other eligible bills	**10,852**	3,014	3,496

Interest received was $1,636m (2020: $1,952m; 2019: $2,216m), interest paid was $2,724m (2020: $3,166m; 2019: $3,819m) and dividends received were $11,404m (2020: $8,156m; 2019: $15,117m).

HSBC Holdings statement of changes in equity

for the year ended 31 December

	Called up share capital $m	Share premium $m	Other equity instruments $m	Retained earnings[1] $m	Merger and other reserves $m	Total shareholders' equity $m
At 1 Jan 2021	**10,347**	**14,277**	**22,414**	**65,005**	**34,757**	**146,800**
Profit for the year	**—**	**—**	**—**	**10,834**	**—**	**10,834**
Other comprehensive income (net of tax)	**—**	**—**	**—**	**267**	**—**	**267**
– changes in fair value of financial liabilities designated at fair value due to movement in own credit risk	**—**	**—**	**—**	**267**	**—**	**267**
Total comprehensive income for the year	**—**	**—**	**—**	**11,101**	**—**	**11,101**
Shares issued under employee share plans	**29**	**325**	**—**	**(103)**	**—**	**251**
Capital securities issued	**—**	**—**	**2,000**	**(20)**	**—**	**1,980**
Cancellation of shares[2]	**(60)**	**—**	**—**	**(2,004)**	**60**	**(2,004)**
Dividends to shareholders	**—**	**—**	**—**	**(5,790)**	**—**	**(5,790)**
Redemption of capital securities	**—**	**—**	**(2,000)**	**—**	**—**	**(2,000)**
Transfers[3]	**—**	**—**	**—**	**(3,065)**	**3,065**	**—**
Other movements	**—**	**—**	**—**	**(8)**	**—**	**(8)**
At 31 Dec 2021	**10,316**	**14,602**	**22,414**	**65,116**	**37,882**	**150,330**
At 1 Jan 2020	10,319	13,959	20,743	62,484	37,539	145,044
Profit for the year	—	—	—	4,085	—	4,085
Other comprehensive income (net of tax)	—	—	—	176	—	176
– changes in fair value of financial liabilities designated at fair value due to movement in own credit risk	—	—	—	176	—	176
Total comprehensive income for the year	—	—	—	4,261	—	4,261
Shares issued under employee share plans	28	318	—	2,540	(2,347)	539
Capital securities issued	—	—	1,500	(15)	—	1,485
Dividends to shareholders	—	—	—	(1,331)	—	(1,331)
Redemption of capital securities	—	—	—	(1,450)	—	(1,450)
Transfers[3]	—	—	—	435	(435)	—
Other movements[4]	—	—	171	(1,919)	—	(1,748)
At 31 Dec 2020	10,347	14,277	22,414	65,005	34,757	146,800
At 1 Jan 2019	10,180	13,609	22,231	61,434	39,899	147,353
Profit for the year	—	—	—	9,041	—	9,041
Other comprehensive income (net of tax)	—	—	—	(396)	—	(396)
– changes in fair value of financial liabilities designated at fair value due to movement in own credit risk	—	—	—	(396)	—	(396)
Total comprehensive income for the year	—	—	—	8,645	—	8,645
Shares issued under employee share plans	36	521	—	(56)	—	501
Shares issued in lieu of dividends and amounts arising thereon	171	(171)	—	2,687	—	2,687
Cancellation of shares	(68)	—	—	(1,000)	68	(1,000)
Capital securities issued	—	—	—	—	—	—
Dividends to shareholders	—	—	—	(11,683)	—	(11,683)
Redemption of capital securities	—	—	(1,488)	(20)	—	(1,508)
Transfers[3]	—	—	—	2,475	(2,475)	—
Other movements	—	—	—	2	47	49
At 31 Dec 2019	10,319	13,959	20,743	62,484	37,539	145,044

Dividends per ordinary share at 31 December 2021 were $0.22 (2020: nil; 2019: $0.51).

1 *At 31 December 2021, retained earnings included 329,871,829 ($2,542m) treasury shares (2020: 326,766,253 ($2,521m); 2019: 326,191,804 ($2,543m)).*
2 *On 26 October 2021, HSBC announced a share buy-back of up to $2.0bn, which is to be completed no later than 20 April 2022.*
3 *Permitted transfers from the merger reserve to retained earnings were made when the investment in HSBC Overseas Holdings (UK) Limited was previously impaired. In 2021, a part reversal of this impairment resulted in a transfer from retained earnings back to the merger reserve of $3,065m. At 31 December 2020, an additional impairment of $435m (2019: $2,475m) was recognised and a permitted transfer of this amount was made from the merger reserve to retained earnings.*
4 *Includes an adjustment to retained earnings for a repayment of capital by a subsidiary of $1,650m, which had been recognised as dividend income in 2019.*

Notes on the financial statements

1 Basis of preparation and significant accounting policies

1.1 Basis of preparation

(a) Compliance with International Financial Reporting Standards

The consolidated financial statements of HSBC and the separate financial statements of HSBC Holdings comply with UK-adopted international accounting standards and with the requirements of the Companies Act 2006, and have also applied international financial reporting standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union. These financial statements are also prepared in accordance with International Financial Reporting Standards ('IFRSs') as issued by the International Accounting Standards Board ('IASB'), including interpretations issued by the IFRS Interpretations Committee, as there are no applicable differences from IFRSs as issued by the IASB for the periods presented. There were no unendorsed standards effective for the year ended 31 December 2021 affecting these consolidated and separate financial statements.

Standards adopted during the year ended 31 December 2021

There were no new accounting standards or interpretations that had a significant effect on HSBC in 2021. Accounting policies have been consistently applied.

(b) Differences between IFRSs and Hong Kong Financial Reporting Standards

There are no significant differences between IFRSs and Hong Kong Financial Reporting Standards in terms of their application to HSBC, and consequently there would be no significant differences had the financial statements been prepared in accordance with Hong Kong Financial Reporting Standards. The 'Notes on the financial statements', taken together with the 'Report of the Directors', include the aggregate of all disclosures necessary to satisfy IFRSs and Hong Kong reporting requirements.

(c) Future accounting developments

Minor amendments to IFRSs

The IASB has not published any minor amendments effective from 1 January 2021 that are applicable to HSBC. However, the IASB has published a number of minor amendments to IFRSs that are effective from 1 January 2022 and 1 January 2023. HSBC expects they will have an insignificant effect, when adopted, on the consolidated financial statements of HSBC and the separate financial statements of HSBC Holdings.

New IFRSs

IFRS 17 'Insurance Contracts'

IFRS 17 'Insurance Contracts' was issued in May 2017, with amendments to the standard issued in June 2020. The standard sets out the requirements that an entity should apply in accounting for insurance contracts it issues and reinsurance contracts it holds. Following the amendments, IFRS 17 is effective from 1 January 2023. The standard has been endorsed for use in the EU but has not yet been endorsed for use in the UK. The Group is in the process of implementing IFRS 17. Industry practice and interpretation of the standard are still developing. Therefore, the likely financial impact of its implementation remains uncertain. However, we have the following expectations as to the impact compared with our current accounting policy for insurance contracts, which is set out in policy 1.2(j) below:

- Under IFRS 17, there will be no present value of in-force business ('PVIF') asset recognised. Instead the estimated future profit will be included in the measurement of the insurance contract liability as the contractual service margin ('CSM'), representing unearned profit, and this will be gradually recognised in revenue as services are provided over the duration of the insurance contract. While the profit over the life of an individual contract will be unchanged, its emergence will be later under IFRS 17. The removal of the PVIF asset and the recognition of CSM, which is a liability, will reduce equity. The PVIF asset will be eliminated to equity on transition, together with other adjustments to assets and liabilities to reflect IFRS 17 measurement requirements and any consequential amendments to financial assets in the scope of IFRS 9.

- IFRS 17 requires increased use of current market values in the measurement of insurance liabilities. Changes in market conditions for certain products measured under the general measurement approach are immediately recognised in profit or loss, while changes in market conditions for other products measured under the variable fee approach are included in the measurement of CSM.
- In accordance with IFRS 17, directly attributable costs will be incorporated in the CSM and recognised in the results of insurance services as a reduction in reported revenue, as profit is recognised over the duration of insurance contracts. Costs that are not directly attributable will remain in operating expenses. This will result in a reduction in reported operating expenses compared with the current accounting policy.
- We intend to provide an update on the likely financial impacts at or around our 2022 interim results announcement, when we expect that this will be reasonably estimable.

(d) Foreign currencies

HSBC's consolidated financial statements are presented in US dollars because the US dollar and currencies linked to it form the major currency bloc in which HSBC transacts and funds its business. The US dollar is also HSBC Holdings' functional currency because the US dollar and currencies linked to it are the most significant currencies relevant to the underlying transactions, events and conditions of its subsidiaries, as well as representing a significant proportion of its funds generated from financing activities.

Transactions in foreign currencies are recorded at the rate of exchange on the date of the transaction. Assets and liabilities denominated in foreign currencies are translated at the rate of exchange at the balance sheet date, except non-monetary assets and liabilities measured at historical cost, which are translated using the rate of exchange at the initial transaction date. Exchange differences are included in other comprehensive income or in the income statement depending on where the gain or loss on the underlying item is recognised. In the consolidated financial statements, the assets and liabilities of branches, subsidiaries, joint ventures and associates whose functional currency is not US dollars are translated into the Group's presentation currency at the rate of exchange at the balance sheet date, while their results are translated into US dollars at the average rates of exchange for the reporting period. Exchange differences arising are recognised in other comprehensive income. On disposal of a foreign operation, exchange differences previously recognised in other comprehensive income are reclassified to the income statement.

(e) Presentation of information

Certain disclosures required by IFRSs have been included in the sections marked as ('Audited') in the *Annual Report and Accounts 2021* as follows:

- Disclosures concerning the nature and extent of risks relating to insurance contracts and financial instruments are included in the 'Risk review' on pages 120 to 216.
- The 'Own funds disclosure' is included in the 'Risk review' on page 193.
- Disclosures relating to HSBC's securitisation activities and structured products are included in the 'Risk review' on pages 120 to 216.

HSBC follows the UK Finance Disclosure Code. The UK Finance Disclosure Code aims to increase the quality and comparability of UK banks' disclosures and sets out five disclosure principles together with supporting guidance agreed in 2010. In line with the principles of the UK Finance Disclosure Code, HSBC assesses good practice recommendations issued from time to time by relevant regulators and standard setters, and will assess the applicability and relevance of such guidance, enhancing disclosures where appropriate.

(f) Critical accounting estimates and judgements

The preparation of financial information requires the use of estimates and judgements about future conditions. In view of the inherent uncertainties and the high level of subjectivity involved in the recognition or measurement of items, highlighted as the 'critical accounting estimates and judgements' in section 1.2 below, it is possible that the outcomes in the next financial year could differ from those on which management's estimates are based. This could result in materially different estimates and judgements from those reached by management for the purposes of these financial statements. Management's selection of HSBC's accounting policies that contain critical estimates and judgements reflects the materiality of the items to which the policies are applied and the high degree of judgement and estimation uncertainty involved.

(g) Segmental analysis

HSBC's Chief Operating Decision Maker is the Group Chief Executive, who is supported by the rest of the Group Executive Committee ('GEC'), which operates as a general management committee under the direct authority of the Board. Operating segments are reported in a manner consistent with the internal reporting provided to the Group Chief Executive and the GEC.

Measurement of segmental assets, liabilities, income and expenses is in accordance with the Group's accounting policies. Segmental income and expenses include transfers between segments, and these transfers are conducted at arm's length. Shared costs are included in segments on the basis of the actual recharges made.

(h) Going concern

The financial statements are prepared on a going concern basis, as the Directors are satisfied that the Group and parent company have the resources to continue in business for the foreseeable future. In making this assessment, the Directors have considered a wide range of information relating to present and future conditions, including future projections of profitability, cash flows, capital requirements and capital resources. These considerations include stressed scenarios that reflect the uncertainty that the global Covid-19 pandemic has had on HSBC's operations, as well as considering potential impacts from other top and emerging risks, and the related impact on profitability, capital and liquidity.

1.2 Summary of significant accounting policies

(a) Consolidation and related policies

Investments in subsidiaries

Where an entity is governed by voting rights, HSBC consolidates when it holds – directly or indirectly – the necessary voting rights to pass resolutions by the governing body. In all other cases, the assessment of control is more complex and requires judgement of other factors, including having exposure to variability of returns, power to direct relevant activities, and whether power is held as agent or principal.

Business combinations are accounted for using the acquisition method. The amount of non-controlling interest is measured either at fair value or at the non-controlling interest's proportionate share of the acquiree's identifiable net assets. This election is made for each business combination.

HSBC Holdings' investments in subsidiaries are stated at cost less impairment losses.

Goodwill

Goodwill is allocated to cash-generating units ('CGUs') for the purpose of impairment testing, which is undertaken at the lowest level at which goodwill is monitored for internal management purposes. HSBC's CGUs are based on geographical regions subdivided by global business, except for Global Banking and Markets, for which goodwill is monitored on a global basis.

Impairment testing is performed at least once a year, or whenever there is an indication of impairment, by comparing the recoverable amount of a CGU with its carrying amount.

Goodwill is included in a disposal group if the disposal group is a CGU to which goodwill has been allocated or it is an operation within such a CGU. The amount of goodwill included in a disposal group is measured on the basis of the relative values of the operation disposed of and the portion of the CGU retained.

Critical accounting estimates and judgements

The review of goodwill and non-financial assets (see Note 1.2(n)) for impairment reflects management's best estimate of the future cash flows of the CGUs and the rates used to discount these cash flows, both of which are subject to uncertain factors as follows:

Judgements	Estimates
• The accuracy of forecast cash flows is subject to a high degree of uncertainty in volatile market conditions. Where such circumstances are determined to exist, management re-tests goodwill for impairment more frequently than once a year when indicators of impairment exist. This ensures that the assumptions on which the cash flow forecasts are based continue to reflect current market conditions and management's best estimate of future business prospects.	• The future cash flows of the CGUs are sensitive to the cash flows projected for the periods for which detailed forecasts are available and to assumptions regarding the long-term pattern of sustainable cash flows thereafter. Forecasts are compared with actual performance and verifiable economic data, but they reflect management's view of future business prospects at the time of the assessment. • The rates used to discount future expected cash flows can have a significant effect on their valuation, and are based on the costs of equity assigned to individual CGUs. The cost of equity percentage is generally derived from a capital asset pricing model and market implied cost of equity, which incorporates inputs reflecting a number of financial and economic variables, including the risk-free interest rate in the country concerned and a premium for the risk of the business being evaluated. These variables are subject to fluctuations in external market rates and economic conditions beyond management's control. • Key assumptions used in estimating goodwill and non-financial asset impairment are described in Note 21.

HSBC sponsored structured entities

HSBC is considered to sponsor another entity if, in addition to ongoing involvement with the entity, it had a key role in establishing that entity or in bringing together relevant counterparties so the transaction that is the purpose of the entity could occur. HSBC is generally not considered a sponsor if the only involvement with the entity is merely administrative.

Interests in associates and joint arrangements

Joint arrangements are investments in which HSBC, together with one or more parties, has joint control. Depending on HSBC's rights and obligations, the joint arrangement is classified as either a joint operation or a joint venture. HSBC classifies investments in entities over which it has significant influence, and that are neither subsidiaries nor joint arrangements, as associates.

HSBC recognises its share of the assets, liabilities and results in a joint operation. Investments in associates and interests in joint ventures are recognised using the equity method. The attributable share of the results and reserves of joint ventures and associates is included in the consolidated financial statements of HSBC based on either financial statements made up to 31 December or pro-rated amounts adjusted for any material transactions or events occurring between the date the financial statements are available and 31 December.

Investments in associates and joint ventures are assessed at each reporting date and tested for impairment when there is an indication that the investment may be impaired. Goodwill on acquisitions of interests in joint ventures and associates is not tested separately for impairment, but is assessed as part of the carrying amount of the investment.

Critical accounting estimates and judgements

The most significant critical accounting estimates relate to the assessment of impairment of our investment in Bank of Communications Co. Limited ('BoCom'), which involves estimations of value in use:

Judgements	Estimates
	• Management's best estimate of BoCom's earnings are based on management's explicit forecasts over the short to medium term and the capital maintenance charge, which is management's forecast of the earnings that need to be withheld in order for BoCom to meet capital requirements over the forecast period, both of which are subject to uncertain factors. • Key assumptions used in estimating BoCom's value in use, the sensitivity of the value in use calculations to different assumptions and a sensitivity analysis that shows the changes in key assumptions that would reduce the excess of value in use over the carrying amount (the 'headroom') to nil are described in Note 18.

(b) Income and expense

Operating income

Interest income and expense

Interest income and expense for all financial instruments, excluding those classified as held for trading or designated at fair value, are recognised in 'Interest income' and 'Interest expense' in the income statement using the effective interest method. However, as an exception to this, interest on debt instruments issued by HSBC for funding purposes that are designated under the fair value option to reduce an accounting mismatch and on derivatives managed in conjunction with those debt instruments is included in interest expense.

Interest on credit-impaired financial assets is recognised using the rate of interest used to discount the future cash flows for the purpose of measuring the impairment loss.

Non-interest income and expense

HSBC generates fee income from services provided at a fixed price over time, such as account service and card fees, or when HSBC delivers a specific transaction at a point in time, such as broking services and import/export services. With the exception of certain fund management and performance fees, all other fees are generated at a fixed price. Fund management and performance fees can be variable depending on the size of the customer portfolio and HSBC's performance as fund manager. Variable fees are recognised when all uncertainties are resolved. Fee income is generally earned from short-term contracts with payment terms that do not include a significant financing component.

HSBC acts as principal in the majority of contracts with customers, with the exception of broking services. For most brokerage trades, HSBC acts as agent in the transaction and recognises broking income net of fees payable to other parties in the arrangement.

HSBC recognises fees earned on transaction-based arrangements at a point in time when it has fully provided the service to the customer. Where the contract requires services to be provided over time, income is recognised on a systematic basis over the life of the agreement.

Where HSBC offers a package of services that contains multiple non-distinct performance obligations, such as those included in account service packages, the promised services are treated as a single performance obligation. If a package of services contains distinct performance obligations, such as those including both account and insurance services, the corresponding transaction price is allocated to each performance obligation based on the estimated stand-alone selling prices.

Dividend income is recognised when the right to receive payment is established. This is the ex-dividend date for listed equity securities, and usually the date when shareholders approve the dividend for unlisted equity securities.

Net income/(expense) from financial instruments measured at fair value through profit or loss includes the following:

- 'Net income from financial instruments held for trading or managed on a fair value basis': This comprises net trading income, which includes all gains and losses from changes in the fair value of financial assets and financial liabilities held for trading and other financial instruments managed on a fair value basis, together with the related interest income, expense and dividends, excluding the effect of changes in the credit risk of liabilities managed on a fair value basis. It also includes all gains and losses from changes in the fair value of derivatives that are managed in conjunction with financial assets and liabilities measured at fair value through profit or loss.
- 'Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss': This includes interest income, interest expense and dividend income in respect of financial assets and liabilities measured at fair value through profit or loss; and those derivatives managed in conjunction with the above that can be separately identifiable from other trading derivatives.
- 'Changes in fair value of designated debt instruments and related derivatives': Interest paid on debt instruments and interest cash flows on related derivatives is presented in interest expense where doing so reduces an accounting mismatch.
- 'Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss': This includes interest on instruments that fail the solely payments of principal and interest test, see (d) below.

The accounting policies for insurance premium income are disclosed in Note 1.2(j).

(c) Valuation of financial instruments

All financial instruments are initially recognised at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value of a financial instrument on initial recognition is generally its transaction price (that is, the fair value of the consideration given or received). However, if there is a difference between the transaction price and the fair value of financial instruments whose fair value is based on a quoted price in an active market or a valuation technique that uses only data from observable markets, HSBC recognises the difference as a trading gain or loss at inception (a 'day 1 gain or loss'). In all other cases, the entire day 1 gain or loss is deferred and recognised in the income statement over the life of the transaction until the transaction matures, is closed out, the valuation inputs become observable or HSBC enters into an offsetting transaction. The fair value of financial instruments is generally measured on an individual basis. However, in cases where HSBC manages a group of financial assets and liabilities according to its net market or credit risk exposure, the fair value of the group of financial instruments is measured on a net basis but the underlying financial assets and liabilities are presented separately in the financial statements, unless they satisfy the IFRS offsetting criteria.

Critical accounting estimates and judgements

The majority of valuation techniques employ only observable market data. However, certain financial instruments are classified on the basis of valuation techniques that feature one or more significant market inputs that are unobservable, and for them, the measurement of fair value is more judgemental:

Judgements	Estimates
• An instrument in its entirety is classified as valued using significant unobservable inputs if, in the opinion of management, a significant proportion of the instrument's inception profit or greater than 5% of the instrument's valuation is driven by unobservable inputs. • 'Unobservable' in this context means that there is little or no current market data available from which to determine the price at which an arm's length transaction would be likely to occur. It generally does not mean that there is no data available at all upon which to base a determination of fair value (consensus pricing data may, for example, be used).	• Details on the Group's level 3 financial instruments and the sensitivity of their valuation to the effect of applying reasonable possible alternative assumptions in determining their fair value are set out in Note 12.

(d) Financial instruments measured at amortised cost

Financial assets that are held to collect the contractual cash flows and which contain contractual terms that give rise on specified dates to cash flows that are solely payments of principal and interest are measured at amortised cost. Such financial assets include most loans and advances to banks and customers and some debt securities. In addition, most financial liabilities are measured at amortised cost. HSBC accounts for regular way amortised cost financial instruments using trade date accounting. The carrying value of these financial assets at initial recognition includes any directly attributable transactions costs.

HSBC may commit to underwriting loans on fixed contractual terms for specified periods of time. When the loan arising from the lending commitment is expected to be held for trading, the commitment to lend is recorded as a derivative. When HSBC intends to hold the loan, the loan commitment is included in the impairment calculations set out below.

Non-trading reverse repurchase, repurchase and similar agreements

When debt securities are sold subject to a commitment to repurchase them at a predetermined price ('repos'), they remain on the balance sheet and a liability is recorded in respect of the consideration received. Securities purchased under commitments to resell ('reverse repos') are not recognised on the balance sheet and an asset is recorded in respect of the initial consideration paid. Non-trading repos and reverse repos are measured at amortised cost. The difference between the sale and repurchase price or between the purchase and resale price is treated as interest and recognised in net interest income over the life of the agreement.

Contracts that are economically equivalent to reverse repo or repo agreements (such as sales or purchases of debt securities entered into together with total return swaps with the same counterparty) are accounted for similarly to, and presented together with, reverse repo or repo agreements.

(e) Financial assets measured at fair value through other comprehensive income

Financial assets held for a business model that is achieved by both collecting contractual cash flows and selling and which contain contractual terms that give rise on specified dates to cash flows that are solely payments of principal and interest are measured at fair value through other comprehensive income ('FVOCI'). These comprise primarily debt securities. They are recognised on the trade date when HSBC enters into contractual arrangements to purchase and are normally derecognised when they are either sold or redeemed. They are subsequently remeasured at fair value and changes therein (except for those relating to impairment, interest income and foreign currency exchange gains and losses) are recognised in other comprehensive income until the assets are sold. Upon disposal, the cumulative gains or losses in other comprehensive income are recognised in the income statement as 'Gains less losses from financial instruments'. Financial assets measured at FVOCI are included in the impairment calculations set out below and impairment is recognised in profit or loss.

(f) Equity securities measured at fair value with fair value movements presented in other comprehensive income

The equity securities for which fair value movements are shown in other comprehensive income are business facilitation and other similar investments where HSBC holds the investments other than to generate a capital return. Gains or losses on the derecognition of these equity securities are not transferred to profit or loss. Otherwise, equity securities are measured at fair value through profit or loss (except for dividend income, which is recognised in profit or loss).

(g) Financial instruments designated at fair value through profit or loss

Financial instruments, other than those held for trading, are classified in this category if they meet one or more of the criteria set out below and are so designated irrevocably at inception:

- The use of the designation removes or significantly reduces an accounting mismatch.
- A group of financial assets and liabilities or a group of financial liabilities is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy.
- The financial liability contains one or more non-closely related embedded derivatives.

Designated financial assets are recognised when HSBC enters into contracts with counterparties, which is generally on trade date, and are normally derecognised when the rights to the cash flows expire or are transferred. Designated financial liabilities are recognised when HSBC enters into contracts with counterparties, which is generally on settlement date, and are normally derecognised when extinguished. Subsequent changes in fair values are recognised in the income statement in 'Net income from financial instruments held for trading or managed on a fair value basis' or 'Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss' except for the effect of changes in the liabilities' credit risk, which is presented in 'Other comprehensive income', unless that treatment would create or enlarge an accounting mismatch in profit or loss.

Under the above criterion, the main classes of financial instruments designated by HSBC are:

- Debt instruments for funding purposes that are designated to reduce an accounting mismatch: The interest and/or foreign exchange exposure on certain fixed-rate debt securities issued has been matched with the interest and/or foreign exchange exposure on certain swaps as part of a documented risk management strategy.
- Financial assets and financial liabilities under unit-linked and non-linked investment contracts: A contract under which HSBC does not accept significant insurance risk from another party is not classified as an insurance contract, other than investment contracts with discretionary participation features ('DPF'), but is accounted for as a financial liability. Customer liabilities under linked and certain non-linked investment contracts issued by insurance subsidiaries are determined based on the fair value of the assets held in the linked funds. If no fair value designation was made for the related assets, at least some of the assets would otherwise be measured at either fair value through other comprehensive income or amortised cost. The related financial assets and liabilities are managed and reported to management on a fair value basis. Designation at fair value of the financial assets and related liabilities allows changes in fair values to be recorded in the income statement and presented in the same line.
- Financial liabilities that contain both deposit and derivative components: These financial liabilities are managed and their performance evaluated on a fair value basis.

(h) Derivatives

Derivatives are financial instruments that derive their value from the price of underlying items such as equities, interest rates or other indices. Derivatives are recognised initially and are subsequently measured at fair value through profit or loss. Derivatives are classified as assets when their fair value is positive or as liabilities when their fair value is negative. This includes embedded derivatives in financial liabilities, which are bifurcated from the host contract when they meet the definition of a derivative on a stand-alone basis.

Where the derivatives are managed with debt securities issued by HSBC that are designated at fair value, the contractual interest is shown in 'Interest expense' together with the interest payable on the issued debt.

Hedge accounting

When derivatives are not part of fair value designated relationships, if held for risk management purposes they are designated in hedge accounting relationships where the required criteria for documentation and hedge effectiveness are met. HSBC uses these derivatives or, where allowed, other non-derivative hedging instruments in fair value hedges, cash flow hedges or hedges of net investments in foreign operations as appropriate to the risk being hedged.

Fair value hedge

Fair value hedge accounting does not change the recording of gains and losses on derivatives and other hedging instruments, but results in recognising changes in the fair value of the hedged assets or liabilities attributable to the hedged risk that would not otherwise be recognised in the income statement. If a hedge relationship no longer meets the criteria for hedge accounting, hedge accounting is discontinued and the cumulative adjustment to the carrying amount of the hedged item is amortised to the income statement on a recalculated effective interest rate, unless the hedged item has been derecognised, in which case it is recognised in the income statement immediately.

Cash flow hedge

The effective portion of gains and losses on hedging instruments is recognised in other comprehensive income and the ineffective portion of the change in fair value of derivative hedging instruments that are part of a cash flow hedge relationship is recognised immediately in the income statement within 'Net income from financial instruments held for trading or managed on a fair value basis'. The accumulated gains and losses recognised in other comprehensive income are reclassified to the income statement in the same periods in which the hedged item affects profit or loss. When a hedge relationship is discontinued, or partially discontinued, any cumulative gain or loss recognised in other comprehensive income remains in equity until the forecast transaction is recognised in the income statement. When a forecast transaction is no longer expected to occur, the cumulative gain or loss previously recognised in other comprehensive income is immediately reclassified to the income statement.

Net investment hedge

Hedges of net investments in foreign operations are accounted for in a similar way to cash flow hedges. The effective portion of gains and losses on the hedging instrument is recognised in other comprehensive income and other gains and losses are recognised immediately in the income statement. Gains and losses previously recognised in other comprehensive income are reclassified to the income statement on the disposal, or part disposal, of the foreign operation.

Derivatives that do not qualify for hedge accounting

Non-qualifying hedges are derivatives entered into as economic hedges of assets and liabilities for which hedge accounting was not applied.

(i) Impairment of amortised cost and FVOCI financial assets

Expected credit losses ('ECL') are recognised for loans and advances to banks and customers, non-trading reverse repurchase agreements, other financial assets held at amortised cost, debt instruments measured at FVOCI, and certain loan commitments and financial guarantee contracts. At initial recognition, allowance (or provision in the case of some loan commitments and financial guarantees) is required for ECL resulting from default events that are possible within the next 12 months, or less, where the remaining life is less than 12 months ('12-month ECL'). In the event of a significant increase in credit risk, allowance (or provision) is required for ECL resulting from all possible default events over the expected life of the financial instrument ('lifetime ECL'). Financial assets where 12-month ECL is recognised are considered to be 'stage 1'; financial assets that are considered to have experienced a significant increase in credit risk are in 'stage 2'; and financial assets for which there is objective evidence of impairment so are considered to be in default or otherwise credit impaired are in 'stage 3'. Purchased or originated credit-impaired financial assets ('POCI') are treated differently, as set out below.

Credit impaired (stage 3)

HSBC determines that a financial instrument is credit impaired and in stage 3 by considering relevant objective evidence, primarily whether:

- contractual payments of either principal or interest are past due for more than 90 days;
- there are other indications that the borrower is unlikely to pay, such as when a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition; and
- the loan is otherwise considered to be in default.

If such unlikeliness to pay is not identified at an earlier stage, it is deemed to occur when an exposure is 90 days past due, even where regulatory rules permit default to be defined based on 180 days past due. Therefore, the definitions of credit impaired and default are aligned as far as possible so that stage 3 represents all loans that are considered defaulted or otherwise credit impaired.

Interest income is recognised by applying the effective interest rate to the amortised cost amount, i.e. gross carrying amount less ECL allowance.

Write-off

Financial assets (and the related impairment allowances) are normally written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, this is generally after receipt of any proceeds from the realisation of security. In circumstances where the net realisable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier.

Renegotiation

Loans are identified as renegotiated and classified as credit impaired when we modify the contractual payment terms due to significant credit distress of the borrower. Renegotiated loans remain classified as credit impaired until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows and retain the designation of renegotiated until maturity or derecognition.

A loan that is renegotiated is derecognised if the existing agreement is cancelled and a new agreement is made on substantially different terms, or if the terms of an existing agreement are modified such that the renegotiated loan is a substantially different financial instrument. Any new loans that arise following derecognition events in these circumstances are considered to be POCI and will continue to be disclosed as renegotiated loans.

Other than originated credit-impaired loans, all other modified loans could be transferred out of stage 3 if they no longer exhibit any evidence of being credit impaired and, in the case of renegotiated loans, there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows over the minimum observation period, and there are no other indicators of impairment. These loans could be transferred to stage 1 or 2 based on the mechanism as described below by comparing the risk of a default occurring at the reporting date (based on the modified contractual terms) and the risk of a default occurring at initial recognition (based on the original, unmodified contractual terms). Any amount written off as a result of the modification of contractual terms would not be reversed.

Loan modifications other than renegotiated loans

Loan modifications that are not identified as renegotiated are considered to be commercial restructuring. Where a commercial restructuring results in a modification (whether legalised through an amendment to the existing terms or the issuance of a new loan contract) such that HSBC's rights to the cash flows under the original contract have expired, the old loan is derecognised and the new loan is recognised at fair value. The rights to cash flows are generally considered to have expired if the commercial restructure is at market rates and no payment-related concession has been provided. Mandatory and general offer loan modifications that are not borrower-specific, for example market-wide customer relief programmes, have not been classified as renegotiated loans and generally have not resulted in derecognition, but their stage allocation is determined considering all available and supportable information under our ECL impairment policy. Changes made to these financial instruments that are economically equivalent and required by interest rate benchmark reform do not result in the derecognition or a change in the carrying amount of the financial instrument, but instead require the effective interest rate to be updated to reflect the change of the interest rate benchmark.

Significant increase in credit risk (stage 2)

An assessment of whether credit risk has increased significantly since initial recognition is performed at each reporting period by considering the change in the risk of default occurring over the remaining life of the financial instrument. The assessment explicitly or implicitly compares the risk of default occurring at the reporting date compared with that at initial recognition, taking into account reasonable and supportable information, including information about past events, current conditions and future economic conditions. The assessment is unbiased, probability-weighted, and to the extent relevant, uses forward-looking information consistent with that used in the measurement of ECL. The analysis of credit risk is multifactor. The determination of whether a specific factor is relevant and its weight compared with other factors depends on the type of product, the characteristics of the financial instrument and the borrower, and the geographical region. Therefore, it is not possible to provide a single set of criteria that will determine what is considered to be a significant increase in credit risk, and these criteria will differ for different types of lending, particularly between retail and wholesale. However, unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when 30 days past due. In addition, wholesale loans that are individually assessed, which are typically corporate and commercial customers, and included on a watch or worry list, are included in stage 2.

For wholesale portfolios, the quantitative comparison assesses default risk using a lifetime probability of default ('PD'), which encompasses a wide range of information including the obligor's customer risk rating ('CRR'), macroeconomic condition forecasts and credit transition probabilities. For origination CRRs up to 3.3, significant increase in credit risk is measured by comparing the average PD for the remaining term estimated at origination with the equivalent estimation at the reporting date. The quantitative measure of significance varies depending on the credit quality at origination as follows:

Origination CRR	Significance trigger – PD to increase by
0.1–1.2	15bps
2.1–3.3	30bps

For CRRs greater than 3.3 that are not impaired, a significant increase in credit risk is considered to have occurred when the origination PD has doubled. The significance of changes in PD was informed by expert credit risk judgement, referenced to historical credit migrations and to relative changes in external market rates.

For loans originated prior to the implementation of IFRS 9, the origination PD does not include adjustments to reflect expectations of future macroeconomic conditions since these are not available without the use of hindsight. In the absence of this data, origination PD must be approximated assuming through-the-cycle PDs and through-the-cycle migration probabilities, consistent with the instrument's underlying modelling approach and the CRR at origination. For these loans, the quantitative comparison is supplemented with additional CRR deterioration-based thresholds, as set out in the table below:

Origination CRR	Additional significance criteria – number of CRR grade notches deterioration required to identify as significant credit deterioration (stage 2) (> or equal to)
0.1	5 notches
1.1–4.2	4 notches
4.3–5.1	3 notches
5.2–7.1	2 notches
7.2–8.2	1 notch
8.3	0 notch

Further information about the 23-grade scale used for CRR can be found on page 138.

For certain portfolios of debt securities where external market ratings are available and credit ratings are not used in credit risk management, the debt securities will be in stage 2 if their credit risk increases to the extent they are no longer considered investment grade. Investment grade is where the financial instrument has a low risk of incurring losses, the structure has a strong capacity to meet its contractual cash flow obligations in the near term, and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil their contractual cash flow obligations.

For retail portfolios, default risk is assessed using a reporting date 12-month PD derived from credit scores, which incorporates all available information about the customer. This PD is adjusted for the effect of macroeconomic forecasts for periods longer than 12 months and is considered to be a reasonable approximation of a lifetime PD measure. Retail exposures are first segmented into homogeneous portfolios, generally by country, product and brand. Within each portfolio, the stage 2 accounts are defined as accounts with an adjusted 12-month PD greater than the average 12-month PD of loans in that portfolio 12 months before they become 30 days past due. The expert credit risk judgement is that no prior increase in credit risk is significant. This portfolio-specific threshold identifies loans with a PD higher than would be expected from loans that are performing as originally expected, and higher than what would have been acceptable at origination. It therefore approximates a comparison of origination to reporting date PDs.

Unimpaired and without significant increase in credit risk (stage 1)

ECL resulting from default events that are possible within the next 12 months ('12-month ECL') are recognised for financial instruments that remain in stage 1.

Purchased or originated credit impaired

Financial assets that are purchased or originated at a deep discount that reflects the incurred credit losses are considered to be POCI. This population includes the recognition of a new financial instrument following a renegotiation where concessions have been granted for economic or contractual reasons relating to the borrower's financial difficulty that otherwise would not have been considered. The amount of change-in-lifetime ECL is recognised in profit or loss until the POCI is derecognised, even if the lifetime ECL are less than the amount of ECL included in the estimated cash flows on initial recognition.

Movement between stages

Financial assets can be transferred between the different categories (other than POCI) depending on their relative increase in credit risk since initial recognition. Financial instruments are transferred out of stage 2 if their credit risk is no longer considered to be significantly increased since initial recognition based on the assessments described above. Except for renegotiated loans, financial instruments are transferred out of stage 3 when they no longer exhibit any evidence of credit impairment as described above. Renegotiated loans that are not POCI will continue to be in stage 3 until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows, observed over a minimum one-year period and there are no other indicators of impairment. For loans that are assessed for impairment on a portfolio basis, the evidence typically comprises a history of payment performance against the original or revised terms, as appropriate to the circumstances. For loans that are assessed for impairment on an individual basis, all available evidence is assessed on a case-by-case basis.

Measurement of ECL

The assessment of credit risk and the estimation of ECL are unbiased and probability-weighted, and incorporate all available information that is relevant to the assessment including information about past events, current conditions and reasonable and supportable forecasts of future events and economic conditions at the reporting date. In addition, the estimation of ECL should take into account the time value of money.

In general, HSBC calculates ECL using three main components: a probability of default, a loss given default ('LGD') and the exposure at default ('EAD').

The 12-month ECL is calculated by multiplying the 12-month PD, LGD and EAD. Lifetime ECL is calculated using the lifetime PD instead. The 12-month and lifetime PDs represent the probability of default occurring over the next 12 months and the remaining maturity of the instrument respectively.

The EAD represents the expected balance at default, taking into account the repayment of principal and interest from the balance sheet date to the default event together with any expected drawdowns of committed facilities. The LGD represents expected losses on the EAD given the event of default, taking into account, among other attributes, the mitigating effect of collateral value at the time it is expected to be realised and the time value of money.

HSBC makes use of the Basel II IRB framework where possible, with recalibration to meet the differing IFRS 9 requirements as set out in the following table:

Model	Regulatory capital	IFRS 9
PD	• Through the cycle (represents long-run average PD throughout a full economic cycle) • The definition of default includes a backstop of 90+ days past due, although this has been modified to 180+ days past due for some portfolios, particularly UK and US mortgages	• Point in time (based on current conditions, adjusted to take into account estimates of future conditions that will impact PD) • Default backstop of 90+ days past due for all portfolios
EAD	• Cannot be lower than current balance	• Amortisation captured for term products
LGD	• Downturn LGD (consistent losses expected to be suffered during a severe but plausible economic downturn) • Regulatory floors may apply to mitigate risk of underestimating downturn LGD due to lack of historical data • Discounted using cost of capital • All collection costs included	• Expected LGD (based on estimate of loss given default including the expected impact of future economic conditions such as changes in value of collateral) • No floors • Discounted using the original effective interest rate of the loan • Only costs associated with obtaining/selling collateral included
Other		• Discounted back from point of default to balance sheet date

While 12-month PDs are recalibrated from Basel II models where possible, the lifetime PDs are determined by projecting the 12-month PD using a term structure. For the wholesale methodology, the lifetime PD also takes into account credit migration, i.e. a customer migrating through the CRR bands over its life.

The ECL for wholesale stage 3 is determined on an individual basis using a discounted cash flow ('DCF') methodology. The expected future cash flows are based on the credit risk officer's estimates as at the reporting date, reflecting reasonable and supportable assumptions and projections of future recoveries and expected future receipts of interest. Collateral is taken into account if it is likely that the recovery of the outstanding amount will include realisation of collateral based on the estimated fair value of collateral at the time of expected realisation, less costs for obtaining and selling the collateral. The cash flows are discounted at a reasonable approximation of the original effective interest rate. For significant cases, cash flows under four different scenarios are probability-weighted by reference to the economic scenarios applied more generally by the Group and the judgement of the credit risk officer in relation to the likelihood of the workout strategy succeeding or receivership being required. For less significant cases, the effect of different economic scenarios and work-out strategies is approximated and applied as an adjustment to the most likely outcome.

Period over which ECL is measured

Expected credit loss is measured from the initial recognition of the financial asset. The maximum period considered when measuring ECL (be it 12-month or lifetime ECL) is the maximum contractual period over which HSBC is exposed to credit risk. For wholesale overdrafts, credit risk management actions are taken no less frequently than on an annual basis and therefore this period is to the expected date of the next substantive credit review. The date of the substantive credit review also represents the initial recognition of the new facility. However, where the financial instrument includes both a drawn and undrawn commitment and the contractual ability to demand repayment and cancel the undrawn commitment does not serve to limit HSBC's exposure to credit risk to the contractual notice period, the contractual period does not determine the maximum period considered. Instead, ECL is measured over the period HSBC remains exposed to credit risk that is not mitigated by credit risk management actions. This applies to retail overdrafts and credit cards, where the period is the average time taken for stage 2 exposures to default or close as performing accounts, determined on a portfolio basis and ranging from between two and six years. In addition, for these facilities it is not possible to identify the ECL on the loan commitment component separately from the financial asset component. As a result, the total ECL is recognised in the loss allowance for the financial asset unless the total ECL exceeds the gross carrying amount of the financial asset, in which case the ECL is recognised as a provision.

Forward-looking economic inputs

HSBC applies multiple forward-looking global economic scenarios determined with reference to external forecast distributions representative of its view of forecast economic conditions. This approach is considered sufficient to calculate unbiased expected loss in most economic environments. In certain economic environments, additional analysis may be necessary and may result in additional scenarios or adjustments, to reflect a range of possible economic outcomes sufficient for an unbiased estimate. The detailed methodology is disclosed in 'Measurement uncertainty and sensitivity analysis of ECL estimates' on page 144.

Critical accounting estimates and judgements

The calculation of the Group's ECL under IFRS 9 requires the Group to make a number of judgements, assumptions and estimates. The most significant are set out below:

Judgements	Estimates
• Defining what is considered to be a significant increase in credit risk • Determining the lifetime and point of initial recognition of overdrafts and credit cards • Selecting and calibrating the PD, LGD and EAD models, which support the calculations, including making reasonable and supportable judgements about how models react to current and future economic conditions • Selecting model inputs and economic forecasts, including determining whether sufficient and appropriately weighted economic forecasts are incorporated to calculate unbiased expected loss • Making management adjustments to account for late breaking events, model and data limitations and deficiencies, and expert credit judgements	• The section 'Measurement uncertainty and sensitivity analysis of ECL estimates', marked as audited from page 144, sets out the assumptions used in determining ECL, and provides an indication of the sensitivity of the result to the application of different weightings being applied to different economic assumptions

(j) Insurance contracts

A contract is classified as an insurance contract where HSBC accepts significant insurance risk from another party by agreeing to compensate that party on the occurrence of a specified uncertain future event. An insurance contract may also transfer financial risk, but is accounted for as an insurance contract if the insurance risk is significant. In addition, HSBC issues investment contracts with discretionary participation features ('DPF'), which are also accounted for as insurance contracts as required by IFRS 4 'Insurance Contracts'.

Net insurance premium income

Premiums for life insurance contracts are accounted for when receivable, except in unit-linked insurance contracts where premiums are accounted for when liabilities are established. Reinsurance premiums are accounted for in the same accounting period as the premiums for the direct insurance contracts to which they relate.

Net insurance claims and benefits paid and movements in liabilities to policyholders

Gross insurance claims for life insurance contracts reflect the total cost of claims arising during the year, including claim handling costs and any policyholder bonuses allocated in anticipation of a bonus declaration.

Maturity claims are recognised when due for payment. Surrenders are recognised when paid or at an earlier date on which, following notification, the policy ceases to be included within the calculation of the related insurance liabilities. Death claims are recognised when notified.

Reinsurance recoveries are accounted for in the same period as the related claim.

Liabilities under insurance contracts

Liabilities under non-linked life insurance contracts are calculated by each life insurance operation based on local actuarial principles. Liabilities under unit-linked life insurance contracts are at least equivalent to the surrender or transfer value, which is calculated by reference to the value of the relevant underlying funds or indices.

Future profit participation on insurance contracts with DPF

Where contracts provide discretionary profit participation benefits to policyholders, liabilities for these contracts include provisions for the future discretionary benefits to policyholders. These provisions reflect the actual performance of the investment portfolio to date and management's expectation of the future performance of the assets backing the contracts, as well as other experience factors such as mortality, lapses and operational efficiency, where appropriate. The benefits to policyholders may be determined by the contractual terms, regulation, or past distribution policy.

Investment contracts with DPF

While investment contracts with DPF are financial instruments, they continue to be treated as insurance contracts as required by IFRS 4. The Group therefore recognises the premiums for these contracts as revenue and recognises as an expense the resulting increase in the carrying amount of the liability.

In the case of net unrealised investment gains on these contracts, whose discretionary benefits principally reflect the actual performance of the investment portfolio, the corresponding increase in the liabilities is recognised in either the income statement or other comprehensive income, following the treatment of the unrealised gains on the relevant assets. In the case of net unrealised losses, a deferred participating asset is recognised only to the extent that its recoverability is highly probable. Movements in the liabilities arising from realised gains and losses on relevant assets are recognised in the income statement.

Present value of in-force long-term insurance business

HSBC recognises the value placed on insurance contracts and investment contracts with DPF, which are classified as long-term and in-force at the balance sheet date, as an asset. The asset represents the present value of the equity holders' interest in the issuing insurance companies' profits expected to emerge from these contracts written at the balance sheet date. The present value of in-force business ('PVIF') is determined by discounting those expected future profits using appropriate assumptions in assessing factors such as future mortality, lapse rates and levels of expenses, and a risk discount rate that reflects the risk premium attributable to the respective contracts. The PVIF incorporates allowances for both non-market risk and the value of financial options and guarantees. The PVIF asset is presented gross of attributable tax in the balance sheet and movements in the PVIF asset are included in 'Other operating income' on a gross of tax basis.

(k) Employee compensation and benefits

Share-based payments

HSBC enters into both equity-settled and cash-settled share-based payment arrangements with its employees as compensation for the provision of their services.

The vesting period for these schemes may commence before the legal grant date if the employees have started to render services in respect of the award before the legal grant date, where there is a shared understanding of the terms and conditions of the arrangement. Expenses are recognised when the employee starts to render service to which the award relates.

Cancellations result from the failure to meet a non-vesting condition during the vesting period, and are treated as an acceleration of vesting recognised immediately in the income statement. Failure to meet a vesting condition by the employee is not treated as a cancellation, and the amount of expense recognised for the award is adjusted to reflect the number of awards expected to vest.

Post-employment benefit plans

HSBC operates a number of pension schemes including defined benefit, defined contribution and post-employment benefit schemes.

Payments to defined contribution schemes are charged as an expense as the employees render service.

Defined benefit pension obligations are calculated using the projected unit credit method. The net charge to the income statement mainly comprises the service cost and the net interest on the net defined benefit asset or liability, and is presented in operating expenses. Remeasurements of the net defined benefit asset or liability, which comprise actuarial gains and losses, return on plan assets excluding interest and the effect of the asset ceiling (if any, excluding interest), are recognised immediately in other comprehensive income. The net defined benefit asset or liability represents the present value of defined benefit obligations reduced by the fair value of plan assets (see policy (c)), after applying the asset ceiling test, where the net defined benefit surplus is limited to the present value of available refunds and reductions in future contributions to the plan.

The cost of obligations arising from other post-employment plans are accounted for on the same basis as defined benefit pension plans.

Critical accounting estimates and judgements

The most significant critical accounting estimates relate to the determination of key assumptions applied in calculating the defined benefit pension obligation for the principal plan.

Judgements	Estimates
	• A range of assumptions could be applied, and different assumptions could significantly alter the defined benefit obligation and the amounts recognised in profit or loss or OCI. • The calculation of the defined benefit pension obligation includes assumptions with regard to the discount rate, inflation rate, pension payments and deferred pensions, pay and mortality. Management determines these assumptions in consultation with the plan's actuaries. • Key assumptions used in calculating the defined benefit pension obligation for the principal plan and the sensitivity of the calculation to different assumptions are described in Note 5.

(l) Tax

Income tax comprises current tax and deferred tax. Income tax is recognised in the income statement except to the extent that it relates to items recognised in other comprehensive income or directly in equity, in which case the tax is recognised in the same statement as the related item appears.

Current tax is the tax expected to be payable on the taxable profit for the year and on any adjustment to tax payable in respect of previous years. HSBC provides for potential current tax liabilities that may arise on the basis of the amounts expected to be paid to the tax authorities.

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities in the balance sheet, and the amounts attributed to such assets and liabilities for tax purposes. Deferred tax is calculated using the tax rates expected to apply in the periods in which the assets will be realised or the liabilities settled.

Current and deferred tax are calculated based on tax rates and laws enacted, or substantively enacted, by the balance sheet date.

Critical accounting estimates and judgements

The recognition of deferred tax assets depends on judgements and estimates.

Judgements	Estimates
• In assessing the probability and sufficiency of future taxable profit, we consider the availability of evidence to support the recognition of deferred tax assets. taking into account the inherent risk in long-term forecasting and drivers of recent history of tax losses where applicable, taking into account the future reversal of existing taxable temporary differences and tax planning strategies including corporate reorganisations. Specific judgements supporting deferred tax assets are described in Note 7.	The recognition of deferred tax assets is sensitive to estimates of future cash flows projected for periods for which detailed forecasts are available and to assumptions regarding the long-term pattern of cash flows thereafter, on which forecasts of future taxable profit are based, and which affect the expected recovery periods and the pattern of utilisation of tax losses and tax credits. In particular there is estimation uncertainty relating to the recognition of deferred tax on the post-1 April 2017 tax losses of HSBC Holdings plc. See Note 7 for further detail.

(m) Provisions, contingent liabilities and guarantees

Provisions

Provisions are recognised when it is probable that an outflow of economic benefits will be required to settle a present legal or constructive obligation that has arisen as a result of past events and for which a reliable estimate can be made.

Critical accounting estimates and judgements

The recognition and measurement of provisions requires the Group to make a number of judgements, assumptions and estimates. The most significant are set out below:

Judgements	Estimates
• Determining whether a present obligation exists. Professional advice is taken on the assessment of litigation and similar obligations. • Provisions for legal proceedings and regulatory matters typically require a higher degree of judgement than other types of provisions. When matters are at an early stage, accounting judgements can be difficult because of the high degree of uncertainty associated with determining whether a present obligation exists, and estimating the probability and amount of any outflows that may arise. As matters progress, management and legal advisers evaluate on an ongoing basis whether provisions should be recognised, revising previous estimates as appropriate. At more advanced stages, it is typically easier to make estimates around a better defined set of possible outcomes.	• Provisions for legal proceedings and regulatory matters remain very sensitive to the assumptions used in the estimate. There could be a wider range of possible outcomes for any pending legal proceedings, investigations or inquiries. As a result it is often not practicable to quantify a range of possible outcomes for individual matters. It is also not practicable to meaningfully quantify ranges of potential outcomes in aggregate for these types of provisions because of the diverse nature and circumstances of such matters and the wide range of uncertainties involved.

Contingent liabilities, contractual commitments and guarantees

Contingent liabilities

Contingent liabilities, which include certain guarantees and letters of credit pledged as collateral security, and contingent liabilities related to legal proceedings or regulatory matters, are not recognised in the financial statements but are disclosed unless the probability of settlement is remote.

Financial guarantee contracts

Liabilities under financial guarantee contracts that are not classified as insurance contracts are recorded initially at their fair value, which is generally the fee received or present value of the fee receivable.

HSBC Holdings has issued financial guarantees and similar contracts to other Group entities. HSBC elects to account for certain guarantees as insurance contracts in HSBC Holdings' financial statements, in which case they are measured and recognised as insurance liabilities. This election is made on a contract-by-contract basis, and is irrevocable.

(n) Impairment of non-financial assets

Software under development is tested for impairment at least annually. Other non-financial assets are property, plant and equipment, intangible assets (excluding goodwill) and right-of-use assets. They are tested for impairment at the individual asset level when there is indication of impairment at that level, or at the CGU level for assets that do not have a recoverable amount at the individual asset level. In addition, impairment is also tested at the CGU level when there is indication of impairment at that level. For this purpose, CGUs are considered to be the principal operating legal entities divided by global business.

Impairment testing compares the carrying amount of the non-financial asset or CGU with its recoverable amount, which is the higher of the fair value less costs of disposal or the value in use. The carrying amount of a CGU comprises the carrying value of its assets and liabilities, including non-financial assets that are directly attributable to it and non-financial assets that can be allocated to it on a reasonable and consistent basis. Non-financial assets that cannot be allocated to an individual CGU are tested for impairment at an appropriate grouping of CGUs. The recoverable amount of the CGU is the higher of the fair value less costs of disposal of the CGU, which is determined by independent and qualified valuers where relevant, and the value in use, which is calculated based on appropriate inputs (see Note 21).

When the recoverable amount of a CGU is less than its carrying amount, an impairment loss is recognised in the income statement to the extent that the impairment can be allocated on a pro-rata basis to the non-financial assets by reducing their carrying amounts to the higher of their respective individual recoverable amount or nil. Impairment is not allocated to the financial assets in a CGU.

Impairment loss recognised in prior periods for non-financial assets is reversed when there has been a change in the estimate used to determine the recoverable amount. The impairment loss is reversed to the extent that the carrying amount of the non-financial assets would not exceed the amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised in prior periods.

Critical accounting estimates and judgements

The review of goodwill and other non-financial assets for impairment reflects management's best estimate of the future cash flows of the CGUs and the rates used to discount these cash flows, both of which are subject to uncertain factors as described in the Critical accounting estimates and judgements in Note 1.2(a).

2 Net fee income

Net fee income by global business

	2021				
	Wealth and Personal Banking	**Commercial Banking**	**Global Banking and Markets**	**Corporate Centre**	**Total**
	$m	**$m**	**$m**	**$m**	**$m**
Funds under management	**1,984**	**126**	**546**	**—**	**2,656**
Cards	**1,949**	**240**	**23**	**1**	**2,213**
Credit facilities	**103**	**833**	**690**	**1**	**1,627**
Broking income	**863**	**69**	**669**	**—**	**1,601**
Account services	**429**	**677**	**340**	**6**	**1,452**
Unit trusts	**1,065**	**23**	**—**	**—**	**1,088**
Underwriting	**4**	**6**	**1,009**	**(2)**	**1,017**
Global custody	**167**	**24**	**787**	**—**	**978**
Remittances	**75**	**357**	**343**	**—**	**775**
Imports/exports	**1**	**474**	**145**	**—**	**620**
Insurance agency commission	**324**	**17**	**—**	**—**	**341**
Other	**1,305**	**1,077**	**2,503**	**(2,465)**	**2,420**
Fee income	**8,269**	**3,923**	**7,055**	**(2,459)**	**16,788**
Less: fee expense	**(2,375)**	**(284)**	**(3,452)**	**2,420**	**(3,691)**
Net fee income	**5,894**	**3,639**	**3,603**	**(39)**	**13,097**

	2020					2019
	Wealth and Personal Banking	Commercial Banking	Global Banking and Markets	Corporate Centre	Total	Total
	$m	$m	$m	$m	$m	$m
Funds under management	1,686	126	477	—	2,289	2,177
Cards	1,564	360	25	—	1,949	1,975
Credit facilities	93	740	626	—	1,459	1,618
Broking income	862	61	616	—	1,539	1,057
Account services	431	598	264	—	1,293	2,003
Unit trusts	881	18	—	—	899	1,035
Underwriting	5	9	1,002	(1)	1,015	829
Global custody	189	22	723	—	934	717
Remittances	77	313	288	(1)	677	747
Imports/exports	—	417	160	—	577	662
Insurance agency commission	307	17	1	—	325	377
Other	1,123	893	2,369	(2,290)	2,095	2,242
Fee income	7,218	3,574	6,551	(2,292)	15,051	15,439
Less: fee expense	(1,810)	(349)	(3,284)	2,266	(3,177)	(3,416)
Net fee income	5,408	3,225	3,267	(26)	11,874	12,023

Net fee income included $6,742m of fees earned on financial assets that were not at fair value through profit or loss, other than amounts included in determining the effective interest rate (2020: $5,858m; 2019: $6,647m), $1,520m of fees payable on financial liabilities that were not at fair value through profit or loss, other than amounts included in determining the effective interest rate (2020: $1,260m; 2019: $1,450m), $3,849m of fees earned on trust and other fiduciary activities (2020: $3,426m; 2019: $3,110m) and $305m of fees payable relating to trust and other fiduciary activities (2020: $267m; 2019: $237m).

3 Net income from financial instruments measured at fair value through profit or loss

	2021	2020	2019
	$m	$m	$m
Net income/(expense) arising on:			
Net trading activities	**6,668**	11,074	16,121
Other instruments managed on a fair value basis	**1,076**	(1,492)	(5,890)
Net income from financial instruments held for trading or managed on a fair value basis	**7,744**	9,582	10,231
Financial assets held to meet liabilities under insurance and investment contracts	**4,134**	2,481	3,830
Liabilities to customers under investment contracts	**(81)**	(400)	(352)
Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	**4,053**	2,081	3,478
Derivatives managed in conjunction with HSBC's issued debt securities	**(2,811)**	2,619	2,561
Other changes in fair value	**2,629**	(2,388)	(2,471)
Changes in fair value of designated debt and related derivatives[1]	**(182)**	231	90
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**798**	455	812
Year ended 31 Dec	**12,413**	12,349	14,611

1 *The debt instruments, issued for funding purposes, are designated under the fair value option to reduce an accounting mismatch.*

HSBC Holdings

	2021	2020	2019
	$m	$m	$m
Net income/(expense) arising on:			
– trading activities	**87**	(336)	(559)
– other instruments managed on a fair value basis	**23**	1,137	2,036
Net income from financial instruments held for trading or managed on a fair value basis	**110**	801	1,477
Derivatives managed in conjunction with HSBC Holdings-issued debt securities	**(625)**	694	764
Other changes in fair value	**974**	(1,020)	(1,124)
Changes in fair value of designated debt and related derivatives	**349**	(326)	(360)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**(420)**	1,141	1,659
Year ended 31 Dec	**39**	1,616	2,776

4 Insurance business

Net insurance premium income

	Non-linked insurance	Linked life insurance	Investment contracts with DPF[1]	Total
	$m	$m	$m	$m
Gross insurance premium income	**8,529**	**1,027**	**1,873**	**11,429**
Reinsurers' share of gross insurance premium income	**(555)**	**(4)**	**–**	**(559)**
Year ended 31 Dec 2021	**7,974**	**1,023**	**1,873**	**10,870**
Gross insurance premium income	8,321	579	1,563	10,463
Reinsurers' share of gross insurance premium income	(362)	(8)	—	(370)
Year ended 31 Dec 2020	7,959	571	1,563	10,093
Gross insurance premium income	9,353	489	2,266	12,108
Reinsurers' share of gross insurance premium income	(1,465)	(7)	—	(1,472)
Year ended 31 Dec 2019	7,888	482	2,266	10,636

1 *Discretionary participation features.*

Net insurance claims and benefits paid and movement in liabilities to policyholders

	Non-linked insurance	Linked life insurance	Investment contracts with DPF[1]	Total
	$m	$m	$m	$m
Gross claims and benefits paid and movement in liabilities	**10,474**	**1,134**	**3,332**	**14,940**
– claims, benefits and surrenders paid	**2,929**	**1,023**	**2,142**	**6,094**
– movement in liabilities	**7,545**	**111**	**1,190**	**8,846**
Reinsurers' share of claims and benefits paid and movement in liabilities	**(543)**	**(9)**	**–**	**(552)**
– claims, benefits and surrenders paid	**(343)**	**(7)**	**–**	**(350)**
– movement in liabilities	**(200)**	**(2)**	**–**	**(202)**
Year ended 31 Dec 2021	**9,931**	**1,125**	**3,332**	**14,388**
Gross claims and benefits paid and movement in liabilities	10,050	1,112	1,853	13,015
– claims, benefits and surrenders paid	3,695	900	2,083	6,678
– movement in liabilities	6,355	212	(230)	6,337
Reinsurers' share of claims and benefits paid and movement in liabilities	(366)	(4)	—	(370)
– claims, benefits and surrenders paid	(430)	(10)	—	(440)
– movement in liabilities	64	6	—	70
Year ended 31 Dec 2020	9,684	1,108	1,853	12,645
Gross claims and benefits paid and movement in liabilities	11,305	1,217	3,810	16,332
– claims, benefits and surrenders paid	3,783	900	1,921	6,604
– movement in liabilities	7,522	317	1,889	9,728
Reinsurers' share of claims and benefits paid and movement in liabilities	(1,402)	(4)	—	(1,406)
– claims, benefits and surrenders paid	(411)	(17)	—	(428)
– movement in liabilities	(991)	13	—	(978)
Year ended 31 Dec 2019	9,903	1,213	3,810	14,926

1 *Discretionary participation features.*

Liabilities under insurance contracts

	Non-linked insurance	Linked life insurance	Investment contracts with DPF[1]	Total
	$m	$m	$m	$m
Gross liabilities under insurance contracts at 1 Jan 2021	**72,464**	**6,449**	**28,278**	**107,191**
Claims and benefits paid	**(2,929)**	**(1,023)**	**(2,142)**	**(6,094)**
Increase in liabilities to policyholders	**10,474**	**1,134**	**3,332**	**14,940**
Exchange differences and other movements[2]	**(534)**	**(47)**	**(2,711)**	**(3,292)**
Gross liabilities under insurance contracts at 31 Dec 2021	**79,475**	**6,513**	**26,757**	**112,745**
Reinsurers' share of liabilities under insurance contracts	**(3,638)**	**(30)**	**—**	**(3,668)**
Net liabilities under insurance contracts at 31 Dec 2021	**75,837**	**6,483**	**26,757**	**109,077**
Gross liabilities under insurance contracts at 1 Jan 2020	65,324	6,151	25,964	97,439
Claims and benefits paid	(3,695)	(900)	(2,083)	(6,678)
Increase in liabilities to policyholders	10,050	1,112	1,853	13,015
Exchange differences and other movements[2]	785	86	2,544	3,415
Gross liabilities under insurance contracts at 31 Dec 2020	72,464	6,449	28,278	107,191
Reinsurers' share of liabilities under insurance contracts	(3,434)	(14)	—	(3,448)
Net liabilities under insurance contracts at 31 Dec 2020	69,030	6,435	28,278	103,743

1 *Discretionary participation features.*
2 *'Exchange differences and other movements' includes movements in liabilities arising from net unrealised investment gains recognised in other comprehensive income.*

The key factors contributing to the movement in liabilities to policyholders included movements in the market value of assets supporting policyholder liabilities, death claims, surrenders, lapses, new business, the declaration of bonuses and other amounts attributable to policyholders.

5 Employee compensation and benefits

	2021	2020	2019
	$m	$m	$m
Employee compensation and benefits	**18,742**	18,076	18,002
Capitalised wages and salaries	**870**	1,320	1,475
Gross employee compensation and benefits for the year ended 31 Dec	**19,612**	19,396	19,477
Consists of:			
Wages and salaries	**17,072**	17,072	17,056
Social security costs	**1,503**	1,378	1,472
Post-employment benefits	**1,037**	946	949
Year ended 31 Dec	**19,612**	19,396	19,477

Employee compensation and benefits are presented net of software capitalisation costs in the income statement. During 2021, the allocation methodology for internally capitalised software costs between 'employee compensation and benefits' and 'general administrative expenses' has been updated to better reflect the underlying costs being capitalised.

Average number of persons employed by HSBC during the year by global business

	2021	2020	2019
Wealth and Personal Banking	**138,026**	144,615	148,680
Commercial Banking	**44,992**	45,631	46,584
Global Banking and Markets	**48,179**	49,055	51,313
Corporate Centre	**359**	411	478
Year ended 31 Dec	**231,556**	239,712	247,055

Average number of persons employed by HSBC during the year by geographical region

	2021	2020	2019
Europe	**60,919**	64,886	66,392
Asia	**127,673**	129,923	133,624
Middle East and North Africa	**9,329**	9,550	9,798
North America	**13,845**	15,430	16,615
Latin America	**19,790**	19,923	20,626
Year ended 31 Dec	**231,556**	239,712	247,055

Reconciliation of total incentive awards granted to income statement charge

	2021	2020	2019
	$m	$m	$m
Total incentive awards approved for the current year	**3,495**	2,659	3,341
Less: deferred bonuses awarded, expected to be recognised in future periods	**(379)**	(239)	(337)
Total incentives awarded and recognised in the current year	**3,116**	2,420	3,004
Add: current year charges for deferred bonuses from previous years	**270**	286	327
Other	**4**	2	(55)
Income statement charge for incentive awards	**3,390**	2,708	3,276

Share-based payments

'Wages and salaries' includes the effect of share-based payments arrangements, of which $467m was equity settled (2020: $434m; 2019: $478m), as follows:

	2021	2020	2019
	$m	$m	$m
Conditional share awards	**479**	411	521
Savings-related and other share award option plans	**27**	51	30
Year ended 31 Dec	**506**	462	551

HSBC share awards

Award	Policy
Deferred share awards (including annual incentive awards, LTI awards delivered in shares) and Group Performance Share Plans ('GPSP')	An assessment of performance over the relevant period ending on 31 December is used to determine the amount of the award to be granted. • Deferred awards generally require employees to remain in employment over the vesting period and are generally not subject to performance conditions after the grant date. An exception to these are the LTI awards, which are subject to performance conditions. • Deferred share awards generally vest over a period of three, five or seven years. • Vested shares may be subject to a retention requirement post-vesting. • Awards are subject to malus and clawback provisions.
International Employee Share Purchase Plan ('ShareMatch')	The plan was first introduced in Hong Kong in 2013 and now includes employees based in 28 jurisdictions. • Shares are purchased in the market each quarter up to a maximum value of £750, or the equivalent in local currency. • Matching awards are added at a ratio of one free share for every three purchased (in mainland China matching awards are settled in cash). • Matching awards vest subject to continued employment and the retention of the purchased shares for a maximum period of two years and nine months.

Movement on HSBC share awards

	2021	2020
	Number	Number
	(000s)	(000s)
Conditional share awards outstanding at 1 Jan	**103,473**	97,055
Additions during the year	**75,549**	72,443
Released in the year	**(63,635)**	(60,673)
Forfeited in the year	**(6,023)**	(5,352)
Conditional share awards outstanding at 31 Dec	**109,364**	103,473
Weighted average fair value of awards granted ($)	**6.49**	7.28

HSBC share option plans

Main plans	Policy
Savings-related share option plans ('Sharesave')	• From 2014, employees eligible for the UK plan could save up to £500 per month with the option to use the savings to acquire shares. • These are generally exercisable within six months following either the third or fifth anniversary of the commencement of a three-year or five-year contract, respectively. • The exercise price is set at a 20% (2020: 20%) discount to the market value immediately preceding the date of invitation.

Calculation of fair values

The fair values of share options are calculated using a Black-Scholes model. The fair value of a share award is based on the share price at the date of the grant.

Movement on HSBC share option plans

	Savings-related share option plans	
	Number (000s)	WAEP[1] £
Outstanding at 1 Jan 2021	**130,953**	**2.97**
Granted during the year[2]	**15,410**	**3.15**
Exercised during the year[3]	**(3,878)**	**3.80**
Expired during the year	**(11,502)**	**3.53**
Forfeited during the year	**(7,786)**	**3.97**
Outstanding at 31 Dec 2021	**123,197**	**2.85**
– of which exercisable	***4,949***	***4.05***
Weighted average remaining contractual life (years)	**3.02**	
Outstanding at 1 Jan 2020	65,060	4.81
Granted during the year[2]	111,469	2.63
Exercised during the year[3]	(1,387)	4.48
Expired during the year	(43,032)	4.81
Forfeited during the year	(1,158)	4.88
Outstanding at 31 Dec 2020	130,953	2.97
– of which exercisable	*8,170*	*4.50*
Weighted average remaining contractual life (years)	3.68	

1 *Weighted average exercise price.*
2 *The weighted average fair value of options granted during the year was $0.85 (2020: $0.47).*
3 *The weighted average share price at the date the options were exercised was $5.87 (2020: $7.08).*

Post-employment benefit plans

The Group operates pension plans throughout the world for its employees. 'Pension risk management processes' on page 192 contains details of the policies and practices associated with these pension plans, some of which are defined benefit plans. The largest defined benefit plan is the HBUK section of the HSBC Bank (UK) Pension Scheme ('the principal plan'), created as a result of the HSBC Bank (UK) Pension Scheme being fully sectionalised in 2018 to meet the requirements of the Banking Reform Act.

HSBC holds on its balance sheet the net surplus or deficit, which is the difference between the fair value of plan assets and the discounted value of scheme liabilities at the balance sheet date for each plan. Surpluses are only recognised to the extent that they are recoverable through reduced contributions in the future or through potential future refunds from the schemes. In assessing whether a surplus is recoverable, HSBC has considered its current right to obtain a future refund or a reduction in future contributions together with the rights of third parties such as trustees.

The principal plan

The principal plan has a defined benefit section and a defined contribution section. The defined benefit section was closed to future benefit accrual in 2015, with defined benefits earned by employees at that date continuing to be linked to their salary while they remain employed by HSBC. The plan is overseen by an independent corporate trustee, who has a fiduciary responsibility for the operation of the plan. Its assets are held separately from the assets of the Group.

The investment strategy of the plan is to hold the majority of assets in bonds, with the remainder in a diverse range of investments. It also includes some interest rate swaps to reduce interest rate risk, inflation swaps to reduce inflation risk and longevity swaps to reduce the impact of longer life expectancy.

The latest funding valuation of the plan at 31 December 2019 was carried out by Colin G Singer of Willis Towers Watson Limited, who is a Fellow of the UK Institute and Faculty of Actuaries, using the projected unit credit method. At that date, the market value of the plan's assets was £31.1bn ($41.1bn) and this exceeded the value placed on its liabilities on an ongoing basis by £2.5bn ($3.3bn), giving a funding level of 109%. These figures include defined contribution assets amounting to £2.4bn ($3.2bn). The main differences between the assumptions used for assessing the defined benefit liabilities for this funding valuation and those used for IAS 19 are more prudent assumptions for discount rate, inflation rate and life expectancy. The next funding valuation will have an effective date of 31 December 2022.

Although the plan was in surplus at the valuation date, HSBC continued to make separately committed lump sum contributions and the final such contribution of £160m ($218m) was paid in 2021. The main employer of the principal plan is HSBC UK Bank plc, with additional support from HSBC Holdings plc. The HSBC Bank (UK) Pension Scheme is fully sectionalised and no entities outside the ring fence participate in the HBUK section.

The actuary also assessed the value of the liabilities if the plan were to have been stopped and an insurance company asked to secure all future pension payments. This is generally larger than the amount needed on the ongoing basis described above because an insurance company would use more prudent assumptions and include an explicit allowance for the future administrative expenses of the plan. Under this approach, the amount of assets needed was estimated to be £33bn ($44bn) at 31 December 2019.

Guaranteed minimum pension equalisation

Following a judgment issued by the High Court of Justice of England and Wales in 2018, we estimated the financial effect of equalising benefits in respect of guaranteed minimum pension ('GMP') equalisation, and any potential conversion of GMPs into non-GMP benefits, to be an approximate 0.9% increase in the principal plan's liabilities, or £187m ($239m). This was recognised in the income statement in 2018. A further judgment by the High Court on 20 November 2020 ruled that GMPs should also be equalised for those who had previously transferred benefits from the principal plan to another arrangement, with £13m ($17m) consequently being recognised in 2020. We continue to assess the impact of GMP equalisation.

Income statement charge

	2021	2020	2019
	$m	$m	$m
Defined benefit pension plans	243	146	176
Defined contribution pension plans	767	775	758
Pension plans	**1,010**	921	934
Defined benefit and contribution healthcare plans	27	25	15
Year ended 31 Dec	**1,037**	946	949

Net assets/(liabilities) recognised on the balance sheet in respect of defined benefit plans

	Fair value of plan assets	Present value of defined benefit obligations	Effect of limit on plan surpluses	Total
	$m	$m	$m	$m
Defined benefit pension plans	51,431	(42,277)	(23)	9,131
Defined benefit healthcare plans	103	(572)	—	(469)
At 31 Dec 2021	**51,534**	**(42,849)**	**(23)**	**8,662**
Total employee benefit liabilities (within Note 26 'Accruals, deferred income and other liabilities')				(1,607)
Total employee benefit assets (within Note 22 'Prepayments, accrued income and other assets')				**10,269**
Defined benefit pension plans	52,990	(43,995)	(44)	8,951
Defined benefit healthcare plans	114	(639)	—	(525)
At 31 Dec 2020	53,104	(44,634)	(44)	8,426
Total employee benefit liabilities (within Note 26 'Accruals, deferred income and other liabilities')				(2,025)
Total employee benefit assets (within Note 22 'Prepayments, accrued income and other assets')				10,450

HSBC Holdings

Employee compensation and benefit expense in respect of HSBC Holdings' employees in 2021 amounted to $30m (2020: $56m). The average number of persons employed during 2021 was 54 (2020: 59). A small number of employees are members of defined benefit pension plans. These employees are members of the HSBC Bank (UK) Pension Scheme. HSBC Holdings pays contributions to such plan for its own employees in accordance with the schedules of contributions determined by the trustees of the plan and recognises these contributions as an expense as they fall due.

Defined benefit pension plans

Net asset/(liability) under defined benefit pension plans

	Fair value of plan assets		Present value of defined benefit obligations		Effect of the asset ceiling		Net defined benefit asset/(liability)	
	Principal[1] plan	Other plans	Principal[1] plan	Other plans	Principal[1] plan	Other plans	Principal[1] plan	Other plans
	$m	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2021	**42,505**	**10,485**	**(33,005)**	**(10,990)**	**—**	**(44)**	**9,500**	**(549)**
Service cost	**—**	**—**	**(55)**	**(276)**	**—**	**—**	**(55)**	**(276)**
– current service cost	**—**	**—**	**(14)**	**(206)**	**—**	**—**	**(14)**	**(206)**
– past service cost and gains/(losses) from settlements	**—**	**—**	**(41)**	**(70)**	**—**	**—**	**(41)**	**(70)**
Net interest income/(cost) on the net defined benefit asset/(liability)	**613**	**172**	**(473)**	**(174)**	**—**	**(1)**	**140**	**(3)**
Remeasurement effects recognised in other comprehensive income	**(377)**	**7**	**(271)**	**471**	**—**	**22**	**(648)**	**500**
– return on plan assets (excluding interest income)	**(377)**	**7**	**—**	**—**	**—**	**—**	**(377)**	**7**
– actuarial gains/(losses) financial assumptions	**—**	**—**	**611**	**315**	**—**	**—**	**611**	**315**
– actuarial gains/(losses) demographic assumptions	**—**	**—**	**(447)**	**64**	**—**	**—**	**(447)**	**64**
– actuarial gains/(losses) experience adjustments	**—**	**—**	**(435)**	**92**	**—**	**—**	**(435)**	**92**
– other changes	**—**	**—**	**—**	**—**	**—**	**22**	**—**	**22**
Exchange differences	**(361)**	**(94)**	**283**	**138**	**—**	**—**	**(78)**	**44**
Benefits paid	**(1,396)**	**(645)**	**1,396**	**712**	**—**	**—**	**—**	**67**
Other movements[2]	**400**	**122**	**(130)**	**97**	**—**	**—**	**270**	**219**
At 31 Dec 2021	**41,384**	**10,047**	**(32,255)**	**(10,022)**	**—**	**(23)**	**9,129**	**2**
At 1 Jan 2020	37,874	9,693	(30,158)	(10,424)	—	(16)	7,716	(747)
Service cost	—	—	(68)	(172)	—	—	(68)	(172)
– current service cost	—	—	(28)	(184)	—	—	(28)	(184)
– past service cost and losses from settlements	—	—	(40)	12	—	—	(40)	12
Net interest income/(cost) on the net defined benefit asset/(liability)	726	233	(575)	(245)	—	—	151	(12)
Remeasurement effects recognised in other comprehensive income	3,173	879	(2,118)	(547)	—	(26)	1,055	306
– return on plan assets (excluding interest income)	3,173	692	—	—	—	—	3,173	692
– actuarial gains/(losses) financial assumptions	—	—	(3,179)	(564)	—	—	(3,179)	(564)
– actuarial gains/(losses) demographic assumptions	—	—	86	49	—	—	86	49
– actuarial gains/(losses) experience adjustments	—	—	975	87	—	—	975	87
– other changes	—	187	—	(119)	—	(26)	—	42
Exchange differences	1,446	249	(1,100)	(387)	—	(2)	346	(140)
Benefits paid	(1,148)	(652)	1,148	727	—	—	—	75
Other movements[2]	434	83	(134)	58	—	—	300	141
At 31 Dec 2020	42,505	10,485	(33,005)	(10,990)	—	(44)	9,500	(549)

1 *For further details of the principal plan, see page 333.*
2 *Other movements include contributions by HSBC, contributions by employees, administrative costs and taxes paid by plan.*

HSBC expects to make $145m of contributions to defined benefit pension plans during 2022. Benefits expected to be paid from the plans to retirees over each of the next five years, and in aggregate for the five years thereafter, are as follows:

Benefits expected to be paid from plans

	2022	2023	2024	2025	2026	2027-2031
	$m	$m	$m	$m	$m	$m
The principal plan[1,2]	1,444	1,491	1,542	1,592	1,644	9,070
Other plans[1]	474	473	460	459	453	2,325

1 *The duration of the defined benefit obligation is 17.3 years for the principal plan under the disclosure assumptions adopted (2020: 17.4 years) and 12.7 years for all other plans combined (2020: 13.5 years).*
2 *For further details of the principal plan, see page 333.*

Fair value of plan assets by asset classes

	31 Dec 2021				31 Dec 2020			
	Value	Quoted market price in active market	No quoted market price in active market	Thereof HSBC[1]	Value	Quoted market price in active market	No quoted market price in active market	Thereof HSBC[1]
	$m	$m	$m	$m	$m	$m	$m	$m
The principal plan[2]								
Fair value of plan assets	**41,384**	**36,270**	**5,114**	**1,037**	42,505	37,689	4,816	973
– equities[3]	**197**	**5**	**192**	**—**	268	7	261	—
– bonds[4]	**36,295**	**35,612**	**683**	**—**	36,198	35,479	719	—
– derivatives	**1,864**	**—**	**1,864**	**1,037**	1,973	—	1,973	973
– property	**1,094**	**—**	**1,094**	**—**	1,106	—	1,106	—
– other[5]	**1,934**	**653**	**1,281**	**—**	2,960	2,203	757	—
Other plans								
Fair value of plan assets	**10,047**	**8,248**	**1,799**	**52**	10,485	9,512	973	54
– equities	**892**	**668**	**224**	**5**	1,484	1,069	415	3
– bonds	**7,080**	**6,490**	**590**	**5**	7,624	7,143	481	10
– derivatives	**7**	**(13)**	**20**	**—**	(57)	—	(57)	—
– property	**123**	**119**	**4**	**—**	192	157	35	—
– other	**1,945**	**984**	**961**	**42**	1,242	1,143	99	41

1 The fair value of plan assets includes derivatives entered into with HSBC Bank plc as detailed in Note 35.
2 For further details on the principal plan, see page 333.
3 Includes $192m (2020: $261m) in relation to private equities.
4 Principal plan bonds includes fixed income bonds of $18,315m (2020: $17,730m) and index-linked bonds of $18,160m (2020: $18,468m).
5 Other includes $0m (2020: $696m) of pooled investment vehicles with quoted underlying assets and $1,281m (2020: $757m) of pooled investment vehicles with unquoted underlying assets.

Post-employment defined benefit plans' principal actuarial financial assumptions

HSBC determines the discount rates to be applied to its obligations in consultation with the plans' local actuaries, on the basis of current average yields of high-quality (AA-rated or equivalent) debt instruments with maturities consistent with those of the defined benefit obligations.

Key actuarial assumptions for the principal plan[1]

	Discount rate	Inflation rate (RPI)[2]	Inflation rate (CPI)[2]	Rate of increase for pensions	Rate of pay increase
	%	%	%	%	%
UK					
At 31 Dec 2021	**1.90**	**3.45**	**3.20**	**3.30**	**3.45**
At 31 Dec 2020	1.45	3.05	2.50	3.00	2.75

1 For further details on the principal plan, see page 333.
2 Due to the significant difference between short-term and long-term inflation expectations that has developed over 2021, HSBC UK has changed the methodology of setting inflation-related assumptions to fully and separately reflect how benefits are linked to RPI inflation and CPI inflation respectively. For example, the revaluation of deferred pensions is driven by CPI inflation expectations in the short to medium term, whereas increases to pensions in payment are driven by RPI inflation expectations over the long term.

Mortality tables and average life expectancy at age 60 for the principal plan[1]

	Mortality table	Life expectancy at age 60 for a male member currently:		Life expectancy at age 60 for a female member currently:	
		Aged 60	Aged 40	Aged 60	Aged 40
UK					
At 31 Dec 2021	**SAPS S3[2]**	**27.3**	**28.8**	**28.5**	**30.1**
At 31 Dec 2020	SAPS S3[2]	27.0	28.5	28.1	29.7

1 For further details of the principal plan, see page 333.
2 Self-administered pension scheme ('SAPS') S3 table, with different tables and multipliers adopted based on gender, pension amount and member status, reflecting the Scheme's actual mortality experience. Improvements are projected in accordance with the Continuous Mortality Investigation's CMI 2020 core projection model with an initial addition to improvement of 0.25% per annum and a long-term rate of improvement of 1.25% per annum.

The effect of changes in key assumptions on the principal plan[1]

	Impact on HBUK section of the HSBC Bank (UK) Pension Scheme obligation[2]			
	Financial impact of increase		Financial impact of decrease	
	2021	2020	**2021**	2020
	$m	$m	**$m**	$m
Discount rate – increase/decrease of 0.25%	**(1,337)**	(1,383)	**1,425**	1,475
Inflation rate (RPI and CPI) – increase/decrease of 0.25%	**1,211**	871	**(980)**	(830)
Pension payments and deferred pensions – increase/decrease of 0.25%	**1,267**	1,307	**(1,177)**	(1,222)
Pay – increase/decrease of 0.25%	**20**	60	**(20)**	(59)
Change in mortality – increase of 1 year	**1,387**	1,453	**N/A**	N/A

1 For further details of the principal plan, see page 333.
2 Sensitivities allow for HSBC UK's convention of rounding pension assumptions to the nearest 0.05%.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this in unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions the same method (present value of the defined benefit obligation calculated with the projected unit credit method at the end of the reporting period) has been applied as when calculating the defined benefit asset recognised in the balance sheet. The methods and types of assumptions used in preparing the sensitivity analysis did not change compared with the prior period.

Directors' emoluments

Details of Directors' emoluments, pensions and their interests are disclosed in the Directors' remuneration report on page 254.

6 Auditor's remuneration

	2021	2020	2019
	$m	$m	$m
Audit fees payable to PwC[1]	**88.1**	92.9	85.2
Other audit fees payable	**2.0**	1.0	0.9
Year ended 31 Dec	**90.1**	93.9	86.1

Fees payable by HSBC to PwC

	2021	2020	2019
	$m	$m	$m
Fees for HSBC Holdings' statutory audit[2]	**19.5**	21.9	15.7
Fees for other services provided to HSBC	**109.9**	108.3	95.0
– audit of HSBC's subsidiaries	**68.6**	71.0	69.5
– audit-related assurance services[3]	**18.7**	17.2	10.0
– other assurance services[4,5]	**22.6**	20.1	12.2
– taxation compliance services	**—**	—	1.6
– other non-audit services[4]	**—**	—	1.7
Year ended 31 Dec	**129.4**	130.2	110.7

1 *Audit fees payable to PwC in the current year include adjustments made to the prior year audit fee after finalisation of the 2020 financial statements.*
2 *Fees payable to PwC for the statutory audit of the consolidated financial statements of HSBC and the separate financial statements of HSBC Holdings. They include amounts payable for services relating to the consolidation returns of HSBC Holdings' subsidiaries, which are clearly identifiable as being in support of the Group audit opinion.*
3 *Including services for assurance and other services that relate to statutory and regulatory filings, including interim reviews.*
4 *Including permitted services relating to attestation reports on internal controls of a service organisation primarily prepared for and used by third-party end user, including comfort letters.*
5 *Includes reviews of PRA regulatory reporting returns.*

No fees were payable by HSBC to PwC as principal auditor for the following types of services: internal audit services and services related to litigation, recruitment and remuneration.

Fees payable by HSBC's associated pension schemes to PwC

	2021	2020	2019
	$000	$000	$000
Audit of HSBC's associated pension schemes	**382**	316	250
Year ended 31 Dec	**382**	316	250

No fees were payable by HSBC's associated pension schemes to PwC as principal auditor for the following types of services: internal audit services, other assurance services, services related to corporate finance transactions, valuation and actuarial services, litigation, recruitment and remuneration, and information technology.

In addition to the above, the estimated fees paid to PwC by third parties associated with HSBC amounted to $6.3m (2020: $12.3m; 2019: $17.2m). In these cases, HSBC was connected with the contracting party and may therefore have been involved in appointing PwC. These fees arose from services such as auditing mutual funds managed by HSBC and reviewing the financial position of corporate concerns that borrow from HSBC.

Fees payable for non-audit services for HSBC Holdings are not disclosed separately because such fees are disclosed on a consolidated basis for the Group.

7 Tax

Tax expense

	2021	2020	2019
	$m	$m	$m
Current tax[1]	**3,250**	2,700	3,768
– for this year	**3,182**	2,883	3,689
– adjustments in respect of prior years	**68**	(183)	79
Deferred tax	**963**	(22)	871
– origination and reversal of temporary differences	**874**	(341)	684
– effect of changes in tax rates	**132**	58	(11)
– adjustments in respect of prior years	**(43)**	261	198
Year ended 31 Dec[2]	**4,213**	2,678	4,639

1 *Current tax included Hong Kong profits tax of $813m (2020: $888m; 2019: $1,413m). The Hong Kong tax rate applying to the profits of subsidiaries assessable in Hong Kong was 16.5% (2020: 16.5%; 2019: 16.5%).*
2 *In addition to amounts recorded in the income statement, a tax charge of $7m (2020: charge of $7m) was recorded directly to equity.*

Tax reconciliation

The tax charged to the income statement differs from the tax charge that would apply if all profits had been taxed at the UK corporation tax rate as follows:

	2021		2020		2019	
	$m	%	$m	%	$m	%
Profit before tax	**18,906**		8,777		13,347	
Tax expense						
Taxation at UK corporation tax rate of 19.00%	**3,592**	**19.0**	1,668	19.0	2,536	19.0
Impact of differently taxed overseas profits in overseas locations	**280**	**1.5**	178	2.0	253	1.9
UK banking surcharge	**332**	**1.8**	(113)	(1.3)	29	0.2
Items increasing tax charge in 2021:						
– impact of differences between French tax basis and IFRSs	**434**	**2.3**	—	—	—	—
– local taxes and overseas withholding taxes	**360**	**1.9**	228	2.6	484	3.6
– UK tax losses not recognised	**294**	**1.6**	444	5.1	364	2.7
– other permanent disallowables	**254**	**1.3**	322	3.6	481	3.6
– non-deductible goodwill write-down	**178**	**0.9**	—	—	1,421	10.7
– impact of changes in tax rates	**132**	**0.7**	58	0.6	(11)	(0.1)
– bank levy	**93**	**0.5**	202	2.3	184	1.4
– impacts of hyperinflation	**68**	**0.4**	65	0.7	29	0.2
– adjustments in respect of prior period liabilities	**25**	**0.1**	78	0.9	277	2.1
– non-deductible regulatory settlements	**2**	**—**	33	0.4	5	—
Items reducing tax charge in 2021:						
– non-taxable income and gains	**(641)**	**(3.4)**	(515)	(5.8)	(844)	(6.3)
– tax impact of planned sale of French retail banking business	**(434)**	**(2.3)**	—	—	—	—
– effect of profits in associates and joint ventures	**(414)**	**(2.2)**	(250)	(2.8)	(467)	(3.5)
– deductions for AT1 coupon payments	**(270)**	**(1.4)**	(310)	(3.5)	(263)	(2.0)
– non-UK movements in unrecognised deferred tax	**(67)**	**(0.4)**	608	6.9	12	0.1
– non-deductible UK customer compensation	**(5)**	**—**	(18)	(0.2)	382	2.9
– non-taxable gain on dilution of shareholding in SABB	**—**	**—**	—	—	(181)	(1.3)
– other items	**—**	**—**	—	—	(52)	(0.4)
Year ended 31 Dec	**4,213**	**22.3**	2,678	30.5	4,639	34.8

The Group's profits are taxed at different rates depending on the country or territory in which the profits arise. The key applicable tax rates for 2021 include Hong Kong (16.5%), the US (21%) and the UK (19%). If the Group's profits were taxed at the statutory rates of the countries in which the profits arose, then the tax rate for the year would have been 22.3% (2020: 19.7%). The effective tax rate for the year of 22.3% was lower than in the previous year (2020: 30.5%). The impact of non-recognition of deferred tax was smaller in 2021 than in 2020, which decreased the effective tax rate by 10.8%. This was partly offset by changes in the geographical composition of profits, which resulted in tax at applicable local statutory rates being 2.5% greater for 2020 than for 2021.

The signing of a framework agreement for the planned sale of the French retail banking business resulted in a tax deduction (tax value of $434m) for a provision for loss on disposal, which was recorded in the French tax return. A deferred tax liability of the same amount arises as a consequence of the temporary difference between the French tax basis and IFRSs in respect of this provision.

During 2021, legislation to increase the main rate of UK corporation tax from 19% to 25% from 1 April 2023 was enacted, increasing the Group's 2021 tax charge by $132m due to the remeasurement of deferred tax balances.

Accounting for taxes involves some estimation because tax law is uncertain and its application requires a degree of judgement, which authorities may dispute. Liabilities are recognised based on best estimates of the probable outcome, taking into account external advice where appropriate. We do not expect significant liabilities to arise in excess of the amounts provided. HSBC only recognises current and deferred tax assets where recovery is probable.

Movement of deferred tax assets and liabilities

	Loan impairment provisions	Unused tax losses and tax credits	Derivatives, FVOD[1] and other investments	Insurance business	Expense provisions	Fixed assets	Retirement obligations	Other	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Assets	**1,242**	**1,821**	**548**	**—**	**565**	**901**	**—**	**960**	**6,037**
Liabilities	**—**	**—**	**(705)**	**(1,622)**	**—**	**—**	**(2,306)**	**(1,234)**	**(5,867)**
At 1 Jan 2021	**1,242**	**1,821**	**(157)**	**(1,622)**	**565**	**901**	**(2,306)**	**(274)**	**170**
Income statement	**(89)**	**161**	**22**	**(43)**	**(333)**	**(26)**	**(336)**	**(319)**	**(963)**
Other comprehensive income	**(5)**	**33**	**149**	**—**	**74**	**25**	**(205)**	**713**	**784**
Foreign exchange and other adjustments	**14**	**(14)**	**(5)**	**25**	**(10)**	**3**	**28**	**(81)**	**(40)**
At 31 Dec 2021	**1,162**	**2,001**	**9**	**(1,640)**	**296**	**903**	**(2,819)**	**39**	**(49)**
Assets[2]	**1,162**	**2,001**	**9**	**—**	**296**	**903**	**109**	**742**	**5,222**
Liabilities[2]	**—**	**—**	**—**	**(1,640)**	**—**	**—**	**(2,928)**	**(703)**	**(5,271)**
Assets	983	1,414	979	—	650	1,002	—	422	5,450
Liabilities	—	—	(558)	(1,621)	—	—	(1,613)	(401)	(4,193)
At 1 Jan 2020	983	1,414	421	(1,621)	650	1,002	(1,613)	21	1,257
Income statement	295	355	(274)	(32)	(81)	(112)	(190)	61	22
Other comprehensive income	—	—	(23)	—	—	—	(387)	(660)	(1,070)
Foreign exchange and other adjustments	(36)	52	(281)	31	(4)	11	(116)	304	(39)
At 31 Dec 2020	1,242	1,821	(157)	(1,622)	565	901	(2,306)	(274)	170
Assets[2]	1,242	1,821	548	—	565	901	—	960	6,037
Liabilities[2]	—	—	(705)	(1,622)	—	—	(2,306)	(1,234)	(5,867)

1 *Fair value of own debt.*
2 *After netting off balances within countries, the balances as disclosed in the accounts are as follows: deferred tax assets $4,624m (2020: $4,483m) and deferred tax liabilities $4,673m (2020: $4,313m).*

In applying judgement in recognising deferred tax assets, management has critically assessed all available information, including future business profit projections and the track record of meeting forecasts. Management's assessment of the likely availability of future taxable profits against which to recover deferred tax assets is based on the most recent financial forecasts approved by management, which cover a five-year period and are extrapolated where necessary, and takes into consideration the reversal of existing taxable temporary differences and past business performance.

The Group's net deferred tax asset of $4.6bn (2020: $4.5bn) included $2.6bn (2020: $2.4bn) of deferred tax assets relating to the US and a net deferred asset of $0.0bn (2020: $0.00) in France.

The net US deferred tax asset of $2.6bn included $1.1bn related to US tax losses that expire in 13 to 17 years. Management expects the US deferred tax asset to be substantially recovered in seven to eight years, with the majority recovered in the first five years.

The net deferred tax asset in France of $0.0bn included $0.4bn related to tax losses which are expected to be substantially recovered within 10 years.

Following the signing of a framework agreement in 2021 for the planned sale of the French retail banking business, that business is now excluded from our deferred tax analysis as its sale is considered probable. Although the French consolidated tax group recorded a tax loss in both 2020 and 2021, this would have been taxable profit if the effects of the retail banking business and other non-recurring items, mainly related to the restructuring of the European business, were excluded. The French net deferred tax asset is supported by forecasts of taxable profit, also taking into consideration the history of profitability in the remaining businesses. No net deferred tax asset was recognised as at 31 December 2020 as management did not consider there to be convincing evidence of sufficient future taxable profits within the French consolidated tax group to support recognition.

The Group's net deferred tax liability of $4.7bn (2020: $4.3bn) included a net UK deferred tax asset of $0.8bn (2020: $0.6bn), of which $0.2bn related to UK banking tax losses which are expected to be substantially recovered within one year. The net UK deferred tax asset of $0.8bn excludes a $3.0bn deferred tax liability arising on the UK pension scheme surplus, the reversal of which is not taken into account when estimating future taxable profits. The UK deferred tax assets are supported by forecasts of taxable profit, also taking into consideration the history of profitability in the relevant businesses.

Unrecognised deferred tax

The amount of gross temporary differences, unused tax losses and tax credits for which no deferred tax asset is recognised in the balance sheet was $16.9bn (2020: $15.6bn). This amount included unused UK tax losses of $10.5bn (2020: $9.3bn), of which $5.8bn (2020: $4.3bn) arose after 1 April 2017 and can be recovered against the future taxable profits of any of the Group's UK tax resident subsidiaries. The remaining balance can only be recovered against future taxable profits of HSBC Holdings plc. No deferred tax was recognised on any of these losses due to the absence of convincing evidence regarding the availability of sufficient future taxable profits against which to recover them, taking into account the recent history of taxable losses within the UK group. Deferred tax asset recognition is reassessed at each balance sheet date based on the available evidence. Of the total amounts unrecognised, $10.9bn (2020: $11.5bn) had no expiry date, $0.7bn (2020: $0.7bn) was scheduled to expire within 10 years and the remaining balance is expected to expire after 10 years.

Deferred tax is not recognised in respect of the Group's investments in subsidiaries and branches where HSBC is able to control the timing of remittance or other realisation and where remittance or realisation is not probable in the foreseeable future. The aggregate temporary differences relating to unrecognised deferred tax liabilities arising on investments in subsidiaries and branches is $12.7bn (2020: $12.1bn) and the corresponding unrecognised deferred tax liability was $0.8bn (2020: $0.7bn).

8 Dividends

Dividends to shareholders of the parent company

	2021			2020			2019		
	Per share	**Total**	**Settled in scrip**	Per share	Total	Settled in scrip	Per share	Total	Settled in scrip
	$	**$m**	**$m**	$	$m	$m	$	$m	$m
Dividends paid on ordinary shares									
In respect of previous year:									
– fourth interim dividend / interim dividend	**0.15**	**3,059**	**—**	—	—	—	0.21	4,206	1,160
In respect of current year:									
– first interim dividend	**0.07**	**1,421**	**—**	—	—	—	0.10	2,013	375
– second interim dividend	**—**	**—**	**—**	—	—	—	0.10	2,021	795
– third interim dividend	**—**	**—**	**—**	—	—	—	0.10	2,029	357
Total	**0.22**	**4,480**	**—**	—	—	—	0.51	10,269	2,687
Total dividends on preference shares classified as equity (paid quarterly)[1]	**4.99**	**7**		62.00	90		62.00	90	
Total coupons on capital securities classified as equity		**1,303**			1,241			1,324	
Dividends to shareholders		**5,790**			1,331			11,683	

1 *HSBC Holdings called $1,450m 6.20% non-cumulative US dollar preference shares on 10 December 2020. The security was redeemed and cancelled on 13 January 2021.*

Total coupons on capital securities classified as equity

		2021		2020	2019
			Total	Total	Total
	First call date	**Per security**	**$m**	$m	$m
Perpetual subordinated contingent convertible securities,[1,2]					
$1,500m issued at 5.625%[2]	Nov 2019	**$56.250**	**—**	—	84
$2,000m issued at 6.875%[3]	Jun 2021	**$68.750**	**69**	138	138
$2,250m issued at 6.375%	Sep 2024	**$63.750**	**143**	143	143
$2,450m issued at 6.375%	Mar 2025	**$63.750**	**156**	156	156
$3,000m issued at 6.000%	May 2027	**$60.000**	**180**	180	180
$2,350m issued at 6.250%	Mar 2023	**$62.500**	**147**	147	147
$1,800m issued at 6.500%	Mar 2028	**$65.000**	**117**	117	117
$1,500m issued at 4.600%[4]	Jun 2031	**$46.000**	**69**	—	—
$1,000m issued at 4.000%[5]	Mar 2026	**$40.000**	**20**	—	—
$1,000m issued at 4.700%[6]	Mar 2031	**$47.000**	**24**	—	—
€1,500m issued at 5.250%	Sep 2022	**€52.500**	**93**	90	88
€1,000m issued at 6.000%	Sep 2023	**€60.000**	**70**	67	66
€1,250m issued at 4.750%	July 2029	**€47.500**	**72**	67	68
£1,000m issued at 5.875%	Sep 2026	**£58.750**	**80**	74	75
SGD1,000m issued at 4.700%	Jun 2022	**SGD47.000**	**35**	35	34
SGD750m issued at 5.000%	Sep 2023	**SGD50.000**	**28**	27	28
Total			**1,303**	1,241	1,324

1 *Discretionary coupons are paid semi-annually on the perpetual subordinated contingent convertible securities, in denominations of each security's issuance currency 1,000 per security.*
2 *This security was called by HSBC Holdings on 22 November 2019 and was redeemed and cancelled on 17 January 2020. Between the date of exercise of the call option and the redemption, this security was considered to be a subordinated liability. For further details on additional tier 1 securities, see Note 31.*
3 *This security was called by HSBC Holdings on 15 April 2021 and was redeemed and cancelled on 1 June 2021.*
4 *This security was issued by HSBC Holdings on 17 December 2020. The first call date commences six calendar months prior to the reset date of 17 June 2031.*
5 *This security was issued by HSBC Holdings on 9 March 2021. The first call date commences six calendar months prior to the reset date of 9 September 2026.*
6 *This security was issued by HSBC Holdings on 9 March 2021. The first call date commences six calendar months prior to the reset date of 9 September 2031.*

After the end of the year, the Directors approved a second interim dividend in respect of the financial year ended 31 December 2021 of $0.18 per ordinary share, a distribution of approximately $3,649m. The second interim dividend for 2021 will be payable on 28 April 2022 to holders on the Principal Register in the UK, the Hong Kong Overseas Branch Register or the Bermuda Overseas Branch Register on 11 March 2022. No liability was recorded in the financial statements in respect of the second interim dividend for 2021.

On 4 January 2022, HSBC paid a coupon on its €1,250m subordinated capital securities, representing a total distribution of €30m ($34m). No liability was recorded in the balance sheet at 31 December 2021 in respect of this coupon payment.

9 Earnings per share

Basic earnings per ordinary share is calculated by dividing the profit attributable to ordinary shareholders of the parent company by the weighted average number of ordinary shares outstanding, excluding own shares held. Diluted earnings per ordinary share is calculated by dividing the basic earnings, which require no adjustment for the effects of dilutive potential ordinary shares, by the weighted average number of ordinary shares outstanding, excluding own shares held, plus the weighted average number of ordinary shares that would be issued on conversion of dilutive potential ordinary shares.

Profit attributable to the ordinary shareholders of the parent company

	2021	2020	2019
	$m	$m	$m
Profit attributable to shareholders of the parent company	13,917	5,229	7,383
Dividend payable on preference shares classified as equity	(7)	(90)	(90)
Coupon payable on capital securities classified as equity	(1,303)	(1,241)	(1,324)
Year ended 31 Dec	12,607	3,898	5,969

Basic and diluted earnings per share

	2021			2020			2019		
	Profit	Number of shares	Per share	Profit	Number of shares	Per share	Profit	Number of shares	Per share
	$m	(millions)	$	$m	(millions)	$	$m	(millions)	$
Basic[1]	12,607	20,197	0.62	3,898	20,169	0.19	5,969	20,158	0.30
Effect of dilutive potential ordinary shares		105			73			75	
Diluted[1]	12,607	20,302	0.62	3,898	20,242	0.19	5,969	20,233	0.30

1 *Weighted average number of ordinary shares outstanding (basic) or assuming dilution (diluted).*

The number of anti-dilutive employee share options excluded from the weighted average number of dilutive potential ordinary shares is 8.6 million (2020: 14.6 million; 2019: 1.1 million).

10 Segmental analysis

The Group Chief Executive, supported by the rest of the Group Executive Committee ('GEC'), is considered the Chief Operating Decision Maker ('CODM') for the purposes of identifying the Group's reportable segments. Global business results are assessed by the CODM on the basis of adjusted performance that removes the effects of significant items and currency translation from reported results. Therefore, we present these results on an adjusted basis as required by IFRSs. The 2020 and 2019 adjusted performance information is presented on a constant currency basis. The 2020 and 2019 income statements are converted at the average rates of exchange for 2021, and the balance sheets at 31 December 2020 and 31 December 2019 at the prevailing rates of exchange on 31 December 2021.

Our operations are closely integrated and, accordingly, the presentation of data includes internal allocations of certain items of income and expense. These allocations include the costs of certain support services and global functions to the extent that they can be meaningfully attributed to global businesses. While such allocations have been made on a systematic and consistent basis, they necessarily involve a degree of subjectivity. Costs that are not allocated to global businesses are included in Corporate Centre.

Where relevant, income and expense amounts presented include the results of inter-segment funding along with inter-company and inter-business line transactions. All such transactions are undertaken on arm's length terms. The intra-Group elimination items for the global businesses are presented in Corporate Centre.

Our global businesses

We provide a comprehensive range of banking and related financial services to our customers in our three global businesses. The products and services offered to customers are organised by these global businesses.

- Wealth and Personal Banking ('WPB') provides a full range of retail banking and wealth products to our customers from personal banking to ultra high net worth individuals. Typically, customer offerings include retail banking products, such as current and savings accounts, mortgages and personal loans, credit cards, debit cards and local and international payment services. We also provide wealth management services, including insurance and investment products, global asset management services, investment management and private wealth solutions for customers with more sophisticated and international requirements.
- Commercial Banking ('CMB') offers a broad range of products and services to serve the needs of our commercial customers, including small and medium-sized enterprises, mid-market enterprises and corporates. These include credit and lending, international trade and receivables finance, treasury management and liquidity solutions (payments and cash management and commercial cards), commercial insurance and investments. CMB also offers customers access to products and services offered by other global businesses, such as Global Banking and Markets, which include foreign exchange products, raising capital on debt and equity markets and advisory services.
- Global Banking and Markets ('GBM') provides tailored financial solutions to major government, corporate and institutional clients and private investors worldwide. The client-focused business lines deliver a full range of banking capabilities including financing, advisory and transaction services, a markets business that provides services in credit, rates, foreign exchange, equities, money markets and securities services, and principal investment activities.

HSBC adjusted profit before tax and balance sheet data

	2021				
	Wealth and Personal Banking	Commercial Banking	Global Banking and Markets	Corporate Centre	Total
	$m	$m	$m	$m	$m
Net operating income/(expense) before change in expected credit losses and other credit impairment charges[1]	**22,110**	**13,415**	**15,002**	**(437)**	**50,090**
– external	**21,753**	**13,294**	**16,558**	**(1,515)**	**50,090**
– inter-segment	**357**	**121**	**(1,556)**	**1,078**	**—**
of which: net interest income/(expense)	***14,198***	***8,898***	***4,122***	***(739)***	***26,479***
Change in expected credit losses and other credit impairment recoveries	**288**	**300**	**337**	**3**	**928**
Net operating income/(expense)	**22,398**	**13,715**	**15,339**	**(434)**	**51,018**
Total operating expenses	**(15,384)**	**(6,973)**	**(10,006)**	**215**	**(32,148)**
Operating profit/(loss)	**7,014**	**6,742**	**5,333**	**(219)**	**18,870**
Share of profit in associates and joint ventures	**34**	**1**	**—**	**3,011**	**3,046**
Adjusted profit before tax	**7,048**	**6,743**	**5,333**	**2,792**	**21,916**
	%	**%**	**%**	**%**	**%**
Share of HSBC's adjusted profit before tax	**32.2**	**30.8**	**24.3**	**12.7**	**100.0**
Adjusted cost efficiency ratio	**69.6**	**52.0**	**66.7**	**49.2**	**64.2**
Adjusted balance sheet data	**$m**	**$m**	**$m**	**$m**	**$m**
Loans and advances to customers (net)	**488,786**	**349,126**	**207,162**	**740**	**1,045,814**
Interests in associates and joint ventures	**499**	**13**	**126**	**28,971**	**29,609**
Total external assets	**932,582**	**622,925**	**1,229,820**	**172,612**	**2,957,939**
Customer accounts	**859,029**	**506,688**	**344,205**	**652**	**1,710,574**

	2020				
Net operating income/(expense) before change in expected credit losses and other credit impairment charges[1]	22,571	13,718	15,768	(287)	51,770
– external	20,474	14,114	18,651	(1,469)	51,770
– inter-segment	2,097	(396)	(2,883)	1,182	—
– *of which: net interest income/(expense)*	*15,470*	*9,560*	*4,580*	*(1,337)*	*28,273*
Change in expected credit losses and other credit impairment (charges)/recoveries	(3,005)	(4,989)	(1,289)	1	(9,282)
Net operating income/(expense)	19,566	8,729	14,479	(286)	42,488
Total operating expenses	(15,443)	(6,897)	(9,640)	(429)	(32,409)
Operating profit/(loss)	4,123	1,832	4,839	(715)	10,079
Share of profit in associates and joint ventures	7	(1)	—	2,186	2,192
Adjusted profit before tax	4,130	1,831	4,839	1,471	12,271
	%	%	%	%	%
Share of HSBC's adjusted profit before tax	33.7	14.9	39.4	12.0	100.0
Adjusted cost efficiency ratio	68.4	50.3	61.1	(149.5)	62.6
Adjusted balance sheet data	$m	$m	$m	$m	$m
Loans and advances to customers (net)	462,286	338,193	220,692	1,231	1,022,402
Interests in associates and joint ventures	444	13	141	26,472	27,070
Total external assets	869,924	562,125	1,319,389	187,189	2,938,627
Customer accounts	823,991	464,380	331,164	593	1,620,128

	2019				
Net operating income/(expense) before change in expected credit losses and other credit impairment charges[1]	26,140	15,594	15,282	(581)	56,435
– external	21,777	16,522	20,782	(2,646)	56,435
– inter-segment	4,363	(928)	(5,500)	2,065	—
– *of which: net interest income/(expense)*	*17,820*	*11,242*	*5,309*	*(3,338)*	*31,033*
Change in expected credit losses and other credit impairment (charges)/recoveries	(1,376)	(1,194)	(155)	38	(2,687)
Net operating income/(expense)	24,764	14,400	15,127	(543)	53,748
Total operating expenses	(15,823)	(7,028)	(9,891)	(821)	(33,563)
Operating profit/(loss)	8,941	7,372	5,236	(1,364)	20,185
Share of profit in associates and joint ventures	54	1	1	2,440	2,496
Adjusted profit before tax	8,995	7,373	5,237	1,076	22,681
	%	%	%	%	%
Share of HSBC's adjusted profit before tax	39.7	32.5	23.1	4.7	100.0
Adjusted cost efficiency ratio	60.5	45.1	64.7	(141.3)	59.5
Adjusted balance sheet data	$m	$m	$m	$m	$m
Loans and advances to customers (net)	448,880	348,716	248,062	1,141	1,046,799
Interests in associates and joint ventures	445	14	16	25,305	25,780
Total external assets	780,456	515,962	1,283,597	161,055	2,741,070
Customer accounts	758,414	392,133	298,618	760	1,449,925

1 Net operating income before change in expected credit losses and other credit impairment charges, also referred to as revenue.

Reported external net operating income is attributed to countries and territories on the basis of the location of the branch responsible for reporting the results or advancing the funds:

	2021	2020	2019
	$m	$m	$m
Reported external net operating income by country/territory[1]	**49,552**	50,429	56,098
– UK	**10,909**	9,163	9,011
– Hong Kong	**14,245**	15,783	18,449
– US	**3,795**	4,474	4,471
– France	**2,179**	1,753	1,942
– other countries	**18,424**	19,256	22,225

1 *Net operating income before change in expected credit losses and other credit impairment charges, also referred to as revenue.*

Adjusted results reconciliation

	2021			2020				2019			
	Adjusted	**Significant items**	**Reported**	Adjusted	Currency translation	Significant items	Reported	Adjusted	Currency translation	Significant items	Reported
	$m	**$m**	**$m**	$m	$m	$m	$m	$m	$m	$m	$m
Revenue[1]	**50,090**	**(538)**	**49,552**	51,770	(1,393)	52	50,429	56,435	(1,010)	673	56,098
ECL	**928**	**—**	**928**	(9,282)	465	—	(8,817)	(2,687)	(69)	—	(2,756)
Operating expenses	**(32,148)**	**(2,472)**	**(34,620)**	(32,409)	1,072	(3,095)	(34,432)	(33,563)	981	(9,767)	(42,349)
Share of profit in associates and joint ventures	**3,046**	**—**	**3,046**	2,192	(133)	(462)	1,597	2,496	(142)	—	2,354
Profit/(loss) before tax	**21,916**	**(3,010)**	**18,906**	12,271	11	(3,505)	8,777	22,681	(240)	(9,094)	13,347

1 *Net operating income before change in expected credit losses and other credit impairment charges, also referred to as revenue.*

Adjusted balance sheet reconciliation

	2021	2020			2019		
	Reported and adjusted	Adjusted	Currency translation	Reported	Adjusted	Currency translation	Reported
	$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)	**1,045,814**	1,022,402	15,585	1,037,987	1,046,799	(10,056)	1,036,743
Interests in associates and joint ventures	**29,609**	27,070	(386)	26,684	25,780	(1,306)	24,474
Total external assets	**2,957,939**	2,938,627	45,537	2,984,164	2,741,070	(25,918)	2,715,152
Customer accounts	**1,710,574**	1,620,128	22,652	1,642,780	1,449,925	(10,810)	1,439,115

Adjusted profit reconciliation

	2021	2020	2019
	$m	$m	$m
Year ended 31 Dec			
Adjusted profit before tax	**21,916**	12,271	22,681
Significant items	**(3,010)**	(3,505)	(9,094)
– customer redress programmes (revenue)	**11**	(21)	(163)
– disposals, acquisitions and investment in new businesses (revenue)	**—**	(10)	768
– fair value movements on financial instruments[1]	**(242)**	264	84
– restructuring and other related costs (revenue)[2]	**(307)**	(170)	—
– costs of structural reform[3]	**—**	—	(158)
– customer redress programmes (operating expenses)	**(49)**	54	(1,281)
– impairment of goodwill and other intangible assets	**(587)**	(1,090)	(7,349)
– past service costs of guaranteed minimum pension benefits equalisation	**—**	(17)	—
– restructuring and other related costs (operating expenses)[4]	**(1,836)**	(1,908)	(827)
– settlements and provisions in connection with legal and other regulatory matters	**—**	(12)	61
– impairment of goodwill (share of profit in associates and joint ventures)[5]	**—**	(462)	—
– currency translation on significant items		(133)	(229)
Currency translation		11	(240)
Reported profit before tax	**18,906**	8,777	13,347

1 *Includes fair value movements on non-qualifying hedges and debt valuation adjustments on derivatives.*
2 *Comprises losses associated with the RWA reduction commitments and gains relating to the business update in February 2020.*
3 *Comprises costs associated with preparations for the UK's exit from the European Union.*
4 *Includes impairment of software intangible assets of $189m (of the total software intangible asset impairment of $1,347m) and impairment of tangible assets of $197m in 2020.*
5 *During 2020, The Saudi British Bank ('SABB'), an associate of HSBC, impaired the goodwill that arose following the merger with Alawwal bank in 2019. HSBC's post-tax share of the goodwill impairment was $462m.*

11 Trading assets

	2021	2020
	$m	$m
Treasury and other eligible bills	23,110	24,035
Debt securities	89,944	102,846
Equity securities	109,614	77,643
Trading securities	222,668	204,524
Loans and advances to banks[1]	7,767	8,242
Loans and advances to customers[1]	18,407	19,224
Year ended 31 Dec	248,842	231,990

1 *Loans and advances to banks and customers include reverse repos, stock borrowing and other accounts.*

12 Fair values of financial instruments carried at fair value

Control framework

Fair values are subject to a control framework designed to ensure that they are either determined or validated by a function independent of the risk taker.

Where fair values are determined by reference to externally quoted prices or observable pricing inputs to models, independent price determination or validation is used. For inactive markets, HSBC sources alternative market information, with greater weight given to information that is considered to be more relevant and reliable. Examples of the factors considered are price observability, instrument comparability, consistency of data sources, underlying data accuracy and timing of prices.

For fair values determined using valuation models, the control framework includes development or validation by independent support functions of the model logic, inputs, model outputs and adjustments. Valuation models are subject to a process of due diligence before becoming operational and are calibrated against external market data on an ongoing basis.

Changes in fair value are generally subject to a profit and loss analysis process and are disaggregated into high-level categories including portfolio changes, market movements and other fair value adjustments.

The majority of financial instruments measured at fair value are in GBM. GBM's fair value governance structure comprises its Finance function, Valuation Committees and a Valuation Committee Review Group. Finance is responsible for establishing procedures governing valuation and ensuring fair values are in compliance with accounting standards. The fair values are reviewed by the Valuation Committees, which consist of independent support functions. These committees are overseen by the Valuation Committee Review Group, which considers all material subjective valuations.

Financial liabilities measured at fair value

In certain circumstances, HSBC records its own debt in issue at fair value, based on quoted prices in an active market for the specific instrument. When quoted market prices are unavailable, the own debt in issue is valued using valuation techniques, the inputs for which are either based on quoted prices in an inactive market for the instrument or are estimated by comparison with quoted prices in an active market for similar instruments. In both cases, the fair value includes the effect of applying the credit spread that is appropriate to HSBC's liabilities. The change in fair value of issued debt securities attributable to the Group's own credit spread is computed as follows: for each security at each reporting date, an externally verifiable price is obtained or a price is derived using credit spreads for similar securities for the same issuer. Then, using discounted cash flow, each security is valued using an appropriate market discount curve. The difference in the valuations is attributable to the Group's own credit spread. This methodology is applied consistently across all securities.

Structured notes issued and certain other hybrid instruments are included within trading liabilities and are measured at fair value. The credit spread applied to these instruments is derived from the spreads at which HSBC issues structured notes.

Gains and losses arising from changes in the credit spread of liabilities issued by HSBC, recorded in other comprehensive income, reverse over the contractual life of the debt, provided that the debt is not repaid at a premium or a discount.

Fair value hierarchy

Fair values of financial assets and liabilities are determined according to the following hierarchy:

- Level 1 – valuation technique using quoted market price. These are financial instruments with quoted prices for identical instruments in active markets that HSBC can access at the measurement date.
- Level 2 – valuation technique using observable inputs. These are financial instruments with quoted prices for similar instruments in active markets or quoted prices for identical or similar instruments in inactive markets and financial instruments valued using models where all significant inputs are observable.
- Level 3 – valuation technique with significant unobservable inputs. These are financial instruments valued using valuation techniques where one or more significant inputs are unobservable.

Financial instruments carried at fair value and bases of valuation

	2021				2020			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Recurring fair value measurements at 31 Dec								
Assets								
Trading assets	**180,423**	**65,757**	**2,662**	**248,842**	167,980	61,511	2,499	231,990
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**17,937**	**17,629**	**14,238**	**49,804**	19,711	14,365	11,477	45,553
Derivatives	**2,783**	**191,621**	**2,478**	**196,882**	2,602	302,454	2,670	307,726
Financial investments	**247,745**	**97,838**	**3,389**	**348,972**	303,654	94,746	3,654	402,054
Liabilities								
Trading liabilities	**63,437**	**20,682**	**785**	**84,904**	53,290	21,814	162	75,266
Financial liabilities designated at fair value	**1,379**	**136,243**	**7,880**	**145,502**	1,267	150,866	5,306	157,439
Derivatives	**1,686**	**186,290**	**3,088**	**191,064**	1,788	297,025	4,188	303,001

Transfers between Level 1 and Level 2 fair values

	Assets				Liabilities		
	Financial investments	Trading assets	Designated and otherwise mandatorily measured at fair value	Derivatives	Trading liabilities	Designated at fair value	Derivatives
	$m	$m	$m	$m	$m	$m	$m
At 31 Dec 2021							
Transfers from Level 1 to Level 2	**8,477**	**6,553**	**1,277**	**103**	**181**	**—**	**212**
Transfers from Level 2 to Level 1	**6,007**	**4,132**	**768**	**—**	**638**	**—**	**—**
At 31 Dec 2020							
Transfers from Level 1 to Level 2	4,514	3,891	245	—	155	7,414	—
Transfers from Level 2 to Level 1	7,764	5,517	328	1	433	—	—

Transfers between levels of the fair value hierarchy are deemed to occur at the end of each quarterly reporting period. Transfers into and out of levels of the fair value hierarchy are primarily attributable to observability of valuation inputs and price transparency.

Fair value adjustments

We adopt the use of fair value adjustments when we take into consideration additional factors not incorporated within the valuation model that would otherwise be considered by a market participant. We classify fair value adjustments as either 'risk-related' or 'model-related'. The majority of these adjustments relate to GBM. Movements in the level of fair value adjustments do not necessarily result in the recognition of profits or losses within the income statement. For example, as models are enhanced, fair value adjustments may no longer be required. Similarly, fair value adjustments will decrease when the related positions are unwound, but this may not result in profit or loss.

Global Banking and Markets fair value adjustments

	2021		2020	
	GBM	Corporate Centre	GBM	Corporate Centre
	$m	$m	$m	$m
Type of adjustment				
Risk-related	**868**	**42**	1,170	28
– bid-offer	**412**	**—**	514	—
– uncertainty	**66**	**1**	106	1
– credit valuation adjustment	**228**	**35**	445	27
– debt valuation adjustment	**(92)**	**—**	(120)	—
– funding fair value adjustment	**254**	**6**	204	—
– other	**—**	**—**	21	—
Model-related	**57**	**—**	74	—
– model limitation	**57**	**—**	70	—
– other	**—**	**—**	4	—
Inception profit (Day 1 P&L reserves)	**106**	**—**	104	—
At 31 Dec	**1,031**	**42**	1,348	28

We continue to observe losses on the disposals of certain uncollateralised over-the-counter ('OTC') derivatives as part of our commitments to reduce RWAs in GBM, as set out in our business update in February 2020. Based on our analysis, these losses are not considered to give rise to an adjustment within the IFRS 13 'Fair Value Measurement' framework.

The reduction in fair value adjustments was driven by increased liquidity, lower volatility and an improved credit environment. Movement in funding fair value adjustment included a change in measurement from Libor to a Libor replacement risk-free rate.

Bid-offer

IFRS 13 'Fair Value Measurement' requires the use of the price within the bid-offer spread that is most representative of fair value. Valuation models will typically generate mid-market values. The bid-offer adjustment reflects the extent to which bid-offer costs would be incurred if substantially all residual net portfolio market risks were closed using available hedging instruments or by disposing of or unwinding the position.

Uncertainty

Certain model inputs may be less readily determinable from market data and/or the choice of model itself may be more subjective. In these circumstances, an adjustment may be necessary to reflect the likelihood that market participants would adopt more conservative values for uncertain parameters and/or model assumptions than those used in HSBC's valuation model.

Credit and debt valuation adjustments

The credit valuation adjustment ('CVA') is an adjustment to the valuation of over-the-counter ('OTC') derivative contracts to reflect the possibility that the counterparty may default and that HSBC may not receive the full market value of the transactions.

The debt valuation adjustment ('DVA') is an adjustment to the valuation of OTC derivative contracts to reflect the possibility that HSBC may default, and that it may not pay the full market value of the transactions.

HSBC calculates a separate CVA and DVA for each legal entity, and for each counterparty to which the entity has exposure. With the exception of central clearing parties, all third-party counterparties are included in the CVA and DVA calculations, and these adjustments are not netted across Group entities.

HSBC calculates the CVA by applying the probability of default ('PD') of the counterparty, conditional on the non-default of HSBC, to HSBC's expected positive exposure to the counterparty and multiplying the result by the loss expected in the event of default. Conversely, HSBC calculates the DVA by applying the PD of HSBC, conditional on the non-default of the counterparty, to the expected positive exposure of the counterparty to HSBC and multiplying the result by the loss expected in the event of default. Both calculations are performed over the life of the potential exposure.

For most products HSBC uses a simulation methodology, which incorporates a range of potential exposures over the life of the portfolio, to calculate the expected positive exposure to a counterparty. The simulation methodology includes credit mitigants, such as counterparty netting agreements and collateral agreements with the counterparty.

The methodologies do not, in general, account for 'wrong-way risk'. Wrong-way risk is an adverse correlation between the counterparty's probability of default and the mark-to-market value of the underlying transaction. The risk can either be general, perhaps related to the currency of the issuer country, or specific to the transaction concerned. When there is significant wrong-way risk, a trade-specific approach is applied to reflect this risk in the valuation.

Funding fair value adjustment

The funding fair value adjustment ('FFVA') is calculated by applying future market funding spreads to the expected future funding exposure of any uncollateralised component of the OTC derivative portfolio. The expected future funding exposure is calculated by a simulation methodology, where available, and is adjusted for events that may terminate the exposure, such as the default of HSBC or the counterparty. The FFVA and DVA are calculated independently.

Model limitation

Models used for portfolio valuation purposes may be based upon a simplified set of assumptions that do not capture all current and future material market characteristics. In these circumstances, model limitation adjustments are adopted.

Inception profit (Day 1 P&L reserves)

Inception profit adjustments are adopted when the fair value estimated by a valuation model is based on one or more significant unobservable inputs. The accounting for inception profit adjustments is discussed in Note 1.

Fair value valuation bases

Financial instruments measured at fair value using a valuation technique with significant unobservable inputs – Level 3

	Assets					Liabilities			
	Financial investments	Trading assets	Designated and otherwise mandatorily measured at fair value through profit or loss	Derivatives	Total	Trading liabilities	Designated at fair value	Derivatives	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Private equity including strategic investments	**544**	**2**	**13,732**	**—**	**14,278**	**9**	**—**	**—**	**9**
Asset-backed securities	**1,008**	**132**	**1**	**—**	**1,141**	**—**	**—**	**—**	**—**
Structured notes	**—**	**—**	**—**	**—**	**—**	**—**	**7,879**	**—**	**7,879**
Derivatives with monolines	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
Other derivatives	**—**	**—**	**—**	**2,478**	**2,478**	**—**	**—**	**3,088**	**3,088**
Other portfolios	**1,837**	**2,528**	**505**	**—**	**4,870**	**776**	**1**	**—**	**777**
At 31 Dec 2021	**3,389**	**2,662**	**14,238**	**2,478**	**22,767**	**785**	**7,880**	**3,088**	**11,753**
Private equity including strategic investments	930	4	10,971	—	11,905	4	—	—	4
Asset-backed securities	1,286	523	25	—	1,834	—	—	—	—
Structured notes	—	—	—	—	—	29	5,301	—	5,330
Derivatives with monolines	—	—	—	68	68	—	—	—	—
Other derivatives	—	—	—	2,602	2,602	—	—	4,187	4,187
Other portfolios	1,438	1,972	481	—	3,891	129	5	1	135
At 31 Dec 2020	3,654	2,499	11,477	2,670	20,300	162	5,306	4,188	9,656

Level 3 instruments are present in both ongoing and legacy businesses. Loans held for securitisation, derivatives with monolines, certain 'other derivatives' and predominantly all Level 3 asset-backed securities are legacy positions. HSBC has the capability to hold these positions.

Private equity including strategic investments

The fair value of a private equity investment (including strategic investments) is estimated on the basis of an analysis of the investee's financial position and results, risk profile, prospects and other factors; by reference to market valuations for similar entities quoted in an active market; the price at which similar companies have changed ownership; or from published net asset values ('NAV') received. If necessary, adjustments are made to the NAV of funds to obtain the best estimate of fair value.

Asset-backed securities

While quoted market prices are generally used to determine the fair value of the asset-backed securities ('ABSs'), valuation models are used to substantiate the reliability of the limited market data available and to identify whether any adjustments to quoted market prices are required. For certain ABSs, such as residential mortgage-backed securities, the valuation uses an industry standard model with assumptions relating to prepayment speeds, default rates and loss severity based on collateral type, and performance, as appropriate. The valuations output is benchmarked for consistency against observable data for securities of a similar nature.

Structured notes

The fair value of Level 3 structured notes is derived from the fair value of the underlying debt security, and the fair value of the embedded derivative is determined as described in the paragraph below on derivatives. These structured notes comprise principally equity-linked notes issued by HSBC, which provide the counterparty with a return linked to the performance of equity securities and other portfolios.

Examples of the unobservable parameters include long-dated equity volatilities and correlations between equity prices, and interest and foreign exchange rates.

Derivatives

OTC derivative valuation models calculate the present value of expected future cash flows, based upon 'no arbitrage' principles. For many vanilla derivative products, the modelling approaches used are standard across the industry. For more complex derivative products, there may be some differences in market practice. Inputs to valuation models are determined from observable market data wherever possible, including prices available from exchanges, dealers, brokers or providers of consensus pricing. Certain inputs may not be observable in the market directly, but can be determined from observable prices via model calibration procedures or estimated from historical data or other sources.

Reconciliation of fair value measurements in Level 3 of the fair value hierarchy

Movement in Level 3 financial instruments

	Assets				Liabilities		
	Financial investments	Trading assets	Designated and otherwise mandatorily measured at fair value through profit or loss	Derivatives	Trading liabilities	Designated at fair value	Derivatives
	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2021	3,654	2,499	11,477	2,670	162	5,306	4,188
Total gains/(losses) recognised in profit or loss	(10)	(378)	1,753	2,237	16	(836)	2,583
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	–	(378)	–	2,237	16	–	2,583
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	–	–	1,753	–	–	(836)	–
– gains less losses from financial investments at fair value through other comprehensive income	(10)	–	–	–	–	–	–
Total gains/(losses) recognised in other comprehensive income ('OCI')[1]	(521)	(18)	(285)	(27)	(8)	(61)	(26)
– financial investments: fair value gains	(428)	–	–	–	–	–	–
– exchange differences	(93)	(18)	(285)	(27)	(8)	(61)	(26)
Purchases	1,025	1,988	3,692	–	1,014	1	–
New issuances	–	–	–	–	35	5,969	–
Sales	(580)	(473)	(1,216)	–	(4)	(27)	–
Settlements	(336)	(747)	(1,049)	(2,347)	(681)	(2,922)	(3,962)
Transfers out	(383)	(1,027)	(184)	(418)	(7)	(704)	(734)
Transfers in	540	818	50	363	258	1,154	1,039
At 31 Dec 2021	3,389	2,662	14,238	2,478	785	7,880	3,088
Unrealised gains/(losses) recognised in profit or loss relating to assets and liabilities held at 31 Dec 2020	–	(309)	1,509	1,298	–	166	(969)
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	–	(309)	–	1,298	–	–	(969)
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	–	–	1,509	–	–	166	–

Movement in Level 3 financial instruments (continued)

	Assets				Liabilities		
	Financial investments	Trading assets	Designated and otherwise mandatorily measured at fair value through profit or loss	Derivatives	Trading liabilities	Designated at fair value	Derivatives
	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2020	3,218	4,979	9,476	2,136	53	5,016	2,302
Total gains/(losses) recognised in profit or loss	17	(6)	504	2,281	307	(59)	3,398
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	—	(6)	—	2,281	307	—	3,398
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	—	—	504	—	—	(59)	—
– gains less losses from financial investments at fair value through other comprehensive income	17	—	—	—	—	—	—
Total gains/(losses) recognised in other comprehensive income ('OCI')[1]	394	115	286	143	17	204	169
– financial investments: fair value gains	270	—	—	—	—	—	—
– exchange differences	124	115	286	143	17	204	169
Purchases	671	687	3,701	—	66	—	—
New issuances	—	—	1	—	6	1,876	—
Sales	(674)	(1,579)	(2,042)	—	(260)	—	—
Settlements	(530)	(1,122)	(435)	(1,542)	(26)	(1,531)	(1,462)
Transfers out	(101)	(1,790)	(140)	(565)	(9)	(777)	(528)
Transfers in	659	1,215	126	217	8	577	309
At 31 Dec 2020	3,654	2,499	11,477	2,670	162	5,306	4,188
Unrealised gains/(losses) recognised in profit or loss relating to assets and liabilities held at 31 Dec 2020	—	(32)	412	707	1	(91)	(1,621)
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	—	(32)	—	707	1	—	(1,621)
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	—	—	412	—	—	(91)	—

1 *Included in 'financial investments: fair value gains/(losses)' in the current year and 'exchange differences' in the consolidated statement of comprehensive income.*

Transfers between levels of the fair value hierarchy are deemed to occur at the end of each quarterly reporting period. Transfers into and out of levels of the fair value hierarchy are primarily attributable to observability of valuation inputs and price transparency.

Effect of changes in significant unobservable assumptions to reasonably possible alternatives

Sensitivity of fair values to reasonably possible alternative assumptions

	2021				2020			
	Reflected in profit or loss		**Reflected in OCI**		Reflected in profit or loss		Reflected in OCI	
	Favourable changes	**Un-favourable changes**	**Favourable changes**	**Un-favourable changes**	Favourable changes	Un-favourable changes	Favourable changes	Un-favourable changes
	$m	**$m**	**$m**	**$m**	$m	$m	$m	$m
Derivatives, trading assets and trading liabilities[1]	**143**	**(146)**	**—**	**—**	229	(244)	—	—
Financial assets and liabilities designated and otherwise mandatorily measured at fair value through profit or loss	**849**	**(868)**	**—**	**—**	644	(643)	—	—
Financial investments	**20**	**(20)**	**113**	**(112)**	35	(35)	110	(110)
At 31 Dec	**1,012**	**(1,034)**	**113**	**(112)**	908	(922)	110	(110)

1 *'Derivatives, trading assets and trading liabilities' are presented as one category to reflect the manner in which these instruments are risk-managed.*

The sensitivity analysis aims to measure a range of fair values consistent with the application of a 95% confidence interval. Methodologies take account of the nature of the valuation technique employed, as well as the availability and reliability of observable proxy and historical data.

When the fair value of a financial instrument is affected by more than one unobservable assumption, the above table reflects the most favourable or the most unfavourable change from varying the assumptions individually.

Key unobservable inputs to Level 3 financial instruments

The following table lists key unobservable inputs to Level 3 financial instruments and provides the range of those inputs at 31 December 2021.

Quantitative information about significant unobservable inputs in Level 3 valuations

	Fair value				2021		2020	
					Full range of inputs		Full range of inputs	
	Assets $m	Liabilities $m	Valuation techniques	Key unobservable inputs	Lower	Higher	Lower	Higher
Private equity including strategic investments	14,278	9	See below	See below				
Asset-backed securities	1,141	–						
– collateralised loan/debt obligation	20	–	Market proxy	Prepayment rate	–	–	0%	9%
			Market proxy	Bid quotes	0	100	0	100
– other ABSs	1,121	–	Market proxy	Bid quotes	0	100	0	101
Structured notes	–	7,879						
– equity-linked notes	–	6,565	Model – Option model	Equity volatility	6%	124%	6%	115%
			Model – Option model	Equity correlation	22%	99%	(4)%	88%
– FX-linked notes	–	629	Model – Option model	FX volatility	1%	99%	0%	36%
– other	–	685						
Derivatives with monolines	–	–	Model – Discounted cash flow	Credit spread	–	–	2%	2%
Other derivatives	2,478	3,088						
– interest rate derivatives	797	990						
securitisation swaps	284	595	Model – Discounted cash flow	Prepayment rate	5%	10%	6%	6%
long-dated swaptions	36	73	Model – Option model	IR volatility	15%	35%	6%	28%
other	477	322						
– FX derivatives	379	403						
FX options	212	270	Model – Option model	FX volatility	1%	99%	0%	43%
other	167	133						
– equity derivatives	1,143	1,513						
long-dated single stock options	590	895	Model – Option model	Equity volatility	4%	138%	0%	120%
other	553	618						
– credit derivatives	159	182						
other	159	182						
Other portfolios	4,870	777						
– repurchase agreements	778	–	Model – Discounted cash flow	IR curve	1%	5%	0%	5%
– other[1]	4,092	777						
At 31 Dec 2021	**22,767**	**11,753**						

1 *'Other' includes a range of smaller asset holdings.*

Private equity including strategic investments

Given the bespoke nature of the analysis in respect of each private equity holding, it is not practical to quote a range of key unobservable inputs. The key unobservable inputs would be price and correlation. The valuation approach includes using a range of inputs that include company specific financials, traded comparable companies multiples, published net asset values and qualitative assumptions, which are not directly comparable or quantifiable.

Prepayment rates

Prepayment rates are a measure of the anticipated future speed at which a loan portfolio will be repaid in advance of the due date. They vary according to the nature of the loan portfolio and expectations of future market conditions, and may be estimated using a variety of evidence, such as prepayment rates implied from proxy observable security prices, current or historical prepayment rates and macroeconomic modelling.

Market proxy

Market proxy pricing may be used for an instrument when specific market pricing is not available but there is evidence from instruments with common characteristics. In some cases it might be possible to identify a specific proxy, but more generally evidence across a wider range of instruments will be used to understand the factors that influence current market pricing and the manner of that influence.

Volatility

Volatility is a measure of the anticipated future variability of a market price. It varies by underlying reference market price, and by strike and maturity of the option. Certain volatilities, typically those of a longer-dated nature, are unobservable and are estimated from observable data. The range of unobservable volatilities reflects the wide variation in volatility inputs by reference market price. The core range is significantly narrower than the full range because these examples with extreme volatilities occur relatively rarely within the HSBC portfolio.

Correlation

Correlation is a measure of the inter-relationship between two market prices and is expressed as a number between minus one and one. It is used to value more complex instruments where the payout is dependent upon more than one market price. There is a wide range of instruments for which correlation is an input, and consequently a wide range of both same-asset correlations and cross-asset correlations is used. In general, the range of same-asset correlations will be narrower than the range of cross-asset correlations.

Unobservable correlations may be estimated based upon a range of evidence, including consensus pricing services, HSBC trade prices, proxy correlations and examination of historical price relationships. The range of unobservable correlations quoted in the table reflects the wide variation in correlation inputs by market price pair.

Credit spread

Credit spread is the premium over a benchmark interest rate required by the market to accept lower credit quality. In a discounted cash flow model, the credit spread increases the discount factors applied to future cash flows, thereby reducing the value of an asset. Credit spreads may be implied from market prices and may not be observable in more illiquid markets.

Inter-relationships between key unobservable inputs

Key unobservable inputs to Level 3 financial instruments may not be independent of each other. As described above, market variables may be correlated. This correlation typically reflects the manner in which different markets tend to react to macroeconomic or other events. Furthermore, the effect of changing market variables on the HSBC portfolio will depend on HSBC's net risk position in respect of each variable.

HSBC Holdings

Basis of valuing HSBC Holdings' financial assets and liabilities measured at fair value

	2021	2020
	$m	$m
Valuation technique using observable inputs: Level 2		
Assets at 31 Dec		
– derivatives	**2,811**	4,698
– designated and otherwise mandatorily measured at fair value through profit or loss	**51,408**	65,253
Liabilities at 31 Dec		
– designated at fair value	**32,418**	25,664
– derivatives	**1,220**	3,060

13 Fair values of financial instruments not carried at fair value

Fair values of financial instruments not carried at fair value and bases of valuation

		Fair value			
	Carrying amount	Quoted market price Level 1	Observable inputs Level 2	Significant unobservable inputs Level 3	Total
	$m	$m	$m	$m	$m
At 31 Dec 2021					
Assets					
Loans and advances to banks	**83,136**	**–**	**82,220**	**1,073**	**83,293**
Loans and advances to customers	**1,045,814**	**–**	**10,287**	**1,034,288**	**1,044,575**
Reverse repurchase agreements – non-trading	**241,648**	**–**	**241,531**	**121**	**241,652**
Financial investments – at amortised cost	**97,302**	**38,722**	**63,022**	**523**	**102,267**
Liabilities					
Deposits by banks	**101,152**	**–**	**101,149**	**–**	**101,149**
Customer accounts	**1,710,574**	**–**	**1,710,733**	**–**	**1,710,733**
Repurchase agreements – non-trading	**126,670**	**–**	**126,670**	**–**	**126,670**
Debt securities in issue	**78,557**	**–**	**78,754**	**489**	**79,243**
Subordinated liabilities	**20,487**	**–**	**26,206**	**–**	**26,206**
At 31 Dec 2020					
Assets					
Loans and advances to banks	81,616	–	80,457	1,339	81,796
Loans and advances to customers	1,037,987	–	9,888	1,025,573	1,035,461
Reverse repurchase agreements – non-trading	230,628	–	230,330	272	230,602
Financial investments – at amortised cost	88,639	28,722	67,572	507	96,801
Liabilities					
Deposits by banks	82,080	–	81,996	–	81,996
Customer accounts	1,642,780	–	1,642,988	143	1,643,131
Repurchase agreements – non-trading	111,901	3	111,898	–	111,901
Debt securities in issue	95,492	–	96,371	657	97,028
Subordinated liabilities	21,951	–	28,552	–	28,552

Other financial instruments not carried at fair value are typically short term in nature and reprice to current market rates frequently. Accordingly, their carrying amount is a reasonable approximation of fair value. They include cash and balances at central banks, items in the course of collection from and transmission to other banks, Hong Kong Government certificates of indebtedness and Hong Kong currency notes in circulation, all of which are measured at amortised cost.

Valuation

Fair value is an estimate of the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. It does not reflect the economic benefits and costs that HSBC expects to flow from an instrument's cash flow over its expected future life. Our valuation methodologies and assumptions in determining fair values for which no observable market prices are available may differ from those of other companies.

Loans and advances to banks and customers

To determine the fair value of loans and advances to banks and customers, loans are segregated, as far as possible, into portfolios of similar characteristics. Fair values are based on observable market transactions, when available. When they are unavailable, fair values are estimated using valuation models incorporating a range of input assumptions. These assumptions may include: value estimates from third-party brokers reflecting over-the-counter trading activity; forward-looking discounted cash flow models, taking account of expected customer prepayment rates, using assumptions that HSBC believes are consistent with those that would be used by market participants in valuing such loans; new business rates estimates for similar loans; and trading inputs from other market participants including observed primary and secondary trades. From time to time, we may engage a third-party valuation specialist to measure the fair value of a pool of loans.

The fair value of loans reflects expected credit losses at the balance sheet date and estimates of market participants' expectations of credit losses over the life of the loans, and the fair value effect of repricing between origination and the balance sheet date. For credit-impaired loans, fair value is estimated by discounting the future cash flows over the time period they are expected to be recovered.

Financial investments

The fair values of listed financial investments are determined using bid market prices. The fair values of unlisted financial investments are determined using valuation techniques that incorporate the prices and future earnings streams of equivalent quoted securities.

Deposits by banks and customer accounts

The fair values of on-demand deposits are approximated by their carrying value. For deposits with longer-term maturities, fair values are estimated using discounted cash flows, applying current rates offered for deposits of similar remaining maturities.

Debt securities in issue and subordinated liabilities

Fair values in debt securities in issue and subordinated liabilities are determined using quoted market prices at the balance sheet date where available, or by reference to quoted market prices for similar instruments.

Repurchase and reverse repurchase agreements – non-trading

Fair values of repurchase and reverse repurchase agreements that are held on a non-trading basis provide approximate carrying amounts. This is due to the fact that balances are generally short dated.

HSBC Holdings

The methods used by HSBC Holdings to determine fair values of financial instruments for the purposes of measurement and disclosure are described above.

Fair values of HSBC Holdings' financial instruments not carried at fair value on the balance sheet

	2021		2020	
	Carrying amount	Fair value[1]	Carrying amount	Fair value[1]
	$m	$m	$m	$m
Assets at 31 Dec				
Loans and advances to HSBC undertakings	25,108	25,671	10,443	10,702
Financial investments – at amortised cost	26,194	26,176	17,485	17,521
Liabilities at 31 Dec				
Amounts owed to HSBC undertakings	111	111	330	330
Debt securities in issue	67,483	69,719	64,029	67,706
Subordinated liabilities	17,059	21,066	17,916	22,431

1 *Fair values (other than Level 1 financial investments) were determined using valuation techniques with observable inputs (Level 2).*

14 Financial assets designated and otherwise mandatorily measured at fair value through profit or loss

	2021			2020		
	Designated at fair value	Mandatorily measured at fair value	Total	Designated at fair value	Mandatorily measured at fair value	Total
	$m	$m	$m	$m	$m	$m
Securities	2,251	42,062	44,313	2,492	39,088	41,580
– treasury and other eligible bills	599	31	630	635	26	661
– debt securities	1,652	5,177	6,829	1,857	5,250	7,107
– equity securities	–	36,854	36,854	–	33,812	33,812
Loans and advances to banks and customers	–	4,307	4,307	–	2,988	2,988
Other	–	1,184	1,184	–	985	985
At 31 Dec	2,251	47,553	49,804	2,492	43,061	45,553

15 Derivatives

Notional contract amounts and fair values of derivatives by product contract type held by HSBC

	Notional contract amount		Fair value – Assets			Fair value – Liabilities		
	Trading	Hedging	Trading	Hedging	Total	Trading	Hedging	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Foreign exchange	**7,723,034**	**43,839**	**79,801**	**1,062**	**80,863**	**77,670**	**207**	**77,877**
Interest rate	**14,470,539**	**162,921**	**151,631**	**1,749**	**153,380**	**146,808**	**966**	**147,774**
Equities	**659,142**	**—**	**12,637**	**—**	**12,637**	**14,379**	**—**	**14,379**
Credit	**190,724**	**—**	**2,175**	**—**	**2,175**	**3,151**	**—**	**3,151**
Commodity and other	**74,159**	**—**	**1,205**	**—**	**1,205**	**1,261**	**—**	**1,261**
Gross total fair values	**23,117,598**	**206,760**	**247,449**	**2,811**	**250,260**	**243,269**	**1,173**	**244,442**
Offset (Note 30)					**(53,378)**			**(53,378)**
At 31 Dec 2021	**23,117,598**	**206,760**	**247,449**	**2,811**	**196,882**	**243,269**	**1,173**	**191,064**
Foreign exchange	7,606,446	35,021	106,696	309	107,005	108,903	1,182	110,085
Interest rate	15,240,867	157,436	249,204	1,914	251,118	236,594	2,887	239,481
Equities	652,288	—	14,043	—	14,043	15,766	—	15,766
Credit	269,401	—	2,590	—	2,590	3,682	—	3,682
Commodity and other	120,259	—	2,073	—	2,073	3,090	—	3,090
Gross total fair values	23,889,261	192,457	374,606	2,223	376,829	368,035	4,069	372,104
Offset (Note 30)					(69,103)			(69,103)
At 31 Dec 2020	23,889,261	192,457	374,606	2,223	307,726	368,035	4,069	303,001

The notional contract amounts of derivatives held for trading purposes and derivatives designated in hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date. They do not represent amounts at risk.

Derivative assets and liabilities decreased during 2021, driven by yield curve movements and changes in foreign exchange rates.

Notional contract amounts and fair values of derivatives by product contract type held by HSBC Holdings with subsidiaries

	Notional contract amount		Assets			Liabilities		
	Trading	Hedging	Trading	Hedging	Total	Trading	Hedging	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Foreign exchange	**36,703**	**—**	**384**	**—**	**384**	**377**	**—**	**377**
Interest rate	**35,970**	**45,358**	**712**	**1,715**	**2,427**	**769**	**74**	**843**
At 31 Dec 2021	**72,673**	**45,358**	**1,096**	**1,715**	**2,811**	**1,146**	**74**	**1,220**
Foreign exchange	23,413	—	506	—	506	870	—	870
Interest rate	47,569	34,006	966	3,221	4,187	2,176	8	2,184
At 31 Dec 2020	70,982	34,006	1,472	3,221	4,693	3,046	8	3,054

Use of derivatives

For details regarding the use of derivatives, see page 207 under 'Market risk'.

Trading derivatives

Most of HSBC'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 and risk management. Market-making entails quoting bid and offer prices to other market participants for the purpose of generating revenue based on spread and volume. Risk management activity is undertaken to manage the risk arising from client transactions, with the principal purpose of retaining client margin. Other derivatives classified as held for trading include non-qualifying hedging derivatives.

Substantially all of HSBC Holdings' derivatives entered into with subsidiaries are managed in conjunction with financial liabilities designated at fair value.

Derivatives valued using models with unobservable inputs

The difference between the fair value at initial recognition (the transaction price) and the value that would have been derived had valuation techniques used for subsequent measurement been applied at initial recognition, less subsequent releases, is as shown in the following table:

Unamortised balance of derivatives valued using models with significant unobservable inputs

	2021	2020
	$m	$m
Unamortised balance at 1 Jan	**104**	73
Deferral on new transactions	**311**	232
Recognised in the income statement during the year:	**(308)**	(205)
– amortisation	**(177)**	(116)
– subsequent to unobservable inputs becoming observable	**(4)**	(4)
– maturity, termination or offsetting derivative	**(127)**	(85)
Exchange differences	**(1)**	4
Other	**—**	—
Unamortised balance at 31 Dec[1]	**106**	104

1 *This amount is yet to be recognised in the consolidated income statement.*

Hedge accounting derivatives

HSBC applies hedge accounting to manage the following risks: interest rate and foreign exchange risks. Further details on how these risks arise and how they are managed by the Group can be found in the 'Risk review'.

Fair value hedges

HSBC enters into fixed-for-floating-interest-rate swaps to manage the exposure to changes in fair value caused by movements in market interest rates on certain fixed-rate financial instruments that are not measured at fair value through profit or loss, including debt securities held and issued.

HSBC hedging instrument by hedged risk

	Hedging instrument				
		Carrying amount			
	Notional amount[1]	Assets	Liabilities	Balance sheet presentation	Change in fair value[2]
Hedged risk	$m	$m	$m		$m
Interest rate[3]	**90,556**	**1,637**	**1,410**	**Derivatives**	**1,330**
At 31 Dec 2021	**90,556**	**1,637**	**1,410**		**1,330**
Interest rate[3]	121,573	1,675	3,761	Derivatives	(1,894)
At 31 Dec 2020	121,573	1,675	3,761		(1,894)

1 *The notional contract amounts of derivatives designated in qualifying hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date. They do not represent amounts at risk.*
2 *Used in effectiveness testing, which uses the full fair value change of the hedging instrument not excluding any component.*
3 *The hedged risk 'interest rate' includes inflation risk.*

HSBC hedged item by hedged risk

	Hedged item						Ineffectiveness	
	Carrying amount		Accumulated fair value hedge adjustments included in carrying amount[2]					
	Assets	Liabilities	Assets	Liabilities		Change in fair value[1]	Recognised in profit and loss	Profit and loss presentation
Hedged risk	$m	$m	$m	$m	Balance sheet presentation	$m	$m	
Interest rate[3]	**68,059**		**1,199**		**Financial assets designated and otherwise mandatorily measured at fair value through other comprehensive income**	**(1,932)**	**(36)**	**Net income from financial instruments held for trading or managed on a fair value basis**
	2		**(3)**		**Loans and advances to banks**	**(3)**		
	3,066		**9**		**Loans and advances to customers**	**(41)**		
		14,428		**992**	**Debt securities in issue**	**609**		
		86		**1**	**Deposits by banks**	**1**		
At 31 Dec 2021	**71,127**	**14,514**	**1,205**	**993**		**(1,366)**	**(36)**	
Interest rate[3]	102,260		3,392		Financial assets designated and otherwise mandatorily measured at fair value through other comprehensive income	2,456	(11)	Net income from financial instruments held for trading or managed on a fair value basis
	6		3		Loans and advances to banks	1		
	2,280		56		Loans and advances to customers	21		
		12,148		1,620	Debt securities in issue	(613)		
		89		3	Deposits by banks	18		
At 31 Dec 2020	104,546	12,237	3,451	1,623		1,883	(11)	

1 *Used in effectiveness testing, which comprise an amount attributable to the designated hedged risk that can be a risk component.*
2 *The accumulated amount of fair value adjustments remaining in the statement of financial position for hedged items that have ceased to be adjusted for hedging gains and losses were assets of $1,061m for FVOCI assets and assets of $15m for debt issued.*
3 *The hedged risk 'interest rate' includes inflation risk.*

HSBC Holdings hedging instrument by hedged risk

	Hedging instrument				
		Carrying amount			
	Notional amount[1,4]	Assets	Liabilities	Balance sheet presentation	Change in fair value[2]
Hedged risk	$m	$m	$m		$m
Interest rate[3]	**45,358**	**1,715**	**74**	**Derivatives**	**(1,515)**
At 31 Dec 2021	**45,358**	**1,715**	**74**		**(1,515)**
Interest rate[3]	34,006	3,221	8	Derivatives	1,927
At 31 Dec 2020	34,006	3,221	8		1,927

1 *The notional contract amounts of derivatives designated in qualifying hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date; they do not represent amounts at risk.*
2 *Used in effectiveness testing; comprising the full fair value change of the hedging instrument not excluding any component.*
3 *The hedged risk 'interest rate' includes foreign exchange risk.*
4 *The notional amount of non-dynamic fair value hedges is equal to $45,358m, of which the weighted-average maturity date is January 2028 and the weighted-average swap rate is 1.30%. The majority of these hedges are internal to the Group.*

HSBC Holdings hedged item by hedged risk

	Hedged item						Ineffectiveness	
	Carrying amount		Accumulated fair value hedge adjustments included in carrying amount[2]					
	Assets	Liabilities	Assets	Liabilities	Balance sheet presentation	Change in fair value[1]	Recognised in profit and loss	Profit and loss presentation
Hedged risk	$m	$m	$m	$m		$m	$m	
Interest rate[3]		**39,154**		**1,408**	**Debt securities in issue**	**1,599**	**(21)**	**Net income from financial instruments held for trading or managed on a fair value basis**
	7,863		**(104)**		**Loans and Advances to banks**	**(104)**		
At 31 Dec 2021	**7,863**	**39,154**	**(104)**	**1,408**		**1,495**	**(21)**	
Interest rate[3]		37,338		3,027	Debt securities in issue	(1,910)	17	Net income from financial instruments held for trading or managed on a fair value basis
					Loans and Advances to banks			
At 31 Dec 2020	—	37,338	—	3,027		(1,910)	17	

1 *Used in effectiveness testing; comprising amount attributable to the designated hedged risk that can be a risk component.*
2 *The accumulated amount of fair value adjustments remaining in the statement of financial position for hedged items that have ceased to be adjusted for hedging gains and losses were liabilities of $54.4m for debt issued.*
3 *The hedged risk 'interest rate' includes foreign exchange risk.*

Sources of hedge ineffectiveness may arise from basis risk, including but not limited to the discount rates used for calculating the fair value of derivatives, hedges using instruments with a non-zero fair value, and notional and timing differences between the hedged items and hedging instruments.

For some debt securities held, HSBC manages interest rate risk in a dynamic risk management strategy. The assets in scope of this strategy are high-quality fixed-rate debt securities, which may be sold to meet liquidity and funding requirements.

The interest rate risk of the HSBC fixed-rate debt securities issued is managed in a non-dynamic risk management strategy.

Cash flow hedges

HSBC's cash flow hedging instruments consist principally of interest rate swaps and cross-currency swaps that are used to manage the variability in future interest cash flows of non-trading financial assets and liabilities, arising due to changes in market interest rates and foreign-currency basis.

HSBC applies macro cash flow hedging for interest rate risk exposures on portfolios of replenishing current and forecasted issuances of non-trading assets and liabilities that bear interest at variable rates, including rolling such instruments. The amounts and timing of future cash flows, representing both principal and interest flows, are projected for each portfolio of financial assets and liabilities on the basis of their contractual terms and other relevant factors, including estimates of prepayments and defaults. The aggregate cash flows representing both principal balances and interest cash flows across all portfolios are used to determine the effectiveness and ineffectiveness. Macro cash flow hedges are considered to be dynamic hedges.

HSBC also hedges the variability in future cash flows on foreign-denominated financial assets and liabilities arising due to changes in foreign exchange market rates with cross-currency swaps, which are considered dynamic hedges.

Hedging instrument by hedged risk

Hedged risk	Hedging instrument: Notional amount[1] $m	Carrying amount: Assets $m	Carrying amount: Liabilities $m	Balance sheet presentation	Change in fair value[2] $m	Hedged item: Change in fair value[3] $m	Ineffectiveness: Recognised in profit and loss $m	Profit and loss presentation
Foreign currency	**17,930**	**827**	**207**	**Derivatives**	**987**	**987**	**—**	**Net income from financial instruments held for trading or managed on a fair value basis**
Interest rate	**72,365**	**112**	**217**	**Derivatives**	**(519)**	**(500)**	**(19)**	
At 31 Dec 2021	**90,295**	**939**	**424**		**468**	**487**	**(19)**	
Foreign currency	24,506	309	448	Derivatives	(630)	(630)	—	Net income from financial instruments held for trading or managed on a fair value basis
Interest rate	35,863	239	2	Derivatives	519	514	5	
At 31 Dec 2020	60,369	548	450		(111)	(116)	5	

1 The notional contract amounts of derivatives designated in qualifying hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date. They do not represent amounts at risk.
2 Used in effectiveness testing; comprising the full fair value change of the hedging instrument not excluding any component.
3 Used in effectiveness assessment; comprising amount attributable to the designated hedged risk that can be a risk component.

Sources of hedge ineffectiveness may arise from basis risk, including but not limited to timing differences between the hedged items and hedging instruments and hedges using instruments with a non-zero fair value.

Reconciliation of equity and analysis of other comprehensive income by risk type

	Interest rate $m	Foreign currency $m
Cash flow hedging reserve at 1 Jan 2021	**495**	**(37)**
Fair value gains/(losses)	**(500)**	**987**
Fair value (gains)/losses reclassified from the cash flow hedge reserve to the income statement in respect of:		
Hedged items that have affected profit or loss	**(217)**	**(1,177)**
Income taxes	**185**	**25**
Others	**45**	**(3)**
Cash flow hedging reserve at 31 Dec 2021	**8**	**(205)**
Cash flow hedging reserve at 1 Jan 2020	204	(205)
Fair value gains/(losses)	514	(630)
Fair value (gains)/losses reclassified from the cash flow hedge reserve to the income statement in respect of:		
Hedged items that have affected profit or loss	(107)	822
Income taxes	(79)	(23)
Others	(37)	(1)
Cash flow hedging reserve at 31 Dec 2020	495	(37)

Net investment hedges

The Group applies hedge accounting in respect of certain net investments in non-US dollar functional currency foreign operations for changes in spot exchange rates only. Hedging could be undertaken for Group structural exposure to changes in the US dollar to foreign currency exchange rates using forward foreign exchange contracts or by financing with foreign currency borrowings. The aggregate positions at the reporting date and the performance indicators of both live and de-designated hedges are summarised below. There were no amounts reclassified to the profit and loss account during the accounting periods presented.

Hedges of net investment in foreign operations

Description of hedged risk	Carrying value: Derivative assets $m	Carrying value: Derivative liabilities $m	Nominal amount $m	Amounts recognised in OCI $m	Hedge ineffectiveness recognised in income statement $m
2021					
Pound sterling-denominated structural foreign exchange	**229**	**—**	**15,717**	**(126)**	**—**
Swiss franc-denominated structural foreign exchange	**—**	**(8)**	**809**	**101**	**—**
Hong Kong dollar-denominated structural foreign exchange	**7**	**—**	**4,992**	**5**	**—**
Other structural foreign exchange[1]	**7**	**—**	**4,387**	**6**	**—**
Total	**243**	**(8)**	**25,905**	**(14)**	**—**
2020					
Pound sterling-denominated structural foreign exchange	—	733	10,500	(167)	—
Swiss franc-denominated structural foreign exchange	—	—	—	111	—
Hong Kong dollar-denominated structural foreign exchange	—	—	—	—	—
Other structural foreign exchange[1]	—	—	—	—	—
Total	—	733	10,500	(56)	—

1 Other currencies include New Taiwan dollar, Singapore dollar, Canadian dollar, Omani rial, South Korean won and United Arab Emirates dirham.

Interest rate benchmark reform: Amendments to IFRS 9 and IAS 39 'Financial Instruments'

HSBC has applied both the first set of amendments ('Phase 1') and the second set of amendments ('Phase 2') to IFRS 9 and IAS 39 applicable to hedge accounting. The hedge accounting relationships that are affected by Phase 1 and Phase 2 amendments are presented in the balance sheet as 'Financial assets designated and otherwise mandatorily measured at fair value through other comprehensive income', 'Loans and advances to customers', 'Debt securities in issue' and 'Deposits by banks'. The notional value of the derivatives impacted by the Ibor reform, including those designated in hedge accounting relationships, is disclosed on page 127 in the section 'Financial instruments impacted by the Ibor reform'. For further details on Ibor transition, see 'Top and emerging risks' on page 126.

During 2021, the Group transitioned all of its hedging instruments referencing sterling Libor, European Overnight Index Average rate ('Eonia') and Japanese yen Libor. The Group also transitioned some of the hedging instruments referencing US dollar Libor. There is no significant judgement applied for these benchmarks to determine whether and when the transition uncertainty has been resolved.

The most significant Ibor benchmark in which the Group continues to have hedging instruments is US dollar Libor. It is expected that the transition out of US dollar Libor hedging derivatives will be largely completed by the end of 2022. These transitions do not necessitate new approaches compared with any of the mechanisms used so far for transition and it will not be necessary to change the transition risk management strategy.

For some of the Ibors included under the 'Other' header in the table below, judgement has been needed to establish whether a transition is required, since there are Ibor benchmarks that are subject to computation methodology improvements and insertion of fallback provisions without full clarity being provided by their administrators on whether these Ibor benchmarks will be demised.

The notional amounts of interest rate derivatives designated in hedge accounting relationships do not represent the extent of the risk exposure managed by the Group but they are expected to be directly affected by market-wide Ibor reform and in scope of Phase 1 amendments and are shown in the table below. The cross-currency swaps designated in hedge accounting relationships and affected by Ibor reform are not significant and have not been presented below.

Hedging instrument impacted by Ibor reform

	Hedging instrument						
	Impacted by Ibor reform					Not impacted by Ibor reform	Notional amount[1]
	€[2]	£	$	Other[3]	Total		
	$m	$m	$m	$m	$m	$m	$m
Fair value hedges	**6,178**	**—**	**18,525**	**6,615**	**31,318**	**59,238**	**90,556**
Cash flow hedges	**7,954**	**—**	**100**	**8,632**	**16,686**	**55,679**	**72,365**
At 31 Dec 2021	**14,132**	**—**	**18,625**	**15,247**	**48,004**	**114,917**	**162,921**
Fair value hedges	17,792	3,706	32,789	10,128	64,415	57,157	121,572
Cash flow hedges	8,344	2,522	8,705	6,797	26,368	9,495	35,863
At 31 Dec 2020	26,136	6,228	41,494	16,925	90,783	66,652	157,435

1 *The notional contract amounts of interest rate derivatives designated in qualifying hedge accounting relationships indicate the nominal value of transactions outstanding at the balance sheet date and they do not represent amounts at risk.*
2 *The notional contract amounts of euro interest rate derivatives impacted by Ibor reform mainly comprise hedges with a Euribor benchmark, which are 'Fair value hedges' of $6,178m (31 December 2020: $6,000m) and 'Cash flow hedges' of $7,954m (31 December 2020: $8,344m).*
3 *Other benchmarks impacted by Ibor reform comprise mainly of Canadian dollar offered rate ('CDOR'), Hong Kong interbank offered rate ('HIBOR') and Mexican interbank equilibrium interest rate ('TIIE') related derivatives.*

Hedging instrument impacted by Ibor reform held by HSBC Holdings

	Hedging instrument						
	Impacted by Ibor reform					Not impacted by Ibor reform	Notional amount
	€	£	$	Other	Total		
	$m	$m	$m	$m	$m	$m	$m
Fair value hedges	**9,944**	**—**	**20,035**	**1,458**	**31,437**	**13,921**	**45,358**
At 31 Dec 2021	**9,944**	**—**	**20,035**	**1,458**	**31,437**	**13,921**	**45,358**
Fair value hedges	4,290	5,393	21,081	3,242	34,006	—	34,006
At 31 Dec 2020	4,290	5,393	21,081	3,242	34,006	—	34,006

16 Financial investments

Carrying amount of financial investments

	2021	2020
	$m	$m
Financial investments measured at fair value through other comprehensive income	**348,972**	402,054
– treasury and other eligible bills	**100,158**	118,163
– debt securities	**246,998**	281,467
– equity securities	**1,770**	2,337
– other instruments	**46**	87
Debt instruments measured at amortised cost	**97,302**	88,639
– treasury and other eligible bills	**21,634**	11,757
– debt securities	**75,668**	76,882
At 31 Dec	**446,274**	490,693

Equity instruments measured at fair value through other comprehensive income

Type of equity instruments	Fair value $m	Dividends recognised $m
Investments required by central institutions	**766**	**17**
Business facilitation	**954**	**24**
Others	**50**	**3**
At 31 Dec 2021	**1,770**	**44**
Investments required by central institutions	904	22
Business facilitation	1,387	22
Others	46	3
At 31 Dec 2020	2,337	47

Weighted average yields of investment debt securities

	Up to 1 year Yield %	1 to 5 years Yield %	5 to 10 years Yield %	Over 10 years Yield %
Debt securities measured at fair value through other comprehensive income				
US Treasury	**1.2**	**1.5**	**1.3**	**2.1**
US Government agencies	**0.2**	**1.2**	**2.8**	**1.9**
US Government-sponsored agencies	**1.0**	**1.6**	**2.3**	**1.6**
UK Government	**2.5**	**0.5**	**0.7**	**2.6**
Hong Kong Government	**0.4**	**0.9**	**2.2**	**–**
Other governments	**2.0**	**2.5**	**2.2**	**3.7**
Asset-backed securities	**9.3**	**0.7**	**1.1**	**0.5**
Corporate debt and other securities	**2.3**	**1.3**	**2.4**	**3.1**
Debt securities measured at amortised cost				
US Treasury	**0.7**	**1.3**	**5.9**	**2.9**
US Government agencies	**3.8**	**8.2**	**5.4**	**2.5**
US Government-sponsored agencies	**2.7**	**2.8**	**2.3**	**3.3**
Hong Kong Government	**2.0**	**3.8**	**2.1**	**4.8**
Other governments	**3.0**	**3.9**	**3.3**	**3.9**
Asset-backed securities	**–**	**–**	**–**	**7.5**
Corporate debt and other securities	**3.4**	**3.3**	**3.7**	**3.3**

The maturity distributions of ABSs are presented in the above table on the basis of contractual maturity dates. The weighted average yield for each range of maturities is calculated by dividing the annualised interest income for the year ended 31 December 2021 by the book amount of debt securities at that date. The yields do not include the effect of related derivatives.

HSBC Holdings

HSBC Holdings carrying amount of financial investments

	2021 $m	2020 $m
Debt instruments measured at amortised cost		
– treasury and other eligible bills	**19,508**	10,941
– debt securities	**6,686**	6,544
At 31 Dec	**26,194**	17,485

Weighted average yields of investment debt securities

	Up to 1 year Yield %	1 to 5 years Yield %	5 to 10 years Yield %	Over 10 years Yield %
Debt securities measured at amortised cost				
US Treasury	**0.3**	**0.3**	**–**	**–**

The weighted average yield for each range of maturities is calculated by dividing the annualised interest income for the year ended 31 December 2021 by the book amount of debt securities at that date. The yields do not include the effect of related derivatives.

17 Assets pledged, collateral received and assets transferred

Assets pledged

Financial assets pledged as collateral

	2021	2020
	$m	$m
Treasury bills and other eligible securities	9,613	12,774
Loans and advances to banks	412	236
Loans and advances to customers	55,370	43,168
Debt securities	66,629	67,312
Equity securities	34,472	26,101
Other	45,396	60,810
Assets pledged at 31 Dec	**211,892**	210,401

Assets pledged as collateral include all assets categorised as encumbered in the disclosure on page 79 of the Pillar 3 Disclosures at 31 December 2021.

The amount of assets pledged to secure liabilities may be greater than the book value of assets utilised as collateral. For example, in the case of securitisations and covered bonds, the amount of liabilities issued plus mandatory over-collateralisation is less than the book value of the pool of assets available for use as collateral. This is also the case where assets are placed with a custodian or a settlement agent that has a floating charge over all the assets placed to secure any liabilities under settlement accounts.

These transactions are conducted under terms that are usual and customary for collateralised transactions including, where relevant, standard securities lending and borrowing, repurchase agreements and derivative margining. HSBC places both cash and non-cash collateral in relation to derivative transactions.

Hong Kong currency notes in circulation are secured by the deposit of funds in respect of which the Hong Kong Government certificates of indebtedness are held.

Financial assets pledged as collateral which the counterparty has the right to sell or repledge

	2021	2020
	$m	$m
Trading assets	69,719	64,225
Financial investments	12,416	16,915
At 31 Dec	**82,135**	81,140

Collateral received

The fair value of assets accepted as collateral relating primarily to standard securities lending, reverse repurchase agreements, swaps of securities and derivative margining that HSBC is permitted to sell or repledge in the absence of default was $476,455m (2020: $447,101m). The fair value of any such collateral sold or repledged was $271,582m (2020: $246,520m).

HSBC is obliged to return equivalent securities. These transactions are conducted under terms that are usual and customary to standard securities lending, reverse repurchase agreements and derivative margining.

Assets transferred

The assets pledged include transfers to third parties that do not qualify for derecognition, notably secured borrowings such as debt securities held by counterparties as collateral under repurchase agreements and equity securities lent under securities lending agreements, as well as swaps of equity and debt securities. For secured borrowings, the transferred asset collateral continues to be recognised in full while a related liability, reflecting the Group's obligation to repurchase the assets for a fixed price at a future date, is also recognised on the balance sheet. Where securities are swapped, the transferred asset continues to be recognised in full. There is no associated liability as the non-cash collateral received is not recognised on the balance sheet. The Group is unable to use, sell or pledge the transferred assets for the duration of the transaction, and remains exposed to interest rate risk and credit risk on these pledged assets. With the exception of 'Other sales' in the following table, the counterparty's recourse is not limited to the transferred assets.

Transferred financial assets not qualifying for full derecognition and associated financial liabilities

	Carrying amount of:		Fair value of:		
	Transferred assets	Associated liabilities	Transferred assets	Associated liabilities	Net position
	$m	$m	$m	$m	$m
At 31 Dec 2021					
Repurchase agreements	51,135	48,180			
Securities lending agreements	43,644	2,918			
Other sales (recourse to transferred assets only)	3,826	3,826	3,830	3,842	(12)
At 31 Dec 2020					
Repurchase agreements	52,413	51,092			
Securities lending agreements	38,364	124			
Other sales (recourse to transferred assets only)	3,564	3,478	3,619	3,564	55

18 Interests in associates and joint ventures

Carrying amount of HSBC's interests in associates and joint ventures

	2021	2020
	$m	$m
Interests in associates	29,515	26,594
Interests in joint ventures	94	90
Interests in associates and joint ventures	29,609	26,684

Principal associates of HSBC

	2021		2020	
	Carrying amount	Fair value[1]	Carrying amount	Fair value[1]
	$m	$m	$m	$m
Bank of Communications Co., Limited	23,616	8,537	21,248	7,457
The Saudi British Bank	4,426	5,599	4,215	4,197

1 *Principal associates are listed on recognised stock exchanges. The fair values are based on the quoted market prices of the shares held (Level 1 in the fair value hierarchy).*

	At 31 Dec 2021		
	Country of incorporation and principal place of business	Principal activity	HSBC's interest %
Bank of Communications Co., Limited	People's Republic of China	Banking services	19.03
The Saudi British Bank	Saudi Arabia	Banking services	31.00

A list of all associates and joint ventures is set out in Note 38.

Bank of Communications Co., Limited

The Group's investment in Bank of Communications Co., Limited ('BoCom') is classified as an associate. Significant influence in BoCom was established with consideration of all relevant factors, including representation on BoCom's Board of Directors and participation in a resource and experience sharing agreement ('RES'). Under the RES, HSBC staff have been seconded to assist in the maintenance of BoCom's financial and operating policies. Investments in associates are recognised using the equity method of accounting in accordance with IAS 28, whereby the investment is initially recognised at cost and adjusted thereafter for the post-acquisition change in the Group's share of BoCom's net assets. An impairment test is required if there is any indication of impairment.

Impairment testing

At 31 December 2021, the fair value of the Group's investment in BoCom had been below the carrying amount for approximately 10 years. As a result, the Group performed an impairment test on the carrying amount, which confirmed that there was no impairment at 31 December 2021 as the recoverable amount as determined by a value-in-use ('VIU') calculation was higher than the carrying value.

	At 31 Dec 2021			At 31 Dec 2020		
	VIU	Carrying value	Fair value	VIU	Carrying value	Fair value
	$bn	$bn	$bn	$bn	$bn	$bn
BoCom	24.8	23.6	8.5	21.8	21.2	7.5

Compared with 31 December 2020, the extent to which the VIU exceeds the carrying value ('headroom') increased by $0.6bn. The increase in headroom was principally due to the impact on the VIU from BoCom's actual performance, which was better than earlier estimates, revisions to management's best estimates of BoCom's future earnings in the short to medium term, and the net impact of revisions to certain long-term assumptions.

In future periods, the VIU may increase or decrease depending on the effect of changes to model inputs. The main model inputs are described below and are based on factors observed at period-end. The factors that could result in a change in the VIU and an impairment include a short-term underperformance by BoCom, a change in regulatory capital requirements or an increase in uncertainty regarding the future performance of BoCom resulting in a downgrade of the forecast of future asset growth or profitability. An increase in the discount rate could also result in a reduction of VIU and an impairment. At the point where the carrying value exceeds the VIU, impairment would be recognised.

If the Group did not have significant influence in BoCom, the investment would be carried at fair value rather than the current carrying value.

Basis of recoverable amount

The impairment test was performed by comparing the recoverable amount of BoCom, determined by a VIU calculation, with its carrying amount. The VIU calculation uses discounted cash flow projections based on management's best estimates of future earnings available to ordinary shareholders prepared in accordance with IAS 36. Significant management judgement is required in arriving at the best estimate. There are two main components to the VIU calculation. The first component is management's best estimate of BoCom's earnings, which is based on explicit forecasts over the short to medium term. This results in forecast earnings growth that is lower than recent historical actual growth and also reflects the uncertainty arising from the current economic outlook. Reflecting management's intent to continue to retain its investment, earnings beyond the short to medium term are then extrapolated into perpetuity using a long-term growth rate to derive a terminal value, which comprises the majority of the VIU. The second component is the capital maintenance charge ('CMC'), which is management's forecast of the earnings that need to be withheld in order for BoCom to meet capital requirements over the forecast period, meaning that CMC is deducted when arriving at management's estimate of future earnings available to ordinary shareholders. The principal inputs to the CMC calculation include estimates of asset growth, the ratio of risk-weighted assets to total assets and the expected capital requirements. An increase in the CMC as a result of a change to these principal inputs would reduce VIU. Additionally, management considers other qualitative factors, to ensure that the inputs to the VIU calculation remain appropriate.

Key assumptions in value-in-use calculation

We used a number of assumptions in our VIU calculation, in accordance with the requirements of IAS 36:

- Long-term profit growth rate: 3% (2020: 3%) for periods after 2025, which does not exceed forecast GDP growth in mainland China and is consistent with forecasts by external analysts.
- Long-term asset growth rate: 3% (2020: 3%) for periods after 2025, which is the rate that assets are expected to grow to achieve long-term profit growth of 3%.
- Discount rate: 10.03% (2020: 11.37%) based on a capital asset pricing model ('CAPM'), using market data. The discount rate used is within the range of 8.7% to 10.1% (2020 equivalent range: 10.9% to 11.9%) indicated by the CAPM. The lower rate reflects the impact of a relative reduction in the volatility of Chinese banks' equity prices and a decrease in mainland China's credit risk due to its relatively quick recovery from the impact of the Covid-19 outbreak. While the CAPM range sits at the lower end of the range adopted by selected external analysts of 9.9% to 13.5% (2020: 10.3% to 15.0%), we continue to regard the CAPM range as the most appropriate basis for determining this assumption.
- Expected credit losses as a percentage of customer advances ('ECL'): ranges from 0.98% to 1.12% (2020: 0.98% to 1.22%) in the short to medium term, reflecting reported credit experience through the ongoing Covid-19 pandemic in mainland China followed by an expected reversion to recent historical levels. For periods after 2025, the ratio is 0.97% (2020: 0.88%), which is higher than BoCom's average ECL in recent years prior to the Covid-19 outbreak.
- Risk-weighted assets as a percentage of total assets: ranges from 61.0% to 62.4% (2020: 61.0% to 62.0%) in the short to medium term, reflecting reductions that may arise from a subsequent lowering of ECL and a continuation of the trend of strong retail loan growth. For periods after 2025, the ratio is 61.0% (2020: 61.0%). These rates are similar to BoCom's actual results in recent years and forecasts disclosed by external analysts.
- Operating income growth rate: ranges from 5.1% to 6.2% (2020: 3.5% to 6.7%) in the short to medium term, and is lower than BoCom's actual results in recent years and the forecasts disclosed by external analysts, reflecting BoCom's most recent actual results, global trade tensions and industry developments in mainland China.
- Cost-income ratio: ranges from 35.5% to 36.1% (2020: 36.3% to 36.8%) in the short to medium term. These ratios are similar to BoCom's actual results in recent years and forecasts disclosed by external analysts.
- Effective tax rate ('ETR'): ranges from 6.8% to 15.0% (2020: 7.8% to 16.5%) in the short to medium term, reflecting BoCom's actual results and an expected increase towards the long-term assumption through the forecast period. For periods after 2025, the rate is 15.0% (2020: 16.8%), which is higher than the recent historical average, and aligned to the minimum tax rate as proposed by the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting.
- Capital requirements: capital adequacy ratio ('CAR') of 12.5% (2020: 11.5%) and tier 1 capital adequacy ratio of 9.5% (2020: 9.5%), based on BoCom's capital risk appetite and capital requirements respectively. The CAR assumption was updated to 12.5% from 11.5% following the approval of BoCom's capital management plan in March 2021.

The following table shows the change to each key assumption in the VIU calculation that on its own would reduce the headroom to nil:

Key assumption	Changes to key assumption to reduce headroom to nil
• Long-term profit growth rate	• Decrease by 28 basis points
• Long-term asset growth rate	• Increase by 23 basis points
• Discount rate	• Increase by 36 basis points
• Expected credit losses as a percentage of customer advances	• Increase by 4 basis points
• Risk-weighted assets as a percentage of total assets	• Increase by 194 basis points
• Operating income growth rate	• Decrease by 39 basis points
• Cost-income ratio	• Increase by 109 basis points
• Long-term effective tax rate	• Increase by 322 basis points
• Capital requirements – capital adequacy ratio	• Increase by 40 basis points
• Capital requirements – tier 1 capital adequacy ratio	• Increase by 195 basis points

The following table further illustrates the impact on VIU of reasonably possible changes to key assumptions. This reflects the sensitivity of the VIU to each key assumption on its own and it is possible that more than one favourable and/or unfavourable change may occur at the same time. The selected rates of reasonably possible changes to key assumptions are largely based on external analysts' forecasts, which can change period to period.

Sensitivity of VIU to reasonably possible changes in key assumptions

	Favourable change			Unfavourable change		
		Increase in VIU	VIU		Decrease in VIU	VIU
	bps	$bn	$bn	bps	$bn	$bn
At 31 Dec 2021						
Long-term profit growth rate[1]	**87**	**4.2**	**29.0**	**(69)**	**(2.7)**	**22.1**
Long-term asset growth rate[1]	**(69)**	**2.9**	**27.7**	**87**	**(4.7)**	**20.1**
Discount rate[2]	**(133)**	**5.4**	**30.2**	**207**	**(5.3)**	**19.5**
Expected credit losses as a percentage of customer advances	**2021 to 2025: 103 2026 onwards: 91**	**1.5**	**26.3**	**2021 to 2025: 121 2026 onwards: 105**	**(2.7)**	**22.1**
Risk-weighted assets as a percentage of total assets	**(111)**	**0.2**	**25.0**	**280**	**(2.1)**	**22.7**
Operating income growth rate	**37**	**1.0**	**25.8**	**(58)**	**(1.8)**	**23.0**
Cost-income ratio	**(152)**	**1.7**	**26.5**	**174**	**(1.7)**	**23.1**
Long-term effective tax rate	**(104)**	**0.3**	**25.1**	**1,000**	**(3.6)**	**21.2**
Capital requirements – capital adequacy ratio	**—**	**—**	**24.8**	**325**	**(10.0)**	**14.8**
Capital requirements – tier 1 capital adequacy ratio	**—**	**—**	**24.8**	**364**	**(6.5)**	**18.3**
At 31 Dec 2020						
Long-term profit growth rate[1]	—	—	21.8	(50)	(1.3)	20.5
Long-term asset growth rate[1]	(50)	1.4	23.2	—	—	21.8
Discount rate	(47)	1.2	23.0	53	(1.2)	20.6
Expected credit losses as a percentage of customer advances	2020 to 2024: 96 2025 onwards: 76	2.3	24.1	2020 to 2024: 122 2025 onwards: 95	(2.1)	19.7
Risk-weighted assets as a percentage of total assets	(40)	0.1	21.9	166	(0.8)	21.0
Operating income growth rate	2	0.2	22.0	(69)	(1.5)	20.3
Cost-income ratio	(149)	1.3	23.1	120	(1.2)	20.6
Long-term effective tax rate	(316)	0.9	22.7	820	(2.2)	19.6
Capital requirements – capital adequacy ratio	—	—	21.8	297	(7.8)	14.0
Capital requirements – tier 1 capital adequacy ratio	—	—	21.8	263	(5.3)	16.5

1 *The reasonably possible ranges of the long-term profit growth rate and long-term asset growth rate assumptions reflect the close relationship between these assumptions, which would result in offsetting changes to each assumption.*
2 *The unfavourable change in the reasonably possible ranges of the discount rate assumption reflects the impact of adopting the average of the rates adopted by selected external analysts.*

Considering the interrelationship of the changes set out in the table above, management estimates that the reasonably possible range of VIU is $19.0bn to $29.3bn (2020 equivalent range: $17.2bn to $25.7bn). The range is based on impacts set out in the table above arising from the favourable/unfavourable change in the earnings in the short to medium term, the long-term expected credit losses as a percentage of customer advances, and a 50bps increase/decrease in the discount rate. The discount rate has been included this year, reflecting the relative materiality of movements in this assumption. All other long-term assumptions and the basis of the CMC have been kept unchanged when determining the reasonably possible range of the VIU.

Selected financial information of BoCom

The statutory accounting reference date of BoCom is 31 December. For the year ended 31 December 2021, HSBC included the associate's results on the basis of the financial statements for the 12 months ended 30 September 2021, taking into account changes in the subsequent period from 1 October 2021 to 31 December 2021 that would have materially affected the results.

Selected balance sheet information of BoCom

	At 30 Sep	
	2021	2020
	$m	$m
Cash and balances at central banks	**123,194**	121,987
Loans and advances to banks and other financial institutions	**98,932**	107,334
Loans and advances to customers	**993,956**	870,728
Other financial assets	**541,577**	508,328
Other assets	**47,679**	44,622
Total assets	**1,805,338**	1,652,999
Deposits by banks and other financial institutions	**287,057**	273,708
Customer accounts	**1,099,266**	1,012,732
Other financial liabilities	**228,135**	207,110
Other liabilities	**40,070**	31,105
Total liabilities	**1,654,528**	1,524,655
Total equity	**150,810**	128,344

Reconciliation of BoCom's total shareholders' equity to the carrying amount in HSBC's consolidated financial statements

	At 31 Dec	
	2021	2020
	$m	$m
HSBC's share of total shareholders' equity	**23,097**	20,743
Goodwill and other intangible assets	**519**	505
Carrying amount	**23,616**	21,248

Selected income statement information of BoCom

	For the 12 months ended 30 Sep	
	2021	2020
	$m	$m
Net interest income	**24,582**	21,994
Net fee and commission income	**7,170**	6,398
Change in expected credit losses and other credit impairment charges	**(9,701)**	(9,698)
Depreciation and amortisation	**(2,297)**	(2,072)
Tax expense	**(1,045)**	(858)
Profit for the year	**14,199**	10,261
Other comprehensive income	**(368)**	(769)
Total comprehensive income	**13,831**	9,492
Dividends received from BoCom	**692**	633

The Saudi British Bank

The Group's investment in The Saudi British Bank ('SABB') is classified as an associate. HSBC is the largest shareholder in SABB with a shareholding of 31%. Significant influence in SABB is established via representation on the Board of Directors. Investments in associates are recognised using the equity method of accounting in accordance with IAS 28, as described previously for BoCom.

Impairment testing

There were no indicators of impairment at 31 December 2021. The fair value of the Group's investment in SABB of $5.6bn was above the carrying amount of $4.4bn.

19 Investments in subsidiaries

Main subsidiaries of HSBC Holdings

	At 31 Dec 2021		
	Place of incorporation or registration	**HSBC's interest %**	**Share class**
Europe			
HSBC Bank plc	**England and Wales**	**100**	**£1 Ordinary, $0.01 Non-Cumulative Third Dollar Preference**
HSBC UK Bank plc	**England and Wales**	**100**	**£1 Ordinary**
HSBC Continental Europe	**France**	**99.99**	**€5 Actions**
HSBC Trinkaus & Burkhardt AG	**Germany**	**100**	**Stückaktien no par value**
Asia			
Hang Seng Bank Limited	**Hong Kong**	**62.14**	**HK$5 Ordinary**
HSBC Bank (China) Company Limited	**People's Republic of China**	**100**	**CNY1 Ordinary**
HSBC Bank Malaysia Berhad	**Malaysia**	**100**	**RM0.5 Ordinary**
HSBC Life (International) Limited	**Bermuda**	**100**	**HK$1 Ordinary**
The Hongkong and Shanghai Banking Corporation Limited	**Hong Kong**	**100**	**Ordinary no par value**
Middle East and North Africa			
HSBC Bank Middle East Limited	**United Arab Emirates**	**100**	**$1 Ordinary and $1 Cumulative Redeemable Preference shares**
North America			
HSBC Bank Canada	**Canada**	**100**	**Common no par value and Preference no par value**
HSBC Bank USA, N.A.	**US**	**100**	**$100 Common and $0.01 Preference**
Latin America			
HSBC Mexico, S.A., Institución de Banca Múltiple, Grupo Financiero HSBC	**Mexico**	**99.99**	**MXN2 Ordinary**

Details of the debt, subordinated debt and preference shares issued by the main subsidiaries to parties external to the Group are included in Note 25 'Debt securities in issue' and Note 28 'Subordinated liabilities', respectively.

A list of all related undertakings is set out in Note 38. The principal countries of operation are the same as the countries and territories of incorporation except for HSBC Life (International) Limited, which operates mainly in Hong Kong.

HSBC is structured as a network of regional banks and locally incorporated regulated banking entities. Each bank is separately capitalised in accordance with applicable prudential requirements and maintains a capital buffer consistent with the Group's risk appetite for the relevant country or region. HSBC's capital management process is incorporated in the annual operating plan, which is approved by the Board.

HSBC Holdings is the primary provider of equity capital to its subsidiaries and also provides them with non-equity capital where necessary. These investments are substantially funded by HSBC Holdings' issuance of equity and non-equity capital, and by profit retention. The net increase in investments in subsidiaries was partly due to the reversal of impairment of HSBC Overseas Holdings (UK) Limited of $3.1bn. The cumulative impairment for HSBC Overseas Holdings (UK) Limited as at 31 December 2021 is $7.2bn. It is reasonably possible that outcomes in the future may be different from the assumptions made as at December 2021 that could require a material change to the carrying amount of HSBC Overseas Holdings (UK) Limited. The carrying value is $33.1bn as at 31 December 2021 (2020:$30.7bn).

As part of its capital management process, HSBC Holdings seeks to maintain a balance between the composition of its capital and its investment in subsidiaries. Subject to this, there is no current or foreseen impediment to HSBC Holdings' ability to provide funding for such investments. During 2021, consistent with the Group's capital plan, the Group's subsidiaries did not experience any significant restrictions on paying dividends or repaying loans and advances. Also, there are no foreseen restrictions envisaged with regard to planned dividends or payments. However, the ability of subsidiaries to pay dividends or advance monies to HSBC Holdings depends on, among other things, their respective local regulatory capital and banking requirements, exchange controls, statutory reserves, and financial and operating performance.

The amount of guarantees by HSBC Holdings in favour of other Group entities is set out in Note 32.

Information on structured entities consolidated by HSBC where HSBC owns less than 50% of the voting rights is included in Note 20 'Structured entities'. In each of these cases, HSBC controls and consolidates an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Subsidiaries with significant non-controlling interests

	2021	2020
Hang Seng Bank Limited		
Proportion of ownership interests and voting rights held by non-controlling interests	**37.86 %**	37.86%
Place of business	**Hong Kong**	Hong Kong
	$m	$m
Profit attributable to non-controlling interests	**708**	843
Accumulated non-controlling interests of the subsidiary	**7,597**	7,604
Dividends paid to non-controlling interests	**568**	625
Summarised financial information:		
– total assets	**230,866**	224,483
– total liabilities	**209,315**	202,907
– net operating income before changes in expected credit losses and other credit impairment charges	**4,280**	4,568
– profit for the year	**1,872**	2,230
– total comprehensive income for the year	**1,686**	2,535

20 Structured entities

HSBC is mainly involved with both consolidated and unconsolidated structured entities through the securitisation of financial assets, conduits and investment funds, established either by HSBC or a third party.

Consolidated structured entities

Total assets of HSBC's consolidated structured entities, split by entity type

	Conduits	Securitisations	HSBC managed funds	Other	Total
	$bn	$bn	$bn	$bn	$bn
At 31 Dec 2021	**4.4**	**10.0**	**6.3**	**8.4**	**29.1**
At 31 Dec 2020	6.9	11.7	5.3	10.8	34.7

Conduits

HSBC has established and manages two types of conduits: securities investment conduits ('SICs') and multi-seller conduits.

Securities investment conduits

The SICs purchase highly rated ABSs to facilitate tailored investment opportunities.

- At 31 December 2021, Solitaire, HSBC's principal SIC, held $1.6bn of ABSs (2020: $1.9bn). It is currently funded entirely by commercial paper ('CP') issued to HSBC. At 31 December 2021, HSBC held $1.8bn of CP (2020: $2.1bn).

Multi-seller conduit

HSBC's multi-seller conduit was established to provide access to flexible market-based sources of finance for its clients. Currently, HSBC bears risk equal to the transaction-specific facility offered to the multi-seller conduit, amounting to $6.7bn at 31 December 2021 (2020: $9.6bn). First loss protection is provided by the originator of the assets, and not by HSBC, through transaction-specific credit enhancements. A layer of secondary loss protection is provided by HSBC in the form of programme-wide enhancement facilities.

Securitisations

HSBC uses structured entities to securitise customer loans and advances it originates in order to diversify its sources of funding for asset origination and capital efficiency purposes. The loans and advances are transferred by HSBC to the structured entities for cash or synthetically through credit default swaps, and the structured entities issue debt securities to investors.

HSBC managed funds

HSBC has established a number of money market and non-money market funds. Where it is deemed to be acting as principal rather than agent in its role as investment manager, HSBC controls these funds.

Other

HSBC has entered into a number of transactions in the normal course of business, which include asset and structured finance transactions where it has control of the structured entity. In addition, HSBC is deemed to control a number of third-party managed funds through its involvement as a principal in the funds.

Unconsolidated structured entities

The term 'unconsolidated structured entities' refers to all structured entities not controlled by HSBC. The Group enters into transactions with unconsolidated structured entities in the normal course of business to facilitate customer transactions and for specific investment opportunities.

Nature and risks associated with HSBC interests in unconsolidated structured entities

Total asset values of the entities ($m)	Securitisations	HSBC managed funds	Non-HSBC managed funds	Other	Total
0–500	**96**	**294**	**1,408**	**37**	**1,835**
500–2,000	**11**	**116**	**911**	**3**	**1,041**
2,000–5,000	**—**	**33**	**435**	**—**	**468**
5,000–25,000	**—**	**14**	**197**	**—**	**211**
25,000+	**—**	**4**	**11**	**—**	**15**
Number of entities at 31 Dec 2021	**107**	**461**	**2,962**	**40**	**3,570**
	$bn	**$bn**	**$bn**	**$bn**	**$bn**
Total assets in relation to HSBC's interests in the unconsolidated structured entities	**4.8**	**10.8**	**18.6**	**3.8**	**38.0**
– trading assets	**—**	**0.2**	**2.4**	**0.1**	**2.7**
– financial assets designated and otherwise mandatorily measured at fair value	**—**	**10.0**	**15.5**	**—**	**25.5**
– loans and advances to customers	**4.8**	**—**	**0.1**	**3.0**	**7.9**
– financial investments	**—**	**0.6**	**0.6**	**—**	**1.2**
– other assets	**—**	**—**	**—**	**0.7**	**0.7**
Total liabilities in relation to HSBC's interests in the unconsolidated structured entities	**—**	**—**	**—**	**0.4**	**0.4**
– other liabilities	**—**	**—**	**—**	**0.4**	**0.4**
Other off-balance sheet commitments	**0.1**	**0.9**	**4.6**	**1.2**	**6.8**
HSBC's maximum exposure at 31 Dec 2021	**4.9**	**11.7**	**23.2**	**4.6**	**44.4**
Total asset values of the entities ($m)					
0–500	86	292	1,430	47	1,855
500–2,000	9	94	733	2	838
2,000–5,000	—	32	389	—	421
5,000–25,000	—	14	311	—	325
25,000+	—	5	41	—	46
Number of entities at 31 Dec 2020	95	437	2,904	49	3,485
	$bn	$bn	$bn	$bn	$bn
Total assets in relation to HSBC's interests in the unconsolidated structured entities	4.4	9.9	17.5	2.1	33.9
– trading assets	—	0.3	3.2	—	3.5
– financial assets designated and otherwise mandatorily measured at fair value	—	8.6	13.8	—	22.4
– loans and advances to customers	4.4	—	—	1.5	5.9
– financial investments	—	1	0.5	—	1.5
– other assets	—	—	—	0.6	0.6
Total liabilities in relation to HSBC's interests in the unconsolidated structured entities	—	—	—	0.3	0.3
– other liabilities	—	—	—	0.3	0.3
Other off-balance sheet commitments	0.1	0.5	4.9	1.2	6.7
HSBC's maximum exposure at 31 Dec 2020	4.5	10.4	22.4	3.6	40.9

The maximum exposure to loss from HSBC's interests in unconsolidated structured entities represents the maximum loss it could incur as a result of its involvement with these entities regardless of the probability of the loss being incurred.

- For commitments, guarantees and written credit default swaps, the maximum exposure to loss is the notional amount of potential future losses.
- For retained and purchased investments and loans to unconsolidated structured entities, the maximum exposure to loss is the carrying value of these interests at the balance sheet reporting date.

The maximum exposure to loss is stated gross of the effects of hedging and collateral arrangements that HSBC has entered into in order to mitigate the Group's exposure to loss.

Securitisations

HSBC has interests in unconsolidated securitisation vehicles through holding notes issued by these entities. In addition, HSBC has investments in ABSs issued by third-party structured entities.

HSBC managed funds

HSBC establishes and manages money market funds and non-money market investment funds to provide customers with investment opportunities. Further information on funds under management is provided on page 104.

HSBC, as fund manager, may be entitled to receive management and performance fees based on the assets under management. HSBC may also retain units in these funds.

Non-HSBC managed funds

HSBC purchases and holds units of third-party managed funds in order to facilitate business and meet customer needs.

Other

HSBC has established structured entities in the normal course of business, such as structured credit transactions for customers, to provide finance to public and private sector infrastructure projects, and for asset and structured finance transactions.

In addition to the interests disclosed above, HSBC enters into derivative contracts, reverse repos and stock borrowing transactions with structured entities. These interests arise in the normal course of business for the facilitation of third-party transactions and risk management solutions.

HSBC sponsored structured entities

The amount of assets transferred to and income received from such sponsored structured entities during 2021 and 2020 were not significant.

21 Goodwill and intangible assets

	2021	2020
	$m	$m
Goodwill	**5,033**	5,881
Present value of in-force long-term insurance business	**9,453**	9,435
Other intangible assets[1]	**6,136**	5,127
At 31 Dec	**20,622**	20,443

1 *Included within other intangible assets is internally generated software with a net carrying value of $5,430m (2020: $4,452m). During the year, capitalisation of internally generated software was $2,373m (2020: $1,934m), impairment was $137m (2020: $1,322m) and amortisation was $1,183m (2020: $1,085m).*

Movement analysis of goodwill

	2021	2020
	$m	$m
Gross amount		
At 1 Jan	**23,135**	22,084
Exchange differences	**(905)**	967
Other	**(15)**	84
At 31 Dec	**22,215**	23,135
Accumulated impairment losses		
At 1 Jan	**(17,254)**	(16,494)
Impairment losses	**(587)**	(41)
Exchange differences	**659**	(719)
At 31 Dec	**(17,182)**	(17,254)
Net carrying amount at 31 Dec	**5,033**	5,881

Goodwill

Impairment testing

The Group's impairment test in respect of goodwill allocated to each cash-generating unit ('CGU') is performed at 1 October each year. A review for indicators of impairment is undertaken at each subsequent quarter-end and at 31 December 2021.

As a result of the 1 October 2021 annual impairment test, we recognised $0.6bn of goodwill impairment related to the Latin America – WPB CGU. Impairment resulted from a combination of factors, including our macroeconomic outlook and the impact of inflationary pressure on judgements made to estimate value in use ('VIU'). Significant inputs to the VIU calculation are discussed in more detail within 'Basis of the recoverable amount' below. Management considered the sensitivity of certain assumptions, in particular the discount rate, and the outcome of reasonably possible alternative scenarios. This resulted in full impairment of goodwill allocated to Latin America – WPB.

Impairment results and key assumptions in VIU calculations – impaired CGU at 1 October 2021

	Carrying amount	of which goodwill	Value in use	Impairment	Discount rate	Growth rate beyond initial cash flow projections
	$bn	$bn	$bn	$bn	%	%
Latin America – WPB	**2.3**	**0.6**	**1.7**	**0.6**	**14.5**	**4.8**

Basis of the recoverable amount

The recoverable amount of all CGUs to which goodwill has been allocated was equal to its value in use at each respective testing date. The VIU is calculated by discounting management's cash flow projections for the CGU. The key assumptions used in the VIU calculation for each individually significant CGU that is not impaired are discussed below.

Key assumptions in VIU calculation – significant CGUs at 1 October 2021

	Goodwill at 1 Oct 2021	Discount rate	Growth rate beyond initial cash flow	Goodwill at 1 Oct 2020	Discount rate	Growth rate beyond initial cash flow projections
	$m	%	%	$m	%	%
Europe – WPB	**3,556**	**9.2**	**1.8**	3,582	9.6	1.9

At 1 October 2021, aggregate goodwill of $2,108m (1 October 2020: $2,059m) had been allocated to CGUs that were not considered individually significant. The Group's CGUs do not carry on their balance sheets any significant intangible assets with indefinite useful lives, other than goodwill.

Management's judgement in estimating the cash flows of a CGU

The cash flow projections for each CGU are based on forecast profitability plans approved by the Board and minimum capital levels required to support the business operations of a CGU. The Board challenges and endorses planning assumptions in light of internal capital allocation decisions necessary to support our strategy, current market conditions and macroeconomic outlook including climate risk. For the 1 October 2021 impairment test, cash flow projections until the end of 2026 were considered, in line with our internal planning horizon. As required by IFRSs, estimates of future cash flows exclude estimated cash inflows or outflows that are expected to arise from restructuring initiatives before an entity has a constructive obligation to carry out the plan, and would therefore have recognised a provision for restructuring costs.

Discount rate

The rate used to discount the cash flows is based on the cost of equity assigned to each CGU, which is derived using a capital asset pricing model ('CAPM') and market implied cost of equity. CAPM depends on a number of inputs reflecting financial and economic variables, including the risk-free rate and a premium to reflect the inherent risk of the business being evaluated. These variables are based on the market's assessment of the economic variables and management's judgement. The discount rates for each CGU are refined to reflect the rates of inflation for the countries within which the CGU operates. In addition, for the purposes of testing goodwill for impairment, management supplements this process by comparing the discount rates derived using the internally generated CAPM, with the cost of equity rates produced by external sources for businesses operating in similar markets.

Long-term growth rate

The long-term growth rate is used to extrapolate the cash flows in perpetuity because of the long-term perspective within the Group of business units making up the CGUs. These growth rates reflect inflation for the countries within which the CGU operates or from which it derives revenue.

Sensitivities of key assumptions in calculating VIU

At 1 October 2021, Europe – WPB was sensitive to reasonably possible adverse changes in key assumptions supporting the recoverable amount. In making an estimate of reasonably possible changes to assumptions, management considers the available evidence in respect of each input to the VIU calculation, such as the external range of discount rates observable, historical performance against forecast and risks attaching to the key assumptions underlying cash flow projections. A reasonable change in a single key assumption may not result in impairment, although taken together a combination of reasonable changes in key assumptions could result in a recoverable amount that is lower than the CGU's carrying amount.

	Input	Key assumptions	Associated risks	Reasonably possible change
Cash-generating unit				
Europe – WPB	Forecast profitability	• Level of interest rates and yield curves. • Competitors' position within the market. • Level and change in unemployment rates.	• Uncertain regulatory environment. • Customer remediation and regulatory actions.	• Forecast profitability projections decrease by 30%. This does not result in an impairment.
	Discount rate	Discount rate used is a reasonable estimate of a suitable market rate for the profile of the business.	• External evidence suggests that the rate used is not appropriate to the business.	• Discount rate increases by 100bps. This does not result in an impairment.

Sensitivity of VIU to reasonably possible changes in key assumptions and changes to current assumptions to achieve nil headroom

In $bn (unless otherwise stated)	**Europe – WPB**
At 1 October 2021	
Carrying amount	**18.8**
VIU	**29.8**
Impact on VIU	
100bps increase in the discount rate – single variable	**(3.7)**
30% decrease in forecast profitability – single variable	**(9.2)**
Cumulative impact of all changes	**(11.7)**
Changes to key assumption to reduce headroom to nil – single variable	
Discount rate – bps	**409**
Profit cash flows – %	**36**

Other intangible assets

Impairment testing

Impairment of other intangible assets is assessed in accordance with our policy explained in Note 1.2(n) by comparing the net carrying amount of CGUs containing intangible assets with their recoverable amounts. Recoverable amounts are determined by calculating an estimated VIU or fair value, as appropriate, for each CGU. No significant impairment was recognised during the year.

In 2020, having considered the pervasive macroeconomic deterioration caused by the outbreak of Covid-19, along with the impact of forecast profitability in some businesses, we recognised $1.3bn of capitalised software impairment related principally to businesses within HSBC Bank plc, our non-ring-fenced bank in Europe, and to a lesser degree businesses within HSBC USA Inc. This impairment reflected underperformance and deterioration in the future forecasts of these businesses, substantially relating to prior periods in HSBC Bank plc.

Key assumptions in VIU calculation

We used a number of assumptions in our VIU calculation, in accordance with the requirements of IAS 36:

- Management's judgement in estimating future cash flows: We considered past business performance, current market conditions and our macroeconomic outlook to estimate future earnings. As required by IFRSs, estimates of future cash flows exclude estimated cash inflows or outflows that are expected to arise from restructuring initiatives before an entity has a constructive obligation to carry out the plan, and would therefore have recognised a provision for restructuring costs. For some businesses, this means that the benefit of certain strategic actions may not be included in the impairment assessment, including capital releases.

- Long-term growth rates: The long-term growth rate is used to extrapolate the cash flows in perpetuity because of the long-term perspective of the businesses within the Group.
- Discount rates: Rates are based on a combination of CAPM and market-implied calculations considering market data for the businesses and geographies in which the Group operates.

Future software capitalisation

We will continue to invest in digital capabilities to meet our strategic objectives. However, software capitalisation within businesses where impairment was identified will not resume until the performance outlook for each business indicates future profits are sufficient to support capitalisation. The cost of additional software investment in these businesses will be recognised as an operating expense until such time.

Sensitivity of estimates relating to non-financial assets

As explained in Note 1.2(a), estimates of future cash flows for CGUs are made in the review of goodwill and non-financial assets for impairment. Non-financial assets include other intangible assets shown above, and owned property, plant and equipment and right-of-use assets (see Note 22). The most significant sources of estimation uncertainty are in respect of the goodwill balances disclosed above. There are no non-financial asset balances relating to individual CGUs which involve estimation uncertainty that represents a significant risk of resulting in a material adjustment to the results and financial position of the Group within the next financial year.

Non-financial assets are widely distributed across CGUs within the legal entities of the Group, including Corporate Centre assets that cannot be allocated to CGUs and are therefore tested for impairment at consolidated level. The recoverable amounts of other intangible assets, owned property, plant and equipment, and right-of-use assets cannot be lower than individual asset fair values less costs to dispose, where relevant. At 31 December 2021 none of the CGUs were sensitive to reasonably possible adverse changes in key assumptions supporting the recoverable amount. In making an estimate of reasonably possible changes to assumptions, management considers the available evidence in respect of each input to the VIU calculation, such as the external range of discount rates observable, historical performance against forecast and risks attaching to the key assumptions underlying cash flow projections.

Present value of in-force long-term insurance business

When calculating the present value of in-force long-term ('PVIF') insurance business, expected cash flows are projected after adjusting for a variety of assumptions made by each insurance operation to reflect local market conditions, and management's judgement of future trends and uncertainty in the underlying assumptions is reflected by applying margins (as opposed to a cost of capital methodology) including valuing the cost of policyholder options and guarantees using stochastic techniques.

Actuarial Control Committees of each key insurance entity meet on a quarterly basis to review and approve PVIF assumptions. All changes to non-economic assumptions, economic assumptions that are not observable and model methodologies must be approved by the Actuarial Control Committee.

Movements in PVIF

	2021	2020
	$m	$m
At 1 Jan	**9,435**	8,945
Change in PVIF of long-term insurance business	**130**	382
– value of new business written during the year	**1,090**	776
– expected return[1]	**(903)**	(1,003)
– assumption changes and experience variances (see below)	**(105)**	604
– other adjustments	**48**	5
Exchange differences and other movements	**(112)**	108
At 31 Dec	**9,453**	9,435

1 *'Expected return' represents the unwinding of the discount rate and reversal of expected cash flows for the period.*

Assumption changes and experience variances

Included within this line item are:

- $59m (2020: $132m), directly offsetting interest rate-driven changes to the valuation of liabilities under insurance contracts;
- $(324)m (2020: $247m), reflecting the future expected sharing of returns with policyholders on contracts with discretionary participation features ('DPF'), to the extent this sharing is not already included in liabilities under insurance contracts; and
- $160m (2020: $225m), driven by other assumptions changes and experience variances.

Key assumptions used in the computation of PVIF for main life insurance operations

Economic assumptions are set in a way that is consistent with observable market values. The valuation of PVIF is sensitive to observed market movements and the impact of such changes is included in the sensitivities presented below.

	2021		2020	
	Hong Kong	France[1]	Hong Kong	France[1]
	%	%	%	%
Weighted average risk-free rate	**1.40**	**0.69**	0.71	0.34
Weighted average risk discount rate	**5.20**	**1.55**	4.96	1.34
Expense inflation	**3.00**	**1.80**	3.00	1.60

1 *For 2021, the calculation of France's PVIF assumes a risk discount rate of 1.55% (2020: 1.34%) plus a risk margin of $215m (2020: $213m).*

Sensitivity to changes in economic assumptions

The Group sets the risk discount rate applied to the PVIF calculation by starting from a risk-free rate curve and adding explicit allowances for risks not reflected in the best-estimate cash flow modelling. Where the insurance operations provide options and guarantees to policyholders, the cost of these options and guarantees is accounted for as a deduction from the PVIF asset, unless the cost of such guarantees is already allowed for as an explicit addition to liabilities under insurance contracts. For further details of these guarantees and the impact of changes in economic assumptions on our insurance manufacturing subsidiaries, see page 214.

Sensitivity to changes in non-economic assumptions

Policyholder liabilities and PVIF are determined by reference to non-economic assumptions, including mortality and/or morbidity, lapse rates and expense rates. For further details on the impact of changes in non-economic assumptions on our insurance manufacturing operations, see page 216.

22 Prepayments, accrued income and other assets

	2021	2020
	$m	$m
Prepayments and accrued income	**8,233**	8,114
Settlement accounts	**17,713**	17,316
Cash collateral and margin receivables	**42,171**	59,543
Assets held for sale[1]	**3,411**	299
Bullion	**15,283**	20,151
Endorsements and acceptances	**11,229**	10,278
Reinsurers' share of liabilities under insurance contracts (Note 4)	**3,668**	3,448
Employee benefit assets (Note 5)	**10,269**	10,450
Right-of-use assets	**2,985**	4,002
Owned property, plant and equipment	**10,255**	10,412
Other accounts	**14,765**	12,399
At 31 Dec	**139,982**	156,412

1 *'Assets held for sale' includes $2.6bn of loans and advances to customers that were classified as assets held for sale, reflecting our exit of mass market retail banking in the US.*

Prepayments, accrued income and other assets include $91,045m (2020: $105,469m) of financial assets, the majority of which are measured at amortised cost.

23 Trading liabilities

	2021	2020
	$m	$m
Deposits by banks[1]	**4,243**	6,689
Customer accounts[1]	**9,424**	10,681
Other debt securities in issue (Note 25)	**1,792**	1,582
Other liabilities – net short positions in securities	**69,445**	56,314
At 31 Dec	**84,904**	75,266

1 *'Deposits by banks' and 'Customer accounts' include repos, stock lending and other amounts.*

24 Financial liabilities designated at fair value

HSBC

	2021	2020
	$m	$m
Deposits by banks and customer accounts[1]	**16,703**	19,176
Liabilities to customers under investment contracts	**5,938**	6,385
Debt securities in issue (Note 25)	**112,761**	121,034
Subordinated liabilities (Note 28)	**10,100**	10,844
At 31 Dec	**145,502**	157,439

1 *Structured deposits placed at HSBC Bank USA are insured by the Federal Deposit Insurance Corporation, a US government agency, up to $250,000 per depositor.*

The carrying amount of financial liabilities designated at fair value was $827m more than the contractual amount at maturity. The cumulative amount of change in fair value attributable to changes in credit risk was a loss of $2,084m (2020: loss of $2,542m).

HSBC Holdings

	2021	2020
	$m	$m
Debt securities in issue (Note 25)	**26,818**	19,624
Subordinated liabilities (Note 28)	**5,600**	6,040
At 31 Dec	**32,418**	25,664

The carrying amount of financial liabilities designated at fair value was $1,766m more than the contractual amount at maturity (2020: $3,019m more). The cumulative amount of change in fair value attributable to changes in credit risk was a loss of $951m (2020: $1,210m).

25 Debt securities in issue

HSBC

	2021	2020
	$m	$m
Bonds and medium-term notes	166,537	176,570
Other debt securities in issue	26,573	41,538
Total debt securities in issue	193,110	218,108
Included within:		
– trading liabilities (Note 23)	(1,792)	(1,582)
– financial liabilities designated at fair value (Note 24)	(112,761)	(121,034)
At 31 Dec	78,557	95,492

HSBC Holdings

	2021	2020
	$m	$m
Debt securities	94,301	83,653
Included within:		
– financial liabilities designated at fair value (Note 24)	(26,818)	(19,624)
At 31 Dec	67,483	64,029

26 Accruals, deferred income and other liabilities

	2021	2020
	$m	$m
Accruals and deferred income	10,466	10,406
Settlement accounts	15,226	13,008
Cash collateral and margin payables	50,226	65,557
Endorsements and acceptances	11,232	10,293
Employee benefit liabilities (Note 5)	1,607	2,025
Liabilities of disposal groups held for sale[1]	9,005	—
Lease liabilities	3,586	4,614
Other liabilities	22,430	22,721
At 31 Dec	123,778	128,624

1 *Includes $8.8bn of customer accounts that were classified as liabilities of disposal groups held for sale, reflecting our exit of mass market retail banking in the US.*

Accruals, deferred income and other liabilities include $111,887m (2020: $120,229m) of financial liabilities, the majority of which are measured at amortised cost.

27 Provisions

	Restructuring costs	Legal proceedings and regulatory matters	Customer remediation	Other provisions	Total
	$m	$m	$m	$m	$m
Provisions (excluding contractual commitments)					
At 1 Jan 2021	671	756	858	305	2,590
Additions	347	249	192	471	1,259
Amounts utilised	(499)	(316)	(548)	(58)	(1,421)
Unused amounts reversed	(170)	(59)	(113)	(124)	(466)
Exchange and other movements	34	(11)	(3)	(36)	(16)
At 31 Dec 2021	383	619	386	558	1,946
Contractual commitments[1]					
At 1 Jan 2021					1,088
Net change in expected credit loss provision and other movements					(468)
At 31 Dec 2021					620
Total provisions					
At 31 Dec 2020					3,678
At 31 Dec 2021					2,566

	Restructuring costs	Legal proceedings and regulatory matters	Customer remediation	Other provisions	Total
	$m	$m	$m	$m	$m
Provisions (excluding contractual commitments)					
At 1 Jan 2020	356	605	1,646	280	2,887
Additions	698	347	189	222	1,456
Amounts utilised	(322)	(177)	(739)	(125)	(1,363)
Unused amounts reversed	(74)	(75)	(240)	(80)	(469)
Exchange and other movements	13	56	2	8	79
At 31 Dec 2020	671	756	858	305	2,590
Contractual commitments[1]					
At 1 Jan 2020					511
Net change in expected credit loss provision and other movements					577
At 31 Dec 2020					1,088
Total provisions					
At 31 Dec 2019					3,398
At 31 Dec 2020					3,678

1 *Contractual commitments include the provision for contingent liabilities measured under IFRS 9 'Financial Instruments' in respect of financial guarantees and the expected credit loss provision on off-balance sheet guarantees and commitments.*

Further details of 'Legal proceedings and regulatory matters' are set out in Note 34. Legal proceedings include civil court, arbitration or tribunal proceedings brought against HSBC companies (whether by way of claim or counterclaim) or civil disputes that may, if not settled, result in court, arbitration or tribunal proceedings. Regulatory matters refer to investigations, reviews and other actions carried out by, or in response to the actions of, regulators or law enforcement agencies in connection with alleged wrongdoing by HSBC.

Customer remediation refers to HSBC's activities to compensate customers for losses or damages associated with a failure to comply with regulations or to treat customers fairly. Customer remediation is often initiated by HSBC in response to customer complaints and/or industry developments in sales practices and is not necessarily initiated by regulatory action. Further details of customer remediation are set out in this note.

At 31 December 2021, $173m (2020: $328m) of the customer remediation provision related to the estimated liability for redress in respect of the possible mis-selling of payment protection insurance ('PPI') policies in previous years. Of the $328m balance at 31 December 2020, $192m was utilised during 2021 and the provision was increased by $37m.

At 31 December 2021, a provision of $87m (2020: $302m) was held relating to the estimated liability for redress payable to customers following a review of historical collections and recoveries practices in the UK. During 2021, redress payments and incurred operating costs totalled $197m, in addition to the net release of $18m of provision. This release reflect the actual number of customers impacted and cost of redress paid, which were lower than has been previously estimated.

For further details of the impact of IFRS 9 on undrawn loan commitments and financial guarantees, presented in 'Contractual commitments', see Note 32. This provision results from the adoption of IFRS 9 and has no comparatives. Further analysis of the movement in the expected credit loss provision is disclosed within the 'Reconciliation of allowances for loans and advances to banks and customers including loan commitments and financial guarantees' table on page 153.

28 Subordinated liabilities

HSBC's subordinated liabilities

	2021	2020
	$m	$m
At amortised cost	**20,487**	21,951
– subordinated liabilities	**18,640**	20,095
– preferred securities	**1,847**	1,856
Designated at fair value (Note 24)	**10,100**	10,844
– subordinated liabilities	**10,100**	10,844
– preferred securities	**—**	—
At 31 Dec	**30,587**	32,795
Issued by HSBC subsidiaries	**9,112**	10,223
Issued by HSBC Holdings	**21,475**	22,572

Subordinated liabilities rank behind senior obligations and generally count towards the capital base of HSBC. Capital securities may be called and redeemed by HSBC subject to prior notification to the PRA and, where relevant, the consent of the local banking regulator. If not redeemed at the first call date, coupons payable may reset or become floating rate based on relevant market rates. On subordinated liabilities other than floating rate notes, interest is payable at fixed rates of up to 10.176%.

The balance sheet amounts disclosed in the following table are presented on an IFRS basis and do not reflect the amount that the instruments contribute to regulatory capital, principally due to regulatory amortisation and regulatory eligibility limits.

HSBC's subsidiaries subordinated liabilities in issue

		First call date	Maturity date	2021 $m	2020 $m
Additional tier 1 capital securities guaranteed by HSBC Holdings[1]					
$900m	10.176% non-cumulative step-up perpetual preferred securities, series 2[2]	Jun 2030		**900**	900
				900	900
Additional tier 1 capital securities guaranteed by HSBC Bank plc[1]					
£700m	5.844% non-cumulative step-up perpetual preferred securities[3]	Nov 2031		**947**	956
				947	956
Tier 2 securities issued by HSBC Bank plc					
$750m	Undated floating rate primary capital notes	Jun 1990		**750**	750
$500m	Undated floating rate primary capital notes	Sep 1990		**500**	500
$300m	Undated floating rate primary capital notes, series 3	Jun 1992		**300**	300
$300m	7.65% subordinated notes	—	May 2025	**300**	300
				1,850	1,850
£300m	6.50% subordinated notes	—	Jul 2023	**406**	409
£350m	5.375% callable subordinated step-up notes[4]	Nov 2025	Nov 2030	**539**	583
£500m	5.375% subordinated notes	—	Aug 2033	**900**	981
£225m	6.25% subordinated notes	—	Jan 2041	**303**	306
£600m	4.75% subordinated notes	—	Mar 2046	**805**	812
				2,953	3,091
				4,803	4,941
Tier 2 securities issued by The Hongkong and Shanghai Banking Corporation Limited					
$400m	Primary capital undated floating rate notes (third series)	Jul 1991		**400**	400
				400	400
Tier 2 securities issued by HSBC Bank Malaysia Berhad					
MYR500m	5.05% subordinated bonds[5,6]	Nov 2022	Nov 2027	**120**	124
				120	124
Tier 2 securities issued by HSBC USA Inc.					
$250m	7.20% subordinated debentures[5]	—	Jul 2097	**222**	222
	Other subordinated liabilities each less than $150m[7]			**—**	200
				222	422
Tier 2 securities issued by HSBC Bank USA, N.A.					
$1,000m	5.875% subordinated notes[8]	—	Nov 2034	**456**	497
$750m	5.625% subordinated notes[8]	—	Aug 2035	**489**	533
$700m	7.00% subordinated notes	—	Jan 2039	**697**	700
				1,642	1,730
Tier 2 securities issued by HSBC Finance Corporation					
$2,939m	6.676% senior subordinated notes[5,9]	—	Jan 2021	**—**	509
				—	509
Tier 2 securities issued by HSBC Bank Canada					
	Other subordinated liabilities each less than $150m[5]	Oct 1996	Nov 2083	**9**	9
				9	9
Securities issued by other HSBC subsidiaries					
Other subordinated liabilities each less than $200m[10]				**69**	232
Subordinated liabilities issued by HSBC subsidiaries at 31 Dec				**9,112**	10,223

1 *See paragraph below, 'Guaranteed by HSBC Holdings or HSBC Bank plc'.*
2 *The interest rate payable after June 2030 is the sum of the three-month Libor plus 4.98%.*
3 *The interest rate payable after November 2031 is the sum of the compounded daily Sonia rate plus 2.0366%.*
4 *The interest rate payable after November 2025 is the sum of the compounded daily Sonia rate plus 1.6193%.*
5 *These securities are ineligible for inclusion in the capital base of HSBC.*
6 *The interest rate payable after November 2022 is 6.05%.*
7 *These securities matured in 2021 and were redeemed.*
8 *HSBC tendered for these securities in November 2019. The principal balance is $357m and $383m respectively. The original notional values of these securities are $1,000m and $750m respectively.*
9 *HSBC tendered for these securities in 2017. In January 2018, a further tender was conducted. The principal balance is $509m. The original notional of these securities is $2,939m. This instrument matured and settled in January 2021.*
10 *These securities are included in the capital base of HSBC, in accordance with the grandfathering provisions under CRR II. In 2021, securities of $49m matured and were redeemed, and in addition approximately $109m were redeemed in June 2021 in relation to securities that matured at 31 December 2020. The latter were no longer eligible for inclusion in the capital base of HSBC at the end of 2020.*

HSBC Holdings' subordinated liabilities

	2021 $m	2020 $m
At amortised cost	**17,059**	17,916
Designated at fair value (Note 24)	**5,600**	6,040
At 31 Dec	**22,659**	23,956

HSBC Holdings' subordinated liabilities in issue

		First call date	Maturity date	2021 $m	2020 $m
Tier 2 securities issued by HSBC Holdings					
Amounts owed to third parties					
$2,000m	4.25% subordinated notes[2,3]	—	Mar 2024	**2,072**	2,151
$1,500m	4.25% subordinated notes[2]	—	Aug 2025	**1,615**	1,702
$1,500m	4.375% subordinated notes[2]	—	Nov 2026	**1,641**	1,736
$488m	7.625% subordinated notes[1]	—	May 2032	**536**	541
$222m	7.35% subordinated notes[1]	—	Nov 2032	**241**	243
$2,000m	6.50% subordinated notes[1]	—	May 2036	**2,032**	2,034
$2,500m	6.50% subordinated notes[1]	—	Sep 2037	**2,825**	3,033
$1,500m	6.80% subordinated notes[1]	—	Jun 2038	**1,491**	1,490
$1,500m	5.25% subordinated notes[2]	—	Mar 2044	**1,946**	2,092
£650m	5.75% subordinated notes[2]	—	Dec 2027	**1,040**	1,130
£650m	6.75% subordinated notes[2]	—	Sep 2028	**877**	884
£750m	7.00% subordinated notes[2]	—	Apr 2038	**1,082**	1,157
£900m	6.00% subordinated notes[2]	—	Mar 2040	**1,320**	1,483
€1,500m	3.0% subordinated notes[2]	—	Jun 2025	**1,737**	1,916
€1,000m	3.125% subordinated notes[2]	—	Jun 2028	**1,304**	1,472
				21,759	23,064
Amounts owed to HSBC undertakings					
$900m	10.176% subordinated step-up cumulative notes	Jun 2030	Jun 2040	**900**	892
				900	892
At 31 Dec				**22,659**	23,956

1 *Amounts owed to third parties represent securities included in the capital base of HSBC as tier 2 securities in accordance with the grandfathering provisions under CRR II.*
2 *These securities are included in the capital base of HSBC as fully CRR II-compliant tier 2 securities on an end point basis.*
3 *These subordinated notes are measured at amortised cost in HSBC Holdings, where the interest rate risk is hedged using a fair value hedge, while they are measured at fair value in the Group.*

Guaranteed by HSBC Holdings or HSBC Bank plc

Capital securities guaranteed by HSBC Holdings or HSBC Bank plc were issued by the Jersey limited partnerships. The proceeds of these were lent to the respective guarantors by the limited partnerships in the form of subordinated notes. They qualified as additional tier 1 capital for HSBC under CRR II until 31 December 2021 by virtue of the application of grandfathering provisions. The capital security guaranteed by HSBC Bank plc also qualified as additional tier 1 capital for HSBC Bank plc (on a solo and a consolidated basis) under CRR II until 31 December 2021 by virtue of the same grandfathering process. Since 31 December 2021, these securities have no longer qualified as regulatory capital for HSBC or HSBC Bank plc.

These preferred securities, together with the guarantee, are intended to provide investors with rights to income and capital distributions and distributions upon liquidation of the relevant issuer that are equivalent to the rights that they would have had if they had purchased non-cumulative perpetual preference shares of the relevant issuer. There are limitations on the payment of distributions if such payments are prohibited under UK banking regulations or other requirements, if a payment would cause a breach of HSBC's capital adequacy requirements, or if HSBC Holdings or HSBC Bank plc has insufficient distributable reserves (as defined).

HSBC Holdings and HSBC Bank plc have individually covenanted that, if prevented under certain circumstances from paying distributions on the preferred securities in full, they will not pay dividends or other distributions in respect of their ordinary shares, or repurchase or redeem their ordinary shares, until the distribution on the preferred securities has been paid in full.

If the consolidated total capital ratio of HSBC Holdings falls below the regulatory minimum required or if the Directors expect it to do so in the near term, provided that proceedings have not been commenced for the liquidation, dissolution or winding up of HSBC Holdings, the holders' interests in the preferred securities guaranteed by HSBC Holdings will be exchanged for interests in preference shares issued by HSBC Holdings that have economic terms which are in all material respects equivalent to the preferred securities and their guarantee.

If the preferred securities guaranteed by HSBC Bank plc are outstanding in November 2048, or if the total capital ratio of HSBC Bank plc (on a solo or consolidated basis) falls below the regulatory minimum required, or if the Directors expect it to do so in the near term, provided that proceedings have not been commenced for the liquidation, dissolution or winding up of HSBC Bank plc, the holders' interests in the preferred security guaranteed by HSBC Bank plc will be exchanged for interests in preference shares issued by HSBC Bank plc that have economic terms which are in all material respects equivalent to the preferred security and its guarantee.

Tier 2 securities

Tier 2 capital securities are either perpetual or dated subordinated securities on which there is an obligation to pay coupons. These capital securities are included within HSBC's regulatory capital base as tier 2 capital under CRR II, either as fully eligible capital or by virtue of the application of grandfathering provisions. In accordance with CRR II, the capital contribution of all tier 2 securities is amortised for regulatory purposes in their final five years before maturity.

29 Maturity analysis of assets, liabilities and off-balance sheet commitments

The table on page 374 provides an analysis of consolidated total assets, liabilities and off-balance sheet commitments by residual contractual maturity at the balance sheet date. These balances are included in the maturity analysis as follows:

- Trading assets and liabilities (including trading derivatives but excluding reverse repos, repos and debt securities in issue) are included in the 'Due not more than 1 month' time bucket, because trading balances are typically held for short periods of time.
- Financial assets and liabilities with no contractual maturity (such as equity securities) are included in the 'Due over 5 years' time bucket. Undated or perpetual instruments are classified based on the contractual notice period, which the counterparty of the instrument is entitled to give. Where there is no contractual notice period, undated or perpetual contracts are included in the 'Due over 5 years' time bucket.
- Non-financial assets and liabilities with no contractual maturity are included in the 'Due over 5 years' time bucket.
- Financial instruments included within assets and liabilities of disposal groups held for sale are classified on the basis of the contractual maturity of the underlying instruments and not on the basis of the disposal transaction.
- Liabilities under insurance contracts are irrespective of contractual maturity included in the 'Due over 5 years' time bucket in the maturity table provided below. An analysis of the expected maturity of liabilities under insurance contracts based on undiscounted cash flows is provided on page 215. Liabilities under investment contracts are classified in accordance with their contractual maturity. Undated investment contracts are included in the 'Due over 5 years' time bucket, although such contracts are subject to surrender and transfer options by the policyholders.
- Loan and other credit-related commitments are classified on the basis of the earliest date they can be drawn down.

HSBC

Maturity analysis of assets, liabilities and off-balance sheet commitments

	Due not more than 1 month $m	Due over 1 month but not more than 3 months $m	Due over 3 months but not more than 6 months $m	Due over 6 months but not more than 9 months $m	Due over 9 months but not more than 1 year $m	Due over 1 year but not more than 2 years $m	Due over 2 years but not more than 5 years $m	Due over 5 years $m	Total $m
Financial assets									
Cash and balances at central banks	403,018	–	–	–	–	–	–	–	403,018
Items in the course of collection from other banks	4,136	–	–	–	–	–	–	–	4,136
Hong Kong Government certificates of indebtedness	42,578	–	–	–	–	–	–	–	42,578
Trading assets	244,422	2,403	440	194	468	621	294	–	248,842
Financial assets designated or otherwise mandatorily measured at fair value	4,968	89	585	515	224	855	1,852	40,716	49,804
Derivatives	195,701	164	85	110	233	91	310	188	196,882
Loans and advances to banks	55,572	10,889	5,469	1,078	1,512	5,321	3,134	161	83,136
Loans and advances to customers	160,583	82,531	69,380	42,459	42,651	107,393	220,746	320,071	1,045,814
– personal	50,573	11,373	8,934	8,022	7,766	25,271	78,373	284,922	475,234
– corporate and commercial	97,554	64,511	52,548	29,341	28,749	72,441	127,527	32,664	505,335
– financial	12,456	6,647	7,898	5,096	6,136	9,681	14,846	2,485	65,245
Reverse repurchase agreements – non-trading	155,997	49,392	18,697	9,386	3,661	2,672	1,843	–	241,648
Financial investments	47,084	68,034	33,233	20,638	21,779	49,903	80,367	125,236	446,274
Accrued income and other financial assets	79,077	5,932	2,935	536	537	265	812	3,722	93,816
Financial assets at 31 Dec 2021	1,393,136	219,434	130,824	74,916	71,065	167,121	309,358	490,094	2,855,948
Non-financial assets	–	–	–	–	–	–	–	101,991	101,991
Total assets at 31 Dec 2021	1,393,136	219,434	130,824	74,916	71,065	167,121	309,358	592,085	2,957,939
Off-balance sheet commitments received									
Loan and other credit-related commitments	49,061	–	–	–	–	–	–	–	49,061
Financial liabilities									
Hong Kong currency notes in circulation	42,578	–	–	–	–	–	–	–	42,578
Deposits by banks	63,660	2,695	2,419	238	125	14,653	16,734	628	101,152
Customer accounts	1,615,025	51,835	19,167	8,007	9,710	3,143	3,585	102	1,710,574
– personal	802,777	24,725	12,038	5,961	5,255	2,304	2,242	26	855,328
– corporate and commercial	623,459	22,980	5,654	1,762	3,402	706	1,167	33	659,163
– financial	188,789	4,130	1,475	284	1,053	133	176	43	196,083
Repurchase agreements – non-trading	117,625	4,613	1,716	292	142	975	377	930	126,670
Items in the course of transmission to other banks	5,214	–	–	–	–	–	–	–	5,214
Trading liabilities	79,789	3,810	346	218	223	445	73	–	84,904
Financial liabilities designated at fair value	18,080	9,437	4,514	3,287	4,485	17,422	42,116	46,161	145,502
– debt securities in issue: covered bonds	–	1,137	–	–	–	1,481	1,160	–	3,778
– debt securities in issue: unsecured	9,916	5,967	2,823	2,259	3,462	14,758	34,515	35,282	108,982
– subordinated liabilities and preferred securities	–	–	–	–	–	–	5,371	4,729	10,100
– other	8,164	2,333	1,691	1,028	1,023	1,183	1,070	6,150	22,642
Derivatives	190,233	46	11	30	25	100	288	331	191,064
Debt securities in issue	7,053	7,777	5,664	6,880	1,703	9,045	20,254	20,181	78,557
– covered bonds	–	–	–	997	–	996	860	–	2,853
– otherwise secured	957	164	42	31	193	896	1,696	1,207	5,186
– unsecured	6,096	7,613	5,622	5,852	1,510	7,153	17,698	18,974	70,518
Accruals and other financial liabilities	91,749	10,317	5,630	1,103	1,072	1,948	2,407	2,829	117,055
Subordinated liabilities	–	1	11	–	–	417	2,055	18,003	20,487
Total financial liabilities at 31 Dec 2021	2,231,006	90,531	39,478	20,055	17,485	48,148	87,889	89,165	2,623,757
Non-financial liabilities	–	–	–	–	–	–	–	127,405	127,405
Total liabilities at 31 Dec 2021	2,231,006	90,531	39,478	20,055	17,485	48,148	87,889	216,570	2,751,162
Off-balance sheet commitments given									
Loan and other credit-related commitments	813,491	121	133	228	254	78	931	238	815,474
– personal	239,207	34	34	54	108	32	688	238	240,395
– corporate and commercial	456,498	76	91	168	143	46	243	–	457,265
– financial	117,786	11	8	6	3	–	–	–	117,814

Maturity analysis of assets, liabilities and off-balance sheet commitments (continued)

	Due not more than 1 month	Due over 1 month but not more than 3 months	Due over 3 months but not more than 6 months	Due over 6 months but not more than 9 months	Due over 9 months but not more than 1 year	Due over 1 year but not more than 2 years	Due over 2 years but not more than 5 years	Due over 5 years	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Financial assets									
Cash and balances at central banks	304,481	—	—	—	—	—	—	—	304,481
Items in the course of collection from other banks	4,094	—	—	—	—	—	—	—	4,094
Hong Kong Government certificates of indebtedness	40,420	—	—	—	—	—	—	—	40,420
Trading assets	228,434	1,778	458	135	67	644	474	—	231,990
Financial assets designated at fair value	3,061	240	466	262	454	1,424	1,992	37,654	45,553
Derivatives	306,561	15	12	14	14	441	424	245	307,726
Loans and advances to banks	51,652	11,283	5,640	3,068	2,284	4,059	3,359	271	81,616
Loans and advances to customers	172,306	70,746	65,838	44,392	38,606	112,440	206,448	327,211	1,037,987
– personal	51,711	9,645	7,918	7,270	7,033	26,318	70,447	275,736	456,078
– corporate and commercial	101,684	55,009	51,755	31,529	28,553	76,225	125,393	47,446	517,594
– financial	18,911	6,092	6,165	5,593	3,020	9,897	10,608	4,029	64,315
Reverse repurchase agreements – non-trading	157,234	44,658	16,655	5,113	1,324	3,058	2,586	—	230,628
Financial investments	47,270	77,450	44,255	14,523	24,112	48,741	100,007	134,335	490,693
Accrued income and other financial assets	93,118	5,951	2,743	475	458	267	444	2,107	105,563
Financial assets at 31 Dec 2020	1,408,631	212,121	136,067	67,982	67,319	171,074	315,734	501,823	2,880,751
Non-financial assets	—	—	—	—	—	—	—	103,413	103,413
Total assets at 31 Dec 2020	1,408,631	212,121	136,067	67,982	67,319	171,074	315,734	605,236	2,984,164
Off-balance sheet commitments received									
Loan and other credit-related commitments	60,849	—	—	—	—	—	—	—	60,849
Financial liabilities									
Hong Kong currency notes in circulation	40,420	—	—	—	—	—	—	—	40,420
Deposits by banks	60,973	1,396	714	695	197	718	16,757	630	82,080
Customer accounts	1,533,595	61,376	22,568	9,375	8,418	4,467	2,859	122	1,642,780
– personal	766,631	32,429	15,511	6,276	5,825	3,591	1,976	39	832,278
– corporate and commercial	588,887	22,856	5,963	2,966	2,058	627	777	37	624,171
– financial	178,077	6,091	1,094	133	535	249	106	46	186,331
Repurchase agreements – non-trading	102,633	3,979	2,165	386	675	16	1,035	1,012	111,901
Items in the course of transmission to other banks	4,343	—	—	—	—	—	—	—	4,343
Trading liabilities	70,799	3,377	400	143	185	289	72	1	75,266
Financial liabilities designated at fair value	18,434	7,333	6,973	6,775	6,593	14,182	40,510	56,639	157,439
– debt securities in issue: covered bonds	—	—	—	—	—	1,239	2,918	—	4,157
– debt securities in issue: unsecured	10,762	4,470	5,522	5,604	5,530	10,455	31,710	42,825	116,878
– subordinated liabilities and preferred securities	—	—	—	—	—	—	3,912	6,932	10,844
– other	7,672	2,863	1,451	1,171	1,063	2,488	1,970	6,882	25,560
Derivatives	300,902	264	198	38	55	237	726	581	303,001
Debt securities in issue	6,552	12,329	14,964	9,764	3,878	9,215	16,618	22,172	95,492
– covered bonds	—	—	28	—	750	1,275	999	—	3,052
– otherwise secured	1,094	1,585	1,001	1,000	—	274	1,640	1,590	8,184
– unsecured	5,458	10,744	13,935	8,764	3,128	7,666	13,979	20,582	84,256
Accruals and other financial liabilities	96,821	9,794	3,886	692	1,174	1,742	3,179	3,053	120,341
Subordinated liabilities	619	—	237	—	12	12	2,658	18,413	21,951
Total financial liabilities at 31 Dec 2020	2,236,091	99,848	52,105	27,868	21,187	30,878	84,414	102,623	2,655,014
Non-financial liabilities	—	—	—	—	—	—	—	124,155	124,155
Total liabilities at 31 Dec 2020	2,236,091	99,848	52,105	27,868	21,187	30,878	84,414	226,778	2,779,169
Off-balance sheet commitments given									
Loan and other credit-related commitments	842,974	435	172	243	296	180	299	171	844,770
– personal	235,606	172	27	47	115	125	288	171	236,551
– corporate and commercial	471,410	250	138	194	178	37	11	—	472,218
– financial	135,958	13	7	2	3	18	—	—	136,001

HSBC Holdings

Maturity analysis of assets, liabilities and off-balance sheet commitments (continued)

	Due not more than 1 month	Due over 1 month but not more than 3 months	Due over 3 months but not more than 6 months	Due over 6 months but not more than 9 months	Due over 9 months but not more than 1 year	Due over 1 year but not more than 2 years	Due over 2 years but not more than 5 years	Due over 5 years	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Financial assets									
Cash at bank and in hand:									
– balances with HSBC undertakings	2,590	–	–	–	–	–	–	–	2,590
Derivatives	1,101	–	–	–	–	23	585	1,102	2,811
Loans and advances to HSBC undertakings	120	750	341	–	3,017	5,608	13,333	1,939	25,108
Financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value	–	1,759	250	1,019	–	5,987	19,455	22,938	51,408
Financial investments	8,377	7,166	3,014	1,346	3,026	3,265	–	–	26,194
Accrued income and other financial assets	129	874	108	58	4	–	–	–	1,173
Total financial assets at 31 Dec 2021	12,317	10,549	3,713	2,423	6,047	14,883	33,373	25,979	109,284
Non-financial assets	–	–	–	–	–	–	–	163,888	163,888
Total assets at 31 Dec 2021	12,317	10,549	3,713	2,423	6,047	14,883	33,373	189,867	273,172
Financial liabilities									
Amounts owed to HSBC undertakings	–	111	–	–	–	–	–	–	111
Financial liabilities designated at fair value	397	2,484	–	–	–	1,364	11,276	16,897	32,418
– debt securities in issue	397	2,484	–	–	–	1,364	8,020	14,553	26,818
– subordinated liabilities and preferred securities	–	–	–	–	–	–	3,256	2,344	5,600
Derivatives	1,167	–	–	–	–	5	1	47	1,220
Debt securities in issue	1,051	–	–	–	–	8,525	29,889	28,018	67,483
Accruals and other financial liabilities	1,778	730	1,612	68	12	–	–	40	4,240
Subordinated liabilities	–	–	–	–	–	–	3,809	13,250	17,059
Total financial liabilities 31 Dec 2021	4,393	3,325	1,612	68	12	9,894	44,975	58,252	122,531
Non-financial liabilities	–	–	–	–	–	–	–	311	311
Total liabilities at 31 Dec 2021	4,393	3,325	1,612	68	12	9,894	44,975	58,563	122,842
Financial assets									
Cash at bank and in hand:									
– balances with HSBC undertakings	2,913	–	–	–	–	–	–	–	2,913
Derivatives	1,473	–	5	–	–	9	1,131	2,080	4,698
Loans and advances to HSBC undertakings	–	600	120	–	–	312	6,027	3,384	10,443
Loans and advances to HSBC undertakings designated at fair value	–	451	–	–	–	4,320	23,203	37,279	65,253
Financial investments in HSBC undertakings	3,701	3,769	2,924	799	3,528	2,764	–	–	17,485
Accrued income and other financial assets	1,015	275	100	33	22	–	–	–	1,445
Total financial assets at 31 Dec 2020	9,102	5,095	3,149	832	3,550	7,405	30,361	42,743	102,237
Non-financial assets	–	–	–	–	–	–	–	160,936	160,936
Total assets at 31 Dec 2020	9,102	5,095	3,149	832	3,550	7,405	30,361	203,679	263,173
Financial liabilities									
Amounts owed to HSBC undertakings	–	330	–	–	–	–	–	–	330
Financial liabilities designated at fair value	–	984	859	–	–	3,088	3,810	16,923	25,664
– debt securities in issue	–	984	859	–	–	3,088	2,108	12,585	19,624
– subordinated liabilities and preferred securities	–	–	–	–	–	–	1,702	4,338	6,040
Derivatives	3,052	–	–	–	–	–	–	8	3,060
Debt securities in issue	–	503	1,621	563	–	2,186	24,489	34,667	64,029
Accruals and other financial liabilities	3,769	689	301	57	12	–	1	36	4,865
Subordinated liabilities	–	–	–	–	–	–	4,067	13,849	17,916
Total financial liabilities at 31 Dec 2020	6,821	2,506	2,781	620	12	5,274	32,367	65,483	115,864
Non-financial liabilities	–	–	–	–	–	–	–	509	509
Total liabilities at 31 Dec 2020	6,821	2,506	2,781	620	12	5,274	32,367	65,992	116,373

Contractual maturity of financial liabilities

The following table shows, on an undiscounted basis, all cash flows relating to principal and future coupon payments (except for trading liabilities and derivatives not treated as hedging derivatives). For this reason, balances in the following table do not agree directly with those in our consolidated balance sheet. Undiscounted cash flows payable in relation to hedging derivative liabilities are classified according to their contractual maturities. Trading liabilities and derivatives not treated as hedging derivatives are included in the 'Due not more than 1 month' time bucket and not by contractual maturity.

In addition, loans and other credit-related commitments and financial guarantees are generally not recognised on our balance sheet. The undiscounted cash flows potentially payable under loan and other credit-related commitments and financial guarantees are classified on the basis of the earliest date they can be called.

Cash flows payable by HSBC under financial liabilities by remaining contractual maturities

	Due not more than 1 month	Due over 1 month but not more than 3 months	Due over 3 months but not more than 1 year	Due over 1 year but not more than 5 years	Due over 5 years	Total
	$m	$m	$m	$m	$m	$m
Deposits by banks	**63,684**	**2,712**	**2,800**	**31,294**	**643**	**101,133**
Customer accounts	**1,613,065**	**54,092**	**37,219**	**7,093**	**138**	**1,711,607**
Repurchase agreements – non-trading	**117,643**	**4,615**	**2,157**	**1,359**	**935**	**126,709**
Trading liabilities	**84,904**	**—**	**—**	**—**	**—**	**84,904**
Financial liabilities designated at fair value	**18,335**	**9,760**	**13,606**	**63,834**	**50,953**	**156,488**
Derivatives	**190,354**	**192**	**190**	**1,792**	**1,332**	**193,860**
Debt securities in issue	**7,149**	**7,958**	**15,142**	**32,651**	**21,911**	**84,811**
Subordinated liabilities	**119**	**168**	**848**	**6,741**	**28,347**	**36,223**
Other financial liabilities	**129,706**	**9,842**	**7,664**	**4,577**	**2,697**	**154,486**
	2,224,959	**89,339**	**79,626**	**149,341**	**106,956**	**2,650,221**
Loan and other credit-related commitments	**813,471**	**121**	**615**	**1,029**	**238**	**815,474**
Financial guarantees[1]	**27,774**	**6**	**9**	**6**	**—**	**27,795**
At 31 Dec 2021	**3,066,204**	**89,466**	**80,250**	**150,376**	**107,194**	**3,493,490**
Proportion of cash flows payable in period	**88%**	**3%**	**2%**	**4%**	**3%**	
Deposits by banks	61,001	1,442	1,639	17,352	632	82,066
Customer accounts	1,530,584	64,809	40,755	7,720	153	1,644,021
Repurchase agreements – non-trading	102,664	3,984	3,257	1,058	1,017	111,980
Trading liabilities	75,266	—	—	—	—	75,266
Financial liabilities designated at fair value	18,815	7,556	19,243	59,835	55,475	160,924
Derivatives	300,158	356	579	1,830	2,128	305,051
Debt securities in issue	6,551	12,709	29,520	28,787	24,075	101,642
Subordinated liabilities	739	170	1,102	7,024	28,812	37,847
Other financial liabilities	140,094	9,120	5,113	5,030	2,887	162,244
	2,235,872	100,146	101,208	128,636	115,179	2,681,041
Loan and other credit-related commitments	842,945	434	740	480	171	844,770
Financial guarantees[1]	18,200	13	93	37	41	18,384
At 31 Dec 2020	3,097,017	100,593	102,041	129,153	115,391	3,544,195
Proportion of cash flows payable in period	87%	3%	3%	4%	3%	

1 *Excludes performance guarantee contracts to which the impairment requirements in IFRS 9 are not applied.*

HSBC Holdings

HSBC Holdings' primary sources of liquidity are dividends received from subsidiaries, interest on and repayment of intra-Group loans and securities, and interest earned on its own liquid funds. HSBC Holdings also raises funds in the debt capital markets to meet the Group's minimum requirement for own funds and eligible liabilities. HSBC Holdings uses this liquidity to meet its obligations, including interest and principal repayments on external debt liabilities, operating expenses and collateral on derivative transactions.

HSBC Holdings is also subject to contingent liquidity risk by virtue of credit-related commitments and guarantees and similar contracts issued relating to its subsidiaries. Such commitments and guarantees are only issued after due consideration of HSBC Holdings' ability to finance the commitments and guarantees and the likelihood of the need arising.

HSBC Holdings actively manages the cash flows from its subsidiaries to optimise the amount of cash held at the holding company level. During 2021, consistent with the Group's capital plan, the Group's subsidiaries did not experience any significant restrictions on paying dividends or repaying loans and advances. Also, there are no foreseen restrictions envisaged with regard to planned dividends or payments. However, the ability of subsidiaries to pay dividends or advance monies to HSBC Holdings depends on, among other things, their respective local regulatory capital and banking requirements, exchange controls, statutory reserves, and financial and operating performance.

HSBC Holdings currently has sufficient liquidity to meet its present requirements.

Liquidity risk in HSBC Holdings is overseen by Holdings ALCO. This risk arises because of HSBC Holdings' obligation to make payments to debt holders as they fall due and to pay its operating expenses. The liquidity risk related to these cash flows is managed by matching external debt obligations with internal loan cash flows and by maintaining an appropriate liquidity buffer that is monitored by Holdings ALCO.

The balances in the following table are not directly comparable with those on the balance sheet of HSBC Holdings as the table incorporates, on an undiscounted basis, all cash flows relating to principal and future coupon payments (except for derivatives not treated as hedging derivatives). Undiscounted cash flows payable in relation to hedging derivative liabilities are classified according to their contractual maturities. Derivatives not treated as hedging derivatives are included in the 'On demand' time bucket.

In addition, loan commitments and financial guarantees and similar contracts are generally not recognised on our balance sheet. The undiscounted cash flows potentially payable under financial guarantees and similar contracts are classified on the basis of the earliest date on which they can be called.

Cash flows payable by HSBC Holdings under financial liabilities by remaining contractual maturities

	Due not more than 1 month	Due over 1 month but not more than 3 months	Due over 3 months but not more than 1 year	Due over 1 year but not more than 5 years	Due over 5 years	Total
	$m	$m	$m	$m	$m	$m
Amounts owed to HSBC undertakings	**—**	**111**	**—**	**—**	**—**	**111**
Financial liabilities designated at fair value	**473**	**2,611**	**621**	**15,017**	**17,557**	**36,279**
Derivatives	**1,223**	**9**	**51**	**414**	**585**	**2,282**
Debt securities in issue	**1,196**	**276**	**1,286**	**43,360**	**30,800**	**76,918**
Subordinated liabilities	**81**	**155**	**722**	**7,222**	**20,777**	**28,957**
Other financial liabilities	**1,778**	**730**	**1,692**	**—**	**40**	**4,240**
	4,751	**3,892**	**4,372**	**66,013**	**69,759**	**148,787**
Loan commitments	**—**	**—**	**—**	**—**	**—**	**—**
Financial guarantees[1]	**13,746**	**—**	**—**	**—**	**—**	**13,746**
At 31 Dec 2021	**18,497**	**3,892**	**4,372**	**66,013**	**69,759**	**162,533**
Amounts owed to HSBC undertakings	—	330	—	—	—	330
Financial liabilities designated at fair value	70	1,109	1,412	9,110	16,104	27,805
Derivatives	3,085	—	2	—	—	3,087
Debt securities in issue	135	760	3,354	31,567	37,103	72,919
Subordinated liabilities	82	156	726	7,513	21,552	30,029
Other financial liabilities	3,769	690	370	—	36	4,865
	7,141	3,045	5,864	48,190	74,795	139,035
Loan commitments	—	—	—	—	—	—
Financial guarantees[1]	13,787	—	—	—	—	13,787
At 31 Dec 2020	20,928	3,045	5,864	48,190	74,795	152,822

1 *Excludes performance guarantee contracts to which the impairment requirements in IFRS 9 are not applied.*

30 Offsetting of financial assets and financial liabilities

In the following table, the 'Amounts not set off in the balance sheet' include transactions where:

- the counterparty has an offsetting exposure with HSBC and a master netting or similar arrangement is in place with a right to set off only in the event of default, insolvency or bankruptcy, or the offset criteria are otherwise not satisfied; and
- in the case of derivatives and reverse repurchase/repurchase, stock borrowing/lending and similar agreements, cash and non-cash collateral has been received/pledged.

For risk management purposes, the net amounts of loans and advances to customers are subject to limits, which are monitored and the relevant customer agreements are subject to review and updated, as necessary, to ensure the legal right to set off remains appropriate.

Offsetting of financial assets and financial liabilities

	Amounts subject to enforceable netting arrangements								
				Amounts not set off in the balance sheet					
	Gross amounts	Amounts offset	Net amounts in the balance sheet	Financial instruments	Non-cash collateral	Cash collateral	Net amount	Amounts not subject to enforceable netting arrangements[5]	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Financial assets									
Derivatives (Note 15)[1]	**244,694**	**(53,378)**	**191,316**	**(139,945)**	**(11,359)**	**(36,581)**	**3,431**	**5,566**	**196,882**
Reverse repos, stock borrowing and similar agreements classified as:[2]									
– trading assets	**21,568**	**(222)**	**21,346**	**(359)**	**(20,913)**	**(71)**	**3**	**1,729**	**23,075**
– non-trading assets	**353,066**	**(136,932)**	**216,134**	**(12,226)**	**(203,543)**	**(165)**	**200**	**25,731**	**241,865**
Loans and advances to customers[3]	**27,045**	**(10,919)**	**16,126**	**(13,065)**	**—**	**—**	**3,061**	**327**	**16,453**
At 31 Dec 2021	**646,373**	**(201,451)**	**444,922**	**(165,595)**	**(235,815)**	**(36,817)**	**6,695**	**33,353**	**478,275**
Derivatives (Note 15)[1]	368,057	(69,103)	298,954	(230,758)	(13,766)	(48,154)	6,276	8,772	307,726
Reverse repos, stock borrowing and similar agreements classified as:[2]									
– trading assets	21,204	(461)	20,743	(709)	(20,030)	—	4	1,534	22,277
– non-trading assets	318,424	(115,678)	202,746	(13,936)	(188,646)	(73)	91	28,258	231,004
Loans and advances to customers[3]	30,983	(10,882)	20,101	(17,031)	—	—	3,070	428	20,529
At 31 Dec 2020	738,668	(196,124)	542,544	(262,434)	(222,442)	(48,227)	9,441	38,992	581,536
Financial liabilities									
Derivatives (Note 15)[1]	**239,597**	**(53,378)**	**186,219**	**(139,945)**	**(23,414)**	**(18,225)**	**4,635**	**4,845**	**191,064**
Repos, stock lending and similar agreements classified as:[2]									
– trading liabilities	**13,540**	**(222)**	**13,318**	**(359)**	**(12,959)**	**—**	**—**	**17**	**13,335**
– non-trading liabilities	**235,042**	**(136,932)**	**98,110**	**(12,226)**	**(85,590)**	**(203)**	**91**	**28,560**	**126,670**
Customer accounts[4]	**40,875**	**(10,919)**	**29,956**	**(13,065)**	**—**	**—**	**16,891**	**17**	**29,973**
At 31 Dec 2021	**529,054**	**(201,451)**	**327,603**	**(165,595)**	**(121,963)**	**(18,428)**	**21,617**	**33,439**	**361,042**
Derivatives (Note 15)[1]	364,121	(69,103)	295,018	(230,758)	(21,387)	(37,343)	5,530	7,983	303,001
Repos, stock lending and similar agreements classified as:[2]									
– trading liabilities	16,626	(461)	16,165	(709)	(15,456)	—	—	159	16,324
– non-trading liabilities	200,999	(115,678)	85,321	(13,936)	(71,142)	(215)	28	26,580	111,901
Customer accounts[4]	41,177	(10,882)	30,295	(17,031)	—	—	13,264	13	30,308
At 31 Dec 2020	622,923	(196,124)	426,799	(262,434)	(107,985)	(37,558)	18,822	34,735	461,534

1 *At 31 December 2021, the amount of cash margin received that had been offset against the gross derivatives assets was $4,469m (2020: $7,899m). The amount of cash margin paid that had been offset against the gross derivatives liabilities was $9,479m (2020: $17,955m).*
2 *For the amount of repos, reverse repos, stock lending, stock borrowing and similar agreements recognised on the balance sheet within 'Trading assets' $23,075m (2020: $22,277m) and 'Trading liabilities' $13,335m (2020: $16,324m), see the 'Funding sources and uses' table on page 197.*
3 *At 31 December 2021, the total amount of 'Loans and advances to customers' was $1,045,814m (2020: $1,037,987m), of which $16,126m (2020: $20,101m) was subject to offsetting.*
4 *At 31 December 2021, the total amount of 'Customer accounts' was $1,710,574m (2020: $1,642,780m), of which $29,956m (2020: $30,295m) was subject to offsetting.*
5 *These exposures continue to be secured by financial collateral, but we may not have sought or been able to obtain a legal opinion evidencing enforceability of the right of offset.*

31 Called up share capital and other equity instruments

Called up share capital and share premium

HSBC Holdings ordinary shares of $0.50 each, issued and fully paid

	2021		2020	
	Number	$m	Number	$m
At 1 Jan	**20,693,621,100**	**10,347**	20,638,524,545	10,319
Shares issued under HSBC employee share plans	**58,266,053**	**29**	55,096,555	28
Shares issued in lieu of dividends	**—**	**—**	—	—
Less: Shares repurchased and cancelled	**120,366,714**	**60**	—	—
At 31 Dec[1]	**20,631,520,439**	**10,316**	20,693,621,100	10,347

HSBC Holdings 6.2% non-cumulative US dollar preference shares, Series A

	2021		2020	
	Number	$m	Number	$m
At 1 Jan and 31 Dec[2]	–	–	1,450,000	–

HSBC Holdings share premium

	2021	2020
	$m	$m
At 31 Dec	14,602	14,277

Total called up share capital and share premium

	2021	2020
	$m	$m
At 31 Dec	24,918	24,624

1 *All HSBC Holdings ordinary shares in issue, excluding 325,273,407 shares held in treasury, confer identical rights, including in respect of capital, dividends and voting.*
2 *In 2019 this security was included in the capital base of HSBC as additional tier 1 capital in accordance with the CRR II rules, by virtue of the application of grandfathering provisions. This security was called by HSBC Holdings on 10 December 2020 and was redeemed and cancelled on 13 January 2021. Between the date of exercise of the call option and the redemption, this security was considered as an other liability.*

HSBC Holdings 6.20% non-cumulative US dollar preference shares, Series A of $0.01

The 6.20% non-cumulative US dollar preference shares, Series A of $0.01 each were redeemed on 13 January 2021.

HSBC Holdings non-cumulative preference share of £0.01

The one non-cumulative sterling preference share of £0.01 ('sterling preference share') has been in issue since 29 December 2010 and is held by a subsidiary of HSBC Holdings. Dividends are paid quarterly at the sole and absolute discretion of the Board. The sterling preference share carries no rights of conversion into ordinary shares of HSBC Holdings and no right to attend or vote at shareholder meetings of HSBC Holdings. These securities can be redeemed by HSBC Holdings at any time, subject to prior approval by the PRA.

Other equity instruments

HSBC Holdings has included three types of additional tier 1 capital securities in its tier 1 capital. Two are presented in this Note and they are the HSBC Holdings US dollar non-cumulative preference shares outlined above (which were redeemed in January 2021) and the contingent convertible securities described below. These are accounted for as equity because HSBC does not have an obligation to transfer cash or a variable number of its own ordinary shares to holders under any circumstances outside its control. See Note 28 for additional tier 1 securities accounted for as liabilities.

Additional tier 1 capital – contingent convertible securities

HSBC Holdings continues to issue contingent convertible securities that are included in its capital base as fully CRR II-compliant additional tier 1 capital securities on an end point basis. These securities are marketed principally and subsequently allotted to corporate investors and fund managers. The net proceeds of the issuances are typically used for HSBC Holdings' general corporate purposes and to further strengthen its capital base to meet requirements under CRR II. These securities bear a fixed rate of interest until their initial call dates. After the initial call dates, if they are not redeemed, the securities will bear interest at rates fixed periodically in advance for five-year periods based on credit spreads, fixed at issuance, above prevailing market rates. Interest on the contingent convertible securities will be due and payable only at the sole discretion of HSBC Holdings, and HSBC Holdings has sole and absolute discretion at all times to cancel for any reason (in whole or part) any interest payment that would otherwise be payable on any payment date. Distributions will not be paid if they are prohibited under UK banking regulations or if the Group has insufficient reserves or fails to meet the solvency conditions defined in the securities' terms.

The contingent convertible securities are undated and are repayable at the option of HSBC Holdings in whole typically at the initial call date or on any fifth anniversary after this date. In addition, the securities are repayable at the option of HSBC in whole for certain regulatory or tax reasons. Any repayments require the prior consent of the PRA. These securities rank *pari passu* with HSBC Holdings' sterling preference shares and therefore rank ahead of ordinary shares. The contingent convertible securities will be converted into fully paid ordinary shares of HSBC Holdings at a predetermined price, should HSBC's consolidated non-transitional CET1 ratio fall below 7.0%. Therefore, in accordance with the terms of the securities, if the non-transitional CET1 ratio breaches the 7.0% trigger, the securities will convert into ordinary shares at fixed contractual conversion prices in the issuance currencies of the relevant securities, subject to anti-dilution adjustments.

HSBC's additional tier 1 capital – contingent convertible securities in issue which are accounted for in equity

		First call date	2021 $m	2020 $m
$2,000m	6.875% perpetual subordinated contingent convertible securities[1]	Jun 2021	—	2,000
$2,250m	6.375% perpetual subordinated contingent convertible securities	Sep 2024	2,250	2,250
$2,450m	6.375% perpetual subordinated contingent convertible securities	Mar 2025	2,450	2,450
$3,000m	6.000% perpetual subordinated contingent convertible securities	May 2027	3,000	3,000
$2,350m	6.250% perpetual subordinated contingent convertible securities	Mar 2023	2,350	2,350
$1,800m	6.500% perpetual subordinated contingent convertible securities	Mar 2028	1,800	1,800
$1,500m	4.600% perpetual subordinated contingent convertible securities[2]	Dec 2030	1,500	1,500
$1,000m	4.000% perpetual subordinated contingent convertible securities[3]	Mar 2026	1,000	—
$1,000m	4.700% perpetual subordinated contingent convertible securities[4]	Mar 2031	1,000	—
€1,500m	5.250% perpetual subordinated contingent convertible securities	Sep 2022	1,945	1,945
€1,000m	6.000% perpetual subordinated contingent convertible securities	Sep 2023	1,123	1,123
€1,250m	4.750% perpetual subordinated contingent convertible securities	Jul 2029	1,422	1,422
£1,000	5.875% perpetual subordinated contingent convertible securities	Sep 2026	1,301	1,301
SGD1,000m	4.700% perpetual subordinated contingent convertible securities	Jun 2022	723	723
SGD750m	5.000% perpetual subordinated contingent convertible securities	Sep 2023	550	550
At 31 Dec			**22,414**	22,414

1 *This security was called by HSBC Holdings on 15 April 2021 and was redeemed and cancelled on 1 June 2021.*
2 *This security was issued by HSBC Holdings on 17 December 2020. The first call date commences six calendar months prior to the reset date of 17 June 2031.*
3 *This security was issued by HSBC Holdings on 9 March 2021. The first call date commences six calendar months prior to the reset date of 9 September 2026.*
4 *This security was issued by HSBC Holdings on 9 March 2021. The first call date commences six calendar months prior to the reset date of 9 September 2031.*

Shares under option

For details of the options outstanding to subscribe for HSBC Holdings ordinary shares under the HSBC Holdings Savings-Related Share Option Plan (UK), see Note 5.

Aggregate options outstanding under these plans

31 Dec 2021			31 Dec 2020		
Number of HSBC Holdings ordinary shares	**Usual period of exercise**	**Exercise price**	Number of HSBC Holdings ordinary shares	Usual period of exercise	Exercise price
123,196,850	**2020 to 2027**	**£2.6270–£5.9640**	130,952,539	2019 to 2026	£2.6270–£5.9640

Maximum obligation to deliver HSBC Holdings ordinary shares

At 31 December 2021, the maximum obligation to deliver HSBC Holdings ordinary shares under all of the above option arrangements and the HSBC International Employee Share Purchase Plan, together with long-term incentive awards and deferred share awards granted under the HSBC Share Plan 2011, was 224,974,433 (2020: 238,278,952). The total number of shares at 31 December 2021 held by employee benefit trusts that may be used to satisfy such obligations to deliver HSBC Holdings ordinary shares was 9,297,415 (2020: 5,179,531).

32 Contingent liabilities, contractual commitments and guarantees

	HSBC		HSBC Holdings[1]	
	2021 $m	2020 $m	**2021 $m**	2020 $m
Guarantees and other contingent liabilities:				
– financial guarantees	**27,795**	18,384	**13,746**	13,787
– performance and other guarantees	**85,534**	78,114	—	—
– other contingent liabilities	**858**	1,219	**133**	119
At 31 Dec	**114,187**	97,717	**13,879**	13,906
Commitments:[2]				
– documentary credits and short-term trade-related transactions	**8,827**	7,178	**—**	—
– forward asset purchases and forward deposits placed	**47,184**	66,506	**—**	—
– standby facilities, credit lines and other commitments to lend	**759,463**	771,086	**—**	—
At 31 Dec	**815,474**	844,770	**—**	—

1 *Guarantees by HSBC Holdings are all in favour of other Group entities.*
2 *Includes $627,637m of commitments at 31 December 2021 (31 December 2020: $659,783m), to which the impairment requirements in IFRS 9 are applied where HSBC has become party to an irrevocable commitment.*

The preceding table discloses the nominal principal amounts of off-balance sheet liabilities and commitments for the Group, which represent the maximum amounts at risk should the contracts be fully drawn upon and the clients default. As a significant portion of guarantees and commitments are expected to expire without being drawn upon, the total of the nominal principal amounts is not indicative of future liquidity requirements. The expected credit loss provision relating to guarantees and commitments under IFRS 9 is disclosed in Note 27.

The majority of the guarantees have a term of less than one year, while guarantees with terms of more than one year are subject to HSBC's annual credit review process.

Contingent liabilities arising from legal proceedings, regulatory and other matters against Group companies are excluded from this note but are disclosed in Notes 27 and 34.

Financial Services Compensation Scheme

The Financial Services Compensation Scheme ('FSCS') provides compensation, up to certain limits, to eligible customers of financial services firms that are unable, or likely to be unable, to pay claims against them. The FSCS may impose a further levy on HSBC UK to the extent the industry levies imposed to date are not sufficient to cover the compensation due to customers in any future possible collapse. The ultimate FSCS levy to the industry as a result of a collapse cannot be estimated reliably. It is dependent on various uncertain factors including the potential recovery of assets by the FSCS, changes in the level of protected products (including deposits and investments) and the population of FSCS members at the time.

Associates

HSBC's share of associates' contingent liabilities, contractual commitments and guarantees amounted to $63.5bn at 31 December 2021 (2020: $53.1bn). No matters arose where HSBC was severally liable.

33 Finance lease receivables

HSBC leases a variety of assets to third parties under finance leases, including transport assets (such as aircraft), property and general plant and machinery. At the end of lease terms, assets may be sold to third parties or leased for further terms. Rentals are calculated to recover the cost of assets less their residual value, and earn finance income.

	2021			2020		
	Total future minimum payments	Unearned finance income	Present value	Total future minimum payments	Unearned finance income	Present value
	$m	$m	$m	$m	$m	$m
Lease receivables:						
No later than one year	3,298	(303)	2,995	3,108	(257)	2,851
One to two years	2,303	(242)	2,061	2,476	(196)	2,280
Two to three years	1,645	(192)	1,453	2,055	(143)	1,912
Three to four years	1,225	(146)	1,079	1,380	(109)	1,271
Four to five years	795	(113)	682	787	(80)	707
Later than one year and no later than five years	5,968	(693)	5,275	6,698	(528)	6,170
Later than five years	4,044	(528)	3,516	4,221	(451)	3,770
At 31 Dec	13,310	(1,524)	11,786	14,027	(1,236)	12,791

34 Legal proceedings and regulatory matters

HSBC is party to legal proceedings and regulatory matters in a number of jurisdictions arising out of its normal business operations. Apart from the matters described below, HSBC considers that none of these matters are material. The recognition of provisions is determined in accordance with the accounting policies set out in Note 1. While the outcomes of legal proceedings and regulatory matters are inherently uncertain, management believes that, based on the information available to it, appropriate provisions have been made in respect of these matters as at 31 December 2021 (see Note 27). Where an individual provision is material, the fact that a provision has been made is stated and quantified, except to the extent that doing so would be seriously prejudicial. Any provision recognised does not constitute an admission of wrongdoing or legal liability. It is not practicable to provide an aggregate estimate of potential liability for our legal proceedings and regulatory matters as a class of contingent liabilities.

Bernard L. Madoff Investment Securities LLC

Various non-US HSBC companies provided custodial, administration and similar services to a number of funds incorporated outside the US whose assets were invested with Bernard L. Madoff Investment Securities LLC ('Madoff Securities'). Based on information provided by Madoff Securities as at 30 November 2008, the purported aggregate value of these funds was $8.4bn, including fictitious profits reported by Madoff. Based on information available to HSBC, the funds' actual transfers to Madoff Securities minus their actual withdrawals from Madoff Securities during the time HSBC serviced the funds are estimated to have totalled approximately $4bn. Various HSBC companies have been named as defendants in lawsuits arising out of Madoff Securities' fraud.

US litigation: The Madoff Securities Trustee has brought lawsuits against various HSBC companies and others in the US Bankruptcy Court for the Southern District of New York (the 'US Bankruptcy Court'), seeking recovery of transfers from Madoff Securities to HSBC in an amount not yet pleaded or determined. Following an initial dismissal of certain claims, which was later reversed on appeal, the cases were remanded to the US Bankruptcy Court, where they are now pending.

Fairfield Sentry Limited, Fairfield Sigma Limited and Fairfield Lambda Limited (together, 'Fairfield') (in liquidation since July 2009) have brought a lawsuit in the US against fund shareholders, including HSBC companies that acted as nominees for clients, seeking restitution of redemption payments. In December 2018, the US Bankruptcy Court dismissed certain claims by the Fairfield liquidators and granted a motion by the liquidators to file amended complaints. In May 2019, the liquidators appealed certain issues from the US Bankruptcy Court to the US District Court for the Southern District of New York (the 'New York District Court'), and these appeals remain pending.

In January 2020, the Fairfield liquidators filed amended complaints on the claims remaining in the US Bankruptcy Court. In December 2020, the US Bankruptcy Court dismissed the majority of those claims. In March 2021, the liquidators and defendants appealed the US Bankruptcy Court's decision to the New York District Court, and these appeals are currently pending. Meanwhile, proceedings before the US Bankruptcy Court with respect to the remaining claims that were not dismissed are ongoing.

UK litigation: The Madoff Securities Trustee has filed a claim against various HSBC companies in the High Court of England and Wales, seeking recovery of transfers from Madoff Securities to HSBC in an amount not yet pleaded or determined. The deadline for service of the claim has been extended to September 2022 for UK-based defendants and November 2022 for all other defendants.

Cayman Islands litigation: In February 2013, Primeo Fund ('Primeo') (in liquidation since April 2009) brought an action against HSBC Securities Services Luxembourg ('HSSL') and Bank of Bermuda (Cayman) Limited (now known as HSBC Cayman Limited), alleging breach of contract and breach of fiduciary duty and claiming damages and equitable compensation. The trial concluded in February 2017 and, in August 2017, the court dismissed all claims against the defendants. In September 2017, Primeo appealed to the Court of Appeal of the Cayman Islands and, in June 2019, the Court of Appeal of the Cayman Islands dismissed Primeo's appeal. In August 2019, Primeo filed a notice of appeal to the UK Privy Council. Two hearings before the UK Privy Council took place during 2021. Judgment was given against HSBC in respect of the first hearing and judgment is pending in respect of the second hearing.

Luxembourg litigation: In April 2009, Herald Fund SPC ('Herald') (in liquidation since July 2013) brought an action against HSSL before the Luxembourg District Court, seeking restitution of cash and securities that Herald purportedly lost because of Madoff Securities' fraud, or money damages. The Luxembourg District Court dismissed Herald's securities restitution claim, but reserved Herald's cash restitution and money damages claims. Herald has appealed this judgment to the Luxembourg Court of Appeal, where the matter is pending. In late 2018, Herald brought additional claims against HSSL and HSBC Bank plc before the Luxembourg District Court, seeking further restitution and damages.

In October 2009, Alpha Prime Fund Limited ('Alpha Prime') brought an action against HSSL before the Luxembourg District Court, seeking the restitution of securities, or the cash equivalent, or money damages. In December 2018, Alpha Prime brought additional claims before the Luxembourg District Court seeking damages against various HSBC companies. These matters are currently pending before the Luxembourg District Court.

In December 2014, Senator Fund SPC ('Senator') brought an action against HSSL before the Luxembourg District Court, seeking restitution of securities, or the cash equivalent, or money damages. In April 2015, Senator commenced a separate action against the Luxembourg branch of HSBC Bank plc asserting identical claims before the Luxembourg District Court. In December 2018, Senator brought additional claims against HSSL and HSBC Bank plc Luxembourg branch before the Luxembourg District Court, seeking restitution of Senator's securities or money damages. These matters are currently pending before the Luxembourg District Court.

There are many factors that may affect the range of possible outcomes, and any resulting financial impact, of the various Madoff-related proceedings described above, including but not limited to the multiple jurisdictions in which the proceedings have been brought. Based upon the information currently available, management's estimate of the possible aggregate damages that might arise as a result of all claims in the various Madoff-related proceedings is around $600m, excluding costs and interest. Due to uncertainties and limitations of this estimate, any possible damages that might ultimately arise could differ significantly from this amount.

Anti-money laundering and sanctions-related matters

In December 2012, HSBC Holdings entered into a number of agreements, including an undertaking with the UK Financial Services Authority (replaced with a Direction issued by the UK Financial Conduct Authority ('FCA') in 2013 and again in 2020) as well as a cease-and-desist order with the US Federal Reserve Board ('FRB'), both of which contained certain forward-looking anti-money laundering ('AML') and sanctions-related obligations. Over the past several years, HSBC has retained a Skilled Person under section 166 of the Financial Services and Markets Act and an Independent Consultant under the FRB cease-and-desist order to produce periodic assessments of the Group's AML and sanctions compliance programme. The Skilled Person completed its engagement in the second quarter of 2021, and the FCA has determined that no further Skilled Person work is required. Separately, the Independent Consultant continues to work pursuant to the FRB cease-and-desist order. The roles of each of the FCA Skilled Person and the FRB Independent Consultant are discussed on page 209.

In December 2021, the FCA concluded its investigation into HSBC's compliance with UK money laundering regulations and financial crime systems and control requirements. The FCA imposed a fine on HSBC Bank plc, which has been paid.

Since November 2014, a number of lawsuits have been filed in federal courts in the US against various HSBC companies and others on behalf of plaintiffs who are, or are related to, victims of terrorist attacks in the Middle East. In each case, it is alleged that the defendants aided and abetted the unlawful conduct of various sanctioned parties in violation of the US Anti-Terrorism Act. Currently, nine actions remain pending in federal courts in New York or the District of Columbia. The courts have granted HSBC's motions to dismiss in five of these cases; appeals remain pending in two cases, and the remaining three dismissals are also subject to appeal. The four remaining actions are at an early stage.

Based on the facts currently known, it is not practicable to predict the resolution of these matters, including the timing or any possible impact on HSBC, which could be significant.

London interbank offered rates, European interbank offered rates and other benchmark interest rate investigations and litigation

Euro interest rate derivatives: In December 2016, the European Commission ('EC') issued a decision finding that HSBC, among other banks, engaged in anti-competitive practices in connection with the pricing of euro interest rate derivatives in early 2007. The EC imposed a fine on HSBC based on a one-month infringement. In September 2019, the General Court of the European Union (the 'General Court') issued a decision largely upholding the EC's findings on liability but annulling the fine. HSBC and the EC both appealed the General Court's decision to the European Court of Justice (the 'Court of Justice'). In June 2021, the EC adopted a new fining decision for an amount that was 5% less than the previously annulled fine, and it subsequently withdrew its appeal to the Court of Justice. HSBC has appealed the EC's June 2021 fining decision to the General Court, and its appeal to the Court of Justice on liability also remains pending.

US dollar Libor: Beginning in 2011, HSBC and other panel banks have been named as defendants in a number of private lawsuits filed in the US with respect to the setting of US dollar Libor. The complaints assert claims under various US laws, including US antitrust and racketeering laws, the US Commodity Exchange Act ('US CEA') and state law. The lawsuits include individual and putative class actions, most of which have been transferred and/or consolidated for pre-trial purposes before the New York District Court. HSBC has reached class settlements with five groups of plaintiffs, and the court has approved these settlements. HSBC has also resolved several of the individual actions, although a number of other US dollar Libor-related actions remain pending against HSBC in the New York District Court.

Intercontinental Exchange ('ICE') Libor: Between January and March 2019, HSBC and other panel banks were named as defendants in three putative class actions filed in the New York District Court on behalf of persons and entities who purchased instruments paying interest indexed to US dollar ICE Libor from a panel bank. The complaints allege, among other things, misconduct related to the suppression of this benchmark rate in violation of US antitrust and state law. In July 2019, the three putative class actions were consolidated, and the plaintiffs filed a consolidated amended complaint. In March 2020, the court granted the defendants' motion to dismiss in its entirety and, in February 2022, the US Court of Appeals for the Second Circuit dismissed the plaintiffs' appeal.

Singapore interbank offered rate ('Sibor'), Singapore swap offer rate ('SOR') and Australia bank bill swap rate ('BBSW'): In July and August 2016, HSBC and other panel banks were named as defendants in two putative class actions filed in the New York District Court on behalf of persons who transacted in products related to the Sibor, SOR and BBSW benchmark rates. The complaints allege, among other things, misconduct related to these benchmark rates in violation of US antitrust, commodities and racketeering laws, and state law.

In the Sibor/SOR litigation, in October 2021, The Hongkong and Shanghai Banking Corporation Limited reached a settlement in principle with the plaintiffs to resolve this action. The settlement remains subject to court approval.

In the BBSW litigation, in November 2018, the court dismissed all foreign defendants, including all HSBC entities, on personal jurisdiction grounds. In April 2019, the plaintiffs filed an amended complaint, which the defendants moved to dismiss. In February 2020, the court again dismissed the plaintiffs' amended complaint against all HSBC entities.

There are many factors that may affect the range of outcomes, and the resulting financial impact, of these matters, which could be significant.

Foreign exchange-related investigations and litigation

In December 2021, the EC issued a settlement decision finding that a number of banks, including HSBC, had engaged in anti-competitive practices in an online chatroom between 2011 and 2012 in the foreign exchange spot market. The EC imposed a €174.3m fine on HSBC in connection with this matter, which is fully provisioned.

In January 2018, following the conclusion of the US Department of Justice's ('DoJ') investigation into HSBC's historical foreign exchange activities, HSBC Holdings entered into a three-year deferred prosecution agreement with the Criminal Division of the DoJ (the 'FX DPA'), regarding fraudulent conduct in connection with two particular transactions in 2010 and 2011. In January 2021, the FX DPA expired and, in August 2021, the charges deferred by the FX DPA were dismissed.

In December 2016, Brazil's Administrative Council of Economic Defense initiated an investigation into the onshore foreign exchange market and identified a number of banks, including HSBC, as subjects of its investigation.

In June 2020, the Competition Commission of South Africa, having initially referred a complaint for proceedings before the South African Competition Tribunal in February 2017, filed a revised complaint against 28 financial institutions, including HSBC Bank plc and HSBC Bank USA, for alleged anti-competitive behaviour in the South African foreign exchange market. In December 2021, a hearing on HSBC Bank plc's and HSBC Bank USA's applications to dismiss the revised complaint took place before the South African Competition Tribunal, where a decision remains pending.

Beginning in 2013, various HSBC companies and other banks have been named as defendants in a number of putative class actions filed in, or transferred to, the New York District Court arising from allegations that the defendants conspired to manipulate foreign exchange rates. HSBC has reached class settlements with two groups of plaintiffs, including direct and indirect purchasers of foreign exchange products, and the court has granted final approval of these settlements. A putative class action by a group of retail customers of foreign exchange products remains pending.

In November and December 2018, complaints alleging foreign exchange-related misconduct were filed in the New York District Court and the High Court of England and Wales against HSBC and other defendants by certain plaintiffs that opted out of the direct purchaser class action settlement in the US. These matters remain pending. Additionally, lawsuits alleging foreign exchange-related misconduct remain pending against HSBC and other banks in courts in Brazil and Israel. It is possible that additional civil actions will be initiated against HSBC in relation to its historical foreign exchange activities.

There are many factors that may affect the range of outcomes, and the resulting financial impact, of these matters, which could be significant.

Precious metals fix-related litigation

Gold: Beginning in March 2014, numerous putative class actions were filed in the New York District Court and the US District Courts for the District of New Jersey and the Northern District of California, naming HSBC and other members of The London Gold Market Fixing Limited as defendants. The complaints, which were consolidated in the New York District Court, allege that, from January 2004 to June 2013, the defendants conspired to manipulate the price of gold and gold derivatives for their collective benefit in violation of US antitrust laws, the US CEA and New York state law. In October 2020, HSBC reached a settlement in principle with the plaintiffs to resolve the consolidated action. The settlement remains subject to court approval.

Beginning in December 2015, numerous putative class actions under Canadian law were filed in the Ontario and Quebec Superior Courts of Justice against various HSBC companies and other financial institutions. The plaintiffs allege that, among other things, from January 2004 to March 2014, the defendants conspired to manipulate the price of gold and gold derivatives in violation of the Canadian Competition Act and common law. These actions are ongoing.

Silver: Beginning in July 2014, numerous putative class actions were filed in federal district courts in New York, naming HSBC and other members of The London Silver Market Fixing Limited as defendants. The complaints allege that, from January 2007 to December 2013, the defendants conspired to manipulate the price of silver and silver derivatives for their collective benefit in violation of US antitrust laws, the US CEA and New York state law. The actions were consolidated in the New York District Court and remain pending, following the conclusion of pre-class certification discovery.

In April 2016, two putative class actions under Canadian law were filed in the Ontario and Quebec Superior Courts of Justice against various HSBC companies and other financial institutions. The plaintiffs in both actions allege that, from January 1999 to August 2014, the defendants conspired to manipulate the price of silver and silver derivatives in violation of the Canadian Competition Act and common law. These actions are ongoing.

Platinum and palladium: Between late 2014 and early 2015, numerous putative class actions were filed in the New York District Court, naming HSBC and other members of The London Platinum and Palladium Fixing Company Limited as defendants. The complaints allege that, from January 2008 to November 2014, the defendants conspired to manipulate the price of platinum group metals ('PGM') and PGM-based financial products for their collective benefit in violation of US antitrust laws and the US CEA. In March 2020, the court granted the defendants' motion to dismiss the plaintiffs' third amended complaint but granted the plaintiffs leave to re-plead certain claims. The plaintiffs have filed an appeal.

Based on the facts currently known, it is not practicable at this time for HSBC to predict the resolution of these matters, including the timing or any possible impact on HSBC, which could be significant.

Film finance litigation

In July and November 2015, two actions were brought by individuals against HSBC Private Bank (UK) Limited ('PBGB') in the High Court of England and Wales seeking damages on various alleged grounds, including breach of duty to the claimants, in connection with their participation in certain Ingenious film finance schemes. In December 2018 and June 2019, two further actions were brought against PBGB in the High Court of England and Wales by multiple claimants in connection with lending provided by PBGB to third parties in respect of certain Ingenious film finance schemes in which the claimants participated. In January 2022, HSBC UK Bank plc (as successor to PBGB) reached a settlement in principle with the claimant group to resolve these actions. The settlement remains subject to the negotiation of definitive documentation.

In June 2020, two separate claims were issued against HSBC UK Bank plc (as successor to PBGB) in the High Court of England and Wales by two separate groups of investors in Eclipse film finance schemes in connection with PBGB's role in the development of such schemes. These actions are ongoing.

In April 2021, HSBC UK Bank plc (as successor to PBGB) was served with a claim issued in the High Court of England and Wales in connection with PBGB's role in the development of the Zeus film finance schemes. This action is at an early stage.

It is possible that additional actions or investigations will be initiated against HSBC UK Bank plc as a result of PBGB's historical involvement in the provision of certain film finance-related services.

There are many factors that may affect the range of outcomes, and the resulting financial impact, of these matters, which could be significant.

Other regulatory investigations, reviews and litigation

HSBC Holdings and/or certain of its affiliates are subject to a number of other investigations and reviews by various regulators and competition and law enforcement authorities, as well as litigation, in connection with various matters relating to the firm's businesses and operations, including:

- investigations by tax administration, regulatory and law enforcement authorities in Argentina, India and elsewhere in connection with allegations of tax evasion or tax fraud, money laundering and unlawful cross-border banking solicitation;
- an investigation by the US Commodity Futures Trading Commission regarding interest rate swap transactions related to bond issuances, among other things, as well as the use of non-HSBC approved messaging platforms for business communications;
- an investigation by the PRA in connection with depositor protection arrangements in the UK;
- an investigation by the FCA in connection with collections and recoveries operations in the UK;
- an investigation by the UK Competition and Markets Authority concerning the financial services sector;
- a putative class action brought in the New York District Court relating to the Mexican government bond market;
- two group actions pending in the US courts and a claim issued in the High Court of England and Wales in connection with HSBC Bank plc's role as a correspondent bank to Stanford International Bank Ltd from 2003 to 2009; and
- litigation brought against various HSBC companies in the US courts relating to residential mortgage-backed securities, based primarily on (a) claims brought against HSBC Bank USA in connection with its role as trustee on behalf of various securitisation trusts; and (b) claims against several HSBC companies seeking that the defendants repurchase various mortgage loans.

There are many factors that may affect the range of outcomes, and the resulting financial impact, of these matters, which could be significant.

35 Related party transactions

Related parties of the Group and HSBC Holdings include subsidiaries, associates, joint ventures, post-employment benefit plans for HSBC employees, Key Management Personnel ('KMP') as defined by IAS 24, close family members of KMP and entities that are controlled or jointly controlled by KMP or their close family members. KMP are defined as those persons having authority and responsibility for planning, directing and controlling the activities of HSBC Holdings. These individuals also constitute 'senior management' for the purposes of the Hong Kong Listing Rules. In applying IAS 24, it was determined that for this financial reporting period all KMP included Directors, former Directors and senior management listed on pages 220 to 226 except for the roles of Group Chief Legal Officer, Group Head of Internal Audit, Group Chief Human Resources Officer, Group Chief Sustainability Officer, Group Head of Strategy, Group Chief Communications Officer and Group Company Secretary and Chief Governance Officer who do not meet the criteria for KMP as provided for in the standard.

Particulars of transactions with related parties are tabulated below. The disclosure of the year-end balance and the highest amounts outstanding during the year is considered to be the most meaningful information to represent the amount of the transactions and outstanding balances during the year.

Key Management Personnel

Details of Directors' remuneration and interests in shares are disclosed in the 'Directors' remuneration report' on pages 254 to 287. IAS 24 'Related Party Disclosures' requires the following additional information for key management compensation.

Compensation of Key Management Personnel

	2021	2020	2019
	$m	$m	$m
Short-term employee benefits	50	39	64
Other long-term employee benefits	6	5	8
Share-based payments	27	20	27
Year ended 31 Dec	**83**	64	99

Shareholdings, options and other securities of Key Management Personnel

	2021	2020
	(000s)	(000s)
Number of options held over HSBC Holdings ordinary shares under employee share plans	35	27
Number of HSBC Holdings ordinary shares held beneficially and non-beneficially	13,529	11,916
Number of other HSBC securities held[1]	228	228
At 31 Dec	**13,792**	12,171

1 *The disclosure includes other HSBC securities held by Key Management Personnel and comparatives for 2020 have now been presented.*

Advances and credits, guarantees and deposit balances during the year with Key Management Personnel

	2021		2020	
	Balance at 31 Dec	Highest amounts outstanding during year	Balance at 31 Dec	Highest amounts outstanding during year
	$m	$m	$m	$m
Key Management Personnel				
Advances and credits[1]	373	401	221	357
Guarantees	25	45	30	55
Deposits	284	3,190	281	874

1 *Advances and credits entered into by subsidiaries of HSBC Holdings plc during 2021 with Directors and former Directors, disclosed pursuant to section 413 of the Companies Act 2006, totalled $2.8m (2020: $4.7m).*

Some of the transactions were connected transactions as defined by the Rules Governing The Listing of Securities on The Stock Exchange of Hong Kong Limited, but were exempt from any disclosure requirements under the provisions of those rules. The above transactions were made in the ordinary course of business and on substantially the same terms, including interest rates and security, as for comparable transactions with persons of a similar standing or, where applicable, with other employees. The transactions did not involve more than the normal risk of repayment or present other unfavourable features.

Associates and joint ventures

The Group provides certain banking and financial services to associates and joint ventures including loans, overdrafts, interest and non-interest bearing deposits and current accounts. Details of the interests in associates and joint ventures are given in Note 19.

Transactions and balances during the year with associates and joint ventures

	2021		2020	
	Highest balance during the year	Balance at 31 Dec	Highest balance during the year	Balance at 31 Dec
	$m	$m	$m	$m
Unsubordinated amounts due from joint ventures	160	96	147	147
Unsubordinated amounts due from associates	4,527	4,188	4,330	2,942
Amounts due to associates	3,397	1,070	5,466	2,226
Amounts due to joint ventures	102	44	102	102
Guarantees and commitments	1,016	347	433	283

The above outstanding balances arose in the ordinary course of business and on substantially the same terms, including interest rates and security, as for comparable transactions with third-party counterparties.

Post-employment benefit plans

At 31 December 2021, $3.4bn (2020: $3.5bn) of HSBC post-employment benefit plan assets were under management by HSBC companies, earning management fees of $14m in 2021 (2020: $13m). At 31 December 2021, HSBC's post-employment benefit plans had placed deposits of $476m (2020: $452m) with its banking subsidiaries, earning interest payable to the schemes of nil (2020: nil). The above outstanding balances arose from the ordinary course of business and on substantially the same terms, including interest rates and security, as for comparable transactions with third-party counterparties.

The combined HSBC Bank (UK) Pension Scheme enters into swap transactions with HSBC to manage inflation and interest rate sensitivity of its liabilities and selected assets. At 31 December 2021, the gross notional value of the swaps was $7.4bn (2020: $7.7bn). These swaps had a positive fair value to the scheme of $1.0bn (2020: $1.0bn); and HSBC had delivered collateral of $1.0bn (2020: $1.0bn) to the scheme in respect of these arrangements. All swaps were executed at prevailing market rates and within standard market bid/offer spreads.

HSBC Holdings

Details of HSBC Holdings' subsidiaries are shown in Note 38.

Transactions and balances during the year with subsidiaries

	2021		2020	
	Highest balance during the year	**Balance at 31 Dec**	Highest balance during the year	Balance at 31 Dec
	$m	**$m**	$m	$m
Assets				
Cash and balances with HSBC undertakings	**3,397**	**2,590**	5,476	2,913
Financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value	**64,686**	**51,408**	65,253	65,253
Derivatives	**4,187**	**2,811**	5,784	4,698
Loans and advances to HSBC undertakings	**27,142**	**25,108**	10,785	10,443
Prepayments, accrued income and other assets	**1,555**	**1,135**	1,838	1,363
Investments in subsidiaries	**163,211**	**163,211**	161,546	160,660
Total related party assets at 31 Dec	**264,178**	**246,263**	250,682	245,330
Liabilities				
Amounts owed to HSBC undertakings	**340**	**111**	581	330
Derivatives	**2,872**	**1,220**	3,376	3,060
Accruals, deferred income and other liabilities	**2,036**	**1,732**	2,737	1,936
Subordinated liabilities	**900**	**900**	892	892
Total related party liabilities at 31 Dec	**6,148**	**3,963**	7,586	6,218
Guarantees and commitments	**16,477**	**13,746**	15,661	13,787

The above outstanding balances arose in the ordinary course of business and on substantially the same terms, including interest rates and security, as for comparable transactions with third-party counterparties.

Some employees of HSBC Holdings are members of the HSBC Bank (UK) Pension Scheme, which is sponsored by a separate Group company. HSBC Holdings incurs a charge for these employees equal to the contributions paid into the scheme on their behalf. Disclosure in relation to the scheme is made in Note 5.

36 Business disposals

In 2021, we accelerated the pace of execution on our strategic ambition to be the preferred international financial partner for our clients with the announcements of the planned sale of our retail banking businesses in France, as well as the exit of domestic mass market retail banking in the US.

Planned sale of the retail banking business in France

On 25 November 2021, HSBC Continental Europe signed a framework agreement with Promontoria MMB SAS ('My Money Group') and its subsidiary Banque des Caraïbes SA, regarding the planned sale of HSBC Continental Europe's retail banking business in France. This followed the signing of a Memorandum of Understanding on 18 June 2021 and the conclusion of the information and consultation processes of the parties with their respective works councils.

In parallel, several other agreements have been entered into aiming to ensure continuity of service for HSBC Continental Europe's retail banking customers who hold asset management products with HSBC Global Asset Management (France) and HSBC REIM (France), and protection and/or life-wrapped insurance products with HSBC Assurances Vie (France).

The sale, which is subject to regulatory approvals and the satisfaction of other relevant conditions, includes: HSBC Continental Europe's French retail banking business; the Crédit Commercial de France ('CCF') brand; and HSBC Continental Europe's 100% ownership interest in HSBC SFH (France) and its 3% ownership interest in Crédit Logement. The sale would generate an estimated loss before tax including related transaction costs for the Group of $2.3bn, together with an additional $0.7bn impairment of goodwill.

The signing of the framework agreement for the planned sale of the French retail banking business resulted in a tax deduction (tax value of $0.4bn) for a provision for loss on disposal, which was recorded in the French tax return. A deferred tax liability of the same amount arises as a consequence of the temporary difference between the French tax return and IFRS in respect of this provision. There was no tax impact in respect of goodwill impairment recognised in the Group financial statements for the year ended 31 December 2021. The vast majority of the estimated loss for the write-down of the disposal group to fair value less costs to sell will be recognised when it is classified as held for sale in accordance with IFRS 5, which is currently anticipated to be in 2022. Subsequently, the disposal group classified as held for sale will be remeasured at the lower of carrying amount and fair value less costs to sell at each reporting period. Any remaining gain or loss not previously recognised will be recognised at the date of derecognition, which is currently anticipated to be in 2023.

At 31 December 2021, the value of the total assets of the business to be sold was $27.4bn, including $24.9bn of loans and advances to customers, and the value of customer accounts was $22.6bn.

US retail banking business

On 26 May 2021, we announced that we will exit our US mass market retail banking business, including our Personal and Advance propositions, as well as retail business banking, and will rebrand approximately 20 to 25 of our retail branches into international wealth centres to serve our Premier and Jade customers. In conjunction with the execution of this strategy, HSBC Bank USA, N.A. entered into definitive sale agreements with Citizens Bank and Cathay Bank to sell approximately 90 of our retail branches along with substantially all residential mortgage, unsecured and retail business banking loans and all deposits in our branch network not associated with our Premier, Jade and Private Banking customers. Certain assets under management associated with our mass market retail banking business were also transferred. The sale agreement with Cathay Bank completed on 4 February 2022 and the sale agreement with Citizens Bank completed on 18 February 2022. The remaining branches not sold or rebranded will be closed.

At 31 December 2021, loans and advances to customers of $2.4bn and customer accounts of $8.8bn related to these transactions met the criteria to be classified as held for sale.

37 Events after the balance sheet date

The following recently announced acquisitions form part of our strategy to grow our insurance business, helping to deliver on our strategic priority to become a market leader in Asian wealth management.

- On 11 February 2022, following the completion of all regulatory approvals, HSBC Insurance (Asia-Pacific) Holdings Limited, a wholly-owned subsidiary of the Group, acquired 100% of the issued share capital of AXA Insurance Pte Limited for $529m, subject to adjustment for closing items. This will be reflected in our 2022 results by which time determination of the initial acquisition accounting will have been completed.
- On 30 December 2021, approval was received from the China Banking and Insurance Regulatory Commission for HSBC Insurance (Asia) Limited, a wholly-owned subsidiary of the Group, to acquire the remaining 50% equity interest in HSBC Life Insurance Company Limited (HSBC Life China). Completion is expected to occur during the first half of 2022. Headquartered in Shanghai, HSBC Life China offers a comprehensive range of insurance solutions covering annuity, whole life, critical illness and unit-linked insurance products and in 2021 reported gross written premiums of approximately $0.4bn (2020: $0.3bn).
- On 28 January 2022, HSBC Insurance (Asia-Pacific) Holdings Limited notified the shareholders of Canara HSBC Oriental Bank of Commerce Life Insurance Company Limited ('CHOICe') of its intention to increase its shareholding in CHOICe up to 49%. HSBC currently has a 26% shareholding which is accounted for as an associate. Any increase in shareholding is subject to agreement with other shareholders in CHOICe, as well as internal and regulatory approvals. Established in 2008, CHOICe is a life insurance company based in India with reported gross written premiums of approximately $0.7bn for the year to 31 March 2021 (31 March 2020: $0.5bn).

In 2021 HSBC Bank USA, N.A. entered into definitive sale agreements with Citizens Bank and Cathay Bank to sell approximately 90 of our retail branches along with substantially all residential mortgage, unsecured and retail business banking loans and all deposits in our branch network not associated with our Premier, Jade and Private Banking customers. The sale agreement with Cathay Bank completed on 4 February 2022 and the sale agreement with Citizens Bank completed on 18 February 2022. For further information on the transactions refer to Note 36: Business disposals on page 387.

A second interim dividend for 2021 of $0.18 per ordinary share (a distribution of approximately $3,649m) was approved by the Directors after 31 December 2021. HSBC Holdings called $2,500m 3.262% Fixed to Floating Rate Senior Unsecured Notes due March 2023 on 8 February 2022. The security will be redeemed and cancelled on 13 March 2022. These accounts were approved by the Board of Directors on 22 February 2022 and authorised for issue.

38 HSBC Holdings' subsidiaries, joint ventures and associates

In accordance with section 409 of the Companies Act 2006 a list of HSBC Holdings plc subsidiaries, joint ventures and associates, the registered office addresses and the effective percentages of equity owned at 31 December 2021 are disclosed below.

Unless otherwise stated, the share capital comprises ordinary or common shares that are held by Group subsidiaries. The ownership percentage is provided for each undertaking. The undertakings below are consolidated by HSBC unless otherwise indicated.

Subsidiaries

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
452 TALF Plus ABS Opportunities SPV LLC	100.00		15
452 TALF SPV LLC	100.00		15
Almacenadora Banpacifico S.A. (In Liquidation)	99.99		16
Arcadia Financial Services (Asia) Limited	100.00		17
Assetfinance December (F) Limited	100.00		18
Assetfinance December (H) Limited	100.00		19
Assetfinance December (P) Limited	100.00		19
Assetfinance December (R) Limited	100.00		19
Assetfinance June (A) Limited	100.00		19
Assetfinance June (D) Limited	100.00		18
Assetfinance Limited	100.00		19
Assetfinance March (B) Limited	100.00		20
Assetfinance March (D) Limited	100.00		18
Assetfinance March (F) Limited	100.00		19
Assetfinance September (F) Limited	100.00		19
Assetfinance September (G) Limited	100.00		18
B&Q Financial Services Limited	100.00		19
Banco HSBC S.A.	100.00		21
Banco Nominees (Guernsey) Limited	100.00		22
Banco Nominees 2 (Guernsey) Limited	100.00		22
Banco Nominees Limited	100.00		21
Beau Soleil Limited Partnership	N/A		0, 24
Beijing Miyun HSBC Rural Bank Company Limited	100.00		12, 25
BentallGreenOak China Real Estate Investments LP	N/A		0, 145
Billingsgate Nominees Limited (In Liquidation)	100.00		26
Canada Crescent Nominees (UK) Limited	100.00		19
Canada Square Nominees (UK) Limited	100.00		19
Capco/Cove, Inc.	100.00		27
Card-Flo #1, Inc.	100.00		15
Card-Flo #3, Inc.	100.00		15
CC&H Holdings LLC	100.00		28
CCF HOLDING (LIBAN) S.A.L. (In Liquidation)	74.99		29
CCF & Partners Asset Management Limited	100.00	(99.99)	19
Charterhouse Administrators (D.T.) Limited	100.00	(99.99)	19
Charterhouse Management Services Limited	100.00	(99.99)	19
Charterhouse Pensions Limited	100.00		19
Chongqing Dazu HSBC Rural Bank Company Limited	100.00		12, 30
Chongqing Fengdu HSBC Rural Bank Company Limited	100.00		12, 30
Chongqing Rongchang HSBC Rural Bank Company Limited	100.00		12, 32
COIF Nominees Limited	N/A		0, 19
Cordico Management AG (In Liquidation)	100.00		33
Corsair IV Financial Services Capital Partners-B, LP	N/A		0, 34
Dalian Pulandian HSBC Rural Bank Company Limited	100.00		12, 35
Decision One Mortgage Company, LLC	N/A		0, 36
Dem 9	100.00	(99.99)	4, 37
Dempar 1	100.00	(99.99)	4, 37
Desarrollo Turistico, S.A. de C.V. (In Liquidation)	100.00	(99.99)	16
Electronic Data Process México, S.A. de C.V.	100.00		16
Eton Corporate Services Limited	100.00		22
Far East Leasing SA (In Dissolution)	100.00		38
Flandres Contentieux S.A.	100.00	(99.99)	37
Foncière Elysées	100.00	(99.99)	37
Fujian Yongan HSBC Rural Bank Company Limited	100.00		12, 39
Fulcher Enterprises Company Limited	100.00	(62.14)	40
Fundacion HSBC, A.C.	100.00	(99.99)	11, 16
Giller Ltd.	100.00		27
GPIF Co-Investment, LLC	N/A		0, 15
Griffin International Limited	100.00		19
Grundstuecksgesellschaft Trinkausstrasse Kommanditgesellschaft	N/A		0, 41
Grupo Financiero HSBC, S. A. de C. V.	99.99		16
Guangdong Enping HSBC Rural Bank Company Limited	100.00		12, 42
Guangzhou HSBC Real Estate Company Ltd	100.00		12, 43
Hang Seng (Nominee) Limited	100.00	(62.14)	40
Hang Seng Bank (China) Limited	100.00	(62.14)	44
Hang Seng Bank (Trustee) Limited	100.00	(62.14)	40
Hang Seng Bank Limited	62.14		40
Hang Seng Bullion Company Limited	100.00	(62.14)	40
Hang Seng Credit Limited	100.00	(62.14)	40
Hang Seng Data Services Limited	100.00	(62.14)	40
Hang Seng Finance Limited	100.00	(62.14)	40
Hang Seng Financial Information Limited	100.00	(62.14)	40
Hang Seng Indexes (Netherlands) B.V.	100.00	(62.14)	45
Hang Seng Indexes Company Limited	100.00	(62.14)	40
Hang Seng Insurance Company Limited	100.00	(62.14)	40
Hang Seng Investment Management Limited	100.00	(62.14)	40
Hang Seng Investment Services Limited	100.00	(62.14)	40
Hang Seng Life Limited	100.00	(62.14)	40
Hang Seng Qianhai Fund Management Company Limited	70.00	(43.49)	1, 12, 46
Hang Seng Real Estate Management Limited	100.00	(62.14)	40
Hang Seng Securities Limited	100.00	(62.14)	40
Hang Seng Security Management Limited	100.00	(62.14)	40
HASE Wealth Limited	100.00	(62.14)	40
Haseba Investment Company Limited	100.00	(62.14)	40
HFC Bank Limited (In Liquidation)	100.00		26
High Time Investments Limited	100.00	(62.14)	40
Honey Blue Enterprises Limited	100.00		47
Honey Green Enterprises Ltd.	100.00		48
Honey Grey Enterprises Limited	100.00		49
Honey Silver Enterprises Limited	100.00		49
Household International Europe Limited (In Liquidation)	100.00		50
Household Pooling Corporation	100.00		51
Housing (USA) LLP	N/A		0, 52
HSBC (BGF) Investments Limited	100.00		19
HSBC (General Partner) Limited	100.00		2, 53
HSBC (Guernsey) GP PCC Limited	100.00		22
HSBC (Kuala Lumpur) Nominees Sdn Bhd	100.00		54
HSBC (Malaysia) Trustee Berhad	100.00		55
HSBC (Singapore) Nominees Pte Ltd	100.00		56
HSBC Agency (India) Private Limited	100.00		57
HSBC Alternative Credit Strategies General Partner S.a r.l.	N/A		0, 58
HSBC Alternative Investments Limited	100.00		19
HSBC Amanah Malaysia Berhad	100.00		54
HSBC Americas Corporation (Delaware)	100.00		15
HSBC Argentina Holdings S.A.	100.00		59
HSBC Asia Holdings B.V.	100.00		19
HSBC Asia Holdings Limited	100.00		2, 49
HSBC Asia Pacific Holdings (UK) Limited	100.00		19
HSBC Asset Finance (UK) Limited	100.00		19
HSBC Asset Finance M.O.G. Holdings (UK) Limited	100.00		19
HSBC Asset Management (Fund Services UK) Limited	100.00		19
HSBC Asset Management (Japan) Limited	100.00		61
HSBC Asset Management (India) Private Limited	100.00		60
HSBC Assurances Vie (France)	100.00	(99.99)	62
HSBC Australia Holdings Pty Limited	100.00		63
HSBC BANK (CHILE)	100.00		64
HSBC Bank (China) Company Limited	100.00		12, 65
HSBC Bank (General Partner) Limited	100.00		53
HSBC Bank (Mauritius) Limited	100.00		66

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Bank (RR) (Limited Liability Company)	N/A		0, 13, 67
HSBC Bank (Singapore) Limited	100.00		56
HSBC Bank (Taiwan) Limited	100.00		68
HSBC Bank (Uruguay) S.A.	100.00		69
HSBC Bank (Vietnam) Ltd.	100.00		70
HSBC Bank A.S.	100.00		71
HSBC Bank Argentina S.A.	99.99		59
HSBC Bank Armenia cjsc	100.00		72
HSBC Bank Australia Limited	100.00		63
HSBC Bank Bermuda Limited	100.00		23
HSBC Bank Canada	100.00		73
HSBC Bank Capital Funding (Sterling 1) LP	N/A		0, 53
HSBC Bank Capital Funding (Sterling 2) LP	N/A		0, 53
HSBC Bank Egypt S.A.E	94.54		74
HSBC Bank Malaysia Berhad	100.00		54
HSBC Bank Malta p.l.c.	70.03		75
HSBC Bank Middle East Limited	100.00		5, 76
HSBC Bank Middle East Limited Representative Office Morocco SARL (In Liquidation)	100.00		77
HSBC Bank Oman S.A.O.G.	51.00		78
HSBC Bank Pension Trust (UK) Limited	100.00		19
HSBC Bank plc	100.00		2, 19
HSBC Bank USA, National Association	100.00		3, 79
HSBC Branch Nominee (UK) Limited	100.00		18
HSBC Brasil Holding S.A.	100.00		21
HSBC Broking Forex (Asia) Limited	100.00		49
HSBC Broking Futures (Asia) Limited	100.00		49
HSBC Broking Futures (Hong Kong) Limited	100.00		49
HSBC Broking Securities (Asia) Limited	100.00		49
HSBC Broking Securities (Hong Kong) Limited	100.00		49
HSBC Broking Services (Asia) Limited	100.00		49
HSBC Canadian Covered Bond (Legislative) GP Inc.	100.00		80
HSBC Canadian Covered Bond (Legislative) Guarantor Limited Partnership	N/A		0, 80
HSBC Capital (USA), Inc.	100.00		15
HSBC Capital Funding (Dollar 1) L.P.	N/A		0, 53
HSBC Card Services Inc.	100.00		15
HSBC Casa de Bolsa, S.A. de C.V., Grupo Financiero HSBC	100.00	(99.99)	16
HSBC Cayman Limited	100.00		81
HSBC Cayman Services Limited	100.00		81
HSBC City Funding Holdings	100.00		19
HSBC Client Holdings Nominee (UK) Limited	100.00		19
HSBC Client Nominee (Jersey) Limited	100.00		82
HSBC Columbia Funding, LLC	N/A		0, 15
HSBC Continental Europe	99.99		37
HSBC Corporate Advisory (Malaysia) Sdn Bhd	100.00		54
HSBC Corporate Finance (Hong Kong) Limited	100.00		49
HSBC Corporate Secretary (UK) Limited	100.00		2, 83
HSBC Corporate Trustee Company (UK) Limited	100.00		19
HSBC Custody Nominees (Australia) Limited	100.00		63
HSBC Custody Services (Guernsey) Limited	100.00		22
HSBC Daisy Investments (Mauritius) Limited	100.00		84
HSBC Diversified Loan Fund General Partner Sarl	N/A		0, 85
HSBC Electronic Data Processing (Guangdong) Limited	100.00		12, 86
HSBC Electronic Data Processing (Malaysia) Sdn Bhd	100.00		87
HSBC Electronic Data Processing (Philippines), Inc.	99.99		88
HSBC Electronic Data Processing India Private Limited	100.00		89
HSBC Electronic Data Processing Lanka (Private) Limited	100.00		90
HSBC Electronic Data Service Delivery (Egypt) S.A.E.	100.00		91

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Epargne Entreprise (France)	100.00	(99.99)	62
HSBC Equipment Finance (UK) Limited	100.00		18
HSBC Equity (UK) Limited	100.00		19
HSBC Europe B.V.	100.00		19
HSBC Executor & Trustee Company (UK) Limited	100.00		18
HSBC Factoring (France)	100.00	(99.99)	37
HSBC Finance (Netherlands)	100.00		2, 19
HSBC Finance Corporation	100.00		15
HSBC Finance Limited	100.00		19
HSBC Finance Mortgages Inc.	100.00		92
HSBC Finance Transformation (UK) Limited	100.00		19
HSBC Financial Advisors Singapore Pte. Ltd.	100.00		56
HSBC Financial Services (Lebanon) s.a.l.	99.65		93
HSBC Financial Services (Uruguay) S.A. (In Liquidation)	100.00		94
HSBC FinTech Services (Shanghai) Company Limited	100.00		95
HSBC Germany Holdings GmbH	100.00		41
HSBC Global Asset Management (Bermuda) Limited	100.00		3, 23
HSBC Global Asset Management (Canada) Limited	100.00		73
HSBC Global Asset Management (Deutschland) GmbH	100.00		41
HSBC Global Asset Management (France)	100.00	(99.99)	62
HSBC Global Asset Management (Hong Kong) Limited	100.00		24
HSBC Global Asset Management (International) Limited (In Liquidation)	100.00		96
HSBC Global Asset Management (Malta) Limited	100.00	(70.03)	97
HSBC Global Asset Management (México), S.A. de C.V., Sociedad Operadora de Fondos de Inversión, Grupo Financiero HSBC	100.00	(99.99)	16
HSBC Global Asset Management (Oesterreich) GmbH (In Liquidation)	100.00	(99.33)	6, 98
HSBC Global Asset Management (Singapore) Limited	100.00		56
HSBC Global Asset Management (Switzerland) AG	100.00	(99.66)	4, 99
HSBC Global Asset Management (Taiwan) Limited	100.00		100
HSBC Global Asset Management (UK) Limited	100.00		19
HSBC Global Asset Management (USA) Inc.	100.00		101
HSBC Global Asset Management Argentina S.A. Sociedad Gerente de Fondos Comunes de Inversión	100.00	(99.99)	102
HSBC Global Asset Management Holdings (Bahamas) Limited	100.00		103
HSBC Global Asset Management Limited	100.00		2, 19
HSBC Global Custody Nominee (UK) Limited	100.00		19
HSBC Global Custody Proprietary Nominee (UK) Limited	100.00		1, 19
HSBC Global Services (Canada) Limited	100.00		92
HSBC Global Services (China) Holdings Limited	100.00		19
HSBC Global Services (Hong Kong) Limited	100.00		49
HSBC Global Services (UK) Limited	100.00		19
HSBC Global Services Limited	100.00		2, 19
HSBC Global Shared Services (India) Private Limited (In Liquidation)	99.99		1, 57
HSBC Group Management Services Limited	100.00		19
HSBC Group Nominees UK Limited	100.00		2, 19
HSBC Holdings B.V.	100.00		19
HSBC IM Pension Trust Limited	100.00		19
HSBC Infrastructure Debt GP 1 S.à r.l.	N/A		0, 58
HSBC Infrastructure Debt GP 2 S.à r.l.	N/A		0, 58
HSBC Infrastructure Limited	100.00		19
HSBC INKA Investment-AG TGV	100.00	(99.33)	14, 41
HSBC Institutional Trust Services (Asia) Limited	100.00		49
HSBC Institutional Trust Services (Bermuda) Limited	100.00		23

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Institutional Trust Services (Mauritius) Limited	100.00		66
HSBC Institutional Trust Services (Singapore) Limited	100.00		56
HSBC Insurance (Asia) Limited	100.00		104
HSBC Insurance (Asia-Pacific) Holdings Limited	100.00		105
HSBC Insurance (Bermuda) Limited	100.00		23
HSBC Insurance (Singapore) Pte. Limited	100.00		56
HSBC Insurance Agency (USA) Inc.	100.00		101
HSBC Insurance Brokers (Philippines) Inc	99.99		106
HSBC Insurance Holdings Limited	100.00		2, 19
HSBC Insurance SAC 1 (Bermuda) Limited	100.00		23
HSBC Insurance SAC 2 (Bermuda) Limited	100.00		23
HSBC Insurance Services (Lebanon) S.A.L. (In Liquidation)	99.99		107
HSBC Insurance Services Holdings Limited	100.00		19
HSBC International Finance Corporation (Delaware)	100.00		108
HSBC International Trustee (BVI) Limited	100.00		109
HSBC International Trustee (Holdings) Pte. Limited	100.00		56
HSBC International Trustee Limited	100.00		110
HSBC Inversiones S.A.	100.00		64
HSBC InvestDirect (India) Private Limited	100.00	(99.98)	60
HSBC InvestDirect Financial Services (India) Limited	99.99	(99.98)	60
HSBC InvestDirect Sales & Marketing (India) Limited	98.99	(98.98)	57
HSBC InvestDirect Securities (India) Private Limited	99.99		60
HSBC Investment Bank Holdings B.V.	100.00		19
HSBC Investment Bank Holdings Limited	100.00		19
HSBC Investment Company Limited	100.00		2, 19
HSBC Investment Funds (Canada) Inc.	100.00		111
HSBC Investment Funds (Hong Kong) Limited	100.00		24
HSBC Investment Funds (Luxembourg) SA	100.00		58
HSBC Invoice Finance (UK) Limited	100.00		112
HSBC Issuer Services Common Depositary Nominee (UK) Limited	100.00		19
HSBC Issuer Services Depositary Nominee (UK) Limited	100.00		19
HSBC Latin America B.V.	100.00		19
HSBC Latin America Holdings (UK) Limited	100.00		2, 19
HSBC Leasing (Asia) Limited	100.00		49
HSBC Leasing (France)	100.00	(99.99)	37
HSBC Life (Cornell Centre) Limited	100.00		104
HSBC Life (Edwick Centre) Limited	100.00		104
HSBC Life (International) Limited	100.00		23
HSBC Life (Property) Limited	100.00		104
HSBC Life (Tsing Yi Industrial) Limited	100.00		104
HSBC Life (UK) Limited	100.00		19
HSBC Life Assurance (Malta) Limited	100.00	(70.03)	97
HSBC Life Insurance Company Limited	50.00		113
HSBC LU Nominees Limited	100.00		19
HSBC Management (Guernsey) Limited	100.00		114
HSBC Markets (USA) Inc.	100.00		15
HSBC Marking Name Nominee (UK) Limited	100.00		19
HSBC Master Trust Trustee Limited	100.00		19
HSBC Mexico, S.A., Institucion de Banca Multiple, Grupo Financiero HSBC	99.99		16
HSBC Middle East Asset Co. LLC	100.00		115
HSBC Middle East Holdings B.V.	100.00		2, 116
HSBC Middle East Leasing Partnership	N/A		0, 117
HSBC Middle East Securities L.L.C	100.00		118
HSBC Mortgage Corporation (Canada)	100.00		119
HSBC Mortgage Corporation (USA)	100.00		15
HSBC Nominees (Asing) Sdn Bhd	100.00		54
HSBC Nominees (Hong Kong) Limited	100.00		49
HSBC Nominees (New Zealand) Limited	100.00		120
HSBC Nominees (Tempatan) Sdn Bhd	100.00		54
HSBC North America Holdings Inc.	100.00		3, 15
HSBC Operational Services GmbH	80.00		41
HSBC Overseas Holdings (UK) Limited	100.00		2, 19
HSBC Overseas Investments Corporation (New York)	100.00		121
HSBC Overseas Nominee (UK) Limited	100.00		19
HSBC Participaciones (Argentina) S.A.	100.00	(99.99)	59
HSBC PB Corporate Services 1 Limited	100.00		122
HSBC PB Services (Suisse) SA	100.00		123
HSBC Pension Trust (Ireland) DAC	100.00		124
HSBC Pensiones, S.A.	100.00	(99.99)	16
HSBC PI Holdings (Mauritius) Limited	100.00		66
HSBC Portfoy Yonetimi A.S.	100.00		125
HSBC Preferential LP (UK)	100.00		19
HSBC Private Bank (Luxembourg) S.A.	100.00		58
HSBC Private Bank (Suisse) SA	100.00		126
HSBC Private Bank (UK) Limited	100.00		19
HSBC Private Banking Holdings (Suisse) SA	100.00		123
HSBC Private Banking Nominee 3 (Jersey) Limited	100.00		127
HSBC Private Equity Investments (UK) Limited	100.00		19
HSBC Private Trustee (Hong Kong) Limited	100.00		49
HSBC Private Investment Counsel (Canada) Inc.	100.00		111
HSBC Private Markets Management SARL	N/A		0, 128
HSBC Professional Services (India) Private Limited	100.00		129
HSBC Property (UK) Limited	100.00		19
HSBC Property Funds (Holding) Limited	100.00		19
HSBC Provident Fund Trustee (Hong Kong) Limited	100.00		49
HSBC Qianhai Securities Limited	51.00		12, 130
HSBC Real Estate Leasing (France)	100.00	(99.99)	37
HSBC Realty Credit Corporation (USA)	100.00		15
HSBC REGIO Fund General Partner S.à r.l.	100.00		58
HSBC REIM (France)	100.00	(99.99)	62
HSBC Retirement Benefits Trustee (UK) Limited	100.00		1, 2, 19
HSBC Retirement Services Limited	100.00		1, 19
HSBC Saudi Arabia, a Saudi closed Joint Stock	66.19		131
HSBC Savings Bank (Philippines) Inc.	99.99		132
HSBC Securities (Canada) Inc.	100.00		92
HSBC Securities (Egypt) S.A.E. (In Liquidation)	100.00	(94.65)	74
HSBC Securities (Japan) Limited	100.00		19
HSBC Securities (Singapore) Pte Limited	100.00		56
HSBC Securities (South Africa) (Pty) Limited	100.00		133
HSBC Securities (Taiwan) Corporation Limited	100.00		134
HSBC Securities (USA) Inc.	100.00		15
HSBC Securities and Capital Markets (India) Private Limited	99.99		57
HSBC Securities Brokers (Asia) Limited	100.00		49
HSBC Securities Investments (Asia) Limited	100.00		49
HSBC Securities Preparatory (Japan) Co., Ltd.	100.00		61
HSBC Securities Services (Bermuda) Limited	100.00		23
HSBC Securities Services (Guernsey) Limited	100.00		22
HSBC Securities Services (Ireland) DAC	100.00		124
HSBC Securities Services (Luxembourg) S.A.	100.00		58
HSBC Securities Services Holdings (Ireland) DAC	100.00		124
HSBC Securities Services Nominees Limited	100.00		49
HSBC Seguros de Retiro (Argentina) S.A.	100.00	(99.99)	59
HSBC Seguros de Vida (Argentina) S.A.	100.00	(99.99)	59
HSBC Seguros, S.A de C.V., Grupo Financiero HSBC	100.00	(99.99)	3, 16
HSBC Service Company Germany GmbH	100.00		41
HSBC Service Delivery (Polska) Sp. z o.o.	100.00		135
HSBC Services (France)	100.00	(99.99)	37
HSBC Services Japan Limited	100.00		136
HSBC Services USA Inc.	100.00		137
HSBC Servicios Financieros, S.A. de C.V	100.00	(99.99)	16

Financial statements

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Servicios, S.A. DE C.V., Grupo Financiero HSBC	100.00	(99.99)	16
HSBC SFH (France)	100.00	(99.99)	4, 62
HSBC SFT (C.I.) Limited	100.00		22
HSBC Software Development (Guangdong) Limited	100.00		138
HSBC Software Development (India) Private Limited	100.00		187
HSBC Software Development (Malaysia) Sdn Bhd	100.00		87
HSBC Specialist Investments Limited	100.00		19
HSBC Technology & Services (China) Limited	100.00		139
HSBC Technology & Services (USA) Inc.	100.00		15
HSBC Transaction Services GmbH	100.00		6, 41
HSBC Trinkaus & Burkhardt (International) S.A.	100.00		58
HSBC Trinkaus & Burkhardt AG	100.00		41
HSBC Trinkaus & Burkhardt Gesellschaft fur Bankbeteiligungen mbH	100.00		41
HSBC Trinkaus Europa Immobilien-Fonds Nr. 5 GmbH	100.00		41
HSBC Trinkaus Family Office GmbH	100.00		6, 41
HSBC Trinkaus Real Estate GmbH	100.00		6, 41
HSBC Trust Company (Canada)	100.00		119
HSBC Trust Company (Delaware), National Association	100.00		108
HSBC Trust Company (UK) Limited	100.00		19
HSBC Trust Company AG (In Liquidation)	100.00		33
HSBC Trustee (C.I.) Limited	100.00		127
HSBC Trustee (Cayman) Limited	100.00		140
HSBC Trustee (Guernsey) Limited	100.00		22
HSBC Trustee (Hong Kong) Limited	100.00		49
HSBC Trustee (Singapore) Limited	100.00		56
HSBC UK Bank plc	100.00		2, 18
HSBC UK Client Nominee Limited	100.00		18
HSBC UK Holdings Limited	100.00		2, 19
HSBC USA Inc.	100.00		121
HSBC Ventures USA Inc.	100.00		15
HSBC Violet Investments (Mauritius) Limited	100.00		84
HSBC Wealth Client Nominee Limited	100.00		1, 18
HSBC Yatirim Menkul Degerler A.S.	100.00		125
HSI Asset Securitization Corporation	100.00		15
HSI International Limited	100.00	(62.14)	40
HSIL Investments Limited	100.00		19
Hubei Macheng HSBC Rural Bank Company Limited	100.00		141
Hubei Suizhou Cengdu HSBC Rural Bank Company Limited	100.00		12, 142
Hubei Tianmen HSBC Rural Bank Company Limited	100.00		143
Hunan Pingjiang HSBC Rural Bank Company Limited	100.00		12, 144
Imenson Limited	100.00	(62.14)	40
INKA Internationale Kapitalanlagegesellschaft mbH	100.00		41
Inmobiliaria Banci, S.A. de C.V.	100.00	(99.68)	16
Inmobiliaria Bisa, S.A. de C.V.	99.98		16
Inmobiliaria Grufin, S.A. de C.V.	100.00	(99.99)	16
Inmobiliaria Guatusi, S.A. de C.V.	100.00	(99.99)	16
James Capel & Co. Limited (In Liquidation)	100.00		19
James Capel (Nominees) Limited	100.00		19
James Capel (Taiwan) Nominees Limited	100.00		19
John Lewis Financial Services Limited	100.00		19
Keyser Ullmann Limited	100.00	(99.99)	19
Lion Corporate Services Limited	100.00		49
Lion International Corporate Services Limited	100.00		1, 110
Lion International Management Limited	100.00		110
Lion Management (Hong Kong) Limited	100.00		1, 49
Lyndholme Limited	100.00		49
Marks and Spencer Financial Services plc	100.00		146
Marks and Spencer Unit Trust Management Limited	100.00		146
Maxima S.A. AFJP (In Liquidation)	99.98		59
Mexicana de Fomento, S.A. de C.V.	100.00	(99.90)	16
Midcorp Limited	100.00		19
Midland Bank (Branch Nominees) Limited	100.00		18
Midland Nominees Limited	100.00		18
MIL (Cayman) Limited	100.00		81
MW Gestion SA	100.00		59
Promocion en Bienes Raices, S.A. de C.V.	100.00	(99.99)	16
Prudential Client HSBC GIS Nominee (UK)	100.00		19
PT Bank HSBC Indonesia	99.99	(98.93)	147
PT HSBC Sekuritas Indonesia	85.00		148
R/CLIP Corp.	100.00		15
Real Estate Collateral Management Company	100.00		15
Republic Nominees Limited	100.00		22
Republic Overseas Capital Corporation	100.00		101
RLUKREF Nominees (UK) One Limited	100.00		1, 19
RLUKREF Nominees (UK) Two Limited	100.00		1, 19
S.A.P.C. - Ufipro Recouvrement	99.99		37
Saf Baiyun	100.00	(99.99)	4, 37
Saf Guangzhou	100.00	(99.99)	4, 37
SCI HSBC Assurances Immo	100.00	(99.99)	62
Serai Limited	100.00		1, 49
Serai Technology Development (Shanghai) Limited	100.00		12, 149
SFM	100.00	(99.99)	37
SFSS Nominees (Pty) Limited	100.00		133
Shandong Rongcheng HSBC Rural Bank Company Limited	100.00		12, 150
Shenzhen HSBC Development Company Ltd	100.00		12, 151
Sico Limited	100.00		152
SNC Dorique	99.99		1, 11, 153
SNC Les Oliviers D'Antibes	60.00		62
SNCB/M6 - 2008 A	100.00	(99.99)	37
SNCB/M6-2007 A	100.00	(99.99)	4, 37
SNCB/M6-2007 B	100.00	(99.99)	4, 37
Société Française et Suisse	100.00	(99.99)	37
Somers Dublin DAC	100.00	(99.99)	124
Somers Nominees (Far East) Limited	100.00		23
Sopingest	100.00	(99.99)	37
South Yorkshire Light Rail Limited	100.00		19
St Cross Trustees Limited	100.00		18
Sun Hung Kai Development (Lujiazui III) Limited	100.00		12, 154
Swan National Limited	100.00		19
Tasfiye Halinde HSBC Odeme Sistemleri Bilgisayar Teknolojileri Basin Yayin Ve Musteri Hizmetleri (In Liquidation)	100.00		71
The Hongkong and Shanghai Banking Corporation Limited	100.00		49
The Venture Catalysts Limited	100.00		19
Tooley Street View Limited	100.00		2, 19
Tower Investment Management	100.00		155
Trinkaus Australien Immobilien Fonds Nr. 1 Brisbane GmbH & Co. KG	100.00		41
Trinkaus Australien Immobilien-Fonds Nr. 1 Treuhand-GmbH	100.00		6, 41
Trinkaus Europa Immobilien-Fonds Nr.3 Objekt Utrecht Verwaltungs-GmbH	100.00		41
Trinkaus Immobilien-Fonds Geschaeftsfuehrungs-GmbH	100.00		6, 41
Trinkaus Immobilien-Fonds Verwaltungs-GmbH	100.00		6, 41
Trinkaus Private Equity Management GmbH	100.00		41
Trinkaus Private Equity Verwaltungs GmbH	100.00		6, 41
Tropical Nominees Limited	100.00		81
Turnsonic (Nominees) Limited	100.00		18
Valeurs Mobilières Elysées	100.00	(99.99)	37
Wardley Limited	100.00		49

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
Wayfoong Nominees Limited	100.00		49
Wayhong (Bahamas) Limited (In Liquidation)	100.00		103
Westminster House, LLC	N/A		0, 15
Woodex Limited	100.00		23
Yan Nin Development Company Limited	100.00	(62.14)	40

Joint ventures

The undertakings below are joint ventures and equity accounted.

Joint ventures	% of share class held by immediate parent company (or by the Group where this varies)	Footnotes
Global Payments Technology Mexico S.A. De C.V.	50.00	16
HCM Holdings Limited (In Liquidation)	50.99	28
House Network Sdn Bhd (In Liquidation)	25.00	156
HSBC Pollination Climate Asset Management Limited	40.00	157
ProServe Bermuda Limited	50.00	158
The London Silver Market Fixing Limited	N/A	0, 1, 159
Vaultex UK Limited	50.00	160

Associates

The undertakings below are associates and equity accounted.

Associates	% of share class held by immediate parent company (or by the Group where this varies)	Footnotes
Bank of Communications Co., Ltd.	19.03	161
Barrowgate Limited	15.31	162
BGF Group PLC	24.61	163
Bud Financial Limited	10.89	1, 164
Canara HSBC Oriental Bank of Commerce Life Insurance Company Limited	26.00	165
CFAC Payment Scheme Limited (In Liquidation)	33.33	166
Contour Pte Ltd	12.60	167
Divido Financial Services Limited	5.60	168
Episode Six Limited	8.09	169
EPS Company (Hong Kong) Limited	38.66	49
EURO Secured Notes Issuer	16.66	170
GZHS Research Co Ltd	20.50	171
HSBC Jintrust Fund Management Company Limited	49.00	172
HSBC UK Covered Bonds (LM) Limited	20.00	173
HSBC UK Covered Bonds LLP	N/A	0, 18
Icon Brickell LLC (In Liquidation)	N/A	0, 174
Liquidity Match LLC	N/A	0, 175
London Precious Metals Clearing Limited	25.00	176
MENA Infrastructure Fund (GP) Ltd	33.33	177
Quantexa Ltd	10.10	178
Services Epargne Entreprise	14.18	179
Simon Group LLC	N/A	0, 180
sino AG	24.94	181
The London Gold Market Fixing Limited	25.00	159
The Saudi British Bank	31.00	182
Trade Information Network Limited	16.67	183
Trinkaus Europa Immobilien-Fonds Nr. 7 Frankfurt Mertonviertel KG	N/A	0, 41
Vizolution Limited	17.95	1, 184
We Trade Innovation Designated Activity Company	9.88	1, 185
Threadneedle Software Holdings Limited	6.60	186

Footnotes for Note 38

Description of Shares

0	Where an entity is governed by voting rights, HSBC consolidates when it holds – directly or indirectly – the necessary voting rights to pass resolutions by the governing body. In all other cases, the assessment of control is more complex and requires judgement of other factors, including having exposure to variability of returns, power to direct relevant activities, and whether power is held as an agent or principal. HSBC's consolidation policy is described in Note 1.2(a).
1	Management has determined that these undertakings are excluded from consolidation in the Group accounts as these entities do not meet the definition of subsidiaries in accordance with IFRS. HSBC's consolidation policy is described in Note 1.2(a).
2	Directly held by HSBC Holdings plc
3	Preference Shares
4	Actions
5	Redeemable Preference Shares
6	GmbH Anteil
7	Limited and Unlimited Liability Shares
8	Liquidating Share Class
9	Nominal Shares
10	Non-Participating Voting Shares
11	Parts
12	Registered Capital Shares
13	Russian Limited Liability Company Shares
14	Stückaktien

Registered offices

15	c/o The Corporation Trust Company 1209 Orange Street, Wilmington, Delaware, United States of America, 19801
16	Paseo de la Reforma 347 Col. Cuauhtemoc, Mexico, 06500
17	Unit 232 & 233, Solo Offices, 343-347 King's Road, North Point, Hong Kong
18	1 Centenary Square, Birmingham, United Kingdom, B1 1HQ
19	8 Canada Square, London, United Kingdom, E14 5HQ
20	5 Donegal Square South, Northern Ireland, Belfast, United Kingdom, BT1 5JP
21	1909 Avenida Presidente Juscelino Kubitschek, 19° andar, Torre Norte, São Paulo Corporate Towers, São Paulo, Brazil, 04551-903
22	Arnold House St Julians Avenue, St Peter Port, Guernsey, GY1 3NF
23	37 Front Street, Hamilton, Bermuda, HM 11
24	HSBC Main Building 1 Queen's Road Central, Hong Kong
25	First Floor, Xinhua Bookstore Xindong Road (SE of roundabout), Miyun District, Beijing, China
26	156 Great Charles Street, Queensway, Birmingham, West Midlands, United Kingdom, B3 3HN
27	95 Washington Street Buffalo, New York, United States of America, 14203
28	Corporation Service Company 251 Little Falls Drive, Wilmington, Delaware, United States of America, 19808
29	Solidere - Rue Saad Zaghloul Immeuble - 170 Marfaa, P.O. Box 17 5476 Mar Michael, Beyrouth, Lebanon, 11042040
30	No 1, Bei Huan East Road Dazu County, Chongqing, China
31	No 107 Ping Du Avenue (E), Sanhe Town, Fengdu County, Chongqing, China
32	No. 3, 5, 7, Haitang Erzhi Road Changyuan, Rongchang, Chongqing, China, 402460
33	Bederstrasse 49, Zurich, Switzerland, CH-8002
34	c/o Walkers Corporate Services Limited Walker House, 87 Mary Street, George Town, Grand Cayman, Cayman Islands,
35	First & Second Floor, No.3 Nanshan Road, Pulandian , Dalian, Liaoning, China

Registered offices

36	160 Mine Lake CT, Ste 200, Raleigh, North Carolina, United States Of America, 27615-6417
37	38 avenue Kléber, Paris, France, 75116
38	MMG Tower, 23 floor Ave. Paseo del Mar Urbanizacion Costa del Este, Panama
39	No. 1 1211 Yanjiang Zhong Road, Yongan, Fujian, China
40	83 Des Voeux Road Central, Hong Kong
41	Hansaallee 3, Düsseldorf, Germany, 40549
42	No.44 Xin Ping Road Central, Encheng, Enping, Guangdong, China, 529400
43	Room 1701-010 Heung Kong Building, 37 Jin Long Rd, Nansha District, Guangzhou, China
44	34/F and 36/F, Hang Seng Bank Tower 1000 Lujiazui Ring Road, Pilot Free Trade Zone, Shanghai, Shanghai, China, 200120
45	Claude Debussylaan 10 Office Suite 20, 1082MD, Amsterdam, Netherlands
46	Claude Debussylaan 10 Office Suite 20, 1082MD, Amsterdam, Netherlands
47	1001, T2 Office Building, Qianhai Kerry Business Center, Qianhai Avenue, Nanshan Street, Qianhai Shenzhen-Hong Kong Cooperation Zone,, Shenzhen, Guangdong, China
48	Commerce House, Wickhams Cay 1, P.O. Box 3140, Road Town, Tortola, British Virgin Islands, VG1110
49	1 Queen's Road Central, Hong Kong
50	Hill House 1 Little New Street, London, United Kingdom, EC4A 3TR
51	The Corporation Trust Company of Nevada 311 S. Division Street, Carson City, Nevada, United States of America, 89703
52	Corporation Service Company 2711 Centerville Road, Suite 400, Wilmington, Delaware, United States of America, 19808
53	HSBC House Esplanade, St. Helier, Jersey, JE4 8UB
54	Level 21 Menara IQ, Lingkaran TRX, Tun Razak Exchange, Kuala Lumpur, Malaysia, 55188
55	13th Floor, South Tower 2 Leboh Ampang, Kuala Lumpur, Malaysia, 50100
56	10 Marina Boulevard #48-01 Marina Bay Financial Centre, Singapore, 018983
57	52/60 M G Road Fort, Mumbai, India, 400 001
58	16 Boulevard d'Avranches, Luxembourg, Luxembourg, L-1160
59	557 Bouchard Level 20, Ciudad de Buenos Aires, Capital federal, Argentina, C1106ABG
60	9-11 Floors, NESCO IT Park Building No. 3 Western Express Highway, Goregaon (East), Mumbai, India, 400063
61	Level 21 Menara IQ, Lingkaran TRX, Tun Razak Exchange, Kuala Lumpur, Malaysia, 55188
62	Immeuble Cœur Défense 110 esplanade du Général de Gaulle, Courbevoie, France, 92400
63	Level 36 Tower 1 International Towers Sydney, 100 Barangaroo Avenue, Sydney, New South Wales, Australia, 2000
64	Isidora Goyenechea 2800 23rd floor, Las Condes, Santiago, Chile, 7550647
65	HSBC Building Shanghai ifc, 8 Century Avenue, Pudong, Shanghai, China, 200120
66	6th floor HSBC Centre 18, Cybercity, Ebene, Mauritius, 72201
67	2 Paveletskaya square building 2, Moscow, Russian Federation, 115054
68	13F-14F, 333 Keelung Road, Sec.1, Taipei, 110, Taiwan
69	Rincón 391 Montevideo, CP 11.000, Uruguay, 11000
70	The Metropolitan 235 Dong Khoi Street, District 1, Ho Chi Minh City, Viet Nam
71	Esentepe mah. Büyükdere Caddesi No.128, Istanbul, Turkey, 34394
72	66 Teryan street, Yerevan, Armenia, 0009

Registered offices

73	885 West Georgia Street 3rd Floor, Vancouver, British Columbia, Canada, V6C 3E9
74	306 Corniche El Nil, P.O. Box 124, Maadi, Egypt, 11728
75	116 Archbishop Street, Valletta, Malta
76	Level 1, Building No. 8, Gate Village Dubai International Financial Centre, United Arab Emirates, P.O. Box 30444
77	Majer Consulting, Office 54/44, Building A1, Residence Ryad Anfa, Boulevard Omar El Khayam, Casa Finance City (CFC), Casablanca, Morocco
78	Al Khuwair Office PO Box 1727 PC111 CPO Seeb, Muscat, Oman
79	1800 Tysons Boulevard Suite 50, Tysons, Virginia, United States of America, 22102
80	66 Wellington Street West, Suite 5300, Toronto, Ontario, Canada, M5K 1E6
81	P.O. Box 1109, Strathvale House, Ground floor, 90 North Church Street, George Town, Grand Cayman, Cayman Islands, KY1-1102
82	HSBC House Esplanade, St. Helier, Jersey, JE1 1HS
83	8 Canada Square, London, United Kingdom, E14 5HQ
84	c/o Rogers Capital St. Louis Business Centre, Cnr Desroches & St Louis Streets, Port Louis, Mauritius
85	49 avenue J.F. Kennedy, Luxembourg, Luxembourg, 1855
86	4-17/F, Office Tower 2 TaiKoo Hui, No. 381 Tian He Road, Tian He District, Guangzhou, Guangdong, China
87	Suite 1005, 10th Floor, Wisma Hamzah Kwong, Hing No. 1, Leboh Ampang, Kuala Lumpur, Malaysia, 50100
88	HSBC, Filinvest One Bldg Northgate Cyberzone, Filinvest Corporate City, Alabang, Muntinlupa City, Philippines, 1781
89	HSBC House Plot No.8 Survey No.64 (Part), Hightec City Layout Madhapur, Hyderabad, India, 500081
90	439, Sri Jayawardenapura Mawatha Welikada, Rajagiriya, Colombo, Sri Lanka
91	Smart Village 28th Km Cairo- Alexandria Desert Road Building, Cairo, Egypt
92	16 York Street, 6th Floor, Toronto, Ontario, Canada, M5J 0E6
93	Centre Ville 1341 Building - 4th Floor Patriarche Howayek Street (facing Beirut Souks), PO Box Riad El Solh, Lebanon, 9597
94	World Trade Center Montevideo Avenida Luis Alberto de Herrera 1248, Torre 1, Piso 15, Oficina 1502, Montevideo, Uruguay, CP 11300
95	Room 655, Building A, No. 888, Huan Hu West Two Road, Lin Gang New Area of Shanghai (Pilot) Free Trade Zone, China, Shanghai, Shanghai, China
96	HSBC House Esplanade, St. Helier, Jersey, JE4 8WP
97	80 Mill Street, Qormi, Malta, QRM 3101
98	Herrengasse 1-3, Wien, Austria, 1010
99	26 Gartenstrasse, Zurich, Switzerland, 8002
00	24th Fl. 97-99, Sec.2, Tunhwa S. Rd., Taipei, Taiwan, R.O.C., Taiwan
01	452 Fifth Avenue, New York, United States of America,
02	Bouchard 557, Piso 18°, Cdad. Autónoma de Buenos Aires, Argentina, 1106
03	Mareva House 4 George Street, Nassau, Bahamas
104	18th Floor, Tower 1, HSBC Centre 1 Sham Mong Road, Kowloon, Hong Kong
105	Level 32, HSBC Main Building 1 Queen's Road Central, Hong Kong SAR, Hong Kong
106	7/F HSBC Centre 3058 Fifth Ave West, Bonifacio Global City, Taguig City, Philippines
107	HSBC Building Minet El Hosn, Riad el Solh, Beirut 1107-2080, Lebanon, P.O. Box 11-1380
108	300 Delaware Avenue Suite 1401, Wilmington, Delaware, United States Of America, 19801

Registered offices

109	Woodbourne Hall, Road Town, Tortola, British Virgin Islands, P.O. Box 916
110	Craigmuir Chambers, PO Box 71, Road Town, Tortola, British Virgin Islands
111	300-885 West Georgia Street, Vancouver, British Columbia, Canada, V6C 3E9
112	21 Farncombe Road Worthing, United Kingdom, BN11 2BW
113	Unit 1602 of 16/F,18/F, Unit 2101, 2113, 2113A, 2115 and 2116 of 21/F, HSBC Building, 8 Century Avenue, China
114	Arnold House St Julians Avenue, St Peter Port, Guernsey, GY1 1WA
115	Plot No.312-878 Mezzanine Floor, Bldg. of Sheikh Hamdan Bin Rashid, Dubai Creek, Dubai, United Arab Emirates
116	Level 1, Building No. 8, Gate Village Dubai International Financial Centre, PO Box 30444, United Arab Emirates
117	Unit 101 Level 1, Gate Village Building No. 8 Dubai International Financial Centre (DIFC), Dubai, United Arab Emirates, PO Box 506553
118	Office No.16 Owned by HSBC Bank Middle East Limited, Dubai Branch, Bur Dubai, Burj Khalifa, Dubai, United Arab Emirates
119	885 West Georgia Street Suite 300, Vancouver, British Columbia, Canada, V6C 3E9
120	HSBC Tower, Level 21, 188 Quay Street, Auckland, New Zealand, 1010
121	The Corporation Trust Incorporated, 2405 York Road, Suite 201, Lutherville Timonium, Maryland, United States of America
122	HSBC House Esplanade, St. Helier, Jersey, JE1 1GT
123	Quai des Bergues 9-17, Geneva, Switzerland, 1201
124	1 Grand Canal Square, Grand Canal Harbour, Dublin 2, Ireland, D02 P820
125	Büyükdere Caddesi No.128, Istanbul, Turkey, 34394
126	Quai des Bergues 9-17, Geneva, Switzerland, 1201
127	HSBC House Esplanade, St Helier, Jersey, JE1 1GT
128	5 rue Heienhaff, Senningerberg, Luxembourg, 1736
129	52/60 M G Road, Fort, Mumbai, India, 400 001
130	Block 27 A&B, Qianhai Enterprise Dream Park No. 63 Qianwan Yi Road, Shenzhen-Hong Kong Cooperation Zone, Shenzhen, China, 518052
131	HSBC Building 7267 Olaya - Al Murrooj , Riyadh, Saudi Arabia, 12283 - 2255
132	Unit 1 GF The Commerical Complex Madrigal Avenue, Ayala Alabang Village, Muntinlupa City, Philippines, 17
133	1 Mutual Place 107 Rivonia Road, Sandton, Sandton, Gauteng, South Africa, 2196
134	13F 333 Keelung Road, Sec.1, Taipei, Taiwan, 110
135	Kapelanka 42A, Krakow, Poland, 30-347
136	MB&H Corporate Services Ltd Mareva House, 4 George Street, Nassau, Bahamas
137	C T Corporation System 820 Bear Tavern Road, West Trenton, New Jersey, United States Of America, 08628
138	L22, Office Tower 2, Taikoo Hui, 381 Tianhe Road, Tianhe District, Guangzhou, Guangdong, China
139	Level 19, HSBC Building, Shanghai ifc 8 Century Avenue Pudong, Shanghai, China
140	P.O. Box 309 Ugland House, Grand Cayman, Cayman Islands, KY1-1104
141	No. 56 Yu Rong Street, Macheng, China, 438300
142	No. 205 Lie Shan Road Suizhou, Hubei, China
143	Building 3, Yin Zuo Di Jing Wan Tianmen New City, Tianmen, Hubei Province, China
144	RM101, 102 & 106 Sunshine Fairview, Sunshine Garden, Pedestrian Walkway, Pingjiang, China
145	Oak House Hirzel Street, St Peter Port, Guernsey, GY1 2NP
146	Kings Meadow Chester Business Park, Chester, United Kingdom, CH99 9FB

Registered offices

147	World Trade Center 1, Floor 8-9 Jalan Jenderal Sudirman Kavling 29 - 31, Jakarta, Indonesia, 12920
148	5th Floor, World Trade Center 1, Jl. Jend. Sudirman Kav. 29-31, Jakarta, Indonesia, 12920
149	Unit B02 20/F No. 168 Yin Cheng Zhong Road, Pilot Free Trade Zone, Shanghai, China, 200120
150	No.198-2 Chengshan Avenue (E), Rongcheng, China, 264300
151	Room 1303-13062 Marine Center Main Tower, 59 Linhai Rd, Nanshan District, Shenzhen, China
152	Woodbourne Hall, Road Town, Tortola, British Virgin Islands, P.O. Box 3162
153	43 rue de Paris, Saint Denis, France, 97400
154	RM 2112, HSBC Building, Shanghai ifc No. 8 Century Road, Pudong, Shanghai, China, 200120
155	25 Main St. P.O. Box 69, , Grand Cayman, Cayman Islands, KY1-1107
156	No 5 Jalan Prof Khoo Kay Kim, Seksyen 13, Petaling Jaya, Selangor, Malaysia, 46200
157	Office 1.01 21 Gloucester Place, London, United Kingdom,
158	MUFG Fund Services (Bermuda) Limited The Belvedere Building, 69 Pitts Bay Road, Pembroke, Bermuda, HM
159	c/o Hackwood Secretaries Limited One Silk Street, London, United Kingdom, EC2Y 8HQ
160	All Saints Triangle Caledonian road, London, United Kingdom, N19UT
161	No.188, Yin Cheng Zhong Road China (Shanghai), Pilot Free Trade Zone, Shanghai, China
162	49/F The Lee Gardens, 33 Hysan Avenue, Hong Kong
163	13-15 York Buildings, London, United Kingdom, WC2N 6JU
164	Ground Floor, 25b Vyner Street, London, United Kingdom, E2 9DG
165	Unit No. 208, 2nd Floor, Kanchenjunga Building 18, Barakhamba Road, New Delhi, India, 110001
166	65 Gresham Street 6th Floor, London, United Kingdom, EC2V 7NQ
167	50 Raffles Place, #32-01 Singapore Land Tower, Singapore,
168	Office 7, 35-37 Ludgate Hill, London, United Kingdom, EC4M 7JN
169	9/F Amtel Bldg, 148 des Voeux Rd Central,, Central, Hong Kong
170	3 avenue de l'Opera, Paris, France, 75001
171	Room 1303, 106 Feng Ze Dong Road, Nansha District, Guangzhou, Guangdong, China
172	17F, HSBC Building, Shanghai ifc 8 Century Avenue, Pudong, Shanghai, China
173	10th Floor 5 Churchill Place, London, England, London, United Kingdom, E14 5HU
174	C T Corporation System 1200 South Pine Island Road Plantation, Florida, United States of America, 33324
175	100 Town Square Place, Suite 201 | Jersey City, NJ , United States of America, 07310
176	1-2 Royal Exchange Buildings Royal Exchange, London, United Kingdom, EC3V 3LF
177	Precinct Building 4, Level 3, Dubai International Financial Centre, Dubai, United Arab Emirates, P.O. BOX 506553
178	75 Park Lane, Croydon, Surrey, United Kingdom, CR9 1XS
179	32 rue du Champ de Tir, Nantes, France, 44300
180	125 W 25th St. New York, New York, United States of
181	Ernst-Schneider-Platz 1, Duesseldorf, Germany, 40212
182	Al Amir Abdulaziz Ibn Mossaad Ibn Jalawi Street, Riyadh, Saudi Arabia
183	3 More London Riverside, London, United Kingdom, SE1 2AQ
184	Office Block A, Bay Studios Business Park, Fabian Way, Swansea, Wales, United Kingdom, SA1 8QB
185	10 Earlsfort Terrace, Dublin, Ireland, D02 T380

Registered offices

186	34 Copse Wood Way, Northwood, Middlesex, United Kingdom, HA6 2UA
187	Business Bay, Wing 2, Tower B, Survey no 103, Hissa no. 2, Airport road, Yerwada Pune India 411006

APPENDIX II

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 Group Functions and four business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank.

On 31 December 2021, UBS Group's common equity tier 1 ("**CET1**") capital ratio was 15.0%, the CET1 leverage ratio was 4.24%, the total loss-absorbing capacity ratio was 34.7%, and the total loss-absorbing capacity leverage ratio was 9.8%.[1] On the same date, invested assets stood at USD 4,596 billion, equity attributable to shareholders was USD 60,662 million and market capitalisation was USD 61,230 million. On the same date, UBS employed 71,385 people.[2]

On 31 December 2021, UBS AG consolidated CET1 capital ratio was 13.9%, the CET1 leverage ratio was 3.90%, the total loss-absorbing capacity ratio was 33.3%, and the total loss-absorbing capacity leverage ratio was 9.3%.[1] On the same date, invested assets stood at USD 4,596 billion and equity attributable to UBS AG shareholders was USD 58,102 million. On the same date, UBS AG Group employed 47,067 people.[2]

The rating agencies S&P Global Ratings Europe Limited ("**S&P**"), Moody's Deutschland GmbH ("**Moody's**"), and Fitch Ratings Limited ("**Fitch**") 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 and S&P 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+ from S&P, long-term senior debt rating of Aa3 from Moody's, and long-term issuer default rating of AA- from Fitch.

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. Fitch is established in the UK and registered under Regulation (EU) No 1060/2009 as it forms part of domestic law of the UK by virtue of the EUWA (the "**UK CRA Regulation**") and currently appears on the list of credit rating agencies registered or certified with the Financial Conduct Authority published on its website www.fca.org.uk/markets/credit-rating-agencies/registered-certified-cras. Ratings given by Fitch are endorsed by Fitch Ratings Ireland Limited, which is established in the EEA and registered under Regulation (EU) No 1060/2009, as

[1] All figures based on the Swiss systemically relevant bank framework. Refer to the "Capital management" section of the Annual Report 2021 for more information.
[2] Full-time equivalents.

amended (the "**EU CRA Regulation**") and currently appears on the list of credit ratings agencies published by ESMA on its website www.esma.europa.eu in accordance with the EU CRA Regulation. S&P and Moody's are established in the European Union and registered under the EU CRA Regulation and currently appear on the list of credit ratings agencies published by ESMA on its website in accordance with the EU CRA Regulation. Ratings given by S&P and Moody's are endorsed by Standard & Poor's Global Ratings UK Limited and Moody's Investors Service Ltd, respectively, which are established in the UK and registered under the UK CRA Regulation and currently appear on the list of credit rating agencies registered or certified with the FCA published on its website.

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.

2. Information about the Issuer

2.1 Corporate Information

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

The Issuer was incorporated under the name SBC AG on 28 February 1978 for an unlimited duration and entered in the Commercial Register of Canton Basel-City on that day. On 8 December 1997, the Issuer changed its name to UBS AG. The Issuer in its present form was created on 29 June 1998 by the merger of Union Bank of Switzerland (founded 1862) and Swiss Bank Corporation (founded 1872). UBS AG is entered in the Commercial Registers of Canton Zurich and Canton Basel-City. The registration number is CHE-101.329.561.

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

According to article 2 of the articles of association of UBS AG dated 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.

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

For information on UBS's expected financing of its business activities, please refer to "*Liquidity and funding management*" in the "*Capital, liquidity and funding, and balance sheet*" section of the Annual Report 2021.

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 Group Functions.

In 2014, UBS began adapting its legal entity structure in response to too-big-to-fail requirements and other regulatory initiatives. First, UBS Group AG was established as the ultimate parent holding company for the Group. In 2015, UBS AG transferred its personal & corporate banking and Swiss-booked wealth management businesses to the newly established UBS Switzerland AG, a banking subsidiary of UBS AG in Switzerland. That same year, UBS Business Solutions AG, a wholly owned subsidiary of UBS Group AG, was established and acts as the Group service company. In 2016, UBS Americas Holding LLC became the intermediate holding company for UBS's US subsidiaries and UBS's wealth management subsidiaries across Europe were merged into UBS Europe SE, UBS's German-headquartered European subsidiary. In 2019, UBS Limited, UBS's UK headquartered subsidiary, was merged into UBS Europe SE.

UBS Group AG's interests in subsidiaries and other entities as of 31 December 2021, including interests in significant subsidiaries, are discussed in "Note 29 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 2021 published on 07 March 2022 ("**Annual Report 2021**").

UBS AG's interests in subsidiaries and other entities as of 31 December 2021, including interests in significant subsidiaries, are discussed in "Note 29 Interests in subsidiaries and other entities" to the UBS AG's consolidated financial statements included in the Annual Report 2021.

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 Principal activities

UBS businesses are organised globally into four business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management, and the Investment Bank. All four business divisions are supported by Group Functions. Each of the business divisions and Group Functions are described below. A description of the businesses, organisational structures, products and services and targeted markets of the business divisions and Group Functions can be found under "*Our business*es" in the "*Our strategy, business model and environment*" section of the Annual Report 2021.

– *Global Wealth Management* provides financial services, advice and solutions to private clients, in particular in the ultrahigh net worth and high net worth segments. Its offering ranges from investment management to estate planning and corporate finance advice, in addition to specific wealth management products and services. The business division is managed globally across the regions.

– *Personal & Corporate Banking* serves its private, corporate, and institutional clients' needs, from basic banking to retirement, financing, investments and strategic transactions, in Switzerland, through its branch network and digital channels.

– 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 advisory support to institutions, wholesale intermediaries and wealth management clients globally.

– The *Investment Bank* provides a range of services to institutional, corporate and wealth management clients globally, to help them raise capital, grow their businesses, invest and manage risks. Its offerings include advisory services, facilitating clients raising debt and equity from the public and private markets and capital markets, cash and derivatives trading across equities and fixed income, and financing.

– *Group Functions* is made up of the following major areas: Group Services (which consists of Technology, Corporate Services, Human Resources, Finance, Legal, Risk Control, Compliance, Regulatory & Governance, Communications & Branding and Group Sustainability and Impact), Group Treasury and Non-core and Legacy Portfolio.

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, as well as competition from new technology-based market entrants, which may not be subject to the same level of regulation. Barriers to entry in individual markets and pricing levels are being eroded by new technology. UBS expects these trends to continue and competition to increase.

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.

3.4 Recent Developments

3.4.1 UBS AG consolidated key figures

UBS AG derived the selected consolidated financial information included in the table below for the years ended 31 December 2021, 2020 and 2019 from the Annual Report 2021, except where noted.

The consolidated financial statements were prepared in accordance with International Financial Reporting Standards ("**IFRS**") issued by the International Accounting Standards Board ("**IASB**").

Information for the years ended 31 December 2021, 2020 and 2019 which is indicated as being unaudited in the table below was included in the Annual Report 2021, 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 2021 and should not rely solely on the summarized information set out below.

	As of or for the year ended		
USD million, except where indicated	31.12.21	31.12.20	31.12.19
	audited, except where indicated		
Results			
Income statement			
Operating income	35,976	32,780	29,307
Net interest income	6,605	5,788	4,415
Net fee and commission income	22,438	19,207	17,460
Credit loss (expense) / release	148	(695)	(78)
Other net income from financial instruments measured at fair value through profit or loss	5,844	6,930	6,833
Operating expenses	27,012	25,081	24,138

Operating profit / (loss) before tax	8,964	7,699	5,169
Net profit / (loss) attributable to shareholders	7,032	6,196	3,965
Balance sheet [1]			
Total assets	1,116,145	1,125,327	971,927
Total financial liabilities measured at amortized cost	744,762	732,364	617,429
of which: customer deposits	544,834	527,929	450,591
of which: debt issued measured at amortized cost	82,432	85,351	62,835
of which: subordinated debt	5,163	7,744	7,431
Total financial liabilities measured at fair value through profit or loss	300,916	325,080	291,452
of which: debt issued designated at fair value	71,460	59,868	66,592
Loans and advances to customers	398,693	380,977	327,992
Total equity	58,442	58,073	53,896
Equity attributable to shareholders	58,102	57,754	53,722
Profitability and growth			
Return on equity (%) [2]	12.3*	10.9*	7.4*
Return on tangible equity (%) [3]	13.9*	12.4*	8.5*
Return on common equity tier 1 capital (%) [4]	17.6*	16.6*	11.3*
Return on risk-weighted assets, gross (%) [5]	12.3*	11.9*	11.2*
Return on leverage ratio denominator, gross (%) [6, 7]	3.4*	3.4*	3.2*
Cost / income ratio (%) [8]	75.4*	74.9*	82.1*
Net profit growth (%) [9]	13.5*	56.3*	(3.4)*
Resources			
Common equity tier 1 capital [10]	41,594	38,181	35,233*
Risk-weighted assets [10]	299,005*	286,743*	257,831*
Common equity tier 1 capital ratio (%) [10]	13.9*	13.3*	13.7*
Going concern capital ratio (%) [10]	18.5*	18.3*	18.3*
Total loss-absorbing capacity ratio (%) [10]	33.3*	34.2*	33.9*
Leverage ratio denominator [6, 10]	1,067,679*	1,036,771*	911,228*
Common equity tier 1 leverage ratio (%) [6, 10]	3.90*	3.68*	3.87*
Going concern leverage ratio (%) [6, 10]	5.2*	5.1*	5.2*
Total loss-absorbing capacity leverage ratio (%) [10]	9.3*	9.5*	9.6*
Other			
Invested assets (USD billion) [11]	4,596	4,187	3,607
Personnel (full-time equivalents)	47,067*	47,546*	47,005*

* unaudited

[1] Except for *Total assets*, *Total equity* and *Equity attributable to shareholders*, balance sheet information for year ended 31 December 2019 is derived from the Annual Report 2020.
[2] Calculated as net profit attributable to shareholders (annualized as applicable) divided by average equity attributable to shareholders. This measure provides information about the profitability of the business in relation to equity.
[3] Calculated as net profit attributable to shareholders (annualized as applicable) divided by average equity attributable to shareholders less average goodwill and intangible assets. This measure provides information about the profitability of the business in relation to tangible equity.

[4] Calculated as net profit attributable to shareholders (annualized as applicable) divided by average common equity tier 1 capital. This measure provides information about the profitability of the business in relation to common equity tier 1 capital.
[5] Calculated as operating income before credit loss expense or release (annualized as applicable) divided by average risk-weighted assets. This measure provides information about the revenues of the business in relation to risk-weighted assets.
[6] Leverage ratio denominators and leverage ratios for year 2020 do not reflect the effects of the temporary exemption that applied from 25 March 2020 until 1 January 2021 and was granted by FINMA in connection with COVID-19.
[7] Calculated as operating income before credit loss expense or release (annualized as applicable) divided by average leverage ratio denominator. This measure provides information about the revenues of the business in relation to leverage ratio denominator.
[8] Calculated as operating expenses divided by operating income before credit loss expense or release (annualized as applicable). This measure provides information about the efficiency of the business by comparing operating expenses with gross income.
[9] Calculated as change in net profit attributable to shareholders from continuing operations between current and comparison periods divided by net profit attributable to shareholders from continuing operations of comparison period. This measure provides information about profit growth in comparison with the prior period.
[10] Based on the applicable Swiss systemically relevant bank framework as of 1 January 2020.
[11] Consists of invested assets for Global Wealth Management, Asset Management and Personal & Corporate Banking. Calculated as the sum of 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. This measure provides information about the volume of client assets managed by or deposited with UBS for investment purposes.

3.4.2 Regulatory, legal and other developments

Refer to "*Our environment" and "Regulatory and legal developments*" in the Annual Report 2021, for information on key regulatory, legal and other developments.

3.5 Trend Information

For information on trends, refer to the "*Our environment*" section, and to "*Top and emerging risks*" and "*Country risk*" in the "*Risk management and control*" section of the Annual Report 2021. In addition, please refer to the "*Risk factors*" and the "*Recent Developments*" sections of this document 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 New York Stock Exchange ("**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 executive management of UBS AG Group, 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.

4.1 Board of Directors

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

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

4.1.1 Members of the Board of Directors

The current members of the BoD are listed below. In addition, UBS announced that at the next AGM Colm Kelleher will be nominated for election to the BoD as Chairman and Lukas Gähwiler will be nominated for election to the BoD as Vice Chairman.

Member	**Title**	**Term of office**	**Current principal activities outside UBS AG**
Axel A. Weber	Chairman	2022	Chairman of the Board of Directors of UBS Group AG; vice chairman of the Swiss Bankers Association; Trustees Board member of Avenir Suisse; 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 Councils of the China Banking and Insurance Regulatory Commission and the China Securities Regulatory Commission; member of the International Advisory Panel, Monetary Authority of Singapore; member of the Group of Thirty, Washington, D.C.; Advisory Board member of the Department of Economics, University of Zurich; member of the Trilateral Commission.
Jeremy Anderson	Vice Chairman	2022	Vice-Chairman and Senior Independent Director of the Board of Directors of UBS Group AG; board member of Prudential plc; trustee of the UK's Productivity Leadership Group; trustee of Kingham Hill Trust; trustee of St. Helen Bishopsgate.
Schedule 1 Claud ia Böckstiegel	Member	2022	Member of the Board of Directors of UBS Group AG; General Counsel and member of the Enlarged Executive Committee of Roche Holding AG.
William C. Dudley	Member	2022	Member of the Board of Directors of UBS Group AG; member of the board of Treliant LLC; senior advisor to the Griswold Center for Economic Policy Studies at Princeton University; member of the Group of Thirty; member of the Council on Foreign Relations; chair of the Bretton Woods Committee board of directors; member of the board of the Council for Economic Education.
Schedule 2 Patric k Firmenich	Member	2022	Member of the Board of Directors of UBS Group AG; chairman of the board of Firmenich International SA;

			member of the board of Jacobs Holding AG; member of the Board of INSEAD and INSEAD World Foundation; member of the Advisory Council of the Swiss Board Institute.
Reto Francioni	Member	2022	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, chair of the nomination committee); chairman of the board of Swiss International Air Lines AG; board member of economiesuisse.
Fred Hu	Member	2022	Member of the Board of Directors of UBS Group AG; non-executive chairman of the board of Yum China Holdings (chair of the nomination and governance committee); board member of Industrial and Commercial Bank of China; chairman of Primavera Capital Ltd and of Primavera Capital Group; member of the Board of Ant Group; board member of Minsheng Financial Leasing Co.; trustee of the China Medical Board; Governor of the Chinese International School in Hong Kong; co-chairman of the Nature Conservancy Asia Pacific Council; member of the Board of Trustees of the Institute for Advanced Studies (IAS).
Mark Hughes	Member	2022	Member of the Board of Directors of UBS Group AG; chair of the Board of Directors of the Global Risk Institute; visiting lecturer at the University of Leeds; senior advisor to McKinsey & Company.
Nathalie Rachou	Member	2022	Member of the Board of Directors of UBS Group AG; member of the board of Euronext N.V. (chair of the remuneration committee); member of the board of Veolia Environnement SA (chair of the audit committee); member of the board of the African Financial Institutions Investment Platform.
Julie G. Richardson	Member	2022	Member of the Board of Directors of UBS Group AG; member of the board of Yext (chair of the audit committee); member of the board of Datalog (chair of the audit committee).
Schedule 3 Dieter Wemmer	Member	2022	Member of the Board of Directors of UBS Group AG; board member of Ørsted A/S (chair of the audit and risk committee); chairman of Marco Capital Holdings Limited and Marco Insurance, Malta; member of the Berlin Center of Corporate Governance.
Jeanette Wong	Member	2022	Member of the Board of Directors of UBS Group AG; member of the board of Prudential plc; member of the board of Singapore Airlines Limited; member of the Board Risk Committee of GIC Pte Ltd; board member of Jurong Town Corporation; board member of PSA International; chairman of the CareShield Life Council;

			member of the Securities Industry Council; member of the Board of Trustees of the National University of Singapore.

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

The current members of the EB are listed below. In addition, Sarah Youngwood joined the GEB at the beginning of March 2022, and will take over as Group Chief Financial Officer in May succeeding Kirt Gardner, who will retire from the firm.

Member and business address	**Function**	**Current principal activities outside UBS AG**
Ralph Hamers 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; member of the Board of the Swiss-American Chamber of Commerce; member of the Institut International D'Etudes Bancaires; member of the IMD Foundation Board; member of the McKinsey Advisory Council; member of the World Economic Forum International Business Council; Governor of the World Economic Forum (Financial Services).
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; member of the Foundation Board of the UBS Pension Fund; member of the Foundation Board – International Financial Risk Institute.
Mike Dargan UBS AG, Bahnhofstrasse 45, CH-8001 Zurich	Chief Digital and Information Officer	Member of the Group Executive Board and Chief Digital and Information Officer of UBS Group AG; President of the Executive Board and board member of UBS Business Solutions AG; member of the Board of Directors of Done Next Holdings AG; member of the Board of Trustees of the Inter-Community School Zurich.
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.
Suni Harford	President Asset	Member of the Executive Board and President

 UBS AG, 1285 Avenue of the Americas, New York, NY 10019 USA	Management	Asset Management of UBS Group AG; chairman of the Board of Directors of UBS Asset Management AG; chair of the Board of UBS Optimus Foundation; member of the Leadership Council of the Bob Woodruff Foundation.
Robert Karofsky UBS AG, 1285 Avenue of the Americas, New York, NY 10019, USA	President Investment Bank	Member of the Group Executive Board and President Investment Bank of UBS Group AG; president of UBS Securities LLC; member of the board of UBS Americas Holding LLC; member of the board of UBS Optimus Foundation; trustee of the UBS Americas Inc. Political Action Committee.
Iqbal Khan UBS AG, Bahnhofstrasse 45, CH-8001 Zurich	Co-President Global Wealth Management and President UBS Europe, Middle East and Africa	Member of the Executive Board, co-President Global Wealth Management and President UBS Europe, Middle East and Africa of UBS Group AG; member of the Supervisory Board of UBS Europe SE; member of the board of UBS Optimus Foundation; board member of Room to Read Switzerland.
Edmund Koh UBS AG, One Raffles Quay North Tower, Singapore 048583	President UBS Asia Pacific	Member of the Group Executive Board and President UBS Asia Pacific of UBS Group AG; member of a sub-committee of the Singapore Ministry of Finance's Committee on the Future Economy; member of the Financial Centre Advisory Panel of the Monetary Authority of Singapore; council member of the Asian Bureau of Finance and Economic Research; member of the Board of Trustees of the Wealth Management Institute, Singapore; board member of Next50 Limited, Singapore; board member of Medico Suites (S) Pte Ltd; Council member of the KidSTART program of the Early Childhood Development Agency Singapore; trustee of the Cultural Matching Fund, Singapore; member of University of Toronto's International Leadership Council for Asia.
Barbara Levi UBS AG, Bahnhofstrasse 45, CH-8001 Zurich	General Counsel	Member of the Group Executive Board and Group General Counsel of UBS Group AG; member of the Employers' Board of the Global Institute for Women's Leadership, King's College London; member of the Board of Directors of the European General Counsel Association.
Tom Naratil UBS AG, 1285 Avenue of the	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

Americas, New York, NY 10019 USA		LLC; board member of the American Swiss Foundation.
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 of UBS Group AG.
Sarah Youngwood UBS AG, Bahnhofstrasse 45, CH-8001 Zurich	Designated Chief Financial Officer as of May 2022	Member of the Group Executive Board of UBS Group AG, and Designated Group Chief Financial Officer as of May 2022; Advisory Board Member – Wall Street Women's Alliance.

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.

Other than as indicated above, UBS is not aware of potential conflicts of interests between any duties to the Issuer of the members of the BoD and the EB and their private interests or other duties.

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 18 April 2019, 27 April 2020 and 7 April 2021, Ernst & Young Ltd., Aeschengraben 9, CH-4002 Basel, Switzerland ("**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. Ernst & Young is also registered with the Swiss Federal Audit Oversight Authority, which is responsible for the licensing and supervision of audit firms and individuals that provide audit services in Switzerland.

6. Major Shareholders of the Issuer

UBS Group AG owns 100% of the outstanding shares of UBS AG. UBS AG is a wholly owned subsidiary of UBS Group AG. While UBS has no specific corporate measures intended to prevent abuse of control to the detriment of minority shareholders, UBS has adopted a comprehensive and integrated governance framework which takes into account the specific requirements of each relevant jurisdiction. This governance framework includes separate articles of association and organizational regulations for UBS Group AG and UBS AG. In addition, as UBS AG is regulated as a bank in Switzerland, it is subject to capital regulation and close supervisory oversight. This includes the general requirement under Swiss law that contracts of UBS AG with affiliates are subject to an arm's length principle of negotiation.

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 2021 is available in the section "*UBS AG consolidated financial statements*" of the Annual Report 2021 and in the UBS AG's standalone financial statements for the year ended 31 December 2021 (the "**Standalone Financial Statements 2021**"), respectively; and for financial year 2020 it is available in the "*UBS AG consolidated financial statements*" section of the UBS Group AG and UBS AG annual report 2020, published on 5 March 2021 ("**Annual Report 2020**") and in the UBS AG's standalone financial statements for the year ended 31 December 2020 published on 5 March 2021 (the "**Standalone Financial Statements 2020**"). The consolidated and standalone financial accounts are closed on 31 December of each year.

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 Group Functions. 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 the financial years 2021 and 2020 were audited by Ernst & Young. The reports of the auditors on the consolidated financial statements can be found on pages 422-428 (inclusive) of the Annual Report 2021 and on pages 417-428 (inclusive) of the Annual Report 2020. The reports of the auditors on the standalone financial statements of UBS AG can be found on pages 37-42 (inclusive) of the Standalone Financial Statements 2021 and on pages 34-39 (inclusive) of the Standalone Financial Statements 2020.

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 2021 and 31 December 2020.

7.3 Litigation, Regulatory and Similar Matters

UBS operates in a legal and regulatory environment that exposes it to significant litigation and similar risks arising from disputes and regulatory proceedings. As a result, UBS is involved in various disputes and legal proceedings, including litigation, arbitration, and regulatory and criminal investigations. Such matters are subject to many uncertainties, and the outcome and the timing of resolution are often difficult to predict, particularly in the earlier stages of a case. The uncertainties inherent in all such matters affect the amount and timing of any potential outflows for both matters with respect to which provisions have been established and other contingent liabilities. Litigation, regulatory and similar matters may also result in non-monetary penalties and consequences. A guilty plea to, or conviction of, a crime could have material consequences for UBS. Resolution of regulatory proceedings may require UBS to obtain waivers of regulatory disqualifications to maintain certain operations, may entitle regulatory authorities to limit, suspend or terminate licenses and regulatory authorizations and may permit financial market utilities to limit, suspend or terminate UBS's participation in such utilities. Failure to obtain such waivers, or any limitation, suspension or termination of licenses, authorizations or participations, could have material consequences for UBS.

Specific litigation, regulatory and other matters, including all such matters that management considers to be material and others that management believes to be of significance due to potential financial, reputational and other effects, are described in "*Note 18 Provisions and contingent liabilities*" of the Annual Report 2021. 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.

7.4 Material Contracts

Except as otherwise disclosed in this document (including the documents incorporated herein by reference), 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.

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

Except as otherwise indicated in this document (including the documents incorporated herein by reference), no material changes have occurred in UBS AG's assets and liabilities, financial position or profits and losses since 31 December 2021.

8. Share Capital

As reflected in the Articles of Association most recently registered with the Commercial Register of the Canton 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 Available

The most recent Articles of Association of UBS AG are available on UBS's Corporate Governance website, at www.ubs.com/governance. Save as otherwise indicated herein, information on or accessible through the Group's corporate website, www.ubs.com, does not form part of and is not incorporated into this document.

APPENDIX III

EXTRACT OF
THE AUDITED CONSOLIDATED FINANCIAL STATEMENTS OF
UBS AG AND ITS SUBSIDIARIES
FOR THE FULL YEAR ENDED 31 DECEMBER 2021

UBS Group AG interim consolidated financial information (unaudited)

Income statement

	For the quarter ended			For the year ended	
USD million	31.12.21	30.9.21	31.12.20	31.12.21	31.12.20
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	2,152	2,178	2,111	8,533	8,810
Interest expense from financial instruments measured at amortized cost	(768)	(822)	(857)	(3,259)	(4,247)
Net interest income from financial instruments measured at fair value through profit or loss	387	338	368	1,431	1,299
Net interest income	1,770	1,693	1,622	6,705	5,862
Other net income from financial instruments measured at fair value through profit or loss	1,365	1,697	1,453	5,850	6,960
Credit loss (expense) / release	27	14	(66)	148	(694)
Fee and commission income	6,042	6,119	5,543	24,372	20,961
Fee and commission expense	(513)	(510)	(459)	(1,985)	(1,775)
Net fee and commission income	5,529	5,610	5,084	22,387	19,186
Other income	40	115	24	452	1,076
Total operating income	8,732	9,128	8,117	35,542	32,390
Personnel expenses	4,216	4,598	3,989	18,387	17,224
General and administrative expenses	2,212	1,148	1,515	5,553	4,885
Depreciation, amortization and impairment of non-financial assets	574	518	627	2,118	2,126
Total operating expenses	7,003	6,264	6,132	26,058	24,235
Operating profit / (loss) before tax	1,729	2,865	1,985	9,484	8,155
Tax expense / (benefit)	370	576	341	1,998	1,583
Net profit / (loss)	1,359	2,289	1,645	7,486	6,572
Net profit / (loss) attributable to non-controlling interests	11	9	9	29	15
Net profit / (loss) attributable to shareholders	1,348	2,279	1,636	7,457	6,557

Earnings per share (USD)

Basic	0.39	0.66	0.46	2.14	1.83
Diluted	0.38	0.63	0.44	2.06	1.77

Statement of comprehensive income

	For the quarter ended			For the year ended	
USD million	31.12.21	30.9.21	31.12.20	31.12.21	31.12.20
Comprehensive income attributable to shareholders[1]					
Net profit / (loss)	1,348	2,279	1,636	7,457	6,557
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	315	(392)	1,143	(1,076)	2,103
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax	(183)	175	(539)	498	(936)
Foreign currency translation differences on foreign operations reclassified to the income statement	0	7	0	(2)	(7)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement	3	0	0	10	2
Income tax relating to foreign currency translations, including the impact of net investment hedges	(24)	53	(52)	35	(67)
Subtotal foreign currency translation, net of tax	111	(156)	552	(535)	1,095
Financial assets measured at fair value through other comprehensive income					
Net unrealized gains / (losses), before tax	(49)	(44)	0	(203)	223
Net realized gains / (losses) reclassified to the income statement from equity	0	0	(3)	(9)	(40)
Income tax relating to net unrealized gains / (losses)	13	11	3	55	(48)
Subtotal financial assets measured at fair value through other comprehensive income, net of tax	(37)	(33)	0	(157)	136
Cash flow hedges of interest rate risk					
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	(250)	(112)	(191)	(992)	2,012
Net (gains) / losses reclassified to the income statement from equity	(269)	(282)	(256)	(1,073)	(770)
Income tax relating to cash flow hedges	98	77	87	390	(231)
Subtotal cash flow hedges, net of tax	(421)	(316)	(360)	(1,675)	1,011
Cost of hedging					
Cost of hedging, before tax	(14)	5	(1)	(32)	(13)
Income tax relating to cost of hedging	6	0	0	6	0
Subtotal cost of hedging, net of tax	(8)	5	(1)	(26)	(13)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(355)	(500)	191	(2,393)	2,230
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans					
Gains / (losses) on defined benefit plans, before tax	149	10	37	2	(327)
Income tax relating to defined benefit plans	(25)	(9)	49	(7)	109
Subtotal defined benefit plans, net of tax	124	2	86	(5)	(218)
Own credit on financial liabilities designated at fair value					
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	55	(98)	(211)	46	(293)
Income tax relating to own credit on financial liabilities designated at fair value	0	0	0	0	0
Subtotal own credit on financial liabilities designated at fair value, net of tax	55	(98)	(211)	46	(293)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	178	(96)	(126)	42	(511)
Total other comprehensive income	(177)	(596)	65	(2,351)	1,719
Total comprehensive income attributable to shareholders	1,171	1,683	1,701	5,106	8,276
Comprehensive income attributable to non-controlling interests					
Net profit / (loss)	11	9	9	29	15
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(4)	(14)	18	(16)	21
Total comprehensive income attributable to non-controlling interests	7	(5)	27	13	36
Total comprehensive income					
Net profit / (loss)	1,359	2,289	1,645	7,486	6,572
Other comprehensive income	(181)	(610)	83	(2,367)	1,740
of which: other comprehensive income that may be reclassified to the income statement	*(355)*	*(500)*	*191*	*(2,393)*	*2,230*
of which: other comprehensive income that will not be reclassified to the income statement	*175*	*(110)*	*(108)*	*26*	*(490)*
Total comprehensive income	1,178	1,678	1,728	5,119	8,312

1 Refer to the “Group performance” section of this report for more information.

Balance sheet

USD million	31.12.21	30.9.21	31.12.20
Assets			
Cash and balances at central banks	192,817	174,478	158,231
Loans and advances to banks	15,480	16,378	15,444
Receivables from securities financing transactions	75,012	74,476	74,210
Cash collateral receivables on derivative instruments	30,514	31,654	32,737
Loans and advances to customers	397,761	390,369	379,528
Other financial assets measured at amortized cost	26,209	27,082	27,194
Total financial assets measured at amortized cost	737,794	714,437	687,345
Financial assets at fair value held for trading	130,821	125,471	125,397
of which: assets pledged as collateral that may be sold or repledged by counterparties	*43,397*	*47,683*	*47,098*
Derivative financial instruments	118,142	121,189	159,617
Brokerage receivables	21,839	20,746	24,659
Financial assets at fair value not held for trading	60,080	60,799	80,364
Total financial assets measured at fair value through profit or loss	330,882	328,205	390,037
Financial assets measured at fair value through other comprehensive income	8,844	8,397	8,258
Investments in associates	1,243	1,188	1,557
Property, equipment and software	12,888	12,827	13,109
Goodwill and intangible assets	6,378	6,401	6,480
Deferred tax assets	8,876	8,830	9,212
Other non-financial assets	10,277	8,489	9,768
Total assets	1,117,182	1,088,773	1,125,765
Liabilities			
Amounts due to banks	13,101	13,292	11,050
Payables from securities financing transactions	5,533	5,256	6,321
Cash collateral payables on derivative instruments	31,798	33,062	37,312
Customer deposits	542,007	517,697	524,605
Debt issued measured at amortized cost	139,155	133,662	139,232
Other financial liabilities measured at amortized cost	9,001	9,569	9,729
Total financial liabilities measured at amortized cost	740,595	712,537	728,250
Financial liabilities at fair value held for trading	31,688	34,650	33,595
Derivative financial instruments	121,309	121,162	161,102
Brokerage payables designated at fair value	44,045	45,557	38,742
Debt issued designated at fair value	73,799	71,898	61,243
Other financial liabilities designated at fair value	30,074	30,248	30,387
Total financial liabilities measured at fair value through profit or loss	300,916	303,515	325,069
Provisions	3,518	2,810	2,828
Other non-financial liabilities	11,151	9,359	9,854
Total liabilities	1,056,180	1,028,221	1,066,000
Equity			
Share capital	322	322	338
Share premium	15,928	15,828	16,753
Treasury shares	(4,675)	(3,847)	(4,068)
Retained earnings	43,851	42,330	38,776
Other comprehensive income recognized directly in equity, net of tax	5,236	5,586	7,647
Equity attributable to shareholders	60,662	60,219	59,445
Equity attributable to non-controlling interests	340	333	319
Total equity	61,002	60,552	59,765
Total liabilities and equity	1,117,182	1,088,773	1,125,765

Provisions and contingent liabilities

a) Provisions

The table below presents an overview of total provisions.

USD million	31.12.21	30.9.21	31.12.20
Provisions other than provisions for expected credit losses	3,322	2,607	2,571
Provisions for expected credit losses	196	203	257
Total provisions	**3,518**	**2,810**	**2,828**

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

USD million	Litigation, regulatory and similar matters[1]	Restructuring[2]	Other[3]	Total
Balance as of 31 December 2020	2,135	72	363	2,571
Balance as of 30 September 2021	2,084	170	352	2,607
Increase in provisions recognized in the income statement	856	78	25	959
Release of provisions recognized in the income statement	(30)	(14)	(18)	(62)
Provisions used in conformity with designated purpose	(101)	(64)	(17)	(181)
Capitalized reinstatement costs	0	0	4	4
Foreign currency translation / unwind of discount	(12)	1	6	(5)
Balance as of 31 December 2021	**2,798**	**172**	**352**	**3,322**

1 Comprises provisions for losses resulting from legal, liability and compliance risks. 2 Includes personnel-related restructuring provisions of USD 125 million as of 31 December 2021 (30 September 2021: USD 122 million; 31 December 2020: USD 18 million) and provisions for onerous contracts of USD 47 million as of 31 December 2021 (30 September 2021: USD 48 million; 31 December 2020: USD 49 million). 3 Mainly includes provisions related to real estate, employee benefits and operational risks.

Restructuring provisions primarily relate to personnel-related provisions and onerous contracts. Personnel-related restructuring provisions are used within a short period of time 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. Onerous contracts for property are recognized when UBS is committed to pay for non-lease components, such as utilities, service charges, taxes and maintenance, when a property is vacated or not fully recovered from sub-tenants.

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

b) Litigation, regulatory and similar matters

The Group 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 disclosure may refer to UBS Group 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 the Group 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 the Group 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. The Group 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 the Group 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 the Group, but are nevertheless expected to be, based on the Group'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.

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

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

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

Provisions for litigation, regulatory and similar matters by business division and in Group Functions[1]

USD million	Global Wealth Manage-ment	Personal & Corporate Banking	Asset Manage-ment	Investment Bank	Group Functions	Total
Balance as of 31 December 2020	861	115	0	227	932	2,135
Balance as of 30 September 2021	765	98	8	275	938	2,084
Increase in provisions recognized in the income statement	709	83	0	39	24	856
Release of provisions recognized in the income statement	(29)	0	0	0	0	(30)
Provisions used in conformity with designated purpose	(98)	(1)	0	(2)	0	(101)
Foreign currency translation / unwind of discount	(9)	0	0	(3)	0	(12)
Balance as of 31 December 2021	1,338	181	8	310	962	2,798

1 Provisions, if any, for the matters described in items 3 and 4 of this disclosure are recorded in Global Wealth Management, and provisions, if any, for the matters described in item 2 are recorded in Group Functions. Provisions, if any, for the matters described in items 1 and 6 are allocated between Global Wealth Management and Personal & Corporate Banking, and provisions, if any, for the matters described in item 5 are allocated between the Investment Bank and Group Functions.

1. Inquiries regarding cross-border wealth management businesses

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

Since 2013, UBS (France) S.A., UBS AG and certain former employees have been under investigation in France for alleged complicity in unlawful solicitation of 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.

On 20 February 2019, the court of first instance returned a verdict finding UBS AG guilty of unlawful solicitation of clients on French territory and aggravated laundering of the proceeds of tax fraud, and UBS (France) S.A. guilty of aiding and abetting unlawful solicitation and of laundering the proceeds of tax fraud. The court imposed fines aggregating EUR 3.7 billion on UBS AG and UBS (France) S.A. and awarded EUR 800 million of civil damages to the French state. A trial in the French Court of Appeal took place in March 2021. On 13 December 2021, the Court of Appeal found UBS AG guilty of unlawful solicitation and aggravated laundering of the proceeds of tax fraud. The court ordered a fine of EUR 3.75 million, the confiscation of EUR 1 billion, and awarded civil damages to the French state of EUR 800 million. The court also found UBS (France) SA guilty of the aiding and abetting of unlawful solicitation and ordered it to pay a fine of EUR 1.875 million. UBS AG has filed an appeal with the French Supreme Court to preserve its rights. The appeal enables UBS AG to thoroughly assess the verdict of the Court of Appeal and to determine next steps in the best interest of its stakeholders. The fine and confiscation imposed by the Court of Appeal are suspended during the appeal. The award of civil damages is payable upon request by the French state.

Our balance sheet at 31 December 2021 reflected provisions with respect to this matter in an amount of EUR 1.1 billion (USD 1.252 billion at 31 December 2021). The wide range of possible outcomes in this case contributes to a high degree of estimation uncertainty and the provision reflects our best estimate of possible financial implications, although actual penalties and civil damages could exceed (or may be less than) the provision amount.

In 2016, UBS was notified by the Belgian investigating judge that it was under formal investigation ("*inculpé*") regarding the allegations of laundering of proceeds of tax fraud, banking and financial solicitation by unauthorized persons, and serious tax fraud. In November 2021, the Council Chamber approved a settlement with the Brussels Prosecution Office for EUR 49 million without recognition of guilt with regard to the allegations of banking and financial solicitation by unauthorized persons and serious tax fraud. The allegation of laundering of proceeds of tax fraud was dismissed.

Our balance sheet at 31 December 2021 reflected provisions with respect to matters described in this item 1 in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

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

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

In 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 the Financial Institutions Reform, Recovery and Enforcement Act of 1989 related to UBS's issuance, underwriting and sale of 40 RMBS transactions in 2006 and 2007. UBS moved to dismiss the civil complaint on 6 February 2019. On 10 December 2019, the district court denied UBS's motion to dismiss.

Our balance sheet at 31 December 2021 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.

Provisions and contingent liabilities (continued)

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 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. In February 2019, the Court of Appeals reversed the dismissal of the BMIS Trustee's remaining claims, and the US Supreme Court subsequently denied a petition seeking review of the Court of Appeals' decision. The case has been remanded to the Bankruptcy Court for further proceedings.

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) led to multiple regulatory inquiries, which in 2014 and 2015, led to 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.

Since then, UBS 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 filed customer complaints and arbitration demands seeking aggregate damages of USD 3.4 billion, of which USD 3.1 billion have been resolved through settlements, arbitration or withdrawal of claims. 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 2021, the parties reached an agreement to settle this matter for USD 15 million, subject to court approval.

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. In 2017, the court denied defendants' motion to dismiss the complaint. In 2020, the court denied plaintiffs' motion for summary judgment.

Beginning in 2015, 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.

In May 2019, the oversight board filed complaints in Puerto Rico federal district court bringing claims against financial, legal and accounting firms that had participated in Puerto Rico municipal bond offerings, including UBS, seeking a return of underwriting and swap fees paid in connection with those offerings. UBS estimates that it received approximately USD 125 million in fees in the relevant offerings.

In August 2019, and February and November 2020, four US insurance companies that insured issues of Puerto Rico municipal bonds sued UBS and several other underwriters of Puerto Rico municipal bonds in three separate cases. The actions collectively seek recovery of an aggregate of USD 955 million in damages from the defendants. The plaintiffs in these cases claim that defendants failed to reasonably investigate financial statements in the offering materials for the insured Puerto Rico bonds issued between 2002 and 2007, which plaintiffs argue they relied upon in agreeing to insure the bonds notwithstanding that they had no contractual relationship with the underwriters. Defendants' motions to dismiss were granted in two of the cases; those decisions are being appealed by the plaintiffs. In the third case, defendants' motion to dismiss was denied, but on appeal that ruling was reversed and the motion to dismiss was granted.

Our balance sheet at 31 December 2021 reflected provisions with respect to matters described in this item 4 in amounts that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provisions that we have recognized.

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

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

Foreign exchange-related civil litigation: Putative class actions have been filed since 2013 in US federal courts and in other jurisdictions against UBS and other banks on behalf of putative classes of persons who engaged in foreign currency transactions with any of the defendant banks. UBS has resolved US federal court class actions relating to foreign currency transactions with the defendant banks and persons who transacted in foreign exchange futures contracts and options on such futures under a settlement agreement that provides for UBS to pay an aggregate of USD 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.

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

LIBOR and other benchmark-related civil litigation: A number of putative class actions and other actions are pending in the federal courts in New York against UBS and numerous other banks on behalf of parties who transacted in certain interest rate benchmark-based derivatives. Also pending in the US and in other jurisdictions are a number of other actions asserting losses related to various products whose interest rates were linked to LIBOR and other benchmarks, including adjustable rate mortgages, preferred and debt securities, bonds pledged as collateral, loans, depository accounts, investments and other interest-bearing instruments. The complaints allege manipulation, through various means, of certain benchmark interest rates, including USD LIBOR, Euroyen TIBOR, Yen LIBOR, EURIBOR, CHF LIBOR, GBP LIBOR, 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, and again dismissed the antitrust claims in 2016 following an appeal. In December 2021, the Second Circuit affirmed the district court's dismissal in part and reversed in part and remanded to the district court for further proceedings. The Second Circuit, among other things, held that there was personal jurisdiction over UBS and other foreign defendants based on allegations that at least one alleged co-conspirator undertook an overt act in the United States. Separately, in 2018, the Second Circuit reversed in part the district court's 2015 decision dismissing certain individual plaintiffs' claims and certain of these actions are now proceeding. In 2018, the district court denied plaintiffs' motions for class certification in the USD class actions for claims pending against UBS, and plaintiffs sought permission to appeal that ruling to the Second Circuit. 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 claims. The defendants moved to dismiss the complaint in August 2019. On 26 March 2020 the court granted defendants' motion to dismiss the complaint in its entirety. Plaintiffs have appealed the dismissal. In August 2020, an individual action was filed in the Northern District of California against UBS and numerous other banks alleging that the defendants conspired to fix the interest rate used as the basis for loans to consumers by jointly setting the USD LIBOR rate and monopolized the market for LIBOR-based consumer loans and credit cards. Defendants moved to dismiss the complaint in September 2021.

Provisions and contingent liabilities (continued)

Other benchmark class actions in the US:
Yen LIBOR / Euroyen TIBOR – In 2014, 2015 and 2017, the court in one of the Yen LIBOR / Euroyen TIBOR lawsuits dismissed certain of the plaintiffs' claims, including the plaintiffs' federal antitrust and racketeering claims. In August 2020, the court granted defendants' motion for judgment on the pleadings and dismissed the lone remaining claim in the action as impermissibly extraterritorial. Plaintiffs have appealed. In 2017, the court dismissed the other Yen LIBOR / Euroyen TIBOR action in its entirety on standing grounds. In April 2020, the appeals court reversed the dismissal and in August 2020 plaintiffs in that action filed an amended complaint focused on Yen LIBOR. The court granted in part and denied in part defendants' motion to dismiss the amended complaint in September 2021 and plaintiffs and the remaining defendants have moved for reconsideration.

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

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

SIBOR / SOR – In October 2018, the court in the SIBOR / SOR action dismissed all but one of plaintiffs' claims against UBS. Plaintiffs filed an amended complaint following the dismissal, and the court granted a renewed motion to dismiss in July 2019. Plaintiffs appealed. In March 2021, the Second Circuit reversed the dismissal. Plaintiffs filed an amended complaint in October 2021, which defendants have moved to dismiss.

BBSW – 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 filed an amended complaint in April 2019, which UBS and other defendants named in the amended complaint moved to dismiss. In February 2020, the court in the BBSW action granted in part and denied in part defendants' motions to dismiss the amended complaint. In August 2020, UBS and other BBSW defendants joined a motion for judgment on the pleadings, which the court denied in May 2021.

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

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

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

With respect to additional matters and jurisdictions not encompassed by the settlements and orders referred to above, our balance sheet at 31 December 2021 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 issued a supervisory note to all Swiss banks in response to the Supreme Court decision. UBS has met the FINMA requirements and has notified all potentially affected clients.

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

Our balance sheet at 31 December 2021 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.

UBS AG interim consolidated financial information (unaudited)

This section contains a comparison of selected financial and capital information between UBS Group AG consolidated and UBS AG consolidated. Information for UBS AG consolidated does not differ materially from UBS Group AG on a consolidated basis.

Comparison between UBS Group AG consolidated and UBS AG consolidated

The accounting policies applied under International Financial Reporting Standards (IFRS) to both the UBS Group AG and the UBS AG consolidated financial statements are identical. However, there are certain scope and presentation differences as noted below.

- Assets, liabilities, operating income, operating expenses and operating profit before tax relating to UBS Group AG and its directly held subsidiaries, including UBS Business Solutions AG, are reflected in the consolidated financial statements of UBS Group AG but not in those of UBS AG. UBS AG's assets, liabilities, operating income and operating expenses related to transactions with UBS Group AG and its directly held subsidiaries, including UBS Business Solutions AG and other shared services subsidiaries, are not subject to elimination in the consolidated financial statements of UBS AG, but are eliminated in the consolidated financial statements of UBS Group AG. UBS Business Solutions AG and other shared services subsidiaries of UBS Group AG charge other legal entities within the UBS AG consolidation scope for services provided, including a markup on costs incurred.
- The equity of UBS Group AG consolidated was USD 2.6 billion higher than the equity of UBS AG consolidated as of 31 December 2021. This difference was mainly driven by higher dividends paid by UBS AG to UBS Group AG compared with the dividend distributions of UBS Group AG, as well as higher retained earnings in the consolidated financial statements of UBS Group AG, largely related to the aforementioned markup charged by shared services subsidiaries of UBS Group AG to other legal entities in the UBS AG scope of consolidation. In addition, UBS Group AG is the grantor of the majority of the compensation plans of the Group and recognizes share premium for equity-settled awards granted. These effects were partly offset by treasury shares acquired as part of our share repurchase programs and those held to hedge share delivery obligations associated with Group compensation plans, as well as additional share premium recognized at the UBS AG consolidated level related to the establishment of UBS Group AG and UBS Business Solutions AG, a wholly owned subsidiary of UBS Group AG.
- The going concern capital of UBS Group AG consolidated was USD 5.1 billion higher than the going concern capital of UBS AG consolidated as of 31 December 2021, reflecting higher common equity tier 1 (CET1) capital of USD 3.7 billion and going concern loss-absorbing additional tier 1 (AT1) capital of USD 1.4 billion.
- The CET1 capital of UBS Group AG consolidated was USD 3.7 billion higher than that of UBS AG consolidated as of 31 December 2021. The higher CET1 capital of UBS Group AG consolidated was primarily due to higher UBS Group AG consolidated IFRS equity of USD 2.6 billion, as described above, and lower UBS Group AG accruals for future capital returns to shareholders, partly offset by compensation-related regulatory capital accruals at the UBS Group AG level.
- The going concern loss-absorbing AT1 capital of UBS Group AG consolidated was USD 1.4 billion higher than that of UBS AG consolidated as of 31 December 2021, mainly reflecting deferred contingent capital plan awards granted at the Group level to eligible employees for the performance years 2016 to 2020, partly offset by two loss-absorbing AT1 capital instruments on-lent by UBS Group AG to UBS AG.

Comparison between UBS Group AG consolidated and UBS AG consolidated

	As of or for the quarter ended 31.12.21		
USD million, except where indicated	UBS Group AG consolidated	UBS AG consolidated	Difference (absolute)
Income statement			
Operating income	8,732	8,846	(114)
Operating expenses	7,003	7,227	(224)
Operating profit / (loss) before tax	1,729	1,619	109
of which: Global Wealth Management	*563*	*541*	*22*
of which: Personal & Corporate Banking	*365*	*362*	*3*
of which: Asset Management	*334*	*328*	*6*
of which: Investment Bank	*713*	*710*	*3*
of which: Group Functions	*(246)*	*(321)*	*75*
Net profit / (loss)	1,359	1,266	93
of which: net profit / (loss) attributable to shareholders	*1,348*	*1,255*	*93*
of which: net profit / (loss) attributable to non-controlling interests	*11*	*11*	*0*
Statement of comprehensive income			
Other comprehensive income	(181)	(197)	16
of which: attributable to shareholders	*(177)*	*(194)*	*16*
of which: attributable to non-controlling interests	*(4)*	*(4)*	*0*
Total comprehensive income	1,178	1,069	109
of which: attributable to shareholders	*1,171*	*1,062*	*109*
of which: attributable to non-controlling interests	*7*	*7*	*0*
Balance sheet			
Total assets	1,117,182	1,116,145	1,037
Total liabilities	1,056,180	1,057,702	(1,522)
Total equity	61,002	58,442	2,559
of which: equity attributable to shareholders	*60,662*	*58,102*	*2,559*
of which: equity attributable to non-controlling interests	*340*	*340*	*0*
Capital information			
Common equity tier 1 capital	45,281	41,594	3,687
Going concern capital	60,488	55,434	5,054
Risk-weighted assets	302,209	299,005	3,204
Common equity tier 1 capital ratio (%)	15.0	13.9	1.1
Going concern capital ratio (%)	20.0	18.5	1.5
Total loss-absorbing capacity ratio (%)	34.7	33.3	1.3
Leverage ratio denominator	1,068,862	1,067,679	1,183
Common equity tier 1 leverage ratio (%)	4.24	3.90	0.34
Going concern leverage ratio (%)	5.7	5.2	0.5
Total loss-absorbing capacity leverage ratio (%)	9.8	9.3	0.5

As of or for the quarter ended 30.9.21			As of or for the quarter ended 31.12.20		
UBS Group AG consolidated	UBS AG consolidated	Difference (absolute)	UBS Group AG consolidated	UBS AG consolidated	Difference (absolute)
9,128	9,224	(95)	8,117	8,220	(103)
6,264	6,512	(248)	6,132	6,324	(192)
2,865	2,712	152	1,985	1,896	89
1,516	*1,500*	*16*	*864*	*855*	*9*
478	*479*	*(1)*	*353*	*353*	*(1)*
214	*214*	*0*	*401*	*401*	*0*
837	*833*	*4*	*529*	*528*	*1*
(180)	*(314)*	*134*	*(161)*	*(241)*	*79*
2,289	2,163	125	1,645	1,572	73
2,279	*2,154*	*125*	*1,636*	*1,563*	*73*
9	*9*	*0*	*9*	*9*	*0*
(610)	(598)	(12)	83	54	29
(596)	*(584)*	*(12)*	*65*	*36*	*29*
(14)	*(14)*	*0*	*18*	*18*	*0*
1,678	1,565	113	1,728	1,626	102
1,683	*1,570*	*113*	*1,701*	*1,599*	*102*
(5)	*(5)*	*0*	*27*	*27*	*0*
1,088,773	1,088,246	528	1,125,765	1,125,327	438
1,028,221	1,030,828	(2,607)	1,066,000	1,067,254	(1,254)
60,552	57,418	3,134	59,765	58,073	1,691
60,219	*57,085*	*3,134*	*59,445*	*57,754*	*1,691*
333	*333*	*0*	*319*	*319*	*0*
45,022	41,356	3,665	39,890	38,181	1,709
60,369	55,334	5,035	56,178	52,610	3,567
302,426	299,612	2,814	289,101	286,743	2,358
14.9	13.8	1.1	13.8	13.3	0.5
20.0	18.5	1.5	19.4	18.3	1.1
34.0	32.6	1.4	35.2	34.2	1.0
1,044,916	1,044,438	479	1,037,150	1,036,771	379
4.31	3.96	0.35	3.85	3.68	0.16
5.8	5.3	0.5	5.4	5.1	0.3
9.8	9.4	0.5	9.8	9.5	0.3

UBS AG consolidated key figures

	As of or for the quarter ended			As of or for the year ended	
USD million, except where indicated	31.12.21	30.9.21	31.12.20	31.12.21	31.12.20
Results					
Operating income	8,846	9,224	8,220	35,976	32,780
Operating expenses	7,227	6,512	6,324	27,012	25,081
Operating profit / (loss) before tax	1,619	2,712	1,896	8,964	7,699
Net profit / (loss) attributable to shareholders	1,255	2,154	1,563	7,032	6,196
Profitability and growth					
Return on equity (%)	8.7	15.3	10.9	12.3	10.9
Return on tangible equity (%)	9.8	17.3	12.2	13.9	12.4
Return on common equity tier 1 capital (%)	12.1	21.1	16.3	17.6	16.6
Return on risk-weighted assets, gross (%)	11.8	12.5	11.7	12.3	11.9
Return on leverage ratio denominator, gross (%)[1]	3.3	3.5	3.3	3.4	3.4
Cost / income ratio (%)	81.9	70.7	76.3	75.4	74.9
Net profit growth (%)	(19.7)	6.8	151.3	13.5	56.3
Resources					
Total assets	1,116,145	1,088,246	1,125,327	1,116,145	1,125,327
Equity attributable to shareholders	58,102	57,085	57,754	58,102	57,754
Common equity tier 1 capital[2]	41,594	41,356	38,181	41,594	38,181
Risk-weighted assets[2]	299,005	299,612	286,743	299,005	286,743
Common equity tier 1 capital ratio (%)[2]	13.9	13.8	13.3	13.9	13.3
Going concern capital ratio (%)[2]	18.5	18.5	18.3	18.5	18.3
Total loss-absorbing capacity ratio (%)[2]	33.3	32.6	34.2	33.3	34.2
Leverage ratio denominator[1,2]	1,067,679	1,044,438	1,036,771	1,067,679	1,036,771
Common equity tier 1 leverage ratio (%)[1,2]	3.90	3.96	3.68	3.90	3.68
Going concern leverage ratio (%)[1,2]	5.2	5.3	5.1	5.2	5.1
Total loss-absorbing capacity leverage ratio (%)[2]	9.3	9.4	9.5	9.3	9.5
Other					
Invested assets (USD billion)[3]	4,596	4,432	4,187	4,596	4,187
Personnel (full-time equivalents)	47,067	47,293	47,546	47,067	47,546

1 Leverage ratio denominators and leverage ratios for the respective periods in 2020 do not reflect the effects of the temporary exemption that applied from 25 March 2020 until 1 January 2021 and was granted by FINMA in connection with COVID-19. Refer to the "Regulatory and legal developments" section of our Annual Report 2020 for more information. 2 Based on the Swiss systemically relevant bank framework as of 1 January 2020. Refer to the "Capital management" section of this report for more information. 3 Consists of invested assets for Global Wealth Management, Asset Management and Personal & Corporate Banking. Refer to "Note 32 Invested assets and net new money" in the "Consolidated financial statements" section of our Annual Report 2020 for more information.

Currency translation rates

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

	Closing exchange rate			Average rate[1]				
	As of			For the quarter ended			For the year ended	
	31.12.21	30.9.21	31.12.20	31.12.21	30.9.21	31.12.20	31.12.21	31.12.20
1 CHF	1.10	1.07	1.13	1.09	1.09	1.11	1.09	1.07
1 EUR	1.14	1.16	1.22	1.14	1.17	1.19	1.18	1.15
1 GBP	1.35	1.35	1.37	1.35	1.37	1.33	1.37	1.29
100 JPY	0.87	0.90	0.97	0.88	0.90	0.96	0.91	0.94

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

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