Financial statements

The financial statements provide detailed information and notes on our income, balance sheet, cash flows and changes in equity, alongside a report from our independent auditors.

Building on our international connections

We aim to collaborate internationally to make a difference for our customers. In May 2022, we supported a Hong Kong-based client with its investment in one of London's tallest skyscrapers. We helped C C Land Holdings Limited with a £605m refinancing of The Leadenhall Building in the City of London financial district. The international property development and investment company bought the 225-metre tall tower in 2017 for £1.15bn, in what was the second biggest sale of a UK building at the time. The refinancing was co-ordinated by colleagues from our UK and Hong Kong teams, and incorporated support from three other banks.

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 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 2022 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.

We have audited the financial statements, included within the Annual Report and Accounts 2022 (the “Annual Report”), which comprise: the consolidated and company balance sheets as at 31 December 2022; 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 description of the 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 131 to 238 and the Directors remuneration report disclosures on pages 276 to 301.

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

We remained independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC’s Ethical Standard, as applicable to listed public interest entities, and the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by either the FRC’s Ethical Standard or Article 5(1) of Regulation (EU) No 537/2014 were not provided to the company or its controlled undertakings.

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 fourth year that it has been my responsibility to form this opinion on behalf of PricewaterhouseCoopers LLP, 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.

Key audit matters

- Expected credit losses - Impairment of loans and advances (group)
- Impairment of investment in associate - Bank of Communications Co., Ltd ('BoCom') (group)
- Investments in subsidiaries (company)
- Valuation of defined benefit pension obligations (group)
- Held for sale accounting (group)

Materiality

- Overall group materiality: US$1bn (2021: US$970m) based on 5% of adjusted profit before tax.
- Overall company materiality: US$950m (2021: US$920m) 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$750m (2021: US$725m) (group) and US$712m (2021: US$690m) (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.

Held for sale accounting (group) is a new key audit matter this year. Otherwise, the key audit matters below 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 (specifically the central and downside scenarios given these have the most material impact on ECL) and estimating management judgemental adjustments and significant discounted cash flows for material credit impaired exposures in relation to the China offshore unsecured commercial real estate portfolio.

The level of estimation uncertainty and judgement has remained high during 2022 as a result of the uncertain macroeconomic and geopolitical environment, high levels of inflation and a rising global interest rate environment, as well as developments in China's commercial real estate sector. Macroeconomic conditions vary between territories and industries, leading to uncertainty around judgements made in determining the severity and probability weighting of macroeconomic variable 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 prevailing macroeconomic 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 and 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, in particular in relation to the China commercial real estate offshore portfolio.

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 corporate exposures, other than in relation to the China commercial real estate offshore portfolio;
- 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 uncertain prevailing macroeconomic conditions and developments in China's commercial real estate sector. We discussed a number of areas, including:

- the severity of macroeconomic scenarios, and their related probability weightings, across territories;
- management judgemental adjustments and the nature and extent of analysis used to support those adjustments;
- significant assumptions used to estimate the discounted cash inflow projections for defaulted exposures in relation to unsecured offshore China commercial real estate;
- 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.

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 macroeconomic scenarios and their probability weightings, 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 triggers;
- 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;
- the calculation and approval of management judgemental adjustments to modelled outcomes; and
- approval of significant individual impairments.

We involved our economic experts in assessing the significant assumptions made in determining the severity and probability weighting of macroeconomic variables ("MEV") forecasts. These assessments considered the sensitivity of ECL to variations in the severity and probability weighting of MEV forecasts. We involved our modelling experts in assessing the appropriateness of the significant assumptions and methodologies used for models and certain management judgemental adjustments. We independently re-performed the calculations for a sample of those models and certain management judgemental adjustments. In respect of unsecured offshore China commercial real estate, we involved our business recovery experts in assessing certain significant management judgemental adjustments and discounted cash flows for a sample of credit impaired exposures. 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;
- assumptions and critical data for a sample of credit impaired wholesale exposures; and
- a sample of CRRs applied to the wholesale exposures.

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

Relevant references in the Annual Report and Accounts 2022

- Credit risk disclosures, page 145.
- Group Audit Committee Report, page 262.
- Note 1.2(d):Financial instruments measured at amortised cost, page 340.
- Note 1.2(i): Impairment of amortised cost and FVOCI financial assets, page 341.

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

Nature of the key audit matter

At 31 December 2022, the fair value of the investment in BoCom, based on the share price, was US$15.2bn lower than the carrying value ('CV') of US$23.3bn.

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 $0.2bn 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, and expected credit losses;
- long term assumptions for profit and asset growth rates, expected credit losses, and effective tax rates; and
- capital related assumptions (risk-weighted assets as a percentage of total 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 11 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 the 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 analysts reports, information from BoCom management and historically available BoCom public information;
- assessing the impact on the VIU of 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 meetings 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 2022

- Group Audit Committee Report, page 262.
- Note 1.2(a): Critical accounting estimates and judgements, page 338.
- Note 18: Interests in associates and joint ventures, page 379.

Investments in subsidiaries (company)

Nature of the key audit matter

Management reviewed investments in subsidiaries for indicators of impairment and indicators that impairment charges recognised in prior periods may no longer exist or may have decreased in accordance with IAS 36 as at 31 December 2022. Where indicators have been identified management estimated the recoverable amount using the higher of value in use ('VIU') or fair value less cost to sell. Management's assessment resulted in a partial reversal of an impairment charge of US$2.5bn in relation to the investment in HSBC Overseas Holdings (UK) Limited ('HOHU'), which is an immediate holding company of certain businesses in North America. This resulted in investment in subsidiaries of $US167.5bn at 31 December 2022.

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 business plan for 2023 to 2027 focusing on revenue, cost and ECL forecasts including the impact of climate change risk;
- 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 reasonable 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 business plan and the prospects for HSBC's businesses, as well as considering the achievement of historic forecasts;
- obtaining and evaluating evidence relating to significant assumptions, from a combination of historical 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 2022

- Note 19: Investments in subsidiaries, page 382.

Valuation of defined benefit pensions obligations (group)

Nature of the key audit matter

The group has a defined benefit obligation of US$25.7bn, of which US$18.8bn 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 obligations. 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 tested the accuracy of the calculation, 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 2022

- Group Audit Committee Report, page 262.
- Note 1.2(k): Critical accounting estimates and judgements, page 345.
- Note 5: Employee compensation and benefits, page 351.

Held for sale accounting (group)

Nature of the key audit matter
The group has agreements to sell a number of businesses as part of executing its strategy. This has resulted in US$115.9bn of assets and US$114.6bn of liabilities being classified as held for sale as at 31 December 2022, in relation to businesses in France, Canada, Russia and Greece. In addition to the assets and liabilities classified as held for sale, a loss of US$2.4bn has also been recognised in 2022 in relation to the sale of the business in France. For the assets and liabilities to be classified as held for sale, the sale needs to be considered highly probable and expected to complete within 12 months of the date of classification. We focused our audit on the areas with greater levels of management judgement relating to the highly probable threshold being met including the expected timing of completion, the appropriateness of disclosures relating to the highly probable assessment and the loss recognised in relation to the sale of the business in France.
Matters discussed with the Group Audit Committee
We discussed with the GAC the judgements made by management in determining if the highly probable thresholds were met as at 31 December 2022. We also discussed the appropriateness of the disclosure made in the Annual Report which explained how management had concluded that transactions met the highly probable threshold as at 31 December 2022.
How our audit addressed the Key Audit Matter
We tested governance and controls in place over the management process to determine if the highly probable threshold had been met on assets and liabilities classified as held for sale. We assessed the key judgments made by management to determine whether the highly probable thresholds were met as at 31 December 2022, including their assessment of remaining actions to complete the transactions, any regulatory requirements that need to be met, and the likelihood and expected timing of the transactions being approved by relevant regulators and shareholders. We also tested the completeness and accuracy of the assets and liabilities that were classified as held for sale and the loss on sale recognised in relation to the French business. We evaluated and tested the disclosures made in the Annual Report in relation to assets and liabilities classified as held for sale.
Relevant references in the Annual Report and Accounts 2022
• Group Audit Committee Report, page 262. • Note 1.2(o): Critical accounting estimates and judgements, page 347. • Note 23: Assets held for sale and liabilities of disposal groups held for sale, page 389.

How we tailored the audit scope

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.

The risks that HSBC faces are diverse, with the interdependencies between them being numerous and complex. In performing our risk assessment we engaged with a number of stakeholders to ensure we appropriately understood and considered these risks and their interrelationships. This includes stakeholders within HSBC and our own experts within PwC. This engagement covered external factors across the geopolitical, macroeconomic and regulatory and accounting landscape, the impact of climate change risk as well as the internal environment at HSBC, driven by strategy and transformation.

We evaluated and challenged management's assessment of the impact of climate change risk, which is set out on page 46, including their conclusion that there is no material impact on the financial statements. In making this evaluation we considered management's use of stress testing and scenario analysis to arrive at the conclusion that there is no material impact on the financial statements. We considered management's assessment on the areas in the financial statements most likely to be impacted by climate risk, including:

- the impact on ECL on loans and advances to customers, for both physical and transition risk;
- the forecast cashflows from management's five year business plan and long term growth rates used in estimating recoverable amounts as part of impairment assessments of investments in subsidiaries, goodwill and intangible assets;
- the impact of climate related terms on the solely payments of principal and interest test for classification and measurement of loans and advances to customers; and
- climate risks relating to contingent liabilities as HSBC faces increased reputational, legal and regulatory risk as it progresses towards its climate ambition.

HSBC's progress on their ESG targets is not included within the scope of this audit. We were engaged separately to provide independent limited assurance to the Directors over the following ESG data:

- the 2019 and 2020 on-balance sheet financed emissions for 6 sectors in total (page 50);
- the cumulative progress made by HSBC on providing and facilitating sustainable financing and investments (page 57); and
- HSBC's own operations' scope 1, 2 and 3 (limited to business travel) greenhouse gas emissions data for 2022 (page 62); and supply chain greenhouse gas emissions for purchased goods and services, and capital goods for 2021 and 2022 (page 64).

The independent limited assurance reports, which explain the scope of our work and the procedures undertaken can be found on: www.hsbc.com/who-we-are/esg-and-responsible-business/esg-reporting-centre. The work performed for a limited assurance report is substantially less than the work performed for our financial audit, which provides reasonable assurance.

Through our risk assessment, we tailored our determination as to which entities and balances we needed to perform testing over to support our Group opinion, taking into consideration the complex and disaggregated group structure, the accounting processes and controls as well as the industry in which they operate. The risks of material misstatement can be reduced to an acceptable level by testing the most financially significant entities within the Group and those that drive particular significant risks identified as part of our risk assessment. This ensures that sufficient coverage has been obtained for each financial statement line item (FSLI). 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 The Hongkong and Shanghai Banking Corporation Limited, HSBC Bank plc, and HSBC North America Holdings Inc. 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. Banco. 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 to incorporate elements of unpredictability into our audit scoping, extending the scope of work performed for both The Hongkong and Shanghai Banking Corporation India Branch, and HSBC Bank (China) Limited. These entities are also in scope for The Hongkong and Shanghai Banking Corporation Limited. This was undertaken with consideration of both the relative profitability of these entities in the region and the Group's strategy.

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'). Whilst these operations centres are not separate components, the IT and operational processes and controls are relevant to the financial information of the Significant Subsidiaries. Financial reporting processes and controls are also performed centrally in HSBC's Group Finance function and finance operation centres ('Finance Operations'), including the impairment assessment of goodwill and intangible assets, the consolidation of the group's results, the preparation of financial statements, and management's oversight controls relevant to the group's financial reporting.

Group-wide processes or processes in DBS and Finance Operations are subject to specified audit procedures or an audit over specific FSLIs. These procedures primarily relate to testing of IT general controls, forward looking economic scenarios for ECL, operating expenses, intangible assets, valuation of financial instruments, intercompany eliminations, reconciliations and consolidation as well as payroll. 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, Mexico and the Philippines. 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

In March 2022, we held a meeting in Dubai with the partners and senior staff from the Group audit team and the PwC teams who undertake audits of the Significant Subsidiaries and the Operations Centres. The meeting focused primarily on reconnecting as a team after virtual interactions throughout the Covid-19 pandemic, reassessing our approach to auditing HSBC's businesses, changes at HSBC and in our PwC teams, and how we continue to innovate and improve the quality of the audit. We also discussed our significant audit risks.

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$712m to US$50m. Certain Significant Subsidiaries were audited to a local statutory audit materiality that was a lower level than our allocated 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. Senior members of our team undertook at least one in-person site visit prior to the year end where a full scope audit was requested. We attended Audit Committee meetings for some of the Significant Subsidiaries. We also attended meetings with management for each of these Significant Subsidiaries at the year-end.

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 84% of total assets and 69% of total operating income.

Using the work of others

We have increased our use of evidence provided by others through our reliance on management assurance testing of controls across the group. This included testing of controls performed by management themselves in certain low risk areas including reconciliations, footnote disclosure controls and certain automated controls. We re-performed a portion of the testing to ensure appropriate quality of testing, as well as assessing the competence and objectivity of those performing the testing.

We also used the work of PwC experts, for example economic experts for our work around the severity and probability weighting of macroeconomics variables 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$1bn (2021: US$970m).	US$950m (2021: US$920m).
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.
Rationale for benchmark applied	We believe a standard benchmark of 5% of adjusted profit before tax is an appropriate qualitative 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 29, management believes it best reflects the performance of HSBC and how the group is run. We excluded the adjustments made by management on page 29 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% (2021: 75%) of overall materiality, amounting to US$750m (2021: US$725m) for the group financial statements and US$712m (2021: US$690m) for the company financial statements.

In determining the performance materiality, we considered a number of factors - the history of misstatements, risk assessment and aggregation risk and the effectiveness of controls - and 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$50m (group audit) (2021: US$48m) and US$50m (company audit) (2021: US$48m) 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 both internal risks (i.e. strategy execution) and external risks (i.e. macroeconomic conditions);
- 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; and
- 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.

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 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 2022 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 appropriate 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 and company 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 in relation to cost targets, and management bias in accounting estimates. The group engagement team shared this risk assessment with the component 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 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;
- 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 assessment of the investment in BoCom, valuation of defined benefit pensions obligations, investment in subsidiaries and valuation of financial instruments;
- 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 controls 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 controls;
- 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; and
- 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 Group Audit Committee ('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 eight years, covering the years ended 31 December 2015 to 31 December 2022.

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

21 February 2023

Financial statements

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Consolidated income statement

for the year ended 31 December

	Notes*	2022 $m	2021 $m	2020 $m
Net interest income		**32,610**	26,489	27,578
– interest income[1,2]		**55,059**	36,188	41,756
– interest expense[3]		**(22,449)**	(9,699)	(14,178)
Net fee income	2	**11,451**	13,097	11,874
– fee income		**15,213**	16,788	15,051
– fee expense		**(3,762)**	(3,691)	(3,177)
Net income from financial instruments held for trading or managed on a fair value basis	3	**10,469**	7,744	9,582
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	3	**(3,394)**	4,053	2,081
Changes in fair value of designated debt and related derivatives[4]	3	**(77)**	(182)	231
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	3	**226**	798	455
Gains less losses from financial investments		**(3)**	569	653
Net insurance premium income	4	**12,825**	10,870	10,093
Impairment loss relating to the planned sale of our retail banking operations in France[5]		**(2,378)**	—	—
Other operating income/(loss)[6]		**(133)**	502	527
Total operating income		**61,596**	63,940	63,074
Net insurance claims and benefits paid and movement in liabilities to policyholders	4	**(9,869)**	(14,388)	(12,645)
Net operating income before change in expected credit losses and other credit impairment charges		**51,727**	49,552	50,429
Change in expected credit losses and other credit impairment charges		**(3,592)**	928	(8,817)
Net operating income		**48,135**	50,480	41,612
Employee compensation and benefits	5	**(18,366)**	(18,742)	(18,076)
General and administrative expenses		**(11,091)**	(11,592)	(11,115)
Depreciation and impairment of property, plant and equipment and right-of-use assets[7]		**(2,157)**	(2,261)	(2,681)
Amortisation and impairment of intangible assets		**(1,716)**	(1,438)	(2,519)
Goodwill impairment	21	**—**	(587)	(41)
Total operating expenses		**(33,330)**	(34,620)	(34,432)
Operating profit		**14,805**	15,860	7,180
Share of profit in associates and joint ventures	18	**2,723**	3,046	1,597
Profit before tax		**17,528**	18,906	8,777
Tax expense	7	**(858)**	(4,213)	(2,678)
Profit for the year		**16,670**	14,693	6,099
Attributable to:				
– ordinary shareholders of the parent company		**14,822**	12,607	3,898
– preference shareholders of the parent company		**—**	7	90
– other equity holders		**1,213**	1,303	1,241
– non-controlling interests		**635**	776	870
Profit for the year		**16,670**	14,693	6,099
		$	$	$
Basic earnings per ordinary share	9	**0.75**	0.62	0.19
Diluted earnings per ordinary share	9	**0.74**	0.62	0.19

* *For Notes on the financial statements, see page 335.*

1 *Interest income includes $48,134m (2021: $30,916m; 2020: $35,293m) of interest recognised on financial assets measured at amortised cost and $6,386m (2021: $4,337m; 2020: $5,614m) of interest recognised on financial assets measured at fair value through other comprehensive income.*

2 *Interest income is calculated using the effective interest method and comprises interest recognised on financial assets measured at either amortised cost or fair value through other comprehensive income.*

3 *Interest expense includes $20,798m (2021: $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 impairment of goodwill of $425m.*

6 *Other operating income includes a loss on net monetary positions of $678m (2021: $224m, 2020: $128m) as a result of applying IAS 29 'Financial Reporting in Hyperinflationary Economies'.*

7 *Includes depreciation of the right-of-use assets of $723m (2021: $878m; 2020: $1,029m).*

Consolidated statement of comprehensive income

for the year ended 31 December

	2022 $m	2021 $m	2020 $m
Profit for the year	**16,670**	14,693	6,099
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	**(5,468)**	(2,139)	1,750
– fair value gains/(losses)	**(7,261)**	(2,270)	2,947
– fair value gains transferred to the income statement on disposal	**(20)**	(464)	(668)
– expected credit (recoveries)/losses recognised in the income statement	**67**	(49)	48
– income taxes	**1,746**	644	(577)
Cash flow hedges	**(3,655)**	(664)	471
– fair value gains/(losses)	**(4,207)**	595	(157)
– fair value (gains)/losses reclassified to the income statement	**(758)**	(1,514)	769
– income taxes	**1,310**	255	(141)
Share of other comprehensive income/(expense) of associates and joint ventures	**(367)**	103	(73)
– share for the year	**(367)**	103	(73)
Exchange differences	**(9,931)**	(2,393)	4,855
Items that will not be reclassified subsequently to profit or loss:			
Fair value gains on property revaluation	**280**	—	—
Remeasurement of defined benefit asset/liability	**(1,031)**	(274)	834
– before income taxes	**(1,723)**	(107)	1,223
– income taxes	**692**	(167)	(389)
Changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	**1,922**	531	167
– before income taxes	**2,573**	512	190
– income taxes	**(651)**	19	(23)
Equity instruments designated at fair value through other comprehensive income	**107**	(446)	212
– fair value gains/(losses)	**107**	(443)	212
– income taxes	**—**	(3)	—
Effects of hyperinflation	**842**	315	193
Other comprehensive income/(expense) for the year, net of tax	**(17,301)**	(4,967)	8,409
Total comprehensive income/(expense) for the year	**(631)**	9,726	14,508
Attributable to:			
– ordinary shareholders of the parent company	**(2,393)**	7,765	12,146
– preference shareholders of the parent company	**—**	7	90
– other equity holders	**1,213**	1,303	1,241
– non-controlling interests	**549**	651	1,031
Total comprehensive income/(expense) for the year	**(631)**	9,726	14,508

Consolidated balance sheet

		At	
		31 Dec 2022	31 Dec 2021
	Notes*	**$m**	$m
Assets			
Cash and balances at central banks		**327,002**	403,018
Items in the course of collection from other banks		**7,297**	4,136
Hong Kong Government certificates of indebtedness		**43,787**	42,578
Trading assets	11	**218,093**	248,842
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	14	**45,063**	49,804
Derivatives	15	**284,146**	196,882
Loans and advances to banks		**104,882**	83,136
Loans and advances to customers		**924,854**	1,045,814
Reverse repurchase agreements – non-trading		**253,754**	241,648
Financial investments	16	**425,564**	446,274
Assets held for sale[1]	23	**115,919**	3,411
Prepayments, accrued income and other assets	22	**156,866**	136,571
Current tax assets		**1,230**	970
Interests in associates and joint ventures	18	**29,254**	29,609
Goodwill and intangible assets	21	**21,321**	20,622
Deferred tax assets	7	**7,498**	4,624
Total assets		**2,966,530**	2,957,939
Liabilities and equity			
Liabilities			
Hong Kong currency notes in circulation		**43,787**	42,578
Deposits by banks		**66,722**	101,152
Customer accounts		**1,570,303**	1,710,574
Repurchase agreements – non-trading		**127,747**	126,670
Items in the course of transmission to other banks		**7,864**	5,214
Trading liabilities	24	**72,353**	84,904
Financial liabilities designated at fair value	25	**127,327**	145,502
Derivatives	15	**285,764**	191,064
Debt securities in issue	26	**78,149**	78,557
Liabilities of disposal groups held for sale[1]	23	**114,597**	9,005
Accruals, deferred income and other liabilities	27	**133,240**	114,773
Current tax liabilities		**1,135**	698
Liabilities under insurance contracts	4	**114,844**	112,745
Provisions	28	**1,958**	2,566
Deferred tax liabilities	7	**2,422**	4,673
Subordinated liabilities	29	**22,290**	20,487
Total liabilities		**2,770,502**	2,751,162
Equity			
Called up share capital	32	**10,147**	10,316
Share premium account	32	**14,664**	14,602
Other equity instruments		**19,746**	22,414
Other reserves		**(9,141)**	6,460
Retained earnings		**152,068**	144,458
Total shareholders' equity		**187,484**	198,250
Non-controlling interests	19	**8,544**	8,527
Total equity		**196,028**	206,777
Total liabilities and equity		**2,966,530**	2,957,939

1 *'Assets held for sale' in 2021, including $2.4bn of loans and advances to customers in relation to our exit of mass market retail banking business in the US, were reported within 'Prepayments, accrued income and other assets' in the* Annual Report and Accounts 2021. *Similarly, $8.8bn of customer accounts classified as 'Liabilities of disposal groups' were previously presented within 'Accruals, deferred income and other liabilities'.*

* *For Notes on the financial statements, see page 335.*

The accompanying notes on pages 335 to 417 and the audited sections in the Risk review on pages 131 to 238 (including 'Measurement uncertainty and sensitivity analysis of ECL estimates' on pages 153 to 162, and 'Directors' remuneration report' on pages 276 to 301 form an integral part of these financial statements.

These financial statements were approved by the Board of Directors on 21 February 2023 and signed on its behalf by:

Mark E Tucker
Group Chairman

Georges Elhedery
Group Chief Financial Officer

Consolidated statement of cash flows
for the year ended 31 December

	2022 $m	2021 $m	2020 $m
Profit before tax	**17,528**	18,906	8,777
Adjustments for non-cash items:			
Depreciation, amortisation and impairment	**3,873**	4,286	5,241
Net loss/(gain) from investing activities	**11**	(647)	(541)
Share of profits in associates and joint ventures	**(2,723)**	(3,046)	(1,597)
Loss on disposal of subsidiaries, businesses, associates and joint ventures	**2,639**	—	—
Change in expected credit losses gross of recoveries and other credit impairment charges	**3,907**	(519)	9,096
Provisions including pensions	**635**	1,063	1,164
Share-based payment expense	**400**	467	433
Other non-cash items included in profit before tax	**(1,084)**	510	(906)
Elimination of exchange differences[1]	**49,127**	18,937	(25,749)
Changes in operating assets and liabilities			
Change in net trading securities and derivatives	**20,181**	(9,226)	13,150
Change in loans and advances to banks and customers	**31,799**	(11,014)	(14,131)
Change in reverse repurchase agreements – non-trading	**(23,405)**	552	9,950
Change in financial assets designated and otherwise mandatorily measured at fair value	**8,344**	(4,254)	(1,962)
Change in other assets	**(10,771)**	19,899	(19,610)
Change in deposits by banks and customer accounts	**(91,194)**	95,703	226,723
Change in repurchase agreements – non-trading	**4,344**	14,769	(28,443)
Change in debt securities in issue	**12,518**	(16,936)	(9,075)
Change in financial liabilities designated at fair value	**(13,647)**	(11,425)	(6,630)
Change in other liabilities	**15,978**	(10,935)	20,323
Dividends received from associates	**944**	808	761
Contributions paid to defined benefit plans	**(194)**	(509)	(495)
Tax paid	**(2,776)**	(3,077)	(4,259)
Net cash from operating activities	**26,434**	104,312	182,220
Purchase of financial investments	**(520,600)**	(493,042)	(496,669)
Proceeds from the sale and maturity of financial investments	**495,049**	521,190	476,990
Net cash flows from the purchase and sale of property, plant and equipment	**(1,285)**	(1,086)	(1,446)
Net cash flows from purchase/(disposal) of customer and loan portfolios	**(3,530)**	3,059	1,362
Net investment in intangible assets	**(3,125)**	(2,479)	(2,064)
Net cash flow from acquisition and disposal of subsidiaries, businesses, associates and joint ventures	**(989)**	(106)	(603)
Net cash from investing activities	**(34,480)**	27,536	(22,430)
Issue of ordinary share capital and other equity instruments	**—**	1,996	1,497
Cancellation of shares	**(2,285)**	(707)	—
Net purchases of own shares for market-making and investment purposes	**(91)**	(1,386)	(181)
Net cash flow from change in stake of subsidiaries	**(197)**	—	—
Redemption of preference shares and other equity instruments	**(2,266)**	(3,450)	(398)
Subordinated loan capital issued	**7,300**	—	—
Subordinated loan capital repaid[2]	**(1,777)**	(864)	(3,538)
Dividends paid to shareholders of the parent company and non-controlling interests	**(6,970)**	(6,383)	(2,023)
Net cash from financing activities	**(6,286)**	(10,794)	(4,643)
Net increase/(decrease) in cash and cash equivalents	**(14,332)**	121,054	155,147
Cash and cash equivalents at 1 Jan	**574,032**	468,323	293,742
Exchange differences in respect of cash and cash equivalents	**(38,029)**	(15,345)	19,434
Cash and cash equivalents at 31 Dec[3]	**521,671**	574,032	468,323
Cash and cash equivalents comprise:			
– cash and balances at central banks	**327,002**	403,018	304,481
– items in the course of collection from other banks	**7,297**	4,136	4,094
– loans and advances to banks of one month or less	**72,295**	55,705	51,788
– reverse repurchase agreements with banks of one month or less	**68,682**	76,658	65,086
– treasury bills, other bills and certificates of deposit less than three months	**26,727**	28,488	30,023
– cash collateral and net settlement accounts	**19,445**	11,241	17,194
– cash and cash equivalents held for sale[4]	**8,087**	—	—
– less: items in the course of transmission to other banks	**(7,864)**	(5,214)	(4,343)
Cash and cash equivalents at 31 Dec[3]	**521,671**	574,032	468,323

Interest received was $55,664m (2021: $40,175m; 2020: $45,578m), interest paid was $22,856m (2021: $12,695m; 2020: $17,440m) and dividends received (excluding dividends received from associates, which are presented separately above) were $1,638m (2021: $1,898m; 2020: $1,158m).

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 $(1.8)bn (2021: $(0.9)bn; 2020: $(3.5)bn) of securities. Non-cash changes during the year included foreign exchange gains/(losses) of $(1.1)bn (2021: $(0.3)bn; 2020: $0.5bn) and fair value gains/(losses) of $(3.1)bn (2021: $(1.0)bn; 2020: $1.1bn).*
3 *At 31 December 2022, $59.3bn (2021: $33.6bn; 2020: $41.9bn) was not available for use by HSBC, due to a range of restrictions, including currency exchange and other restrictions, of which $22.1bn (2021: $15.4bn; 2020: $16.9bn) related to mandatory deposits at central banks.*
4 *Includes $6.5bn of cash and balances at central banks (excluding the expected cash contribution as part of the planned sale of our retail banking operations in France. For further details, see Note 23); $1.3bn of reverse repurchase agreements with banks of one month or less and $0.2bn of loans and advances to banks of one month or less.*

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 2022	**24,918**	**22,414**	**144,458**	**(634)**	**(197)**	**(22,769)**	**30,060**	**198,250**	**8,527**	**206,777**
Profit for the year	—	—	16,035	—	—	—	—	16,035	635	16,670
Other comprehensive income (net of tax)	—	—	1,368	(5,325)	(3,613)	(9,819)	174	(17,215)	(86)	(17,301)
– debt instruments at fair value through other comprehensive income	—	—	—	(5,417)	—	—	—	(5,417)	(51)	(5,468)
– equity instruments designated at fair value through other comprehensive income	—	—	—	92	—	—	—	92	15	107
– cash flow hedges	—	—	—	—	(3,613)	—	—	(3,613)	(42)	(3,655)
– changes in fair value of financial liabilities designated at fair value upon initial recognition arising from changes in own credit risk	—	—	1,922	—	—	—	—	1,922	—	1,922
– property revaluation	—	—	—	—	—	—	174	174	106	280
– remeasurement of defined benefit asset/liability	—	—	(1,029)	—	—	—	—	(1,029)	(2)	(1,031)
– share of other comprehensive income of associates and joint ventures	—	—	(367)	—	—	—	—	(367)	—	(367)
– effects of hyperinflation	—	—	842	—	—	—	—	842	—	842
– exchange differences	—	—	—	—	—	(9,819)	—	(9,819)	(112)	(9,931)
Total comprehensive income for the year	—	—	17,403	(5,325)	(3,613)	(9,819)	174	(1,180)	549	(631)
Shares issued under employee remuneration and share plans	67	—	(67)	—	—	—	—	—	—	—
Dividends to shareholders	—	—	(6,544)	—	—	—	—	(6,544)	(426)	(6,970)
Redemption of securities[2]	—	(2,668)	402	—	—	—	—	(2,266)	—	(2,266)
Transfers[6]	—	—	(2,499)	—	—	—	2,499	—	—	—
Cost of share-based payment arrangements	—	—	400	—	—	—	—	400	—	400
Cancellation of shares[7]	(174)	—	(1,000)	—	—	—	174	(1,000)	—	(1,000)
Other movements	—	—	(485)	3	2	—	304	(176)	(106)	(282)
At 31 Dec 2022	**24,811**	**19,746**	**152,068**	**(5,956)**	**(3,808)**	**(32,588)**	**33,211**	**187,484**	**8,544**	**196,028**

Consolidated statement of changes in equity (continued)

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

Consolidated statement of changes in equity (continued)

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 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 due to movement 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

1 *In 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 additional tier 1 instruments.*

2 *During 2022, HSBC Holdings redeemed €1,500m 5.250% perpetual subordinated contingent convertible capital securities and SGD1,000m 5.875% perpetual subordinated contingent convertible capital securities. For further details, see Note 32. In 2021, HSBC Holdings redeemed $2,000m 6.875% perpetual subordinated contingent convertible capital securities. In 2020, HSBC Holdings called and later redeemed $1,450m 6.20% non-cumulative US dollar preference shares.*

3 *At 31 December 2022, retained earnings included 554,452,437 treasury shares (2021: 558,397,704; 2020: 509,825,249). These include treasury shares held within HSBC's insurance business's 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 Securities 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 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, 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 2020, an impairment of $435m was recognised and a permitted transfer of this amount was made from the merger reserve to retained earnings. During 2022 and 2021, part-reversals of these impairments resulted in transfers from retained earnings back to the merger reserve of $2,499m and $3,065m respectively.*

7 *For further details, see Note 32. In October 2021, HSBC announced a share buy-back of up to $2.0bn, which was completed in April 2022. Additionally, HSBC announced a share buy-back of up to $1.0bn in February 2022, which concluded on 28 July 2022.*

HSBC Holdings income statement

for the year ended 31 December

	Notes*	2022 $m	2021 $m	2020 $m
Net interest expense		**(3,074)**	(2,367)	(2,632)
– interest income		**937**	380	473
– interest expense		**(4,011)**	(2,747)	(3,105)
Fee (expense)/income		**(3)**	(5)	(12)
Net income from financial instruments held for trading or managed on a fair value basis	3	**2,129**	110	801
Changes in fair value of designated debt and related derivatives[1]	3	**2,144**	349	(326)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	3	**(2,409)**	(420)	1,141
Gains less losses from financial investments		**58**	—	—
Dividend income from subsidiaries		**9,478**	11,404	8,156
Other operating income		**91**	230	1,889
Total operating income		**8,414**	9,301	9,017
Employee compensation and benefits	5	**(41)**	(30)	(56)
General and administrative expenses		**(1,586)**	(1,845)	(4,276)
Reversal of impairment/(impairment) of subsidiaries		**2,493**	3,065	(435)
Total operating expenses		**866**	1,190	(4,767)
Profit before tax		**9,280**	10,491	4,250
Tax (charge)/credit[2]		**3,077**	343	(165)
Profit for the year		**12,357**	10,834	4,085

* *For Notes on the financial statements, see page 335.*

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

2 *The tax credit includes $2.2bn arising from the recognition of a deferred tax asset from historical tax losses in HSBC Holdings. This was a result of improved profit forecasts for the UK tax group, which accelerated the expected utilisation of these losses and reduced uncertainty regarding their recoverability. The amounts recorded within profit before tax with respect to dividend income from subsidiaries and reversal of impairment of subsidiaries are not subject to tax.*

HSBC Holdings statement of comprehensive income

for the year ended 31 December

	2022 $m	2021 $m	2020 $m
Profit for the year	**12,357**	10,834	4,085
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	**326**	267	176
– before income taxes	**435**	259	176
– income taxes	**(109)**	8	—
Other comprehensive income/(expense) for the year, net of tax	**326**	267	176
Total comprehensive income for the year	**12,683**	11,101	4,261

HSBC Holdings balance sheet

	Notes*	31 Dec 2022 $m	31 Dec 2021 $m
Assets			
Cash and balances with HSBC undertakings		**3,210**	2,590
Financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value		**52,322**	51,408
Derivatives	15	**3,801**	2,811
Loans and advances to HSBC undertakings		**26,765**	25,108
Financial investments		**19,466**	26,194
Prepayments, accrued income and other assets		**5,242**	1,513
Current tax assets		**464**	122
Investments in subsidiaries		**167,542**	163,211
Intangible assets		**189**	215
Deferred tax assets		**2,100**	—
Total assets at 31 Dec		**281,101**	273,172
Liabilities and equity			
Liabilities			
Amounts owed to HSBC undertakings		**314**	111
Financial liabilities designated at fair value	25	**32,123**	32,418
Derivatives	15	**6,922**	1,220
Debt securities in issue	26	**66,938**	67,483
Accruals, deferred income and other liabilities		**1,969**	4,240
Subordinated liabilities	29	**19,727**	17,059
Deferred tax liabilities		**—**	311
Total liabilities		**127,993**	122,842
Equity			
Called up share capital	32	**10,147**	10,316
Share premium account		**14,664**	14,602
Other equity instruments		**19,746**	22,414
Merger and other reserves		**40,555**	37,882
Retained earnings		**67,996**	65,116
Total equity		**153,108**	150,330
Total liabilities and equity at 31 Dec		**281,101**	273,172

* *For Notes on the financial statements, see page 335.*

The accompanying notes on pages 335 to 417 and the audited sections in the Risk review on pages 131 to 238 (including 'Measurement uncertainty and sensitivity analysis of ECL estimates' on pages 153 to 162), and 'Directors' remuneration report' on pages 276 to 301 form an integral part of these financial statements.

These financial statements were approved by the Board of Directors on 21 February 2023 and signed on its behalf by:

Mark E Tucker
Group Chairman

Georges Elhedery
Group Chief Financial Officer

HSBC Holdings statement of cash flows

for the year ended 31 December

	2022	2021	2020
	$m	$m	$m
Profit before tax	**9,280**	10,491	4,250
Adjustments for non-cash items	**(2,500)**	(2,954)	442
– depreciation, amortisation and impairment/expected credit losses	**(2,428)**	(2,976)	87
– share-based payment expense	**1**	2	1
– other non-cash items included in profit before tax	**(73)**	20	354
Changes in operating assets and liabilities			
Change in loans to HSBC undertakings	**(1,657)**	3,364	(327)
Change in financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value	**(914)**	(4,409)	(3,289)
Change in net trading securities and net derivatives	**4,712**	47	(1,657)
Change in other assets	**51**	(226)	(633)
Change in financial investments	**196**	20	449
Change in debt securities in issue	**(5,625)**	(2,833)	3,063
Change in financial liabilities designated at fair value	**(4,755)**	(1,396)	1,258
Change in other liabilities	**(3,394)**	(691)	1,366
Tax received	**215**	32	270
Net cash from operating activities	**(4,391)**	1,445	5,192
Purchase of financial investments	**(21,481)**	(16,966)	(11,652)
Proceeds from the sale and maturity of financial investments	**17,165**	16,074	9,342
Net cash outflow from acquisition of or increase in stake of subsidiaries	**(5,696)**	(1,337)	(2,558)
Repayment of capital from subsidiaries	**3,860**	2,000	1,516
Net investment in intangible assets	**(39)**	(26)	(33)
Net cash from investing activities	**(6,191)**	(255)	(3,385)
Issue of ordinary share capital and other equity instruments	**67**	2,334	1,846
Redemption of preference shares and other equity instruments	**(2,266)**	(3,450)	—
Purchase of treasury shares	**(438)**	(28)	—
Cancellation of shares	**(2,298)**	(707)	—
Subordinated loan capital issued	**7,300**	—	—
Subordinated loan capital repaid	**—**	—	(1,500)
Debt securities issued	**18,076**	19,379	15,951
Debt securities repaid	**(10,094)**	(5,569)	(16,577)
Dividends paid on ordinary shares	**(5,330)**	(4,480)	—
Dividends paid to holders of other equity instruments	**(1,214)**	(1,310)	(1,331)
Net cash from financing activities	**3,803**	6,169	(1,611)
Net increase/(decrease) in cash and cash equivalents	**(6,779)**	7,359	196
Cash and cash equivalents at 1 January	**13,535**	6,176	5,980
Cash and cash equivalents at 31 Dec	**6,756**	13,535	6,176
Cash and cash equivalents comprise:			
– cash at bank with HSBC undertakings	**3,210**	2,590	2,913
– cash collateral and net settlement accounts	**3,544**	93	249
– treasury and other eligible bills	**2**	10,852	3,014

Interest received was $2,410m (2021: $1,636m; 2020: $1,952m), interest paid was $3,813m (2021: $2,724m; 2020: $3,166m) and dividends received were $9,478m (2021: $11,404m; 2020: $8,156m).

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	Other reserves: Merger and other reserves $m	Total shareholders' equity $m
At 1 Jan 2022	**10,316**	**14,602**	**22,414**	**65,116**	**37,882**	**150,330**
Profit for the year	—	—	—	12,357	—	12,357
Other comprehensive income (net of tax)	—	—	—	326	—	326
– changes in fair value of financial liabilities designated at fair value due to movement in own credit risk	—	—	—	326	—	326
Total comprehensive income for the year	—	—	—	12,683	—	12,683
Shares issued under employee share plans	5	62	—	(161)	—	(94)
Capital securities issued	—	—	—	—	—	—
Cancellation of shares[2,3]	(174)	—	—	(1,001)	174	(1,001)
Dividends to shareholders	—	—	—	(6,544)	—	(6,544)
Redemption of capital securities	—	—	(2,668)	402	—	(2,266)
Transfers[4]	—	—	—	(2,499)	2,499	—
Other movements	—	—	—	—	—	—
At 31 Dec 2022	**10,147**	**14,664**	**19,746**	**67,996**	**40,555**	**153,108**
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[4]	—	—	—	(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[4]	—	—	—	435	(435)	—
Other movements[5]	—	—	171	(1,919)	—	(1,748)
At 31 Dec 2020	10,347	14,277	22,414	65,005	34,757	146,800

Dividends per ordinary share at 31 December 2022 were $0.27 (2021: $0.22; 2020: nil).

1 *At 31 December 2022, retained earnings included 331,874,221 ($2,615m) treasury shares (2021: 329,871,829 ($2,542m); 2020: 326,766,253 ($2,521m)).*
2 *On 26 October 2021, HSBC announced a share buy-back of up to $2.0bn, which was completed on 20 April 2022.*
3 *On 3 May 2022, HSBC announced a share buy-back of up to $1.0bn, which was completed on 28 July 2022.*
4 *Permitted transfers from the merger reserve to retained earnings were made when the investment in HSBC Overseas Holdings (UK) Limited was previously impaired. In 2022, a part-reversal of this impairment resulted in a transfer from retained earnings back to the merger reserve of $2,499m (2021: $3,065m). At 31 December 2020, an additional impairment of $435m was recognised and a permitted transfer of this amount was made from the merger reserve to retained earnings.*
5 *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

Contents

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 2022 affecting these consolidated and separate financial statements.

Standards adopted during the year ended 31 December 2022

There were no new accounting standards or interpretations that had a significant effect on HSBC in 2022. 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 2022 that are applicable to HSBC. However, the IASB has published a number of minor amendments to IFRSs that are effective from 1 January 2023 and 1 January 2024. 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 and December 2021. Following the amendments, IFRS 17 is effective for annual reporting periods beginning on or after 1 January 2023 and is applied retrospectively, with comparatives restated from 1 January 2022. IFRS 17 has been adopted in its entirety for use in the UK while it has been adopted by the EU subject to certain optional exemptions.

IFRS 17 sets out the requirements that the Group will apply in accounting for insurance contracts it issues, reinsurance contracts it holds, and investment contracts with discretionary participation features.

The Group is at an advanced stage in the implementation of IFRS 17, having put in place accounting policies, data and models, and made progress with preparing 2022 comparative data. We set out below our expectations of the impact of IFRS 17 compared with our current accounting policy for insurance contracts, which is set out in Note 1.2(j) on page 344.

Under IFRS 17, no present value of in-force business ('PVIF') asset is recognised. Instead, the measurement of the insurance contracts liability is based on groups of insurance contracts and will include fulfilment cash flows, as well as the contractual service margin ('CSM'), which represents the unearned profit.

To identify groups of insurance contracts, individual contracts subject to similar dominant risk and managed together are identified as a portfolio of insurance contracts. Each portfolio is further separated by profitability group and issue date into periodic cohorts.

The fulfilment cash flows comprise:

- the best estimates of future cash flows, including amounts expected to be collected from premiums and payouts for claims, benefits and expenses, which are projected using assumptions based on demographic and operating experience;
- an adjustment for the time value of money and financial risks associated with the future cash flows; and
- an adjustment for non-financial risk that reflects the uncertainty about the amount and timing of future cash flows.

In contrast to the Group's IFRS 4 accounting where profits are recognised upfront, the CSM will be systematically recognised in revenue, as services are provided over the expected coverage period of the group of contracts without any change to the overall profit of the contracts. Losses resulting from the recognition of onerous contracts are recognised in the income statement immediately.

The CSM is adjusted depending on the measurement model of the group of insurance contracts. While the general measurement model ('GMM') is the default measurement model under IFRS 17, the Group expects that the majority of its contracts will be accounted for under the variable fee approach ('VFA'), which is mandatory to apply for insurance contracts with direct participation features upon meeting the eligibility criteria.

IFRS 17 requires entities to apply the standard retrospectively as if it had always applied, using the full retrospective approach ('FRA') unless it is impracticable. When the FRA is impracticable such as when there is a lack of sufficient and reliable data, an entity has an accounting policy choice to use either the modified retrospective approach ('MRA') or the fair value approach ('FVA'). HSBC will apply the FRA for new business from 2018 at the earliest, subject to practicability, and the FVA for the majority of contracts for which the FRA is impracticable. Where the FVA is used, the measurement takes into account the cost of capital that a market participant within the jurisdiction would be expected to hold based on the asset and liability positions on the transition date.

The Group will make use of the option to re-designate eligible financial assets held to support insurance liabilities, currently measured at amortised cost, as financial assets measured at fair value through profit or loss. Following re-designation, interest income earned on these financial assets will no longer be shown in 'net interest income', and will instead form part of 'net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss' in accordance with HSBC's income and expense policy set out in Note 1.2(b) on page 339.

The Group will also make use of the risk mitigation option for a number of economic offsets between the VFA contracts and reinsurance contracts held that meet the requirements, and the other comprehensive income ('OCI') option to a limited extent for some contracts.

Impact of IFRS 17

Changes to equity on transition are driven by the elimination of the PVIF asset, the re-designation of certain eligible financial assets in the scope of IFRS 9, the remeasurement of insurance liabilities and assets under IFRS 17, and the recognition of the CSM.

IFRS 17 requires the use of current market values for the measurement of insurance liabilities. The shareholder's share of the investment experience and assumption changes will be absorbed by the CSM and released over time to profit or loss under the VFA. For contracts measured under GMM, the shareholder's share of the investment volatility is recorded in profit or loss as it arises. Under IFRS 17, operating expenses will be lower as directly attributable costs will be incorporated in the CSM and recognised in the insurance service result.

While the profit over the life of an individual contract will be unchanged, its emergence will be later under IFRS 17.

All of these impacts will be subject to deferred tax.

Estimates of the opening balance sheet as at 1 January 2022 have been calculated and are presented below, showing separately the impact on the total assets, liabilities and equity of our insurance manufacturing operations and Group equity. These estimates are based on accounting policies, assumptions, judgements and estimation techniques that remain subject to change.

Impact of transition to IFRS 17, at 1 January 2022	**Insurance manufacturing operations**			**Group**
	Assets	**Liabilities**	**Equity**	**Equity**
	$bn	**$bn**	**$bn**	**$bn**
Balance sheet values at 1 January 2022 under IFRS 4	**144.6**	**127.6**	**17.0**	**206.8**
Removal of PVIF	**(9.5)**	**—**	**(9.5)**	**(9.5)**
Replacement of IFRS 4 liabilities with IFRS 17	**(0.4)**	**7.3**	**(7.7)**	**(8.1)**
Removal of IFRS 4 liabilities and recording of IFRS 17 fulfilment cash	***(0.3)***	***(2.2)***	***1.9***	***1.9***
IFRS 17 contractual service margin	***(0.1)***	***9.5***	***(9.6)***	***(10.0)***
Remeasurement effect of IFRS 9 re-designations	**4.9**	**—**	**4.9**	**4.9**
Tax effect	**0.6**	**(1.6)**	**2.2**	**2.2**
Estimated balance sheet values at 1 January 2022 under IFRS 17	**140.2**	**133.3**	**6.9**	**196.3**

PVIF of $9.5bn less deferred tax of $1.7bn constitute the overall estimated reduction in intangible assets, after tax, of $7.8bn on transition to IFRS 17.

The Group's accounting for insurance contracts considers a broader set of cash flows than those arising within the insurance manufacturing entities. This includes the effect of eliminating intra-Group fees associated with distribution of policies through the Group's banking channels and directly attributable costs incurred by other Group entities. These factors lead to an increase to the Group CSM after inclusion of distribution activities of approximately $0.4bn, with a consequential reduction to Group's equity of approximately $0.4bn after the inclusion of deferred tax.

(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. Except for subsidiaries operating in hyperinflationary economies (see Note 1.2(p)), 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 2022* 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 131 to 238.
- The 'Own funds disclosure' is included in the 'Risk review' on page 206.
- Disclosures relating to HSBC's securitisation activities and structured products are included in the 'Risk review' on pages 131 to238.

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.

Management has considered the impact of climate-related risks on HSBC's financial position and performance. While the effects of climate change are a source of uncertainty, as at 31 December 2022 management do not consider there to be a material impact on our critical judgements and estimates from the physical, transition and other climate-related risks in the short to medium term. In particular management has considered the known and observable potential impact of climate-related risks of associated judgements and estimates in our value in use calculations.

(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 in structural changes from the Covid-19 pandemic, the Russia-Ukraine war, disrupted supply chains globally, slower Chinese economic activity, climate change and other top and emerging risks, as well as from the related impacts 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.

Impairment testing is performed where there is an indication of impairment, by comparing the recoverable amount of the relevant investment to its carrying amount.

Critical accounting estimates and judgements

Investments in subsidiaries are tested for impairment when there is an indication that the investment may be impaired, which involves estimations of value in use reflecting management's best estimate of the future cash flows of the investment 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 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 each investment 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 the investment. The cost of equity percentage is generally derived from a capital asset pricing model and the 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 impairment in subsidiaries are described in Note 19.

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 is 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, 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 reasonably 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 sold shortly after origination, 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. Dividends from such investments are recognised in profit or loss. 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.

(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' or 'Changes in fair value of designated debt and related derivatives' 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 criteria, 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 where doing so reduces an accounting mismatch, 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 fair value through other comprehensive income ('FVOCI'), and certain loan commitments and financial guarantee contracts. At initial recognition, an 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, an 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 which 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 that a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition, or 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.

Forbearance

Loans are identified as forborne and classified as either performing or non-performing when HSBC modifies the contractual terms due to financial difficulty of the borrower. Non-performing forborne loans are stage 3 and classified as non-performing until they meet the cure criteria, as specified by applicable credit risk policy (for example, when the loan is no longer in default and no other indicators of default have been present for at least 12 months). Any amount written off as a result of any modification of contractual terms upon entering forbearance would not be reversed.

In 2022, the Group adopted the EBA Guidelines on the application of definition of default for our retail portfolios, which affect credit risk policies and our reporting in respect of the status of loans as credit impaired principally due to forbearance (or curing thereof). Further details are provided under 'Forborne loans and advances' on page 146.

Performing forborne loans are initially stage 2 and remain classified as forborne until they meet applicable cure criteria (for example, they continue to not be in default and no other indicators of default are present for a period of at least 24 months). At this point, the loan is either stage 1 or stage 2 as determined 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).

A forborne loan 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 forborne loan is a substantially different financial instrument. Any new loans that arise following derecognition events in these circumstances would generally be classified as POCI and will continue to be disclosed as forborne.

Loan modifications other than forborne loans

Loan modifications that are not identified as forborne are considered to be commercial restructurings. 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. Modifications of certain higher credit risk wholesale loans are assessed for derecognition, having regard to changes in contractual terms that either individually or in combination are judged to result in a substantially different financial instrument. Mandatory and general offer loan modifications that are not borrower specific, for example market-wide customer relief programmes generally do not result 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 146.

For retail portfolios, default risk is assessed using a reporting date 12-month PD derived from credit scores, which incorporate 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 homogenous 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 therefore identifies loans with a PD higher than would be expected from loans that are performing as originally expected and higher than that which would have been acceptable at origination. It therefore approximates a comparison of origination to reporting date PDs.

As additional data becomes available, the retail transfer criteria approach continues to be refined to utilise a more relative approach for certain portfolios. These enhancements take advantage of the increase in origination-related data in the assessment of significant increases in credit risk by comparing remaining lifetime PD to the comparable remaining term lifetime PD at origination based on portfolio-specific origination segments. These enhancements resulted in significant migrations of loans to customers gross carrying amounts from stage 1 to stage 2, but did not have a significant impact on the overall ECL for these portfolios in 2022 due to low loan-to-value ratios.

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 new financial instruments recognised in most cases following the derecognition of forborne loans. The amount of change in lifetime ECL for a POCI loan is recognised in profit or loss until the POCI loan 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. In the case of non-performing forborne loans, such financial instruments are transferred out of stage 3 when they no longer exhibit any evidence of credit impairment and meet the curing criteria as described above.

Measurement of ECL

The assessment of credit risk and the estimation of ECL are unbiased and probability-weighted, and incorporate all available information which 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 and considers other factors such as climate-related risks.

In general, HSBC calculates ECL using three main components: a probability of default ('PD'), 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 of 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 its 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 work-out 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. 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. For wholesale overdraft facilities, credit risk management actions are taken no less frequently than on an annual basis.

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 credit losses 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 153.

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 • Selecting applicable recovery strategies for certain wholesale credit-impaired loans	• The section 'Measurement uncertainty and sensitivity analysis of ECL estimates', marked as audited from page 153, 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 Note 1.2 (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 costs 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.

In assessing the probability and sufficiency of future taxable profit, management considers the availability of evidence to support the recognition of deferred tax assets, taking into account the inherent risks in long-term forecasting, including climate change-related, and drivers of recent history of tax losses where applicable. Management also considers the future reversal of existing taxable temporary differences and tax planning strategies, including corporate reorganisations.

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
• 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. See Note 7 for further detail.

The Group does not consider there to be a significant risk of a material adjustment to the carrying amount of deferred tax assets in the next financial year but does consider this to be an area that is inherently judgemental.

(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 losses 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).

(o) Non-current assets and disposal groups held for sale

HSBC classifies non-current assets or disposal groups (including assets and liabilities) as held for sale when their carrying amounts will be recovered principally through sale rather than through continuing use. To be classified as held for sale, the non-current asset or disposal group must be available for immediate sale in its present condition subject only to terms that are usual and customary for sales of such assets (or disposal groups), and the sale must be highly probable. For a sale to be highly probable, the appropriate level of management must be committed to a plan to sell the asset (or disposal group) and an active programme to locate a buyer and complete the plan must have been initiated. Further, the asset (or disposal group) must be actively marketed for sale at a price that is reasonable in relation to its current fair value. In addition, the sale should be expected to qualify as a completed sale within one year from the date of classification and actions required to complete the plan should indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

Held for sale assets and disposal groups are measured at the lower of their carrying amount and fair value less costs to sell except for those assets and liabilities that are not within the scope of the measurement requirements of IFRS 5. If the carrying amount of the non-current asset (or disposal group) is greater than the fair value less costs to sell, an impairment loss for any initial or subsequent write down of the asset or disposal group to fair value less costs to sell is recognised. Any such impairment loss is first allocated against the non-current assets that are in scope of IFRS 5 for measurement. This first reduces the carrying amount of any goodwill allocated to the disposal group, and then to the other non-current assets of the disposal group pro rata on the basis of the carrying amount of each asset in the disposal group. Thereafter, any impairment loss in excess of the carrying value of the non-current assets in scope of IFRS 5 for measurement is recognised against the total assets of the disposal group.

Critical accounting judgements

The classification as held for sale depends on certain judgements:

Judgements
Management judgement is required in determining whether the IFRS 5 held for sale criteria are met, including whether a sale is highly probable and expected to complete within one year of classification. The exercise of judgement will normally consider the likelihood of successfully securing any necessary regulatory or political approvals which are almost always required for sales of banking businesses. For large and complex plans judgement will also include an assessment of the enforceability of any binding sale agreement, the nature and magnitude of any disincentives for non-performance, and the ability of the counterparty to undertake necessary pre-completion preparatory work, comply with conditions precedent, and otherwise be able to comply with contractual undertakings to achieve completion within the expected timescale. Once classified as held for sale, judgement is required to be applied on a continuous basis to ensure that classification remains appropriate in future accounting periods.

(p) Hyperinflationary accounting

Hyperinflationary accounting is applied to those subsidiary operations in countries where the three-year cumulative inflation rate is approaching or exceeding 100%. In 2022, this affected the Group's operations in Argentina and Türkiye. The Group applies IAS 29 to the underlying financial information of relevant subsidiaries to restate their local currency results and financial position so as to be stated in terms of the measuring unit current at the end of the reporting period. Those restated results are translated into the Group's presentation currency of US dollars for consolidation at the closing rate at the balance sheet date. Group comparatives are not restated for inflation and consequential adjustments to the opening balance sheet in relation to hyperinflationary subsidiaries are presented in other comprehensive income. The hyperinflationary gain or loss in respect of the net monetary position of the relevant subsidiary is included in profit or loss.

When applying hyperinflation accounting for the first time, the underlying financial information is restated in terms of the measuring unit current at the end of the reporting period as if the relevant economy had always been hyperinflationary. Group comparatives are not restated for such historic adjustments.

2 Net fee income

Net fee income by global business

	2022				
	Wealth and Personal Banking	**Commercial Banking**	**Global Banking and Markets**	**Corporate Centre**	**Total**
	$m	**$m**	**$m**	**$m**	**$m**
Funds under management	**1,769**	**105**	**503**	**—**	**2,377**
Cards	**2,146**	**313**	**32**	**—**	**2,491**
Credit facilities	**100**	**776**	**598**	**—**	**1,474**
Broking income	**575**	**40**	**634**	**—**	**1,249**
Account services	**337**	**718**	**356**	**1**	**1,412**
Unit trusts	**682**	**14**	**—**	**—**	**696**
Underwriting	**1**	**2**	**443**	**(5)**	**441**
Global custody	**140**	**14**	**767**	**—**	**921**
Remittances	**72**	**378**	**348**	**1**	**799**
Imports/exports	**—**	**475**	**159**	**—**	**634**
Insurance agency commission	**283**	**16**	**1**	**—**	**300**
Other	**1,423**	**1,082**	**2,382**	**(2,468)**	**2,419**
Fee income	**7,528**	**3,933**	**6,223**	**(2,471)**	**15,213**
Less: fee expense	**(2,497)**	**(240)**	**(3,464)**	**2,439**	**(3,762)**
Net fee income	**5,031**	**3,693**	**2,759**	**(32)**	**11,451**

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

Net fee income included $6,410m 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 (2021: $6,742m; 2020: $5,858m), $1,613m 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 (2021: $1,520m; 2020: $1,260m), $3,506m of fees earned on trust and other fiduciary activities (2021: $3,849m; 2020: $3,426m) and $422m of fees payable relating to trust and other fiduciary activities (2021: $305m; 2020: $267m).

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

	2022 $m	2021 $m	2020 $m
Net income/(expense) arising on:			
Net trading activities	**2,576**	6,668	11,074
Other instruments managed on a fair value basis	**7,893**	1,076	(1,492)
Net income from financial instruments held for trading or managed on a fair value basis	**10,469**	7,744	9,582
Financial assets held to meet liabilities under insurance and investment contracts	**(3,720)**	4,134	2,481
Liabilities to customers under investment contracts	**326**	(81)	(400)
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	**(3,394)**	4,053	2,081
Derivatives managed in conjunction with HSBC's issued debt securities	**(7,086)**	(2,811)	2,619
Other changes in fair value	**7,009**	2,629	(2,388)
Changes in fair value of designated debt and related derivatives[1]	**(77)**	(182)	231
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**226**	798	455
Year ended 31 Dec	**7,224**	12,413	12,349

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

HSBC Holdings

	2022 $m	2021 $m	2020 $m
Net income/(expense) arising on:			
– trading activities	**2,094**	87	(336)
– other instruments managed on a fair value basis	**35**	23	1,137
Net income from financial instruments held for trading or managed on a fair value basis	**2,129**	110	801
Derivatives managed in conjunction with HSBC Holdings-issued debt securities	**(1,529)**	(625)	694
Other changes in fair value	**3,673**	974	(1,020)
Changes in fair value of designated debt and related derivatives	**2,144**	349	(326)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**(2,409)**	(420)	1,141
Year ended 31 Dec	**1,864**	39	1,616

4 Insurance business

Net insurance premium income[1]

	Non-linked insurance $m	Linked life insurance $m	Investment contracts with DPF[2] $m	Total $m
Gross insurance premium income	**11,685**	**824**	**1,547**	**14,056**
Reinsurers' share of gross insurance premium income	**(1,226)**	**(5)**	**—**	**(1,231)**
Year ended 31 Dec 2022	**10,459**	**819**	**1,547**	**12,825**
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

1 *This table is presented after elimination of inter-company transactions between our insurance manufacturing operations and other Group entities.*
2 *Discretionary participation features.*

Net insurance claims and benefits paid and movement in liabilities to policyholders[1]

	Non-linked insurance	Linked life insurance	Investment contracts with DPF[2]	Total
	$m	$m	$m	$m
Gross claims and benefits paid and movement in liabilities	**11,008**	**(124)**	**183**	**11,067**
– claims, benefits and surrenders paid	**4,032**	**680**	**1,845**	**6,557**
– movement in liabilities	**6,976**	**(804)**	**(1,662)**	**4,510**
Reinsurers' share of claims and benefits paid and movement in liabilities	**(1,206)**	**8**	**—**	**(1,198)**
– claims, benefits and surrenders paid	**(1,005)**	**(7)**	**—**	**(1,012)**
– movement in liabilities	**(201)**	**15**	**—**	**(186)**
Year ended 31 Dec 2022	**9,802**	**(116)**	**183**	**9,869**
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

1 *This table is presented after elimination of inter-company transactions between our insurance manufacturing operations and other Group entities.*
2 *Discretionary participation features.*

Liabilities under insurance contracts[1]

	Non-linked insurance	Linked life insurance	Investment contracts with DPF[2]	Total
	$m	$m	$m	$m
Gross liabilities under insurance contracts at 1 Jan 2022	**79,475**	**6,513**	**26,757**	**112,745**
Claims and benefits paid	**(4,032)**	**(680)**	**(1,845)**	**(6,557)**
Increase in liabilities to policyholders	**11,008**	**(124)**	**183**	**11,067**
Exchange differences and other movements[2]	**2,004**	**(313)**	**(4,102)**	**(2,411)**
Gross liabilities under insurance contracts at 31 Dec 2022	**88,455**	**5,396**	**20,993**	**114,844**
Reinsurers' share of liabilities under insurance contracts	**(4,247)**	**(10)**	**—**	**(4,257)**
Net liabilities under insurance contracts at 31 Dec 2022	**84,208**	**5,386**	**20,993**	**110,587**
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[3]	(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

1 *This table is presented after elimination of inter-company transactions between our insurance manufacturing operations and other Group entities.*
2 *Discretionary participation features.*
3 *'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

	2022 $m	2021 $m	2020 $m
Employee compensation and benefits[1]	**18,366**	18,742	18,076
Capitalised wages and salaries	**922**	870	1,320
Gross employee compensation and benefits for the year ended 31 Dec	**19,288**	19,612	19,396
Consists of:			
Wages and salaries	**16,954**	17,072	17,072
Social security costs	**1,413**	1,503	1,378
Post-employment benefits	**921**	1,037	946
Year ended 31 Dec	**19,288**	19,612	19,396

1 *Employee compensation and benefits are presented net of software capitalisation costs in the income statement.*

Average number of persons employed by HSBC during the year by global business[1]

	2022	2021	2020
Wealth and Personal Banking	**135,676**	138,026	144,615
Commercial Banking	**48,004**	44,992	45,631
Global Banking and Markets	**48,597**	48,179	49,055
Corporate Centre	**365**	359	411
Year ended 31 Dec	**232,642**	231,556	239,712

1 *Average number of persons employed represents the number of persons with contracts of service with the Group.*

Average number of persons employed by HSBC during the year by geographical region[1]

	2022	2021	2020
Europe	**58,145**	60,919	64,886
Asia	**132,257**	127,673	129,923
Middle East and North Africa	**9,541**	9,329	9,550
North America	**12,242**	13,845	15,430
Latin America	**20,457**	19,790	19,923
Year ended 31 Dec	**232,642**	231,556	239,712

1 *Average number of persons employed represents the number of persons with contracts of service with the Group.*

Reconciliation of total incentive awards granted to income statement charge

	2022 $m	2021 $m	2020 $m
Total incentive awards approved for the current year	**3,359**	3,495	2,659
Less: deferred bonuses awarded, expected to be recognised in future periods	**(343)**	(379)	(239)
Total incentives awarded and recognised in the current year	**3,016**	3,116	2,420
Add: current year charges for deferred bonuses from previous years	**239**	270	286
Other	**(22)**	4	2
Income statement charge for incentive awards	**3,233**	3,390	2,708

Share-based payments

'Wages and salaries' includes the effect of share-based payments arrangements, of which $400m was equity settled (2021: $467m; 2020: $434m), as follows:

	2022 $m	2021 $m	2020 $m
Conditional share awards	**402**	479	411
Savings-related and other share award option plans	**22**	27	51
Year ended 31 Dec	**424**	506	462

HSBC share awards

Award	Policy
Deferred share awards (including annual incentive awards, long-term incentive ('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 LTI awards, which are subject to performance conditions. • Deferred share awards generally vest over a period of three, four, 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 31 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

	2022 Number (000s)	2021 Number (000s)
Conditional share awards outstanding at 1 Jan	**109,364**	103,473
Additions during the year	**90,190**	75,549
Released in the year	**(67,718)**	(63,635)
Forfeited in the year	**(5,590)**	(6,023)
Conditional share awards outstanding at 31 Dec	**126,246**	109,364
Weighted average fair value of awards granted ($)	**5.60**	6.49

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% (2021: 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 2022	**123,197**	**2.85**
Granted during the year[2]	**8,928**	**4.24**
Exercised during the year[3]	**(3,483)**	**3.49**
Expired during the year	**(9,047)**	**3.55**
Forfeited during the year	**(3,944)**	**2.79**
Outstanding at 31 Dec 2022	**115,651**	**2.89**
– of which exercisable	***4,029***	***4.11***
Weighted average remaining contractual life (years)	**2.26**	
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	

1 *Weighted average exercise price.*
2 *The weighted average fair value of options granted during the year was $1.45 (2021: $0.85).*
3 *The weighted average share price at the date the options were exercised was $6.22 (2021: $5.87).*

Post-employment benefit plans

The Group operates pension plans throughout the world for its employees. 'Pension risk management processes' on page 205 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. For further details of how the trustee of the HSBC Bank (UK) Pension Scheme manages climate risk, see 'Managing risk for our stakeholders' on page 64.

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 principal plan is subject to the statutory funding objective requirements of the UK Pensions Act 2004, which requires that it be funded to at least the level of technical provisions (an actuarial estimate of the assets needed to provide for the benefits already built up under the plan). Where a funding valuation is carried out and identifies a deficit, the employer and trustee are required to agree to a deficit recovery plan.

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 that an element of prudence is contained in the funding valuation assumptions for discount rate, inflation rate and life expectancy. The funding valuation is used to judge the amount of cash contributions the Group needs to put into the pension scheme. It will always be different to the IAS 19 accounting surplus, which is an accounting rule concerning employee benefits and shown on the balance sheet of our financial statements. The next funding valuation will be performed in 2023, with an effective date of 31 December 2022. The plan is estimated to remain in a comfortable surplus relative to the funding liabilities as at the end of 2022, based on assumptions consistent with those used to determine the funding liabilities for the 2019 valuation.

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 assumption which allow for reserves 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.

The trust deed gives the ability for HSBC UK to take a refund of surplus assets after the plan has been run down such that no further beneficiaries remain. In assessing whether a surplus is recoverable, HSBC UK has considered its right to obtain a future refund together with the rights of third parties such as trustees. On this basis, any net surplus in the HBUK section of the plan is recognised in HSBC UK's financial statements and the Group's financial statements,

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. In 2022, the trustee and HSBC UK agreed to adopt a simplified approach for all members to implement GMP equalisation. This resulted in an increase to the liabilities of £5m ($6m) and has been recognised as a past service cost through profit and loss.

Income statement charge

	2022	2021	2020
	$m	$m	$m
Defined benefit pension plans	**42**	243	146
Defined contribution pension plans	**852**	767	775
Pension plans	**894**	1,010	921
Defined benefit and contribution healthcare plans	**27**	27	25
Year ended 31 Dec	**921**	1,037	946

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	**32,171**	**(25,693)**	**—**	**6,478**
Defined benefit healthcare plans	**96**	**(388)**	**—**	**(292)**
At 31 Dec 2022	**32,267**	**(26,081)**	**—**	**6,186**
Total employee benefit liabilities (within Note 27 'Accruals, deferred income and other liabilities')				**(1,096)**
Total employee benefit assets (within Note 22 'Prepayments, accrued income and other assets')				**7,282**
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 27 'Accruals, deferred income and other liabilities')				(1,607)
Total employee benefit assets (within Note 22 'Prepayments, accrued income and other assets')				10,269

HSBC Holdings

Employee compensation and benefit expense in respect of HSBC Holdings' employees in 2022 amounted to $41m (2021: $30m). The average number of persons employed during 2022 was 42 (2021: 54). 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 2022	**41,384**	**10,047**	**(32,255)**	**(10,022)**	**—**	**(23)**	**9,129**	**2**
Service cost	**—**	**—**	**(30)**	**(170)**	**—**	**—**	**(30)**	**(170)**
– current service cost	**—**	**—**	**(12)**	**(161)**	**—**	**—**	**(12)**	**(161)**
– past service cost and gains/(losses) from settlements	**—**	**—**	**(18)**	**(9)**	**—**	**—**	**(18)**	**(9)**
Net interest income/(cost) on the net defined benefit asset/(liability)	**703**	**198**	**(546)**	**(202)**	**—**	**(1)**	**157**	**(5)**
Remeasurement effects recognised in other comprehensive income	**(11,505)**	**(2,181)**	**9,532**	**2,360**	**—**	**(3)**	**(1,973)**	**176**
– return on plan assets (excluding interest income)	**(11,505)**	**(2,181)**	**—**	**—**	**—**	**—**	**(11,505)**	**(2,181)**
– actuarial gains/(losses) financial assumptions	**—**	**—**	**10,543**	**2,383**	**—**	**—**	**10,543**	**2,383**
– actuarial gains/(losses) demographic assumptions	**—**	**—**	**(123)**	**24**	**—**	**—**	**(123)**	**24**
– actuarial gains/(losses) experience adjustments	**—**	**—**	**(888)**	**(47)**	**—**	**—**	**(888)**	**(47)**
– other changes	**—**	**—**	**—**	**—**	**—**	**(3)**	**—**	**(3)**
Exchange differences	**(4,288)**	**(180)**	**3,325**	**35**	**—**	**2**	**(963)**	**(143)**
Benefits paid	**(1,222)**	**(616)**	**1,222**	**686**	**—**	**—**	**—**	**70**
Other movements[2]	**49**	**(218)**	**(35)**	**407**	**—**	**25**	**14**	**214**
At 31 Dec 2022	**25,121**	**7,050**	**(18,787)**	**(6,906)**	**—**	**—**	**6,334**	**144**
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 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

1 *For further details of the principal plan, see page 352.*
2 *Other movements include contributions by HSBC, contributions by employees, administrative costs and taxes paid by plan.*

HSBC expects to make $129m of contributions to defined benefit pension plans during 2023, consisting of $13m for the principal plan and $116m for other plans. 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

	2023	2024	2025	2026	2027	2028-2032
	$m	$m	$m	$m	$m	$m
The principal plan[1,2]	1,234	1,275	1,317	1,359	1,403	7,737
Other plans[1]	433	439	445	428	452	2,231

1 *The duration of the defined benefit obligation is 13.2 years for the principal plan under the disclosure assumptions adopted (2021: 17.3 years) and 10.2 years for all other plans combined (2021: 12.7 years).*
2 *For further details of the principal plan, see page 352.*

Fair value of plan assets by asset classes

	31 Dec 2022				31 Dec 2021			
	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	**25,121**	**13,915**	**11,206**	**510**	41,384	36,270	5,114	1,037
– equities[3]	**112**	**—**	**112**	**—**	197	5	192	—
– bonds[4]	**14,764**	**14,301**	**463**	**—**	36,295	35,612	683	—
– derivatives	**1,203**	**—**	**1,203**	**510**	1,864	—	1,864	1,037
– property	**842**	**—**	**842**	**—**	1,094	—	1,094	—
– other[5]	**8,200**	**(386)**	**8,586**	**—**	1,934	653	1,281	—
Other plans								
Fair value of plan assets	**7,050**	**5,848**	**1,202**	**37**	10,047	8,248	1,799	52
– equities	**639**	**486**	**153**	**2**	892	668	224	5
– bonds	**4,986**	**4,537**	**449**	**4**	7,080	6,490	590	5
– derivatives	**4**	**(1)**	**5**	**—**	7	(13)	20	—
– property	**109**	**104**	**5**	**—**	123	119	4	—
– other	**1,312**	**722**	**590**	**31**	1,945	984	961	42

1 *The fair value of plan assets includes derivatives entered into with HSBC Bank plc as detailed in Note 36.*
2 *For further details on the principal plan, see page 352.*
3 *Includes $112m (2021: $192m) in relation to private equities.*
4 *Principal plan bonds includes fixed income bonds of $5,285m (2021: $18,315m) and index-linked bonds of $9,479m (2021: $18,160m).*
5 *Other assets within the principal plan includes $8,586m (2021: $1,281m) of unquoted pooled investment vehicles, of which the majority of the underlying assets are invested in bonds.*

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) %	Inflation rate (CPI) %	Rate of increase for pensions %	Rate of pay increase %
UK					
At 31 Dec 2022	**4.93**	**3.39**	**2.84**	**3.27**	**3.34**
At 31 Dec 2021	1.90	3.45	3.20	3.30	3.45

1 *For further details on the principal plan, see page 352.*

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 2022	**SAPS S3[2]**	**27.1**	**28.6**	**28.4**	**29.9**
At 31 Dec 2021	SAPS S3	27.3	28.8	28.5	30.1

1 *For further details of the principal plan, see page 352.*
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 2021 core projection model with an initial addition to improvement of 0.25% per annum, a long-term rate of improvement of 1.25% per annum, and a 5% weighting to 2020 and 2021 mortality experience reflecting updated long-term view on mortality improvements post-pandemic.*

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	
	2022	2021	**2022**	2021
	$m	$m	**$m**	$m
Discount rate – increase/decrease of 0.25%	**(582)**	(1,337)	**612**	1,425
Inflation rate (RPI and CPI) – increase/decrease of 0.25%	**466**	1,211	**(446)**	(980)
Pension payments and deferred pensions – increase/decrease of 0.25%	**551**	1,267	**(519)**	(1,177)
Pay – increase/decrease of 0.25%	**10**	20	**(10)**	(20)
Change in mortality – increase of 1 year	**470**	1,387	**N/A**	N/A

1 *For further details of the principal plan, see page 352.*
2 *Sensitivities allow for HSBC UK's convention of rounding pension assumptions during 2022 to the nearest 0.01% (2021: 0.05%). The degree of rounding has been increased to align with market practice.*

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is 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 276.

6 Auditor's remuneration

	2022	2021	2020
	$m	$m	$m
Audit fees payable to PwC[1]	**97.6**	88.1	92.9
Other audit fees payable	**1.6**	2.0	1.0
Year ended 31 Dec	**99.2**	90.1	93.9

Fees payable by HSBC to PwC

	2022	2021	2020
	$m	$m	$m
Fees for HSBC Holdings' statutory audit[2]	**21.9**	19.5	21.9
Fees for other services provided to HSBC	**126.2**	109.9	108.3
– audit of HSBC's subsidiaries	**75.7**	68.6	71.0
– audit-related assurance services[3]	**26.4**	18.7	17.2
– other assurance services[4,5]	**24.1**	22.6	20.1
Year ended 31 Dec	**148.1**	129.4	130.2

1 *Audit fees payable to PwC in 2022 included adjustments made to the prior year audit fee after finalisation of the 2021 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

	2022	2021	2020
	$000	$000	$000
Audit of HSBC's associated pension schemes	**480**	382	316
Year ended 31 Dec	**480**	382	316

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 $13.1m (2021: $6.3m; 2020: $12.3m). 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

	2022 $m	2021 $m	2020 $m
Current tax[1]	**2,991**	3,250	2,700
– for this year	**3,271**	3,182	2,883
– adjustments in respect of prior years	**(280)**	68	(183)
Deferred tax	**(2,133)**	963	(22)
– origination and reversal of temporary differences	**(2,236)**	874	(341)
– effect of changes in tax rates	**(293)**	132	58
– adjustments in respect of prior years	**396**	(43)	261
Year ended 31 Dec[2]	**858**	4,213	2,678

1 *Current tax included Hong Kong profits tax of $604m (2021: $813m; 2020: $888m). The Hong Kong tax rate applying to the profits of subsidiaries assessable in Hong Kong was 16.5% (2021: 16.5%; 2020: 16.5%).*
2 *In addition to amounts recorded in the income statement, a tax credit of $145m (2021: 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:

	2022		2021		2020	
	$m	**%**	$m	%	$m	%
Profit before tax	**17,528**		18,906		8,777	
Tax expense						
Taxation at UK corporation tax rate of 19.00%	**3,329**	**19.0**	3,592	19.0	1,668	19.0
Impact of differently taxed overseas profits in overseas locations	**374**	**2.1**	280	1.5	178	2.0
UK banking surcharge	**283**	**1.6**	332	1.8	(113)	(1.3)
Items increasing tax charge in 2022:						
– local taxes and overseas withholding taxes	**550**	**3.1**	360	1.9	228	2.6
– other permanent disallowables	**202**	**1.2**	236	1.2	333	3.8
– impacts of hyperinflation	**171**	**1.0**	68	0.4	65	0.7
– adjustments in respect of prior period liabilities	**116**	**0.7**	25	0.1	78	0.9
– tax impact of planned sale of French retail banking business	**115**	**0.7**	(434)	(2.3)	—	—
– bank levy	**59**	**0.3**	93	0.5	202	2.3
– movements in provisions for uncertain tax positions	**27**	**0.2**	15	0.1	4	—
– non-deductible goodwill write-down	**3**	**—**	178	0.9	—	—
– impact of differences between French tax basis and IFRSs	**—**	**—**	434	2.3	—	—
Items reducing tax charge in 2022:						
– movements in unrecognised UK deferred tax	**(2,191)**	**(12.5)**	294	1.6	444	5.1
– non-taxable income and gains	**(825)**	**(4.7)**	(641)	(3.4)	(515)	(5.8)
– effect of profits in associates and joint ventures	**(504)**	**(2.9)**	(414)	(2.2)	(250)	(2.8)
– non-UK movements in unrecognised deferred tax	**(312)**	**(1.8)**	(67)	(0.4)	608	6.9
– impact of changes in tax rates	**(293)**	**(1.7)**	132	0.7	58	0.6
– deductions for AT1 coupon payments	**(246)**	**(1.4)**	(270)	(1.4)	(310)	(3.5)
Year ended 31 December 2022	**858**	**4.9**	4,213	22.3	2,678	30.5

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 2022 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 22.7% (2021: 22.3%).

The effective tax rate for the year of 4.9% was lower than in the previous year (2021: 22.3%). The effective tax rate for the year reduced by 14.3% as a result of the recognition of previously unrecognised losses in the UK of $2.2bn and France of $0.3bn, in light of improved forecast profitability.

During 2022, legislation was enacted to reduce the rate of the UK banking surcharge from 8% to 3% from 1 April 2023, decreasing the Group's 2022 tax charge by $173m due to the remeasurement of deferred tax balances. The main rate of UK corporation tax will increase from 19% to 25% from 1 April 2023.

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. Exposures relating to legacy tax cases were reassessed during 2022, resulting in a charge of $27m to the income statement. 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	Financial assets at FVOCI	Insurance business	Cash flow hedges	Retirement obligations	Other	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Assets	**1,162**	**2,001**	**84**	**—**	**176**	**109**	**1,690**	**5,222**
Liabilities	**—**	**—**	**(254)**	**(1,640)**	**(22)**	**(2,928)**	**(427)**	**(5,271)**
At 1 Jan 2022	**1,162**	**2,001**	**(170)**	**(1,640)**	**154**	**(2,819)**	**1,263**	**(49)**
Income statement	**6**	**2,425**	**—**	**170**	**—**	**217**	**(685)**	**2,133**
Other comprehensive income	**—**	**—**	**1,679**	**—**	**1,159**	**692**	**(642)**	**2,888**
Foreign exchange and other adjustments	**7**	**(36)**	**(79)**	**35**	**(42)**	**237**	**(18)**	**104**
At 31 Dec 2022	**1,175**	**4,390**	**1,430**	**(1,435)**	**1,271**	**(1,673)**	**(82)**	**5,076**
Assets[1]	**1,175**	**4,390**	**1,430**	**—**	**1,271**	**—**	**1,571**	**9,837**
Liabilities[1]	**—**	**—**	**—**	**(1,435)**	**—**	**(1,673)**	**(1,653)**	**(4,761)**
Assets	1,242	1,821	99	—	25	—	2,850	6,037
Liabilities	—	—	(896)	(1,622)	(70)	(2,306)	(973)	(5,867)
At 1 Jan 2021	1,242	1,821	(797)	(1,622)	(45)	(2,306)	1,877	170
Income statement	(89)	161	—	(43)	—	(336)	(656)	(963)
Other comprehensive income	(5)	33	634	—	212	(205)	115	784
Foreign exchange and other adjustments	14	(14)	(7)	25	(13)	28	(73)	(40)
At 31 Dec 2021	1,162	2,001	(170)	(1,640)	154	(2,819)	1,263	(49)
Assets[1]	1,162	2,001	84	—	176	109	1,690	5,222
Liabilities[1]	—	—	(254)	(1,640)	(22)	(2,928)	(427)	(5,271)

1 *After netting off balances within countries, the balances as disclosed in the accounts are as follows: deferred tax assets of $7,498m (2021: $4,624m) and deferred tax liabilities of $2,422m (2021: $4,673m).*

In applying judgement in recognising deferred tax assets, management has 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. When forecasts are extrapolated beyond five years, a number of different scenarios are considered, reflecting difference downward risk adjustments, in order to assess the sensitivity of our recognition and measurement conclusions in the context of such longer-term forecasts.

The Group's deferred tax asset of $7.5bn (2021: $4.6bn) included $3.9bn (2021: $0.8bn) of deferred tax assets relating to the UK, $3.3bn (2021: $2.6bn) of deferred tax assets relating to the US and a net deferred asset of $0.7bn (2021: $0.0bn) in France.

The net UK deferred tax asset of $3.9bn excluded a $1.8bn 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. The majority of the deferred tax asset relates to tax attributes which do not expire and are forecast to be recovered within five years and as such are less sensitive to changes in long-term profit forecasts. The net UK deferred tax asset includes $2.2bn of previously unrecognised losses that were recognised in the UK in the period in light of improved forecast profitability in the UK group. Sensitivity regarding the recognition and measurement of that deferred tax asset relates to ongoing experience outcome of UK profitability versus forecast, taking into account the non-expiring nature of the underlying attributes.

The net US deferred tax asset of $3.3bn included $1.3bn related to US tax losses, of which $1.1bn expire in 10 to 15 years. Management expects the US deferred tax asset to be substantially recovered within 14 years, with the majority recovered in the first eight years.

The net deferred tax asset in France of $0.7bn included $0.7bn related to tax losses, which are expected to be substantially recovered within nine to 18 years. Following recognition of $0.3bn of previously unrecognised deferred tax asset on losses, deferred tax is now recognised in full in respect of France.

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 $9.2bn (2021: $16.9bn). This amount included unused UK tax losses of $3.5bn (2021: $10.5bn), which arose prior to 1 April 2017 and can only be recovered against future taxable profits of HSBC Holdings. No deferred tax was recognised on these losses due to the absence of convincing evidence regarding the availability of sufficient future taxable profits against which to recover them. Deferred tax asset recognition is reassessed at each balance sheet date based on the available evidence. Of the total amounts unrecognised, $3.6bn (2021: $10.9bn) had no expiry date, $1.2bn (2021: $0.7bn) was scheduled to expire within 10 years and the remaining balance is expected to expire after ten 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 $11.7bn (2021: $12.7bn) and the corresponding unrecognised deferred tax liability was $0.7bn (2021: $0.8bn).

8 Dividends

Dividends to shareholders of the parent company

	2022		2021		2020	
	Per share	**Total**	Per share	Total	Per share	Total
	$	**$m**	$	$m	$	$m
Dividends paid on ordinary shares						
In respect of previous year:						
– second interim dividend	**0.18**	**3,576**	0.15	3,059	—	—
In respect of current year:						
– first interim dividend	**0.09**	**1,754**	0.07	1,421	—	—
Total	**0.27**	**5,330**	0.22	4,480	—	—
Total dividends on preference shares classified as equity (paid quarterly)[1]	**—**	**—**	4.99	7	62.00	90
Total coupons on capital securities classified as equity		**1,214**		1,303		1,241
Dividends to shareholders		**6,544**		5,790		1,331

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

		2022		2021	2020
			Total	Total	Total
	First call date	**Per security**	**$m**	$m	$m
Perpetual subordinated contingent convertible securities[1]					
$2,000m issued at 6.875%[2]	Jun 2021	**$68.750**	**—**	69	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%[3]	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**	69	—
$1,000m issued at 4.000%[5]	Mar 2026	**$40.000**	**40**	20	—
$1,000m issued at 4.700%[6]	Mar 2031	**$47.000**	**47**	24	—
€1,500m issued at 5.250%[7]	Sep 2022	**€52.500**	**76**	93	90
€1,000m issued at 6.000%	Sep 2023	**€60.000**	**63**	70	67
€1,250m issued at 4.750%	Jul 2029	**€47.500**	**65**	72	67
£1,000m issued at 5.875%	Sep 2026	**£58.750**	**70**	80	74
SGD1,000m issued at 4.700%[8]	Jun 2022	**SGD47.000**	**14**	35	35
SGD750m issued at 5.000%	Sep 2023	**SGD50.000**	**27**	28	27
Total			**1,214**	1,303	1,241

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 15 April 2021 and was redeemed and cancelled on 1 June 2021.*
3 *This security was called by HSBC Holdings on 30 January 2023 and is expected to be redeemed and cancelled on 23 March 2023.*
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.*
7 *This security was called by HSBC Holdings on 9 August 2022 and was redeemed and cancelled on 16 September 2022.*
8 *This security was called by HSBC Holdings on 4 May 2022 and was redeemed and cancelled on 8 June 2022.*

After the end of the year, the Directors approved a second interim dividend in respect of the financial year ended 31 December 2022 of $0.23 per ordinary share, a distribution of approximately $4,593m. The second interim dividend for 2022 will be payable on 27 April 2023 to holders on the Principal Register in the UK, the Hong Kong Overseas Branch Register or the Bermuda Overseas Branch Register on 3 March 2023. No liability was recorded in the financial statements in respect of the second interim dividend for 2022.

On 4 January 2023, HSBC paid a coupon on its €1,250m subordinated capital securities, representing a total distribution of €30m ($31m). No liability was recorded in the balance sheet at 31 December 2022 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

	2022	2021	2020
	$m	$m	$m
Profit attributable to shareholders of the parent company	**16,035**	13,917	5,229
Dividend payable on preference shares classified as equity	**—**	(7)	(90)
Coupon payable on capital securities classified as equity	**(1,213)**	(1,303)	(1,241)
Year ended 31 Dec	**14,822**	12,607	3,898

Basic and diluted earnings per share

	2022			2021			2020		
	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]	**14,822**	**19,849**	**0.75**	12,607	20,197	0.62	3,898	20,169	0.19
Effect of dilutive potential ordinary shares		**137**			105			73	
Diluted[1]	**14,822**	**19,986**	**0.74**	12,607	20,302	0.62	3,898	20,242	0.19

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 9.4 million (2021: 8.6 million; 2020: 14.6 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 2021 and 2020 adjusted performance information is presented on a constant currency basis. The 2021 and 2020 income statements are converted at the average rates of exchange for 2022, and the balance sheets at 31 December 2021 and 31 December 2020 at the prevailing rates of exchange on 31 December 2022.

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

	Wealth and Personal Banking	Commercial Banking	Global Banking and Markets	Corporate Centre	Total
	2022				
	$m	**$m**	**$m**	**$m**	**$m**
Net operating income/(expense) before change in expected credit losses and other credit impairment charges[1]	**24,367**	**16,215**	**15,359**	**(596)**	**55,345**
– external	**21,753**	**16,715**	**19,598**	**(2,721)**	**55,345**
– inter-segment	**2,614**	**(500)**	**(4,239)**	**2,125**	**—**
– *of which: net interest income/(expense)*	***18,137***	***11,867***	***5,303***	***(2,706)***	***32,601***
Change in expected credit losses and other credit impairment recoveries	**(1,137)**	**(1,858)**	**(587)**	**(10)**	**(3,592)**
Net operating income/(expense)	**23,230**	**14,357**	**14,772**	**(606)**	**51,753**
Total operating expenses	**(14,726)**	**(6,642)**	**(9,325)**	**227**	**(30,466)**
Operating profit/(loss)	**8,504**	**7,715**	**5,447**	**(379)**	**21,287**
Share of profit in associates and joint ventures	**29**	**1**	**(2)**	**2,695**	**2,723**
Adjusted profit before tax	**8,533**	**7,716**	**5,445**	**2,316**	**24,010**
	%	**%**	**%**	**%**	**%**
Share of HSBC's adjusted profit before tax	**35.5**	**32.1**	**22.7**	**9.7**	**100.0**
Adjusted cost efficiency ratio	**60.4**	**41.0**	**60.7**	**38.1**	**55.0**
Adjusted balance sheet data	**$m**	**$m**	**$m**	**$m**	**$m**
Loans and advances to customers (net)	**423,553**	**308,094**	**192,852**	**355**	**924,854**
Interests in associates and joint ventures	**508**	**15**	**108**	**28,623**	**29,254**
Total external assets	**889,450**	**606,698**	**1,321,076**	**149,306**	**2,966,530**
Customer accounts	**779,310**	**458,714**	**331,844**	**435**	**1,570,303**
	2021				
Net operating income/(expense) before change in expected credit losses and other credit impairment charges[1]	20,963	12,538	13,982	(463)	47,020
– external	20,725	12,423	15,590	(1,718)	47,020
– inter-segment	238	115	(1,608)	1,255	—
– *of which: net interest income/(expense)*	*13,458*	*8,308*	*3,844*	*(716)*	*24,894*
Change in expected credit losses and other credit impairment (charges)/ recoveries	213	225	313	3	754
Net operating income/(expense)	21,176	12,763	14,295	(460)	47,774
Total operating expenses	(14,489)	(6,554)	(9,250)	189	(30,104)
Operating profit/(loss)	6,687	6,209	5,045	(271)	17,670
Share of profit in associates and joint ventures	34	1	—	2,898	2,933
Adjusted profit before tax	6,721	6,210	5,045	2,627	20,603
	%	%	%	%	%
Share of HSBC's adjusted profit before tax	32.6	30.1	24.5	12.8	100.0
Adjusted cost efficiency ratio	69.1	52.3	66.2	40.8	64.0
Adjusted balance sheet data	$m	$m	$m	$m	$m
Loans and advances to customers (net)	461,047	330,683	198,779	688	991,197
Interests in associates and joint ventures	489	12	116	27,469	28,086
Total external assets	888,028	586,392	1,157,327	174,073	2,805,820
Customer accounts	819,319	480,201	322,435	592	1,622,547
	2020				
Net operating income/(expense) before change in expected credit losses and other credit impairment charges[1]	21,481	12,889	14,696	(218)	48,848
– external	19,521	13,278	17,635	(1,586)	48,848
– inter-segment	1,960	(389)	(2,939)	1,368	—
– *of which: net interest income/(expense)*	*14,752*	*8,997*	*4,314*	*(1,324)*	*26,739*
Change in expected credit losses and other credit impairment (charges)/ recoveries	(2,878)	(4,710)	(1,227)	—	(8,815)
Net operating income/(expense)	18,603	8,179	13,469	(218)	40,033
Total operating expenses	(14,536)	(6,475)	(8,895)	(539)	(30,445)
Operating profit/(loss)	4,067	1,704	4,574	(757)	9,588
Share of profit in associates and joint ventures	6	(1)	—	2,102	2,107
Adjusted profit before tax	4,073	1,703	4,574	1,345	11,695
	%	%	%	%	%
Share of HSBC's adjusted profit before tax	34.8	14.6	39.1	11.5	100.0
Adjusted cost efficiency ratio	67.7	50.2	60.5	(247.2)	62.3
Adjusted balance sheet data	$m	$m	$m	$m	$m
Loans and advances to customers (net)	436,105	320,084	211,510	1,151	968,850
Interests in associates and joint ventures	437	15	128	25,142	25,722
Total external assets	828,309	530,203	1,238,781	184,030	2,781,323
Customer accounts	788,043	439,889	310,757	540	1,539,229

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:

	2022 $m	2021 $m	2020 $m
Reported external net operating income by country/territory[1]	**51,727**	49,552	50,429
– UK	**11,767**	10,909	9,163
– Hong Kong	**15,894**	14,245	15,783
– US	**3,893**	3,795	4,474
– France	**136**	2,179	1,753
– other countries	**20,037**	18,424	19,256

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

Adjusted results reconciliation

	2022			2021				2020			
	Adjusted $m	**Significant items $m**	**Reported $m**	Adjusted $m	Currency translation $m	Significant items $m	Reported $m	Adjusted $m	Currency translation $m	Significant items $m	Reported $m
Revenue[1]	**55,345**	**(3,618)**	**51,727**	47,020	3,074	(542)	49,552	48,848	1,523	58	50,429
ECL	**(3,592)**	**—**	**(3,592)**	754	174	—	928	(8,815)	(2)	—	(8,817)
Operating expenses	**(30,466)**	**(2,864)**	**(33,330)**	(30,104)	(2,181)	(2,335)	(34,620)	(30,445)	(1,170)	(2,817)	(34,432)
Share of profit in associates and joint ventures	**2,723**	**—**	**2,723**	2,933	113	—	3,046	2,107	(48)	(462)	1,597
Profit/(loss) before tax	**24,010**	**(6,482)**	**17,528**	20,603	1,180	(2,877)	18,906	11,695	303	(3,221)	8,777

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

Adjusted balance sheet reconciliation

	2022	2021			2020		
	Reported and adjusted $m	Adjusted $m	Currency translation $m	Reported $m	Adjusted $m	Currency translation $m	Reported $m
Loans and advances to customers (net)	**924,854**	991,197	54,617	1,045,814	968,850	69,137	1,037,987
Interests in associates and joint ventures	**29,254**	28,086	1,523	29,609	25,722	962	26,684
Total external assets	**2,966,530**	2,805,820	152,119	2,957,939	2,781,323	202,841	2,984,164
Customer accounts	**1,570,303**	1,622,547	88,027	1,710,574	1,539,229	103,551	1,642,780

Adjusted profit reconciliation

	2022 $m	2021 $m	2020 $m
Year ended 31 Dec			
Adjusted profit before tax	**24,010**	20,603	11,695
Significant items	**(6,482)**	(2,877)	(3,221)
– customer redress programmes (revenue)	**8**	11	(21)
– disposals, acquisitions and investment in new businesses (revenue)[1]	**(2,799)**	—	(10)
– fair value movements on financial instruments[2]	**(579)**	(242)	264
– restructuring and other related costs (revenue)[3]	**(248)**	(307)	(170)
– customer redress programmes (operating expenses)	**31**	(49)	54
– disposals, acquisitions and investment in new businesses (operating expenses)	**(18)**	—	—
– impairment of goodwill and other intangible assets	**4**	(587)	(1,090)
– past service costs of guaranteed minimum pension benefits equalisation	**—**	—	(17)
– restructuring and other related costs (operating expenses)[4]	**(2,881)**	(1,836)	(1,908)
– settlements and provisions in connection with legal and other regulatory matters	**—**	—	(12)
– impairment of goodwill (share of profit in associates and joint ventures)[5]	**—**	—	(462)
– currency translation on significant items		133	151
Currency translation		1,180	303
Reported profit before tax	**17,528**	18,906	8,777

1 *Includes losses from classifying businesses as held for sale as part of the broader restructuring of our European business, of which $2.4bn relates to the planned sale of the retail banking operations in France in 2022.*
2 *Includes fair value movements on non-qualifying hedges and debit valuation adjustments on derivatives.*
3 *Comprises gains and losses relating to the business update in February 2020, including losses associated with the RWA reduction programme.*
4 *Includes impairment of software intangible assets of $128m (2021: $21m, 2020: $189m) of the total software intangible asset impairment of $147m (2021: $146m, 2020: $1,347m) and impairment of tangible assets of $332m (2021: $75m, 2020: $197m).*
5 *During 2020, The Saudi British Bank ('SABB'), an associate of HSBC, impaired the goodwill that arose following the merger with Alawwal bank in 2020. HSBC's post-tax share of the goodwill impairment was $462m.*

11 Trading assets

	2022 $m	2021 $m
Treasury and other eligible bills	**22,897**	23,110
Debt securities	**78,126**	89,944
Equity securities	**88,026**	109,614
Trading securities	**189,049**	222,668
Loans and advances to banks[1]	**8,769**	7,767
Loans and advances to customers[1]	**20,275**	18,407
Year ended 31 Dec	**218,093**	248,842

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 reported as financial liabilities designated 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

	2022				2021			
	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	**148,592**	**64,684**	**4,817**	**218,093**	180,423	65,757	2,662	248,842
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**15,978**	**13,019**	**16,066**	**45,063**	17,937	17,629	14,238	49,804
Derivatives	**2,917**	**279,265**	**1,964**	**284,146**	2,783	191,621	2,478	196,882
Financial investments	**182,231**	**71,621**	**2,965**	**256,817**	247,745	97,838	3,389	348,972
Liabilities								
Trading liabilities	**44,787**	**27,092**	**474**	**72,353**	63,437	20,682	785	84,904
Financial liabilities designated at fair value	**1,130**	**115,765**	**10,432**	**127,327**	1,379	136,243	7,880	145,502
Derivatives	**2,400**	**280,444**	**2,920**	**285,764**	1,686	186,290	3,088	191,064

The table below provides the fair value levelling of assets held for sale and liabilities of disposal groups that have been classified as held for sale in accordance with IFRS 5. For further details, see Note 23.

Financial instruments carried at fair value and bases of valuation – assets and liabilities held for sale

	2022				2021			
	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	**2,932**	**244**	**—**	**3,176**	—	—	—	—
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**—**	**14**	**47**	**61**	—	—	—	—
Derivatives	**—**	**866**	**—**	**866**	—	—	—	—
Financial investments	**11,184**	**—**	**—**	**11,184**	—	—	—	—
Liabilities								
Trading liabilities	**2,572**	**182**	**—**	**2,754**	—	—	—	—
Financial liabilities designated at fair value	**—**	**3,523**	**—**	**3,523**	—	—	—	—
Derivatives	**—**	**813**	**—**	**813**	—	—	—	—

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 2022							
Transfers from Level 1 to Level 2	**4,721**	**5,284**	**743**	**—**	**113**	**—**	**—**
Transfers from Level 2 to Level 1	**8,208**	**5,964**	**1,214**	**—**	**233**	**—**	**—**
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	—	—

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

	2022		2021	
	GBM	Corporate Centre	GBM	Corporate Centre
	$m	$m	$m	$m
Type of adjustment				
Risk-related	**650**	**40**	868	42
– bid-offer	**426**	**—**	412	—
– uncertainty	**86**	**—**	66	1
– credit valuation adjustment	**245**	**35**	228	35
– debit valuation adjustment	**(175)**	**—**	(92)	—
– funding fair value adjustment	**68**	**5**	254	6
Model-related	**61**	**—**	57	—
– model limitation	**61**	**—**	57	—
Inception profit (Day 1 P&L reserves)	**97**	**—**	106	—
At 31 Dec	**808**	**40**	1,031	42

The reduction in fair value adjustments was driven by changes to derivative exposures and the credit environment, including HSBC's own credit.

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 debit 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 debit 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	**647**	**19**	**15,652**	**—**	**16,318**	**92**	**—**	**—**	**92**
Asset-backed securities	**438**	**208**	**95**	**—**	**741**	**—**	**—**	**—**	**—**
Structured notes	**—**	**—**	**—**	**—**	**—**	**—**	**10,432**	**—**	**10,432**
Other derivatives	**—**	**—**	**—**	**1,964**	**1,964**	**—**	**—**	**2,920**	**2,920**
Other portfolios	**1,880**	**4,590**	**319**	**—**	**6,789**	**382**	**—**	**—**	**382**
At 31 Dec 2022	**2,965**	**4,817**	**16,066**	**1,964**	**25,812**	**474**	**10,432**	**2,920**	**13,826**
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
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

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 2022	**3,389**	**2,662**	**14,238**	**2,478**	**785**	**7,880**	**3,088**
Total gains/(losses) recognised in profit or loss	**(4)**	**(245)**	**159**	**390**	**(52)**	**(1,334)**	**1,014**
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	**—**	**(245)**	**—**	**390**	**(52)**	**—**	**1,014**
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**—**	**—**	**159**	**—**	**—**	**(1,334)**	**—**
– gains less losses from financial investments at fair value through other comprehensive income	**(4)**	**—**	**—**	**—**	**—**	**—**	**—**
Total gains/(losses) recognised in other comprehensive income ('OCI')[1]	**(325)**	**(137)**	**(217)**	**(219)**	**(11)**	**(345)**	**(226)**
– financial investments: fair value gains/ (losses)	**(203)**	**—**	**—**	**—**	**—**	**82**	**—**
– exchange differences	**(122)**	**(137)**	**(217)**	**(219)**	**(11)**	**(427)**	**(226)**
Purchases	**1,048**	**3,436**	**4,330**	**—**	**178**	**—**	**—**
New issuances	**1**	**—**	**—**	**—**	**8**	**4,183**	**—**
Sales	**(245)**	**(1,102)**	**(783)**	**—**	**(152)**	**(94)**	**—**
Settlements	**(463)**	**(1,273)**	**(1,729)**	**(918)**	**(644)**	**182**	**(993)**
Transfers out	**(523)**	**(442)**	**(39)**	**(409)**	**(18)**	**(1,296)**	**(632)**
Transfers in	**87**	**1,918**	**107**	**642**	**380**	**1,256**	**669**
At 31 Dec 2022	**2,965**	**4,817**	**16,066**	**1,964**	**474**	**10,432**	**2,920**
Unrealised gains/(losses) recognised in profit or loss relating to assets and liabilities held at 31 Dec 2021	**—**	**(100)**	**(148)**	**707**	**2**	**100**	**2,779**
– net income/(losses) from financial instruments held for trading or managed on a fair value basis	**—**	**(100)**	**—**	**707**	**2**	**—**	**2,779**
– changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	**—**	**—**	**(148)**	**—**	**—**	**100**	**—**
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/ (losses)	(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	—

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

	2022				2021			
	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]	264	(291)	–	–	143	(146)	—	—
Financial assets and liabilities designated and otherwise mandatorily measured at fair value through profit or loss	914	(911)	–	–	849	(868)	—	—
Financial investments	11	(11)	65	(55)	20	(20)	113	(112)
At 31 Dec	1,189	(1,213)	65	(55)	1,012	(1,034)	113	(112)

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 2022.

Quantitative information about significant unobservable inputs in Level 3 valuations

	Fair value				2022		2021	
					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	16,318	92	See below	See below				
Asset-backed securities	741	–						
– collateralised loan/debt obligation	188	–	Market proxy	Bid quotes	–	92	—	100
– other ABSs	553	–	Market proxy	Bid quotes	–	99	—	100
Structured notes	–	10,432						
– equity-linked notes	–	6,833	Model – Option model	Equity volatility	6%	142%	6%	124%
			Model – Option model	Equity correlation	32%	99%	22%	99%
– Foreign exchange-linked notes	–	2,694	Model – Option model	Foreign exchange volatility	3%	37%	1%	99%
– other	–	905						
Derivatives	1,964	2,920						
– interest rate derivatives	560	710						
securitisation swaps	259	209	Model – Discounted cash flow	Prepayment rate	5%	10%	5%	10%
long-dated swaptions	53	67	Model – Option model	Interest rate volatility	8%	53%	15%	35%
other	248	434						
– Foreign exchange derivatives	445	304						
Foreign exchange options	404	274	Model – Option model	Foreign exchange volatility	1%	46%	1%	99%
other	41	30						
– equity derivatives	850	1,658						
long-dated single stock options	415	502	Model – Option model	Equity volatility	7%	153%	4%	138%
other	435	1,156						
– credit derivatives	109	248						
Other portfolios	6,789	382						
– repurchase agreements	750	328	Model – Discounted cash flow	Interest rate curve	1%	9%	1%	5%
– other[1]	6,039	54						
At 31 Dec 2022	25,812	13,826						

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

	2022 $m	2021 $m
Valuation technique using observable inputs: Level 2		
Assets at 31 Dec		
– derivatives	**3,801**	2,811
– designated and otherwise mandatorily measured at fair value through profit or loss	**52,322**	51,408
Liabilities at 31 Dec		
– designated at fair value	**32,123**	32,418
– derivatives	**6,922**	1,220

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

	Carrying amount	Fair value: Quoted market price Level 1	Fair value: Observable inputs Level 2	Fair value: Significant unobservable inputs Level 3	Fair value: Total
	$m	$m	$m	$m	$m
At 31 Dec 2022					
Assets					
Loans and advances to banks	**104,882**	**—**	**104,074**	**814**	**104,888**
Loans and advances to customers	**924,854**	**—**	**8,768**	**904,288**	**913,056**
Reverse repurchase agreements – non-trading	**253,754**	**—**	**253,668**	**—**	**253,668**
Financial investments – at amortised cost	**168,746**	**90,629**	**67,419**	**626**	**158,674**
Liabilities					
Deposits by banks	**66,722**	**—**	**66,831**	**—**	**66,831**
Customer accounts	**1,570,303**	**—**	**1,570,209**	**—**	**1,570,209**
Repurchase agreements – non-trading	**127,747**	**—**	**127,500**	**—**	**127,500**
Debt securities in issue	**78,149**	**—**	**76,640**	**381**	**77,021**
Subordinated liabilities	**22,290**	**—**	**22,723**	**—**	**22,723**
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

Fair values of financial instruments not carried at fair value and bases of valuation – assets and disposal groups held for sale

	Carrying amount	Fair value: Quoted market price Level 1	Fair value: Observable inputs Level 2	Fair value: Significant unobservable inputs Level 3	Fair value: Total
	$m	$m	$m	$m	$m
At 31 Dec 2022					
Assets					
Loans and advances to banks	**253**	**—**	**257**	**—**	**257**
Loans and advances to customers	**80,687**	**—**	**111**	**78,048**	**78,159**
Reverse repurchase agreements – non-trading	**4,646**	**—**	**4,646**	**—**	**4,646**
Financial investments – at amortised cost	**6,165**	**6,042**	**—**	**—**	**6,042**
Liabilities					
Deposits by banks	**64**	**—**	**64**	**—**	**64**
Customer accounts	**85,274**	**—**	**85,303**	**—**	**85,303**
Repurchase agreements – non-trading	**3,266**	**—**	**3,266**	**—**	**3,266**
Debt securities in issue	**12,928**	**—**	**12,575**	**—**	**12,575**
Subordinated liabilities	**8**	**—**	**7**	**—**	**7**
At 31 Dec 2021					
Assets					
Loans and advances to banks	3	—	3	—	3
Loans and advances to customers	3,056	—	363	2,808	3,171
Liabilities					
Deposits by banks	87	—	87	—	87
Customer accounts	8,750	—	8,750	—	8,750

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

	2022		2021	
	Carrying amount $m	**Fair value[1] $m**	Carrying amount $m	Fair value[1] $m
Assets at 31 Dec				
Loans and advances to HSBC undertakings	**26,765**	**26,962**	25,108	25,671
Financial investments – at amortised cost	**19,466**	**19,314**	26,194	26,176
Liabilities at 31 Dec				
Debt securities in issue	**66,938**	**65,364**	67,483	69,719
Subordinated liabilities	**19,727**	**20,644**	17,059	21,066

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

	2022			2021		
	Designated at fair value $m	**Mandatorily measured at fair value $m**	**Total $m**	Designated at fair value $m	Mandatorily measured at fair value $m	Total $m
Securities	**3,079**	**38,529**	**41,608**	2,251	42,062	44,313
– treasury and other eligible bills	**649**	**95**	**744**	599	31	630
– debt securities	**2,430**	**3,969**	**6,399**	1,652	5,177	6,829
– equity securities	**—**	**34,465**	**34,465**	—	36,854	36,854
Loans and advances to banks and customers	**—**	**1,841**	**1,841**	—	4,307	4,307
Other	**—**	**1,614**	**1,614**	—	1,184	1,184
At 31 Dec	**3,079**	**41,984**	**45,063**	2,251	47,553	49,804

Financial statements

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 $m	Hedging $m	Trading $m	Hedging $m	Total $m	Trading $m	Hedging $m	Total $m
Foreign exchange	**8,434,453**	**38,924**	**122,203**	**525**	**122,728**	**123,088**	**166**	**123,254**
Interest rate	**15,213,232**	**276,589**	**285,438**	**5,066**	**290,504**	**287,877**	**3,501**	**291,378**
Equities	**570,410**	**—**	**9,325**	**—**	**9,325**	**9,176**	**—**	**9,176**
Credit	**183,995**	**—**	**1,091**	**—**	**1,091**	**1,264**	**—**	**1,264**
Commodity and other	**78,413**	**—**	**1,485**	**—**	**1,485**	**1,679**	**—**	**1,679**
Gross total fair values	**24,480,503**	**315,513**	**419,542**	**5,591**	**425,133**	**423,084**	**3,667**	**426,751**
Offset (Note 31)					**(140,987)**			**(140,987)**
At 31 Dec 2022	**24,480,503**	**315,513**	**419,542**	**5,591**	**284,146**	**423,084**	**3,667**	**285,764**
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 31)					(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

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 increased during 2022, 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 $m	Hedging $m	Trading $m	Hedging $m	Total $m	Trading $m	Hedging $m	Total $m
Foreign exchange	**60,630**	**—**	**502**	**—**	**502**	**1,683**	**—**	**1,683**
Interest rate	**34,322**	**81,873**	**2,386**	**913**	**3,299**	**826**	**4,413**	**5,239**
At 31 Dec 2022	**94,952**	**81,873**	**2,888**	**913**	**3,801**	**2,509**	**4,413**	**6,922**
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

Use of derivatives

For details regarding the use of derivatives, see page 220 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

	2022 $m	2021 $m
Unamortised balance at 1 Jan	**106**	104
Deferral on new transactions	**191**	311
Recognised in the income statement during the year:	**(192)**	(308)
– amortisation	**(112)**	(177)
– subsequent to unobservable inputs becoming observable	**(3)**	(4)
– maturity, termination or offsetting derivative	**(77)**	(127)
Exchange differences	**(8)**	(1)
Unamortised balance at 31 Dec[1]	**97**	106

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'.

Hedged risk components

HSBC designates a portion of cash flows of a financial instrument or a group of financial instruments for a specific interest rate or foreign currency risk component in a fair value or cash flow hedge. The designated risks and portions are either contractually specified or otherwise separately identifiable components of the financial instrument that are reliably measurable. Risk-free or benchmark interest rates generally are regarded as being both separately identifiable and reliably measurable, except for the Interest Rate Benchmark Reform Phase 2 transition where HSBC designates alternative benchmark rates as the hedged risk which may not have been separately identifiable upon initial designation, provided HSBC reasonably expects it will meet the requirement within 24 months from the first designation date. The designated risk components account for a significant portion of the overall changes in fair value or cash flows of the hedged items.

HSBC uses net investment hedges to hedge the structural foreign exchange risk related to net investments in foreign operations including subsidiaries and branches whose functional currencies are different from that of the parent. When hedging with foreign exchange forward contracts, the spot rate component of the foreign exchange risk is designated as the hedged risk.

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			
Hedged risk	Notional amount[1] $m	Assets $m	Liabilities $m	Balance sheet presentation	Change in fair value[2] $m
Interest rate[3]	**162,062**	**4,973**	**2,573**	**Derivatives**	**4,064**
At 31 Dec 2022	**162,062**	**4,973**	**2,573**		**4,064**
Interest rate[3]	90,556	1,637	1,410	Derivatives	1,330
At 31 Dec 2021	90,556	1,637	1,410		1,330

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]					
Hedged risk	Assets $m	Liabilities $m	Assets $m	Liabilities $m	Balance sheet presentation	Change in fair value[1] $m	Recognised in profit and loss $m	Profit and loss presentation
Interest rate[3]	**82,792**		**(5,100)**		**Financial investments measured at fair value through other comprehensive income**	**(8,005)**	**(59)**	**Net income from financial instruments held for trading or managed on a fair value basis**
	3,415		**(210)**		**Loans and advances to customers**	**(233)**		
	519		**(18)**		**Reverse repos**	**(17)**		
		49,180		**(2,006)**	**Debt securities in issue**	**4,138**		
		83		**—**	**Deposits by banks**	**(5)**		
At 31 Dec 2022	**86,726**	**49,263**	**(5,328)**	**(2,006)**		**(4,122)**	**(59)**	
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)	

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 $252m (2021: $1,061m) for FVOCI assets and liabilities of $916m (2021: $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]	**81,873**	**913**	**4,413**	**Derivatives**	**(5,599)**
At 31 Dec 2022	**81,873**	**913**	**4,413**		**(5,599)**
Interest rate[3]	45,358	1,715	74	Derivatives	(1,515)
At 31 Dec 2021	45,358	1,715	74		(1,515)

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 $81,873m (2021: $45,358m), of which the weighted-average maturity date is June 2028 and the weighted-average swap rate is 2.33% (2021: 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]			Change in fair value[1]	Recognised in profit and loss	
Hedged risk	Assets $m	Liabilities $m	Assets $m	Liabilities $m	Balance sheet presentation	$m	$m	Profit and loss presentation
Interest rate[3]		**68,223**		**(3,829)**	**Debt securities in issue**	**6,258**	**(34)**	**Net income from financial instruments held for trading or managed on a fair value basis**
	6,812		**(789)**		**Loans and advances to banks**	**(693)**		
At 31 Dec 2022	**6,812**	**68,223**	**(789)**	**(3,829)**		**5,565**	**(34)**	
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)	

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 $971m (2021: $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					Hedged item	Ineffectiveness	
		Carrying amount						
	Notional amount[1]	Assets	Liabilities	Balance sheet presentation	Change in fair value[2]	Change in fair value[3]	Recognised in profit and loss	Profit and loss presentation
	$m	$m	$m		$m	$m	$m	
Foreign currency	**8,781**	**418**	**166**	**Derivatives**	**659**	**659**	**—**	**Net income from financial instruments held for trading or managed on a fair value basis**
Interest rate	**114,527**	**93**	**950**	**Derivatives**	**(4,997)**	**(4,973)**	**(24)**	
At 31 Dec 2022	**123,308**	**511**	**1,116**		**(4,338)**	**(4,314)**	**(24)**	
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)	

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	Foreign currency
	$m	$m
Cash flow hedging reserve at 1 Jan 2022	**8**	**(205)**
Fair value gains/(losses)	**(4,973)**	**659**
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[1]	**325**	**(926)**
Income taxes	**1,123**	**28**
Others	**130**	**23**
Cash flow hedging reserve at 31 Dec 2022	**(3,387)**	**(421)**
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)

1 *Hedged items that have affected profit or loss are primarily recorded within interest income.*

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		Nominal amount	Amounts recognised in OCI	Hedge ineffectiveness recognised in income statement
	Derivative assets	Derivative liabilities			
	$m	$m	$m	$m	$m
2022					
Pound sterling-denominated structural foreign exchange	**264**	**—**	**14,000**	**1,447**	**—**
Swiss franc-denominated structural foreign exchange	**—**	**(21)**	**727**	**111**	**—**
Hong Kong dollar-denominated structural foreign exchange	**—**	**(19)**	**4,597**	**(2)**	**—**
Other structural foreign exchange[1]	**—**	**(117)**	**10,819**	**375**	**—**
Total	**264**	**(157)**	**30,143**	**1,931**	**—**
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)	25,906	(14)	—

1 *Other currencies include New Taiwan dollar, Singapore dollar, Canadian dollar, Omani rial, South Korean won, Indian rupee, Indonesian rupiah, euro, Mexican peso, Qatari riyal, Kuwaiti dinar, Saudi riyal 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 138 in the section 'Financial instruments impacted by the Ibor reform'. For further details on Ibor transition, see 'Top and emerging risks' on page 137.

During 2022, 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 completed by the second quarter of 2023. 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] $m	£ $m	$ $m	Other[3] $m	Total $m	$m	$m
Fair value hedges	**12,756**	**—**	**2,015**	**12,643**	**27,414**	**134,648**	**162,062**
Cash flow hedges	**8,865**	**—**	**—**	**27,830**	**36,695**	**77,832**	**114,527**
At 31 Dec 2022	**21,621**	**—**	**2,015**	**40,473**	**64,109**	**212,480**	**276,589**
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

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 $12,756m (31 December 2021: $6,178m) and 'Cash flow hedges' of $8,865m (31 December 2021: $7,954m).*
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
	€ $m	£ $m	$ $m	Other $m	Total $m	$m	$m
Fair value hedges	**15,210**	**—**	**2,000**	**1,336**	**18,546**	**63,327**	**81,873**
At 31 Dec 2022	**15,210**	**—**	**2,000**	**1,336**	**18,546**	**63,327**	**81,873**
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

16 Financial investments

Carrying amount of financial investments

	2022 $m	2021 $m
Financial investments measured at fair value through other comprehensive income	**256,817**	348,972
– treasury and other eligible bills	**86,749**	100,158
– debt securities	**168,264**	246,998
– equity securities	**1,696**	1,770
– other instruments	**108**	46
Debt instruments measured at amortised cost	**168,747**	97,302
– treasury and other eligible bills	**35,282**	21,634
– debt securities	**133,465**	75,668
At 31 Dec	**425,564**	446,274

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	**690**	**24**
Business facilitation	**954**	**28**
Others	**52**	**2**
At 31 Dec 2022	**1,696**	**54**
Investments required by central institutions	766	17
Business facilitation	954	24
Others	50	3
At 31 Dec 2021	1,770	44

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	**1.0**	**1.3**	**1.3**	**2.3**
US Government agencies	**4.7**	**0.9**	**3.2**	**2.5**
US Government-sponsored agencies	**1.1**	**1.7**	**2.1**	**1.7**
UK Government	**0.5**	**0.8**	**0.4**	**1.3**
Hong Kong Government	**1.3**	**1.6**	**1.7**	**—**
Other governments	**2.3**	**3.0**	**2.9**	**3.7**
Asset-backed securities	**6.7**	**0.2**	**2.7**	**2.4**
Corporate debt and other securities	**3.4**	**1.8**	**2.5**	**2.2**
Debt securities measured at amortised cost				
US Treasury	**10.2**	**3.4**	**3.8**	**2.8**
US Government agencies	**—**	**2.9**	**7.2**	**3.2**
US Government-sponsored agencies	**2.9**	**2.4**	**3.2**	**3.3**
UK Government	**—**	**—**	**0.7**	**0.9**
Hong Kong Government	**1.9**	**3.8**	**2.2**	**4.5**
Other governments	**2.1**	**4.2**	**3.6**	**3.8**
Asset-backed securities	**4.0**	**4.7**	**—**	**7.7**
Corporate debt and other securities	**3.2**	**3.2**	**3.3**	**4.0**

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 2022 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

	2022 $m	2021 $m
Debt instruments measured at amortised cost		
– treasury and other eligible bills	**12,796**	19,508
– debt securities	**6,670**	6,686
At 31 Dec	**19,466**	26,194

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**	**2.8**	**—**	**—**

The weighted average yield for each range of maturities is calculated by dividing the annualised interest income for the year ended 31 December 2022 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[1]

Financial assets pledged as collateral

	2022 $m	2021 $m
Treasury bills and other eligible securities	**18,364**	9,613
Loans and advances to banks	**10,198**	412
Loans and advances to customers	**27,627**	55,370
Debt securities	**60,542**	66,629
Equity securities	**26,902**	34,472
Other	**67,576**	45,396
Assets pledged at 31 Dec	**211,209**	211,892

Assets pledged as collateral include all assets categorised as encumbered in the disclosure on page 89 of the Pillar 3 Disclosures at 31 December 2022*, except for assets held for sale.*

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

	2022 $m	2021 $m
Trading assets	**56,894**	69,719
Financial investments	**27,841**	12,416
At 31 Dec	**84,735**	82,135

Collateral received[1]

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 $449,896m (2021: $476,455m). The fair value of any such collateral sold or repledged was $228,245m (2021: $271,582m).

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[1]

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 $m	Associated liabilities $m	Transferred assets $m	Associated liabilities $m	Net position $m
At 31 Dec 2022					
Repurchase agreements	**52,604**	**48,501**			
Securities lending agreements	**39,134**	**4,613**			
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)

1 *Excludes assets classified as held for sale.*

18 Interests in associates and joint ventures

Carrying amount of HSBC's interests in associates and joint ventures

	2022	2021
	$m	$m
Interests in associates	29,127	29,515
Interests in joint ventures	127	94
Interests in associates and joint ventures	29,254	29,609

Principal associates of HSBC

	2022		2021	
	Carrying amount	Fair value[1]	Carrying amount	Fair value[1]
	$m	$m	$m	$m
Bank of Communications Co., Limited	23,307	8,141	23,616	8,537
The Saudi British Bank	4,494	6,602	4,426	5,599

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 2022		
	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

Share of profit in associates and joint ventures

	2022	2021
	$m	$m
Bank of Communications Co., Limited	2,377	2,461
The Saudi British Bank	342	276
Other associates and joint ventures	4	309
Share of profit in associates and joint ventures	2,723	3,046

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 'Investments in Associates and Joint Ventures', 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 2022, the fair value of the Group's investment in BoCom had been below the carrying amount for approximately 11 years. As a result, the Group performed an impairment test on the carrying amount, which confirmed that there was no impairment at 31 December 2022 as the recoverable amount as determined by a value-in-use ('VIU') calculation was higher than the carrying value.

	At 31 Dec 2022			At 31 Dec 2021		
	VIU	Carrying value	Fair value	VIU	Carrying value	Fair value
	$bn	$bn	$bn	$bn	$bn	$bn
BoCom	23.5	23.3	8.1	24.8	23.6	8.5

The headroom, which is defined as the extent to which the VIU exceeds the carrying value, decreased by $1.0bn compared with 31 December 2021. The decrease in headroom was principally due to revisions to management's best estimates of BoCom's future earnings in the short to medium term, and the impact from BoCom's actual performance.

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.

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 'Impairment of Assets'. 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. Forecast earnings growth over the short to medium term are lower than recent (within the last five years) historical actual growth and reflect 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% (2021: 3%) for periods after 2026, which does not exceed forecast GDP growth in mainland China and is similar to forecasts by external analysts.
- Long-term asset growth rate: 3% (2021: 3%) for periods after 2026, which is the rate that assets are expected to grow to achieve long-term profit growth of 3%.
- Discount rate: 10.04% (2021: 10.03%), which is based on a capital asset pricing model ('CAPM'), using market data. The discount rate used is within the range of 8.4% to 10.4% (2021: 8.7% to 10.1%) indicated by the CAPM. While the CAPM range sits at the lower end of the range adopted by selected external analysts of 8.8% to 13.5% (2021: 9.9% to 13.5%), we continue to regard the CAPM range as the most appropriate basis for determining this assumption.
- Expected credit losses ('ECL') as a percentage of customer advances: ranges from 0.99% to 1.05% (2021: 0.98% to 1.12%) 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 2026, the ratio is 0.97% (2021: 0.97%), which is higher than BoCom's average ECL as a percentage of customer advances in recent years prior to the pandemic.
- Risk-weighted assets as a percentage of total assets: ranges from 61.0% to 64.4% (2021: 61.0% to 62.4%) in the short to medium term, reflecting higher risk-weights in the short term followed by an expected reversion to recent historical levels. For periods after 2026, the ratio is 61.0% (2021: 61.0%), which is similar to BoCom's actual results in recent years.
- Operating income growth rate: ranges from 1.9% to 7.7% (2021: 5.1% to 6.2%) in the short to medium term, which is lower than BoCom's actual results in recent years and is similar to the forecasts disclosed by external analysts. This reflects BoCom's most recent actual results, global trade tensions and industry developments in mainland China.
- Cost-income ratio: ranges from 35.5% to 36.3% (2021: 35.5% to 36.1%) 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 4.4% to 15.0% (2021: 6.8% to 15.0%) 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 2026, the rate is 15.0% (2021: 15.0%), 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 of 12.5% (2021: 12.5%) and tier 1 capital adequacy ratio of 9.5% (2021: 9.5%), based on BoCom's capital risk appetite and capital requirements respectively.

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 4 basis points
• Long-term asset growth rate	• Increase by 3 basis points
• Discount rate	• Increase by 5 basis points
• Expected credit losses as a percentage of customer advances	• Increase by 1 basis points
• Risk-weighted assets as a percentage of total assets	• Increase by 26 basis points
• Operating income growth rate	• Decrease by 5 basis points
• Cost-income ratio	• Increase by 15 basis points
• Long-term effective tax rate	• Increase by 46 basis points
• Capital requirements – capital adequacy ratio	• Increase by 5 basis points
• Capital requirements – tier 1 capital adequacy ratio	• Increase by 175 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 based on external analysts' forecasts, statutory requirements and other relevant external data sources, 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 2022						
Long-term profit growth rate[1]	**75**	**3.6**	**27.1**	**(71)**	**(2.7)**	**20.8**
Long-term asset growth rate[1]	**(71)**	**3.1**	**26.6**	**75**	**(4.1)**	**19.4**
Discount rate	**(164)**	**6.9**	**30.4**	**136**	**(3.7)**	**19.8**
Expected credit losses as a percentage of customer advances	**2022 to 2026: 95** **2027 onwards: 91**	**1.9**	**25.4**	**2022 to 2026: 120** **2027 onwards: 104**	**(2.9)**	**20.6**
Risk-weighted assets as a percentage of total assets	**(118)**	**0.1**	**23.6**	**239**	**(2.3)**	**21.2**
Operating income growth rate	**44**	**1.3**	**24.8**	**(83)**	**(2.5)**	**21.0**
Cost-income ratio	**(122)**	**1.0**	**24.5**	**174**	**(2.1)**	**21.4**
Long-term effective tax rate	**(426)**	**1.5**	**25.0**	**1,000**	**(3.6)**	**19.9**
Capital requirements – capital adequacy ratio	**—**	**—**	**23.5**	**191**	**(6.3)**	**17.2**
Capital requirements – tier 1 capital adequacy ratio	**—**	**—**	**23.5**	**266**	**(3.2)**	**20.3**
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	(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

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.*

Considering the interrelationship of the changes set out in the table above, management estimates that the reasonably possible range of VIU is $16.9bn to $28.7bn (2021: $19.0bn to $29.3bn). 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. All other long-term assumptions and the basis of the CMC have been kept unchanged when determining the reasonably possible range of the VIU. Impairment, if determined, would be recognised in the income statement. The impact on the Group's CET1 ratio is expected to be minimal in the event of an impairment, as the adverse impact on CET1 capital from the impairment would be offset by the favourable impact from a lower carrying value.

Selected financial information of BoCom

The statutory accounting reference date of BoCom is 31 December. For the year ended 31 December 2022, HSBC included the associate's results on the basis of the financial statements for the 12 months ended 30 September 2022, taking into account any known changes in the subsequent period from 1 October 2022 to 31 December 2022 that would have materially affected the results.

Selected balance sheet information of BoCom

	At 30 Sep	
	2022	2021
	$m	$m
Cash and balances at central banks	**114,390**	123,194
Due from and placements with banks and other financial institutions	**99,802**	98,932
Loans and advances to customers	**1,022,223**	993,956
Other financial assets	**549,364**	541,577
Other assets	**55,884**	47,679
Total assets	**1,841,663**	1,805,338
Due to and placements from banks and other financial institutions	**277,185**	287,057
Deposits from customers	**1,144,297**	1,099,266
Other financial liabilities	**237,521**	228,135
Other liabilities	**35,543**	40,070
Total liabilities	**1,694,546**	1,654,528
Total equity	**147,117**	150,810

Reconciliation of BoCom's total shareholders' equity to the carrying amount in HSBC's consolidated financial statements

	At 30 Sep	
	2022	2021
	$m	$m
HSBC's share of total shareholders' equity	**22,828**	23,097
Goodwill	**479**	519
Carrying amount	**23,307**	23,616

Selected income statement information of BoCom

	For the 12 months ended 30 Sep	
	2022	2021
	$m	$m
Net interest income	**25,314**	24,582
Net fee and commission income	**6,854**	7,170
Credit and impairment losses	**(9,712)**	(9,701)
Depreciation and amortisation	**(2,351)**	(2,297)
Tax expense	**(598)**	(1,045)
Profit for the year	**13,582**	14,199
Other comprehensive income	**(245)**	(368)
Total comprehensive income	**13,337**	13,831
Dividends received from BoCom	**749**	692

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 2022. The fair value of the Group's investment in SABB of $6.6bn was above the carrying amount of $4.5bn.

19 Investments in subsidiaries

Main subsidiaries of HSBC Holdings[1]

	At 31 Dec 2022		
	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 GmbH	**Germany**	**99.99**	**€1 Ordinary**
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**

1 *Main subsidiaries are either held directly or indirectly via intermediate holding companies.*

Details of the debt, subordinated debt and preference shares issued by the main subsidiaries to parties external to the Group are included in Note 26 'Debt securities in issue' and Note 29 '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.

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 2022, 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 33.

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.

Impairment testing of investments in subsidiaries

At each reporting period end, HSBC Holdings reviews investments in subsidiaries for indicators of impairment. An impairment is recognised when the carrying amount exceeds the recoverable amount for that investment. The recoverable amount is the higher of the investment's fair value less costs of disposal and its VIU, in accordance with the requirements of IAS 36. The VIU is calculated by discounting management's cash flow projections for the investment. The cash flows represent the free cash flows based on the subsidiary's binding capital requirements.

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: The cash flow projections for each investment are based on the latest approved plans, which include forecast capital available for distribution based on the capital requirements of the subsidiary, taking into account minimum and core capital requirements. For the impairment test at 31 December 2022, cash flow projections until the end of 2027 were considered in line with our internal planning horizon. Our cash flow projections include known and observable climate-related opportunities and costs associated with our sustainable products and operating model.
- Long-term growth rates: A long-term growth rate is used to extrapolate the free cash flows in perpetuity. The growth rate reflects inflation for the country or territory within which the investment operates, and is based on the long-term average growth rates.
- Discount rates: The rate used to discount the cash flows is based on the cost of capital assigned to each investment, which is derived using a CAPM. 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 investment are refined to reflect the rates of inflation for the countries or territories within which the investment operates. In addition, for the purposes of testing investments for impairment, management supplements this process by comparing the discount rates derived using the internally generated CAPM, with cost of capital rates produced by external sources for businesses operating in similar markets. The impacts from climate risk are included to the extent that they are observable in discount rates and asset prices.

The net increase in investments in subsidiaries was partly due to the reversal of impairment of HSBC Overseas Holdings (UK) Limited of $2.5bn. The recoverable amount of HSBC Overseas Holdings (UK) Limited is supported by the recoverable amounts of its subsidiaries, of which the principal subsidiaries are HSBC North America Holdings Limited, HSBC Bank Canada and HSBC Bank Bermuda Limited. As HSBC Overseas Holdings (UK) Limited has entered into a sales purchase agreement with Royal Bank of Canada to dispose of HSBC Bank Canada the sales purchase agreement has been used to support the recoverable amount of $10.8bn (inclusive of the preferred shares) under a fair value less costs of disposal basis. The fair value less costs of disposal of HSBC Bank Canada is at a $3.7bn premium to the book value recorded in HSBC Overseas Holdings (UK) Limited. The cumulative impairment for HSBC Overseas Holdings (UK) Limited at 31 December 2022 was $4.7bn (2021: $7.2bn). The carrying value was $32.8bn at 31 December 2022 (2021: $33.1bn). In 2022, in addition to the planned sale of our banking business in Canada, there has been demonstrable performance of the underlying subsidiaries and an increase in interest rate forecasts. These factors provide us with observable indications that HSBC Overseas Holdings (UK) Limited's value has increased, which has led to the reversal of impairment in HSBC Holdings. However, a distribution of the proceeds from the planned sale of HSBC Bank Canada to HSBC Holdings from HSBC Overseas Holdings (UK) Limited could lead to a future impairment.

Impairment test results

Investments	**Recoverable amount**	**Discount rate**	**Long-term growth**
At 31 Dec 2022	**$m**	**%**	**%**
HSBC North America Holdings Limited	**18,363**	**10.00**	**2.22**
HSBC Bank Bermuda Limited	**2,471**	**10.40**	**1.87**
At 31 Dec 2021			
HSBC North America Holdings Limited	20,560	9.20	3.50
HSBC Bank Bermuda Limited	1,643	9.50	1.71

Sensitivities of key assumptions in calculating VIU

At 31 December 2022, the recoverable amount of HSBC Overseas Holdings (UK) Limited remained sensitive to reasonably possible changes in key assumptions impacting its principal subsidiaries, notably HSBC North America Holdings Limited and HSBC Bank Bermuda Limited.

In making an estimate of reasonably possible changes to assumptions, management considers the available evidence in respect of each input to the model. These include the external range of observable discount rates, historical performance against forecast, and risks attaching to the key assumptions underlying cash flow.

The following table presents a summary of the key assumptions underlying the most sensitive inputs to the model for HSBC North America Holdings Limited and HSBC Bank Bermuda Limited, the key risks attaching to each, and details of a reasonably possible change to assumptions where, in the opinion of management, these could result in an impairment.

Reasonably possible changes in key assumptions

	Input	Key assumptions	Associated risks	Reasonably possible change
Investment				
HSBC North America Holdings Limited and HSBC Bank Bermuda Limited (subsidiaries of HSBC Overseas Holdings (UK) Limited)	Free cash flows projections	• Level of interest rates and yield curves. • Competitors' positions within the market.	• Strategic actions relating to revenue and costs are not achieved.	• Free cash flow projections decrease by 10%.
	Discount rate	• Discount rate used is a reasonable estimate of a suitable market rate for the profile of the business.	• External evidence arises to suggest that the rate used is not appropriate to the business.	• Discount rate increases by 1%.

Sensitivity of VIU to reasonably possible changes in key assumptions

In $bn (unless otherwise stated)	HSBC North America Holdings Limited	HSBC Bank Bermuda Limited
At 31 December 2022		
VIU	**18.4**	**2.5**
Impact on VIU		
100bps increase in the discount rate – single variable[1]	**(1.7)**	**(0.2)**
10% decrease in forecast profitability – single variable[1]	**(1.8)**	**(0.2)**

1 *The recoverable amount of HSBC Overseas Holding (UK) Limited represents the aggregate of recoverable amounts of the underlying subsidiaries. Single variable sensitivity analysis on a single subsidiary may therefore not be representative of the aggregate impact of the change in the variable.*

Subsidiaries with significant non-controlling interests

	2022	2021
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	**520**	708
Accumulated non-controlling interests of the subsidiary	**7,683**	7,597
Dividends paid to non-controlling interests	**361**	568
Summarised financial information:		
– total assets	**240,679**	230,866
– total liabilities	**218,892**	209,315
– net operating income before changes in expected credit losses and other credit impairment charges	**4,325**	4,280
– profit for the year	**1,375**	1,872
– total comprehensive income for the year	**1,269**	1,686

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 2022	**4.2**	**7.2**	**4.8**	**7.5**	**23.7**
At 31 Dec 2021	4.4	10.0	6.3	8.4	29.1

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 2022, Solitaire, HSBC's principal SIC, held $1.3bn of ABSs (2021: $1.6bn). It is currently funded entirely by commercial paper ('CP') issued to HSBC. At 31 December 2022, HSBC held $1.5bn of CP (2021: $1.8bn).

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 $6.2bn at 31 December 2022 (2021: $6.7bn). 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	85	338	1,321	41	1,785
500–2,000	8	102	929	4	1,043
2,000–5,000	—	28	388	—	416
5,000–25,000	—	18	206	—	224
25,000+	—	5	24	—	29
Number of entities at 31 Dec 2022	**93**	**491**	**2,868**	**45**	**3,497**
	$bn	$bn	$bn	$bn	$bn
Total assets in relation to HSBC's interests in the unconsolidated structured entities	2.5	10.7	19.7	2.6	35.5
– trading assets	—	0.4	0.1	—	0.5
– financial assets designated and otherwise mandatorily measured at fair value	—	9.7	18.7	—	28.4
– loans and advances to customers	2.5	—	0.5	1.9	4.9
– financial investments	—	0.6	0.4	—	1.0
– other assets	—	—	—	0.7	0.7
Total liabilities in relation to HSBC's interests in the unconsolidated structured entities	—	—	—	0.4	0.4
– other liabilities	—	—	—	0.4	0.4
Other off-balance sheet commitments	0.2	1.5	4.6	1.8	8.1
HSBC's maximum exposure at 31 Dec 2022	**2.7**	**12.2**	**24.3**	**4.0**	**43.2**
Total asset values of the entities ($m)					
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

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 115.

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 2022 and 2021 was not significant.

21 Goodwill and intangible assets

	2022 $m	2021 $m
Goodwill	**4,156**	5,033
Present value of in-force long-term insurance business	**9,900**	9,453
Other intangible assets[1]	**7,265**	6,136
At 31 Dec	**21,321**	20,622

1 *Included within other intangible assets is internally generated software with a net carrying value of $6,166m (2021: $5,430m). During the year, capitalisation of internally generated software was $2,663m (2021: $2,373m), impairment was $125m (2021: $137m) and amortisation was $1,447m (2021: $1,183m).*

Movement analysis of goodwill

	2022 $m	2021 $m
Gross amount		
At 1 Jan	**22,215**	23,135
Exchange differences	**(776)**	(905)
Reclassified to held for sale and additions[1]	**(2,485)**	—
Other	**11**	(15)
At 31 Dec	**18,965**	22,215
Accumulated impairment losses		
At 1 Jan	**(17,182)**	(17,254)
Impairment losses[2]	**—**	(587)
Exchange differences	**482**	659
Reclassified to held for sale[1]	**1,891**	—
At 31 Dec	**(14,809)**	(17,182)
Net carrying amount at 31 Dec	**4,156**	5,033

1 *Includes goodwill allocated to disposal groups as a result of the planned sales of our retail banking operations in France, banking business in Canada and branch operations in Greece, offset by goodwill arising from the acquisition of L&T Investment Management Limited. For further details, see Note 23.*

2 *Full impairment of goodwill allocated to Latin America – WPB.*

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 2022. No indicators of impairment were identified as part of these reviews.

Basis of the recoverable amount

The recoverable amount of all CGUs to which goodwill has been allocated was equal to its value in use ('VIU') 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 2022

	Carrying amount at 1 Oct 2022	***of which goodwill***	**Value in use at 1 Oct 2022**	**Discount rate**	**Growth rate beyond initial cash flow**	Carrying amount at 1 Oct 2021	*of which goodwill*	Value in use at 1 Oct 2021	Discount rate	Growth rate beyond initial cash flow projections
	$m	***$m***	**$m**	**%**	**%**	$m	*$m*	$m	%	%
Europe – WPB	**15,215**	***2,643***	**46,596**	**9.9**	**2.0**	18,780	*3,556*	29,799	9.2	1.8

At 1 October 2022, aggregate goodwill of $1,464m (1 October 2021: $2,108m) 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. For the 1 October 2022 impairment test, cash flow projections until the end of 2027 were considered, in line with our internal planning horizon. Key assumptions underlying cash flow projections reflect management's outlook on interest rates and inflation, as well as business strategy, including the scale of investment in technology and automation. Our cash flow projections include known and observable climate-related opportunities and costs associated with our sustainable products and operating model. 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. The impacts of climate-risk are included to the extent that they are observable in discount rates and asset prices.

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 2022, given the extent by which VIU exceeds carrying amount, the Europe – WPB CGU was not 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. None of the remaining CGUs are individually significant.

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.

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. Our cash flow projections include known and observable climate-related opportunities and costs associated with our sustainable products and operating model.

- 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. The impacts of climate-risk are included to the extent that they are observable in discount rates and asset prices.

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 2022, 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.

Financial Reporting 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 Financial Reporting Committee.

Movements in PVIF

	2022	2021
	$m	$m
At 1 Jan	**9,453**	9,435
Acquisitions	**271**	—
Change in PVIF of long-term insurance business	**263**	130
– value of new business written during the year	**1,322**	1,090
– expected return[1]	**(785)**	(903)
– assumption changes and experience variances (see below)	**(252)**	(105)
– other adjustments	**(22)**	48
Exchange differences and other movements	**(87)**	(112)
At 31 Dec	**9,900**	9,453

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:

- $875m decrease (2021: $59m increase) in PVIF due to rising interest rates, which is directly offset within the valuation of liabilities under insurance contracts;
- $72m decrease (2021: $324m decrease) 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
- $695m increase (2021: $160m increase) 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.

	2022		2021	
	Hong Kong	**France[1]**	Hong Kong	France[1]
	%	**%**	%	%
Weighted average risk-free rate	**3.85**	**2.80**	1.40	0.69
Weighted average risk discount rate	**7.33**	**4.44**	5.20	1.55
Expense inflation	**3.00**	**4.26**	3.00	1.80

1 *For 2022, the calculation of France's PVIF assumes a risk discount rate of 4.44% (2021: 1.55%) plus a risk margin of $100m (2021: $215m).*

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 237.

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 238.

22 Prepayments, accrued income and other assets

	2022 $m	2021 $m
Prepayments and accrued income	**10,316**	8,233
Settlement accounts	**19,565**	17,713
Cash collateral and margin receivables	**63,421**	42,171
Bullion	**15,752**	15,283
Endorsements and acceptances	**8,407**	11,229
Reinsurers' share of liabilities under insurance contracts (Note 4)	**4,257**	3,668
Employee benefit assets (Note 5)	**7,282**	10,269
Right-of-use assets	**2,219**	2,985
Owned property, plant and equipment	**10,365**	10,255
Other accounts	**15,282**	14,765
At 31 Dec	**156,866**	136,571

Prepayments, accrued income and other assets include $113,383m (2021: $91,045m) of financial assets, the majority of which are measured at amortised cost.

23 Assets held for sale and liabilities of disposal groups held for sale

	2022 $m	2021 $m
Held for sale at 31 December		
Disposal groups	**118,055**	2,921
Unallocated impairment losses[1]	**(2,385)**	—
Non-current assets held for sale	**249**	490
Assets held for sale	**115,919**	3,411
Liabilities of disposal groups held for sale	**114,597**	9,005

1 *This represents impairment losses in excess of the carrying value of the non-current assets, excluded from the measurement scope of IFRS 5.*

Disposal groups

Planned sale of our retail banking operations 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 operations in France. The sale, which is subject to regulatory approvals and the satisfaction of other relevant conditions, includes: HSBC Continental Europe's French retail banking operations; 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 framework agreement has a long-stop date of 31 May 2024, if the sale has not closed by that point, the agreement will terminate, although that date can be extended by either party to 30 November 2024 in certain circumstances or with the agreement of both parties. We have agreed a detailed plan with My Money Group with the aim of completing the sale in the second half of 2023, subject to regulatory approvals, agreement and implementation of necessary financing structures, and the completion of the operational transfer, including customer and data migrations. In this regard the framework agreement imposes certain obligations on the parties in planning for completion.

Given the scale and complexity of the business being sold, there is risk of delay in the implementation of this plan. The disposal group was classified as held for sale for the purposes of IFRS 5 as at 30 September 2022, reflecting the prevailing judgements concerning likelihood of the framework agreement's timetable being achieved. The assets and liabilities classified as held for sale were determined in accordance with the framework agreement, and are subject to change as the detailed transition plan is executed. This classification and consequential remeasurement resulted in an impairment loss of $2.4bn, which included impairment of goodwill of $0.4bn and related transaction costs. At 31 December 2022, we reassessed the likelihood of completion, taking account of the most recent correspondence with My Money Group concerning the implementation of the plan and related developments. As a result of this reassessment, the likelihood of completion in 2023 is judged to be highly probable. As such, and in accordance with IFRS 5, the disposal group continues to be classified as held for sale.

The disposal group will be remeasured at the lower of the carrying amount and fair value less costs to sell at each reporting period. Any remaining gains or losses not previously recognised, including from the recycling of foreign currency translation reserves and the reversal of any remaining deferred tax assets and liabilities, will be recognised on completion.

Planned sale of our banking business in Canada

On 29 November 2022, HSBC Holdings plc announced its wholly-owned subsidiary, HSBC Overseas Holdings (UK) Limited, entered into an agreement for the planned sale of its banking business in Canada to Royal Bank of Canada. Completion of the transaction is expected in late 2023, subject to regulatory and governmental approval.

The majority of the estimated gain on sale of $5.7bn (inclusive of the recycling of an estimated $0.6bn of accumulated foreign currency translation reserve losses) will be recognised on completion, reduced by earnings recognised by the Group in the period to completion. The estimated pre-tax profit on the sale will be recognised through a combination of the consolidation of HSBC Canada's results into the Group's financial statements (between the 30 June 2022 net asset reference date and until completion), and the remaining gain on sale recognised at completion. There would be no tax on the gain recognised at completion. At 31 December 2022, total assets of $90bn and total liabilities of $85bn met the criteria to be classified as held for sale in accordance with IFRS 5.

Planned sale of our branch operations in Greece

On 24 May 2022, HSBC Continental Europe signed a sale and purchase agreement for the planned sale of its branch operations in Greece to Pancreta Bank SA. Completion of the transaction is subject to regulatory approval, and is currently expected to occur in the first half of 2023. At 31 December 2022, the disposal group included $0.4bn of loans and advances to customers and $2.3bn of customer accounts, which met the criteria to be classified as held for sale. In the second quarter of 2022, we recognised a loss of $0.1bn, including goodwill impairment, upon reclassification as held for sale in accordance with IFRS 5. On completion accumulated foreign currency translation reserves will be recycled to the income statement.

Planned sale of our business in Russia

On 30 June 2022, following a strategic review of our business in Russia, HSBC Europe BV (a wholly-owned subsidiary of HSBC Bank plc) entered into an agreement for the planned sale of its wholly-owned subsidiary HSBC Bank (RR) (Limited Liability Company). Completion of the transaction is subject to regulatory and governmental approval, and is currently expected to occur in the first half of 2023. In 2022, a $0.3bn loss on the planned sale was recognised, upon reclassification as held for sale in accordance with IFRS 5. On completion accumulated foreign currency translation reserves will be recycled to the income statement.

At 31 December 2022, the major classes of assets and associated liabilities of disposal groups held for sale, including allocated impairment losses, were as follows:

	Canada	Retail banking operations in France	Other	Total
	$m	$m	$m	$m
Assets of disposal groups held for sale				
Cash and balances at central banks	**4,664**	**71**	**1,811**	**6,546**
Trading assets	**3,168**	**—**	**8**	**3,176**
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss	**13**	**47**	**1**	**61**
Derivatives	**866**	**—**	**—**	**866**
Loans and advances to banks	**99**	**—**	**154**	**253**
Loans and advances to customers	**55,197**	**25,029**	**350**	**80,576**
Reverse repurchase agreements – non-trading	**4,396**	**—**	**250**	**4,646**
Financial investments[1]	**17,243**	**—**	**106**	**17,349**
Goodwill	**225**	**—**	**—**	**225**
Prepayments, accrued income and other assets	**4,256**	**75**	**26**	**4,357**
Total assets at 31 December 2022	**90,127**	**25,222**	**2,706**	**118,055**
Liabilities of disposal groups held for sale				
Trading liabilities	**2,751**	**—**	**3**	**2,754**
Deposits by banks	**62**	**—**	**2**	**64**
Customer accounts	**60,606**	**22,348**	**2,320**	**85,274**
Repurchase agreements – non-trading	**3,266**	**—**	**—**	**3,266**
Financial liabilities designated at fair value	**—**	**3,523**	**—**	**3,523**
Derivatives	**806**	**7**	**—**	**813**
Debt securities in issue	**11,602**	**1,326**	**—**	**12,928**
Subordinated liabilities	**8**	**—**	**—**	**8**
Accruals, deferred income and other liabilities	**5,727**	**159**	**81**	**5,967**
Total liabilities at 31 December 2022	**84,828**	**27,363**	**2,406**	**114,597**
Expected date of completion	**Second half of 2023**	**Second half of 2023**		
Operating segment	**All global businesses**	**WPB**		

1 *Includes financial investments measured at fair value through other comprehensive income of $11,184m and debt instruments measured at amortised cost of $6,165m*

	Retail banking operations in France
	$m
Net assets/(liabilities) classified as held for sale[1]	**(2,063)**
Expected cash contribution[2]	**4,094**
Disposal group post-cash contribution[3]	**2,031**

1 *Excludes impairment loss allocated against the non-current assets that are in scope of IFRS 5 measurement of $78m.*
2 *The contributions are reported within 'Cash and balances at central banks' on the Group's consolidated balance sheet.*
3 *'Disposal group post-cash contribution' includes the net asset value of the transferring business of €1.6bn ($1.8bn) and $0.2bn of additional items to which a nil value is ascribed per the framework agreement.*

Under the financial terms of the planned transaction, HSBC Continental Europe will transfer the business with a net asset value of €1.6bn ($1.8bn), subject to adjustment (upwards or downwards) in certain circumstances, for a consideration of €1. Any required increase to the net asset value of the business to achieve the net asset value of €1.6bn ($1.8bn) will be satisfied by the inclusion of additional cash. The value of cash contribution will be determined by the net asset or liability position of the disposal group at the point of completion. Based upon the net liabilities of the disposal group at 31 December 2022, HSBC would be expected to include a cash contribution of $4.1bn as part of the planned transaction.

Completed business disposals

Mass market retail banking business in the US

On 26 May 2021, we announced our intention to exit our mass market retail banking business in the US, including our Personal and Advance propositions, as well as retail business banking, and rebranding 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 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. As a result of entering into these sale agreements, assets and liabilities related to the agreements were transferred to held for sale during the second quarter of 2021.

In February 2022, we completed the sale of the branch disposal group and recognised a net gain on sale of $0.2bn (including subsequent closing adjustments). Included in the sale were $2.1bn of loans and advances to customers and $6.9bn of customer accounts. Certain assets under management associated with our mass market retail banking operations were also transferred. The remaining branches not sold or rebranded have been closed.

Business acquisitions

The following acquisitions form part of our strategy to become a market leader in Asian wealth management:

- On 28 January 2022, HSBC Insurance (Asia-Pacific) Holdings Limited, a subsidiary of the Group, notified the shareholders of Canara HSBC Life Insurance Company Limited ('Canara HSBC') of its intention to increase its shareholding in Canara HSBC 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 Canara HSBC, as well as internal and regulatory approvals. Established in 2008, Canara HSBC is a life insurance company based in India.
- On 11 February 2022, HSBC Insurance (Asia-Pacific) Holdings Limited completed the acquisition of 100% of AXA Insurance Pte Limited ('AXA Singapore') for $0.5bn. A gain on acquisition of $0.1bn was recorded, reflecting the excess of the fair value of net assets acquired (gross assets of $4.5bn and gross liabilities of $3.9bn) over the acquisition price. The legal integration of AXA Singapore with HSBC's pre-existing insurance operations in the country concluded on 1 February 2023.
- On 6 April 2022, The Hongkong and Shanghai Banking Corporation Limited, a subsidiary of the Group, announced it had increased its shareholding in HSBC Qianhai Securities Limited, a partially-owned subsidiary, for $0.2bn from 51% to 90%.
- On 23 June 2022, HSBC Insurance (Asia) Limited, a subsidiary of the Group, acquired the remaining 50% equity interest in HSBC Life Insurance Company Limited for $0.2bn. Headquartered in Shanghai, HSBC Life Insurance Company Limited offers a comprehensive range of insurance solutions covering annuity, whole life, critical illness and unit-linked insurance products.
- On 25 November 2022, HSBC Asset Management (India) Private Ltd, a subsidiary of the Group, completed the acquisition of L&T Investment Management Limited from L&T Finance Holdings Limited for $0.4bn, recognised primarily as intangibles and goodwill. L&T Investment Management Limited is the investment manager of the L&T Mutual Fund, with assets under management of $9.4bn on completion.

24 Trading liabilities

	2022 $m	2021 $m
Deposits by banks[1]	**9,332**	4,243
Customer accounts[1]	**10,724**	9,424
Other debt securities in issue (Note 26)	**978**	1,792
Other liabilities – net short positions in securities	**51,319**	69,445
At 31 Dec	**72,353**	84,904

1 *'Deposits by banks' and 'Customer accounts' include fair value repos, stock lending and other amounts.*

25 Financial liabilities designated at fair value

HSBC

	2022 $m	2021 $m
Deposits by banks and customer accounts[1]	**19,171**	16,703
Liabilities to customers under investment contracts	**5,380**	5,938
Debt securities in issue (Note 26)	**93,140**	112,761
Subordinated liabilities (Note 29)	**9,636**	10,100
At 31 Dec	**127,327**	145,502

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 $8,124m less than the contractual amount at maturity (2021: $827m more). The cumulative amount of change in fair value attributable to changes in credit risk was a profit of $234m (2021: loss of $2,084m).

HSBC Holdings

	2022	2021
	$m	$m
Debt securities in issue (Note 26)	25,423	26,818
Subordinated liabilities (Note 29)	6,700	5,600
At 31 Dec	**32,123**	32,418

The carrying amount of financial liabilities designated at fair value was $2,405m less than the contractual amount at maturity (2021: $1,766m more). The cumulative amount of change in fair value attributable to changes in credit risk was a loss of $516m (2021: $951m).

26 Debt securities in issue

HSBC

	2022	2021
	$m	$m
Bonds and medium-term notes	145,240	166,537
Other debt securities in issue	27,027	26,573
Total debt securities in issue	**172,267**	193,110
Included within:		
– trading liabilities (Note 24)	(978)	(1,792)
– financial liabilities designated at fair value (Note 25)	(93,140)	(112,761)
At 31 Dec	**78,149**	78,557

HSBC Holdings

	2022	2021
	$m	$m
Debt securities	92,361	94,301
Included within:		
– financial liabilities designated at fair value (Note 25)	(25,423)	(26,818)
At 31 Dec	**66,938**	67,483

27 Accruals, deferred income and other liabilities

	2022	2021
	$m	$m
Accruals and deferred income	12,353	10,466
Settlement accounts	18,176	15,226
Cash collateral and margin payables	70,292	50,226
Endorsements and acceptances	8,379	11,232
Employee benefit liabilities (Note 5)	1,096	1,607
Lease liabilities	2,767	3,586
Other liabilities	20,177	22,430
At 31 Dec	**133,240**	114,773

Accruals, deferred income and other liabilities include $125,890m (2021: $111,887m) of financial liabilities, the majority of which are measured at amortised cost.

28 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 2022	383	619	386	558	1,946
Additions	434	271	60	206	971
Amounts utilised	(288)	(393)	(106)	(168)	(955)
Unused amounts reversed	(87)	(82)	(109)	(125)	(403)
Exchange and other movements	3	(6)	(36)	(74)	(113)
At 31 Dec 2022	**445**	**409**	**195**	**397**	**1,446**
Contractual commitments[1]					
At 1 Jan 2022					620
Net change in expected credit loss provision and other movements					(108)
At 31 Dec 2022					**512**
Total provisions					
At 31 Dec 2021					2,566
At 31 Dec 2022					**1,958**

	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

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 35. 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.

For further details of the impact of IFRS 9 on undrawn loan commitments and financial guarantees, presented in 'Contractual commitments', see Note 33. 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 163.

29 Subordinated liabilities

HSBC's subordinated liabilities

	2022	2021
	$m	$m
At amortised cost	**22,290**	20,487
– subordinated liabilities	**20,547**	18,640
– preferred securities	**1,743**	1,847
Designated at fair value (Note 25)	**9,636**	10,100
– subordinated liabilities	**9,636**	10,100
– preferred securities	**—**	—
At 31 Dec	**31,926**	30,587
Issued by HSBC subsidiaries	**6,094**	9,112
Issued by HSBC Holdings	**25,832**	21,475

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	2022 $m	2021 $m
Additional tier 1 capital securities guaranteed by HSBC Holdings[1,2]					
$900m	10.176% non-cumulative step-up perpetual preferred securities, series 2[3]	Jun 2030		**900**	900
				900	900
Additional tier 1 capital securities guaranteed by HSBC Bank plc[1,2]					
£700m	5.844% non-cumulative step-up perpetual preferred securities[4,5]	Nov 2031		**684**	947
				684	947
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[6]	—	May 2025	**170**	300
				1,720	1,850
£300m	6.50% subordinated notes[7]	—	Jul 2023	**162**	406
£350m	5.375% callable subordinated step-up notes[2,7,8]	Nov 2025	Nov 2030	**73**	539
£500m	5.375% subordinated notes[7]	—	Aug 2033	**186**	900
£225m	6.25% subordinated notes[7]	—	Jan 2041	**56**	303
£600m	4.75% subordinated notes[7]	—	Mar 2046	**230**	805
				707	2,953
				2,427	4,803
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[2,9]	Nov 2022	Nov 2027	**—**	120
				—	120
Tier 2 securities issued by HSBC USA Inc.					
$250m	7.20% subordinated debentures[2]	—	Jul 2097	**223**	222
				223	222
Tier 2 securities issued by HSBC Bank USA, N.A.					
$1,000m	5.875% subordinated notes[10]	—	Nov 2034	**339**	456
$750m	5.625% subordinated notes[10]	—	Aug 2035	**366**	489
$700m	7.00% subordinated notes	—	Jan 2039	**700**	697
				1,405	1,642
Tier 2 securities issued by HSBC Bank Canada					
	Other subordinated liabilities each less than $150m[2,11]	Oct 1996	Nov 2083	**—**	9
				—	9
Securities issued by other HSBC subsidiaries					
Other subordinated liabilities each less than $200m[12]				**55**	69
Subordinated liabilities issued by HSBC subsidiaries at 31 Dec				**6,094**	9,112

1 See paragraph below, 'Guaranteed by HSBC Holdings or HSBC Bank plc'.
2 These securities are ineligible for inclusion in the capital base of HSBC.
3 The interest rate payable after June 2030 is the sum of the three-month Libor plus 4.98%.
4 The interest rate payable after November 2031 is the sum of the compounded daily Sonia rate plus 2.0366%.
5 The value of the security partially decreased as a result of a fair value hedge gain. The instrument was held at amortised cost in 2021.
6 HSBC Bank plc tendered for this security in November 2022. The principal balance is $180m. The original notional value of the security was $300m.
7 HSBC Bank plc tendered for these securities in November 2022. The principal balances are £135m, £61m, £157m, £70m and £237m, respectively. The original notional values of these securities were £300m, £350m, £500m, £225m and £600m respectively.
8 These securities qualified as tier 2 capital for HSBC under CRR II until 31 December 2021 by virtue of the application of grandfathering provisions. The interest rate payable after November 2025 is the sum of the compounded daily Sonia rate plus 1.6193%.
9 These securities were fully repaid in November 2022.
10 HSBC tendered for these securities in November 2019. The principal balances are $357m and $383m respectively. The original notional values of these securities were $1,000m and $750m, respectively.
11 Liability accounts for HSBC Bank Canada have been reclassified to 'Liabilities of disposal groups held for sale'.
12 These securities are included in the capital base of HSBC, in accordance with the grandfathering provisions under CRR II. In 2022, securities of $11m matured and were redeemed.

HSBC Holdings' subordinated liabilities

	2022 $m	2021 $m
At amortised cost	**19,727**	17,059
Designated at fair value (Note 25)	**6,700**	5,600
At 31 Dec	**26,427**	22,659

HSBC Holdings' subordinated liabilities in issue

		First call date	Maturity date	2022 $m	2021 $m
Tier 2 securities issued by HSBC Holdings					
Amounts owed to third parties					
$2,000m	4.25% subordinated notes[2,3]	—	Mar 2024	**1,941**	2,072
$1,500m	4.25% subordinated notes[2]	—	Aug 2025	**1,450**	1,615
$1,500m	4.375% subordinated notes[2]	—	Nov 2026	**1,450**	1,641
$264m	7.625% subordinated notes[1,4]	—	May 2032	**308**	536
$223m	7.625% subordinated notes[2,6]	—	May 2032	**223**	—
$125m	7.35% subordinated notes[1,4]	—	Nov 2032	**143**	241
$97m	7.35% subordinated notes[2,6]	—	Nov 2032	**97**	—
$1,431m	6.50% subordinated notes[1,5]	—	May 2036	**1,461**	2,032
$569m	6.50%subordinated notes[2,6]	—	May 2036	**568**	—
$1,515m	6.50% subordinated notes[1,5]	—	Sep 2037	**1,178**	2,825
$985m	6.50% subordinated notes[2,6]	—	Sep 2037	**977**	—
$961m	6.80% subordinated notes[1,5]	—	Jun 2038	**953**	1,491
$539m	6.80% subordinated notes[2,6]	—	Jun 2038	**540**	—
$1,500m	5.25% subordinated notes[2]	—	Mar 2044	**1,447**	1,946
$2,000m	4.762% subordinated notes[2]	Mar 2032	Mar 2033	**1,766**	—
$2,000m	8.113% subordinated notes[2]	Nov 2032	Nov 2033	**2,008**	—
£650m	5.75% subordinated notes[2]	—	Dec 2027	**775**	1,040
£650m	6.75% subordinated notes[2]	—	Sep 2028	**816**	877
£750m	7.00% subordinated notes[2]	—	Apr 2038	**817**	1,082
£900m	6.00% subordinated notes[2]	—	Mar 2040	**776**	1,320
£1,000m	8.201% subordinated notes[2]	Aug 2029	Nov 2034	**1,252**	—
€1,500m	3.0% subordinated notes[2]	—	Jun 2025	**1,492**	1,737
€1,000m	3.125% subordinated notes[2]	—	Jun 2028	**991**	1,304
€1,250m	6.364% subordinated notes[2]	Nov 2027	Nov 2032	**1,316**	—
SGD900m	5.25%subordinated notes[2]	Jun 2027	Jun 2032	**694**	—
JPY11,900m	2.50% subordinated notes[2]	Sep 2027	Sep 2032	**88**	—
				25,527	21,759
Amounts owed to HSBC undertakings					
$900m	10.176% subordinated step-up cumulative notes	Jun 2030	Jun 2040	**900**	900
				900	900
At 31 Dec				**26,427**	22,659

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.
4 These securities were subjected to a tender and an exchange offer exercise in September 2022. The original principal amounts were $488m and $222m, respectively, and are now $264m and $125m.
5 These securities were subjected to an exchange offer exercise in September 2022. The original principal amounts were $2,000m, $2,500m and $1,500m, respectively, and are now $1,431m, $1,515m and $961m.
6 These subordinated notes were issued under an exchange offer exercise in September 2022.

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.

30 Maturity analysis of assets, liabilities and off-balance sheet commitments

The table on page 397 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 included in 'other financial liabilities', 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 238. 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	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	327,002	—	—	—	—	—	—	—	327,002
Items in the course of collection from other banks	7,297	—	—	—	—	—	—	—	7,297
Hong Kong Government certificates of indebtedness	43,787	—	—	—	—	—	—	—	43,787
Trading assets	213,234	1,333	1,343	338	425	808	222	390	218,093
Financial assets designated or otherwise mandatorily measured at fair value	2,778	101	370	658	(53)	645	2,005	38,559	45,063
Derivatives	281,710	133	30	21	64	261	1,052	875	284,146
Loans and advances to banks	72,241	13,963	8,364	880	2,344	3,058	3,900	132	104,882
Loans and advances to customers	139,935	75,487	58,983	35,642	33,738	100,027	173,306	307,736	924,854
– personal	41,835	9,142	6,664	5,754	5,779	18,375	51,104	273,487	412,140
– corporate and commercial	84,956	60,064	45,719	24,427	22,627	68,514	108,590	31,135	446,032
– financial	13,144	6,281	6,600	5,461	5,332	13,138	13,612	3,114	66,682
Reverse repurchase agreements – non-trading	171,173	51,736	16,164	5,840	2,776	3,999	2,066	—	253,754
Financial investments	46,997	79,912	31,629	12,301	13,581	41,968	79,410	119,766	425,564
Assets held for sale[1]	33,781	3,755	3,452	3,044	3,263	15,369	40,017	14,697	117,378
Accrued income and other financial assets	99,409	6,249	3,772	616	777	546	303	1,708	113,380
Financial assets at 31 Dec 2022	1,439,344	232,669	124,107	59,340	56,915	166,681	302,281	483,863	2,865,200
Non-financial assets	—	—	—	—	—	—	—	101,330	101,330
Total assets at 31 Dec 2022	1,439,344	232,669	124,107	59,340	56,915	166,681	302,281	585,193	2,966,530
Off-balance sheet commitments received									
Loan and other credit-related commitments	27,340	—	—	—	—	—	—	—	27,340
Financial liabilities									
Hong Kong currency notes in circulation	43,787	—	—	—	—	—	—	—	43,787
Deposits by banks	46,994	359	3,510	205	136	1,455	13,737	326	66,722
Customer accounts	1,388,297	93,108	47,712	14,244	17,295	4,719	4,607	321	1,570,303
– personal	657,413	55,252	35,430	10,431	12,374	2,835	2,351	2	776,088
– corporate and commercial	555,539	31,624	10,385	3,080	3,824	1,667	2,146	274	608,539
– financial	175,345	6,232	1,897	733	1,097	217	110	45	185,676
Repurchase agreements – non-trading	121,193	3,804	685	170	645	1,250	—	—	127,747
Items in the course of transmission to other banks	7,864	—	—	—	—	—	—	—	7,864
Trading liabilities	66,027	5,668	281	113	113	116	35	—	72,353
Financial liabilities designated at fair value	16,431	7,399	6,561	4,307	5,326	19,287	34,885	33,131	127,327
– debt securities in issue: covered bonds	—	—	—	—	—	—	—	—	—
– debt securities in issue: unsecured	7,057	3,621	4,792	3,156	4,289	16,234	29,940	23,510	92,599
– subordinated liabilities and preferred securities	—	—	—	—	—	1,971	3,675	3,990	9,636
– other	9,374	3,778	1,769	1,151	1,037	1,082	1,270	5,631	25,092
Derivatives	284,414	73	18	46	57	171	849	136	285,764
Debt securities in issue	4,514	7,400	7,476	4,745	3,585	9,198	19,240	21,991	78,149
– covered bonds	—	—	—	—	—	—	601	—	601
– otherwise secured	705	28	40	38	36	124	656	1,346	2,973
– unsecured	3,809	7,372	7,436	4,707	3,549	9,074	17,983	20,645	74,575
Liabilities of disposal groups held for sale[2]	76,928	4,342	5,374	6,599	8,606	2,343	8,653	1,479	114,324
Accruals and other financial liabilities	104,224	9,384	4,785	1,022	1,626	1,111	2,018	1,720	125,890
Subordinated liabilities	—	—	11	160	—	—	1,689	20,430	22,290
Total financial liabilities at 31 Dec 2022	2,160,673	131,537	76,413	31,611	37,389	39,650	85,713	79,534	2,642,520
Non-financial liabilities	—	—	—	—	—	—	—	127,982	127,982
Total liabilities at 31 Dec 2022	2,160,673	131,537	76,413	31,611	37,389	39,650	85,713	207,516	2,770,502
Off-balance sheet commitments given									
Loan and other credit-related commitments	825,781	184	75	59	210	242	975	328	827,854
– personal	242,953	2	3	—	110	199	811	300	244,378
– corporate and commercial	449,843	176	72	59	84	43	163	28	450,468
– financial	132,985	6	—	—	16	—	1	—	133,008

1 *Unallocated impairment losses in relation to disposal groups of $2.4bn and non-financial assets of $1bn that are both are presented within assets held for sale on the balance sheet have been included within non-financial assets in the table above.*

2 *$0.3bn of non-financial liabilities that are presented within liabilities of disposal groups held for sale on the balance sheet have been included within non-financial liabilities in the table above.*

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	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 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
Assets held for sale[1]	58	—	—	—	180	11	549	2,033	2,831
Accrued income and other financial assets	79,019	5,932	2,935	536	357	254	263	1,689	90,985
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
Liabilities of disposal groups held for sale	8,753	6	9	9	8	31	68	11	8,895
Accruals and other financial liabilities	82,996	10,311	5,621	1,094	1,064	1,917	2,339	2,818	108,160
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

HSBC Holdings

Maturity analysis of assets, liabilities and off-balance sheet commitments (continued)

	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 at bank and in hand:									
– balances with HSBC undertakings	3,210	—	—	—	—	—	—	—	3,210
Derivatives	2,889	—	—	—	—	—	796	116	3,801
Loans and advances to HSBC undertakings	—	2,163	240	—	—	2,035	4,414	17,913	26,765
Financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value	—	—	—	—	—	9,007	16,230	27,085	52,322
Financial investments	1,517	2,712	8,870	1,020	2,194	3,153	—	—	19,466
Accrued income and other financial assets	68	4,147	179	90	4	—	14	—	4,502
Total financial assets at 31 Dec 2022	7,684	9,022	9,289	1,110	2,198	14,195	21,454	45,114	110,066
Non-financial assets	—	—	—	—	—	—	—	171,035	171,035
Total assets at 31 Dec 2022	7,684	9,022	9,289	1,110	2,198	14,195	21,454	216,149	281,101
Financial liabilities									
Amounts owed to HSBC undertakings	48	266	—	—	—	—	—	—	314
Financial liabilities designated at fair value	—	—	—	—	—	1,447	16,459	14,217	32,123
– debt securities in issue	—	—	—	—	—	1,447	12,784	11,192	25,423
– subordinated liabilities and preferred securities	—	—	—	—	—	—	3,675	3,025	6,700
Derivatives	2,540	—	35	—	102	460	1,638	2,147	6,922
Debt securities in issue	—	—	1,972	448	714	11,046	25,380	27,378	66,938
Accruals and other financial liabilities	722	450	648	61	35	—	14	31	1,961
Subordinated liabilities	—	—	—	—	—	1,941	1,492	16,294	19,727
Total financial liabilities 31 Dec 2022	3,310	716	2,655	509	851	14,894	44,983	60,067	127,985
Non-financial liabilities	—	—	—	—	—	—	—	8	8
Total liabilities at 31 Dec 2022	3,310	716	2,655	509	851	14,894	44,983	60,075	127,993
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
Loans and advances to HSBC undertakings designated at fair value	—	1,759	250	1,019	—	5,987	19,455	22,938	51,408
Financial investments in HSBC undertakings	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 at 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

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, loan 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	**47,082**	**406**	**4,024**	**16,050**	**359**	**67,921**
Customer accounts	**1,387,125**	**96,474**	**80,608**	**9,961**	**346**	**1,574,514**
Repurchase agreements – non-trading	**121,328**	**3,852**	**1,535**	**1,268**	**—**	**127,983**
Trading liabilities	**72,353**	**—**	**—**	**—**	**—**	**72,353**
Financial liabilities designated at fair value	**16,687**	**7,859**	**18,740**	**63,606**	**43,475**	**150,367**
Derivatives	**283,512**	**171**	**1,181**	**2,222**	**1,059**	**288,145**
Debt securities in issue	**4,329**	**8,217**	**17,522**	**34,283**	**26,428**	**90,779**
Subordinated liabilities	**37**	**168**	**1,395**	**7,321**	**32,946**	**41,867**
Other financial liabilities[1]	**153,597**	**8,670**	**5,994**	**3,230**	**1,704**	**173,195**
	2,086,050	**125,817**	**130,999**	**137,941**	**106,317**	**2,587,124**
Loan and other credit-related commitments	**825,781**	**184**	**344**	**1,217**	**328**	**827,854**
Financial guarantees[2]	**18,696**	**25**	**62**	**—**	**—**	**18,783**
At 31 Dec 2022	**2,930,527**	**126,026**	**131,405**	**139,158**	**106,645**	**3,433,761**
Proportion of cash flows payable in period	**85%**	**4%**	**4%**	**4%**	**3%**	
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[1]	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[2]	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%	

1 *Excludes financial liabilities of disposal groups.*
2 *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 2022, 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	**48**	**266**	**—**	**—**	**—**	**314**
Financial liabilities designated at fair value	**11**	**72**	**1,139**	**22,921**	**19,196**	**43,339**
Derivatives	**1,182**	**177**	**1,089**	**4,231**	**1,321**	**8,000**
Debt securities in issue	**—**	**544**	**4,899**	**44,608**	**32,540**	**82,591**
Subordinated liabilities	**46**	**161**	**1,068**	**8,262**	**27,045**	**36,582**
Other financial liabilities	**721**	**458**	**745**	**14**	**31**	**1,969**
	2,008	**1,678**	**8,940**	**80,036**	**80,133**	**172,795**
Loan commitments	**—**	**—**	**—**	**—**	**—**	**—**
Financial guarantees[1]	**17,707**	**—**	**—**	**—**	**—**	**17,707**
At 31 Dec 2022	**19,715**	**1,678**	**8,940**	**80,036**	**80,133**	**190,502**
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

1 *Excludes performance guarantee contracts to which the impairment requirements in IFRS 9 are not applied.*

31 Offsetting of financial assets and financial liabilities

In the offsetting of financial assets and financial liabilities, the net amount is reported in the balance sheet when the offset criteria are met. This is achieved when there is a legally enforceable right to offset the recognised amounts and there is either an intention to settle on a net basis, or realise the asset and settle the liability simultaneously.

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
- cash and non-cash collateral (debt securities and equities) has been received/pledged for derivatives and reverse repurchase/repurchase, stock borrowing/lending and similar agreements to cover net exposure in the event of a default or other predetermined events.

The effect of over-collateralisation is excluded.

'Amounts not subject to enforceable netting agreements' include contracts executed in jurisdictions where the rights of offset may not be upheld under the local bankruptcy laws, and transactions where a legal opinion evidencing enforceability of the right of offset may not have been sought, or may have been unable to obtain.

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, including non-cash collateral[1]	Cash collateral	Net amount	Amounts not subject to enforceable netting arrangements[2]	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Financial assets								
Derivatives (Note 15)[3]	**419,006**	**(140,987)**	**278,019**	**(236,373)**	**(36,486)**	**5,160**	**6,127**	**284,146**
Reverse repos, stock borrowing and similar agreements classified as:[4]								
– trading assets	**24,372**	**(236)**	**24,136**	**(24,106)**	**(29)**	**1**	**1,367**	**25,503**
– non-trading assets	**335,193**	**(102,888)**	**232,305**	**(231,432)**	**(449)**	**424**	**21,689**	**253,994**
Loans and advances to customers[5]	**28,337**	**(12,384)**	**15,953**	**(13,166)**	**—**	**2,787**	**267**	**16,220**
At 31 Dec 2022	**806,908**	**(256,495)**	**550,413**	**(505,077)**	**(36,964)**	**8,372**	**29,450**	**579,863**
Derivatives (Note 15)[3]	244,694	(53,378)	191,316	(151,304)	(36,581)	3,431	5,566	196,882
Reverse repos, stock borrowing and similar agreements classified as:[4]								
– trading assets	21,568	(222)	21,346	(21,272)	(71)	3	1,729	23,075
– non-trading assets	353,066	(136,932)	216,134	(215,769)	(165)	200	25,731	241,865
Loans and advances to customers[5]	27,045	(10,919)	16,126	(13,065)	—	3,061	327	16,453
At 31 Dec 2021	646,373	(201,451)	444,922	(401,410)	(36,817)	6,695	33,353	478,275
Financial liabilities								
Derivatives (Note 15)[3]	**419,994**	**(140,987)**	**279,007**	**(239,235)**	**(29,276)**	**10,496**	**6,757**	**285,764**
Repos, stock lending and similar agreements classified as:[4]								
– trading liabilities	**20,027**	**(236)**	**19,791**	**(19,790)**	**—**	**1**	**4**	**19,795**
– non-trading liabilities	**206,827**	**(102,888)**	**103,939**	**(103,296)**	**(249)**	**394**	**23,808**	**127,747**
Customer accounts[6]	**37,164**	**(12,384)**	**24,780**	**(13,166)**	**—**	**11,614**	**14**	**24,794**
At 31 Dec 2022	**684,012**	**(256,495)**	**427,517**	**(375,487)**	**(29,525)**	**22,505**	**30,583**	**458,100**
Derivatives (Note 15)[3]	239,597	(53,378)	186,219	(163,359)	(18,225)	4,635	4,845	191,064
Repos, stock lending and similar agreements classified as:[4]								
– trading liabilities	13,540	(222)	13,318	(13,318)	—	—	17	13,335
– non-trading liabilities	235,042	(136,932)	98,110	(97,816)	(203)	91	28,560	126,670
Customer accounts[6]	40,875	(10,919)	29,956	(13,065)	—	16,891	17	29,973
At 31 Dec 2021	529,054	(201,451)	327,603	(287,558)	(18,428)	21,617	33,439	361,042

1 *The disclosure has been enhanced in 2022 to support consistency across Group entities. All financial instruments (whether recognised on our balance sheet or as non-cash collateral received or pledged) are presented within 'financial instruments, including non-cash collateral', as balance sheet classification has no effect on the rights of offset associated with financial instruments. Comparative data have been re-presented accordingly.*
2 *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.*
3 *At 31 December 2022, the amount of cash margin received that had been offset against the gross derivatives assets was $8,357m (2021: $4,469m). The amount of cash margin paid that had been offset against the gross derivatives liabilities was $10,918m (2021: $9,479m).*
4 *For the amount of repos, reverse repos, stock lending, stock borrowing and similar agreements recognised on the balance sheet within 'Trading assets' of $25,503m (2021: $23,075m) and 'Trading liabilities' of $19,795m (2021: $13,335m), see the 'Funding sources and uses' table on page 210.*
5 *At 31 December 2022, the total amount of 'Loans and advances to customers' was $924,854m (2021: $1,045,814m), of which $15,953m (2021: $16,126m) was subject to offsetting.*
6 *At 31 December 2022, the total amount of 'Customer accounts' was $1,570,303m (2021: $1,710,574m), of which $24,780m (2021: $29,956m) was subject to offsetting.*

32 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

	2022		2021	
	Number	**$m**	Number	$m
At 1 Jan	**20,631,520,439**	**10,316**	20,693,621,100	10,347
Shares issued under HSBC employee share plans	**10,226,221**	**5**	58,266,053	29
Shares issued in lieu of dividends	**—**	**—**	—	—
Less: Shares repurchased and cancelled	**348,139,250**	**174**	120,366,714	60
At 31 Dec[1]	**20,293,607,410**	**10,147**	20,631,520,439	10,316

HSBC Holdings share premium

	2022 $m	2021 $m
At 31 Dec	**14,664**	14,602

Total called up share capital and share premium

	2022 $m	2021 $m
At 31 Dec	**24,811**	24,918

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.*

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 called by HSBC Holdings on 10 December 2020 and were redeemed and cancelled 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 two types of additional tier 1 capital securities in its tier 1 capital, including 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 29 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	2022 $m	2021 $m
$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[1]	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**	1,000
$1,000m	4.700% perpetual subordinated contingent convertible securities[4]	Mar 2031	**1,000**	1,000
€1,500m	5.250% perpetual subordinated contingent convertible securities[5]	Sep 2022	**—**	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[6]	Jun 2022	**—**	723
SGD750m	5.000% perpetual subordinated contingent convertible securities	Sep 2023	**550**	550
At 31 Dec			**19,746**	22,414

1 *This security was called by HSBC Holdings on 30 January 2023 and is expected to be redeemed and cancelled on 23 March 2023.*
2 *This security was issued by HSBC Holdings on 17 December 2020. The first call date is 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 is 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 is six calendar months prior to the reset date of 9 September 2031.*
5 *This security was called by HSBC Holdings on 9 August 2022 and was redeemed and cancelled on 16 September 2022.*
6 *This security was called by HSBC Holdings on 4 May 2022 and was redeemed and cancelled on 8 June 2022.*

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 2022			31 Dec 2021		
Number of HSBC Holdings ordinary shares	**Usual period of exercise**	**Exercise price**	Number of HSBC Holdings ordinary shares	Usual period of exercise	Exercise price
115,650,723	**2021 to 2028**	**£2.6270–£5.9640**	123,196,850	2020 to 2027	£2.6270–5.9640

Maximum obligation to deliver HSBC Holdings ordinary shares

At 31 December 2022, 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 240,612,019 (2021: 224,974,433). The total number of shares at 31 December 2022 held by employee benefit trusts that may be used to satisfy such obligations to deliver HSBC Holdings ordinary shares was 12,315,711 (2021: 9,297,415).

33 Contingent liabilities, contractual commitments and guarantees

	HSBC		HSBC Holdings[1]	
	2022	2021	**2022**	2021
	$m	$m	**$m**	$m
Guarantees and other contingent liabilities:				
– financial guarantees	**18,783**	27,795	**17,707**	13,746
– performance and other guarantees	**88,240**	85,534	**—**	—
– other contingent liabilities	**676**	858	**90**	133
At 31 Dec	**107,699**	114,187	**17,797**	13,879
Commitments:[2]				
– documentary credits and short-term trade-related transactions	**8,241**	8,827	**—**	—
– forward asset purchases and forward deposits placed	**50,852**	47,184	**—**	—
– standby facilities, credit lines and other commitments to lend	**768,761**	759,463	**—**	—
At 31 Dec	**827,854**	815,474	**—**	—

1 *Financial guarantees by HSBC Holdings are all in favour of other Group entities.*
2 *Includes $618,788m of commitments at 31 December 2022 (31 December 2021: $627,637m), 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 28.

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 28 and 35.

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 the group 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. In December 2022, the FCA announced that it expects to review various elements of the scheme to ensure consumers are appropriately and proportionately protected, with costs distributed across industry levy payers in a fair and sustainable way, with a view to deliver the majority of changes by the end of the 2023/24 financial year.

Associates

HSBC's share of associates' contingent liabilities, contractual commitments and guarantees amounted to $64.8bn at 31 December 2022 (2021: $63.5bn). No matters arose where HSBC was severally liable.

34 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.

The table below excludes finance lease receivables reclassified on the balance sheet to 'Assets held for sale' in accordance with IFRS 5. Net investment in finance leases of $1,502m was reclassified to 'Assets held for sale' as a result of the planned sale of our banking business in Canada.

	2022			2021		
	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	**2,159**	**(236)**	**1,923**	3,298	(303)	2,995
One to two years	**1,652**	**(201)**	**1,451**	2,303	(242)	2,061
Two to three years	**1,391**	**(161)**	**1,230**	1,645	(192)	1,453
Three to four years	**906**	**(131)**	**775**	1,225	(146)	1,079
Four to five years	**613**	**(112)**	**501**	795	(113)	682
Later than one year and no later than five years	**4,562**	**(605)**	**3,957**	5,968	(693)	5,275
Later than five years	**4,064**	**(736)**	**3,328**	4,044	(528)	3,516
At 31 Dec	**10,785**	**(1,577)**	**9,208**	13,310	(1,524)	11,786

35 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 2022 (see Note 28). 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, seeking recovery of transfers from Madoff Securities to HSBC in an amount not specified, and these lawsuits remain pending in the US Bankruptcy Court for the Southern District of New York (the 'US Bankruptcy Court').

Certain Fairfield entities (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 August 2022, the US District Court for the Southern District of New York (the 'New York District Court') affirmed earlier decisions by the US Bankruptcy Court that dismissed the majority of the liquidators' claims (against most of the HSBC companies). In September 2022, the remaining defendants before the US Bankruptcy Court sought leave to appeal and the liquidators filed appeals to the US Court of Appeals for the Second Circuit, which are currently pending. Meanwhile, proceedings before the US Bankruptcy Court with respect to the remaining claims 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. The claim has not yet been served and the amount claimed has not been specified.

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 monetary damages. Following dismissal of Primeo's action by the lower and appellate courts in the Cayman Islands, in 2019, Primeo appealed to the UK Privy Council. During 2021, the UK Privy Council held two separate hearings in connection with Primeo's appeal. 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 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. In December 2018, Senator brought additional claims against HSSL and HSBC Bank plc Luxembourg branch, 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. For several years thereafter, HSBC 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 determined that no further Skilled Person work is required. Separately, the Independent Consultant's engagement is now complete and, in August 2022, the FRB terminated its cease-and-desist order.

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. Nine actions remain pending in federal courts and HSBC's motions to dismiss have been granted in five of these cases. In September 2022 and January 2023, respectively, the appellate courts affirmed the dismissals of two of the cases, and the plaintiffs' requests for review of these decisions by the full appellate courts have been denied. The dismissals in the other cases are subject to appeal. The four remaining actions are at an early stage.

Based on the facts currently known, it is not practicable at this time for HSBC to predict the resolution of the pending 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, and the EC imposed a fine on HSBC based on a one-month infringement in 2007. The fine was annulled in 2019 and a lower fine was imposed in 2021. In January 2023, the European Court of Justice dismissed an appeal by HSBC and upheld the EC's findings on HSBC's liability. A separate appeal by HSBC concerning the amount of the fine remains pending before the General Court of the European Union.

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 federal and state laws, including antitrust and racketeering laws and the Commodity Exchange Act ('US CEA'). 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.

Singapore interbank offered rate ('Sibor') and Singapore swap offer rate ('SOR'): In 2016, The Hongkong and Shanghai Banking Corporation Limited and other panel banks were named as defendants in a putative class action filed in the New York District Court on behalf of persons who transacted in products related to the Sibor and SOR benchmark rates. The complaint alleged, among other things, misconduct related to these benchmark rates in violation of US antitrust, commodities and racketeering laws, and state law.

In October 2021, The Hongkong and Shanghai Banking Corporation Limited reached a settlement-in-principle with the plaintiffs to resolve this action, the agreement for which was executed in May 2022. The court granted final approval of the settlement in November 2022.

Based on the facts currently known, it is not practicable at this time for HSBC to predict the resolution of the pending matters, including the timing or any possible impact on HSBC, which could be significant.

Foreign exchange-related investigations and litigation

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, which remains ongoing.

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 N.A. ('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 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. In December 2022, HSBC reached a settlement-in-principle with the plaintiffs to resolve these matters. The settlement remains subject to the negotiation of definitive documentation. Additionally, in January 2023, HSBC reached a settlement-in-principle with plaintiffs in Israel to resolve a class action lawsuit filed in the local courts alleging foreign exchange-related misconduct. The settlement remains subject to the negotiation of definitive documentation and court approval. Lawsuits alleging foreign exchange-related misconduct remain pending against HSBC and other banks in courts in Brazil. 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 December 2015, numerous putative class actions 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, which were consolidated in the New York District Court, 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. In February 2022, following the conclusion of pre-class certification discovery, the defendants filed a motion seeking to dismiss the plaintiffs' antitrust claims, which remains pending.

In April 2016, two putative class actions 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 and related 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 June 2020, two separate investor groups issued claims against HSBC UK Bank plc (as successor to HSBC Private Bank (UK) Limited ('PBGB')) in the High Court of England and Wales in connection with PBGB's role in the development of Eclipse film finance 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. In October 2022, this claim was discontinued.

Based on the facts currently known, it is not practicable at this time for HSBC to predict the resolution of the pending matters, including the timing or any possible impact on HSBC, 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 ('CFTC') regarding interest rate swap transactions related to bond issuances, among other things. HSBC has reached a settlement-in-principle with the CFTC's Division of Enforcement to resolve this investigation. The settlement is subject to final approval by the CFTC;
- investigations by the CFTC and US Securities and Exchange Commission ('SEC') concerning compliance with records preservation requirements relating to the use of unapproved electronic messaging platforms for business communications. HSBC has reached settlements-in-principle with the CFTC's and SEC's Divisions of Enforcement to resolve these investigations. The settlements are subject to the negotiation of definitive documentation and final approval by the CFTC and SEC;
- 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 into potentially anti-competitive arrangements involving historical trading activities relating to certain UK-based fixed income products and related financial instruments;
- 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.

36 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 240 to 246 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 and Brand 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 276 to 301. IAS 24 'Related Party Disclosures' requires the following additional information for key management compensation.

Compensation of Key Management Personnel

	2022	2021	2020
	$m	$m	$m
Short-term employee benefits	**52**	50	39
Post-employment benefits	**1**	—	—
Other long-term employee benefits	**8**	6	5
Share-based payments	**26**	27	20
Year ended 31 Dec	**87**	83	64

Shareholdings, options and other securities of Key Management Personnel

	2022	2021
	(000s)	(000s)
Number of options held over HSBC Holdings ordinary shares under employee share plans	**35**	35
Number of HSBC Holdings ordinary shares held beneficially and non-beneficially	**18,185**	13,529
Number of other HSBC securities held	**228**	228
At 31 Dec	**18,448**	13,792

Advances and credits, guarantees and deposit balances during the year with Key Management Personnel

	2022		2021	
	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]	**16**	**25**	373	401
Guarantees	**—**	**—**	25	45
Deposits	**53**	**123**	284	3,190

1 *Advances and credits entered into by subsidiaries of HSBC Holdings plc during 2022 with Directors and former Directors, disclosed pursuant to section 413 of the Companies Act 2006, totalled $2.5m (2021: $2.8m) and the total value of guarantees entered into on behalf of the Directors and former Directors was $nil (2021: $nil).*

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 18.

Transactions and balances during the year with associates and joint ventures

	2022		2021	
	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	**140**	**90**	160	96
Unsubordinated amounts due from associates	**7,378**	**6,594**	4,527	4,188
Amounts due to associates	**2,548**	**1,295**	3,397	1,070
Amounts due to joint ventures	**57**	**53**	102	44
Fair value of derivative assets with associates	**1,205**	**841**	936	465
Fair value of derivative liabilities with associates	**4,319**	**3,648**	696	555
Guarantees and commitments	**513**	**293**	1,016	347

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 2022, $2.9bn (2021: $3.4bn) of HSBC post-employment benefit plan assets were under management by HSBC companies, earning management fees of $13m in 2022 (2021: $14m). At 31 December 2022, HSBC's post-employment benefit plans had placed deposits of $369m (2021: $476m) with its banking subsidiaries, earning interest payable to the schemes of nil (2021: 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 2022, the gross notional value of the swaps was $6.6bn (2021: $7.4bn). These swaps had a positive fair value to the scheme of $0.5bn (2021: $1.0bn); and HSBC had delivered collateral of $0.5bn (2021: $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

	2022		2021	
	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	**7,421**	**3,210**	3,397	2,590
Financial assets with HSBC undertakings designated and otherwise mandatorily measured at fair value	**52,322**	**52,322**	64,686	51,408
Derivatives	**5,380**	**3,801**	4,187	2,811
Loans and advances to HSBC undertakings	**26,765**	**26,765**	27,142	25,108
Prepayments, accrued income and other assets	**4,893**	**4,803**	1,555	1,135
Investments in subsidiaries	**167,542**	**167,542**	163,211	163,211
Total related party assets at 31 Dec	**264,323**	**258,443**	264,178	246,263
Liabilities				
Amounts owed to HSBC undertakings	**314**	**314**	340	111
Derivatives	**8,318**	**6,922**	2,872	1,220
Accruals, deferred income and other liabilities	**1,375**	**429**	2,036	1,732
Subordinated liabilities	**900**	**900**	900	900
Total related party liabilities at 31 Dec	**10,907**	**8,565**	6,148	3,963
Guarantees and commitments	**17,707**	**17,707**	16,477	13,746

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.

37 Events after the balance sheet date

A second interim dividend for 2022 of $0.23 per ordinary share (a distribution of approximately $4,593m) was approved by the Directors after 31 December 2022. HSBC Holdings called $2,350m 6.250% perpetual subordinated contingent convertible securities on 30 January 2023. The security is expected to be redeemed and be cancelled on 23 March 2023. HSBC Holdings also exercised the call option on AUD350m and AUD650m MREL on 13 January 2023 callable on 16 February 2023. The redemption took place on 16 February 2023. These accounts were approved by the Board of Directors on 21 February 2023 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 2022 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
Assetfinance December (F) Limited	100.00		17
Assetfinance December (H) Limited	100.00		18
Assetfinance December (P) Limited	100.00		18
Assetfinance December (R) Limited	100.00		18
Assetfinance June (A) Limited	100.00		18
Assetfinance June (D) Limited	100.00		17
Assetfinance Limited	100.00		18
Assetfinance March (B) Limited	100.00		19
Assetfinance March (D) Limited	100.00		17
Assetfinance March (F) Limited	100.00		18
Assetfinance September (F) Limited	100.00		18
Assetfinance September (G) Limited	100.00		17
AXA Insurance Pte. Ltd.	100.00		1, 20
B&Q Financial Services Limited	100.00		18
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		23
Beau Soleil Limited Partnership	N/A		0, 46
Beijing Miyun HSBC Rural Bank Company Limited	100.00		12, 24
BentallGreenOak China Real Estate Investments L.P.	N/A		0, 1, 25
Canada Crescent Nominees (UK) Limited	100.00		18
Canada Square Nominees (UK) Limited	100.00		18
Capco/Cove, Inc.	100.00		26
Card-Flo #1, Inc.	100.00		15
Card-Flo #3, Inc.	100.00		15
CC&H Holdings LLC	100.00		27
CCF & Partners Asset Management Limited	100.00	(99.99)	18
CCF Holding (Liban) S.A.L. (In Liquidation)	74.99		28
Charterhouse Administrators (D.T.) Limited	100.00	(99.99)	18
Charterhouse Management Services Limited	100.00	(99.99)	18
Charterhouse Pensions Limited	100.00		18
Chongqing Dazu HSBC Rural Bank Company Limited	100.00		12, 29
Chongqing Fengdu HSBC Rural Bank Company Limited	100.00		12, 30
Chongqing Rongchang HSBC Rural Bank Company Limited	100.00		12, 31
COIF Nominees Limited	N/A		0, 18
Corsair IV Financial Services Capital Partners - B, LP	N/A		0, 1, 32
Dalian Pulandian HSBC Rural Bank Company Limited	100.00		12, 33
Decision One Mortgage Company, LLC	N/A		0, 34
Dem 9	100.00	(99.99)	4, 35
Dempar 1	100.00	(99.99)	4, 35
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		1, 16
Eton Corporate Services Limited	100.00		22
Far East Leasing SA (In Dissolution)	100.00		36
Flandres Contentieux S.A.	100.00	(99.99)	35
Foncière Elysées	100.00	(99.99)	35
Fujian Yongan HSBC Rural Bank Company Limited	100.00		12, 37
Fulcher Enterprises Company Limited	100.00	(62.14)	38
Fundacion HSBC, A.C.	100.00	(99.99)	11, 16
Giller Ltd.	100.00		26
GPIF Co-Investment, LLC	N/A		0, 15
Griffin International Limited	100.00		18
Grupo Financiero HSBC, S. A. de C. V.	99.99		16
Guangdong Enping HSBC Rural Bank Company Limited	100.00		12, 39
Guangzhou HSBC Real Estate Company Ltd	100.00		1, 12, 40
Hang Seng (Nominee) Limited	100.00	(62.14)	38
Hang Seng Bank (China) Limited	100.00	(62.14)	41
Hang Seng Bank (Trustee) Limited	100.00	(62.14)	38
Hang Seng Bank Limited	62.14		38
Hang Seng Bullion Company Limited	100.00	(62.14)	38
Hang Seng Credit Limited	100.00	(62.14)	38
Hang Seng Data Services Limited	100.00	(62.14)	38
Hang Seng Finance Limited	100.00	(62.14)	38
Hang Seng Financial Information Limited	100.00	(62.14)	38
Hang Seng Indexes (Netherlands) B.V.	100.00	(62.14)	1, 42
Hang Seng Indexes Company Limited	100.00	(62.14)	38
Hang Seng Insurance Company Limited	100.00	(62.14)	38
Hang Seng Investment Management Limited	100.00	(62.14)	38
Hang Seng Investment Services Limited	100.00	(62.14)	38
Hang Seng Life Limited (In Liquidation)	100.00	(62.14)	43
Hang Seng Qianhai Fund Management Company Limited	70.00	(43.49)	12, 44
Hang Seng Real Estate Management Limited	100.00	(62.14)	38
Hang Seng Securities Limited	100.00	(62.14)	38
Hang Seng Security Management Limited	100.00	(62.14)	38
HASE Wealth Limited	100.00	(62.14)	1, 38
Haseba Investment Company Limited	100.00	(62.14)	38
HFC Bank Limited (In Liquidation)	100.00		45
High Time Investments Limited	100.00	(62.14)	38
HLF	100.00	(99.99)	35
Honey Blue Enterprises Limited	100.00		1, 46
Honey Green Enterprises Ltd.	100.00		47
Honey Grey Enterprises Limited	100.00		1, 46
Honey Silver Enterprises Limited	100.00		1, 46
Household International Europe Limited (In Liquidation)	100.00		45
Household Pooling Corporation	100.00		48
Housing (USA) LLP	N/A		0, 1, 27
HSBC (BGF) Investments Limited	100.00		18
HSBC (General Partner) Limited	100.00		2, 79
HSBC (Guernsey) GP PCC Limited	100.00		22
HSBC (Kuala Lumpur) Nominees Sdn Bhd	100.00		49
HSBC (Malaysia) Trustee Berhad	100.00		49
HSBC (Singapore) Nominees Pte Ltd	100.00		20
HSBC Agency (India) Private Limited	100.00		50
HSBC Alternative Investments Limited	100.00		18
HSBC Amanah Malaysia Berhad	100.00		49
HSBC Americas Corporation (Delaware)	100.00		15
HSBC Argentina Holdings S.A.	100.00		51
HSBC Asia Holdings B.V.	100.00		18
HSBC Asia Holdings Limited	100.00		2, 46
HSBC Asia Pacific Holdings (UK) Limited	100.00		18
HSBC Asset Finance (UK) Limited	100.00		18
HSBC Asset Finance M.O.G. Holdings (UK) Limited	100.00		18
HSBC Asset Management (Fund Services UK) Limited	100.00		1, 18
HSBC Asset Management (India) Private Limited	100.00		52
HSBC Asset Management (Japan) Limited	100.00		53
HSBC Assurances Vie (France)	100.00	(99.99)	54
HSBC Australia Holdings Pty Limited	100.00		55
HSBC BANK (CHILE)	100.00	(99.99)	56
HSBC Bank (China) Company Limited	100.00		12, 57

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Bank (General Partner) Limited	100.00		79
HSBC Bank (Mauritius) Limited	100.00		58
HSBC Bank (RR) (Limited Liability Company)	N/A		0, 13, 59
HSBC Bank (Singapore) Limited	100.00		20
HSBC Bank (Taiwan) Limited	100.00		60
HSBC Bank (Uruguay) S.A.	100.00		61
HSBC Bank (Vietnam) Ltd.	100.00		62
HSBC Bank A.S.	100.00	(99.99)	63
HSBC Bank Argentina S.A.	99.99		51
HSBC Bank Armenia cjsc	100.00		64
HSBC Bank Australia Limited	100.00		55
HSBC Bank Bermuda Limited	100.00		23
HSBC Bank Canada	100.00		65
HSBC Bank Capital Funding (Sterling 1) LP	N/A		0, 79
HSBC Bank Capital Funding (Sterling 2) LP	N/A		0, 79
HSBC Bank Egypt S.A.E	94.54		66
HSBC Bank Malaysia Berhad	100.00		49
HSBC Bank Malta p.l.c.	70.03		67
HSBC Bank Middle East Limited	100.00		68
HSBC Bank Middle East Limited Representative Office Morocco SARL (In Liquidation)	100.00		69
HSBC Bank Oman S.A.O.G.	51.00		70
HSBC Bank Pension Trust (UK) Limited	100.00		18
HSBC Bank plc	100.00		2, 18
HSBC Bank USA, National Association	100.00		71
HSBC Branch Nominee (UK) Limited	100.00		17
HSBC Brasil Holding S.A.	100.00		21
HSBC Broking Forex (Asia) Limited	100.00		46
HSBC Broking Futures (Asia) Limited	100.00		46
HSBC Broking Futures (Hong Kong) Limited	100.00		46
HSBC Broking Securities (Asia) Limited	100.00		46
HSBC Broking Securities (Hong Kong) Limited	100.00		46
HSBC Broking Services (Asia) Limited	100.00		46
HSBC Canadian Covered Bond (Legislative) GP Inc.	100.00		72
HSBC Canadian Covered Bond (Legislative) Guarantor Limited Partnership	N/A		0, 72
HSBC Capital (USA), Inc.	100.00		15
HSBC Capital Funding (Dollar 1) L.P.	N/A		79
HSBC Card Services Inc.	100.00		15
HSBC Casa de Bolsa, S.A. de C.V., Grupo	100.00	(99.99)	16
HSBC Cayman Limited	100.00		73
HSBC Cayman Services Limited	100.00		73
HSBC City Funding Holdings	100.00		18
HSBC Client Holdings Nominee (UK) Limited	100.00		18
HSBC Client Nominee (Jersey) Limited	100.00		74
HSBC Columbia Funding, LLC	N/A		0, 15
HSBC Continental Europe	99.99		35
HSBC Corporate Advisory (Malaysia) Sdn Bhd	100.00		49
HSBC Corporate Finance (Hong Kong) Limited	100.00		46
HSBC Corporate Secretary (UK) Limited	100.00		2, 18
HSBC Corporate Trustee Company (UK) Limited	100.00		18
HSBC Custody Nominees (Australia) Limited	100.00		55
HSBC Custody Services (Guernsey) Limited	100.00		22
HSBC Daisy Investments (Mauritius) Limited	100.00		75
HSBC Diversified Loan Fund General Partner Sarl	N/A		76
HSBC Electronic Data Processing (Guangdong) Limited	100.00		12, 77
HSBC Electronic Data Processing (Malaysia) Sdn Bhd	100.00		78
HSBC Electronic Data Processing (Philippines), Inc.	99.99		79
HSBC Electronic Data Processing India Private Limited	100.00		80
HSBC Electronic Data Processing Lanka (Private) Limited	100.00		81
HSBC Electronic Data Service Delivery (Egypt) S.A.E.	100.00		82
HSBC Epargne Entreprise (France)	100.00	(99.99)	54
HSBC Equipment Finance (UK) Limited	100.00		17
HSBC Equity (UK) Limited	100.00		18
HSBC Europe B.V.	100.00		18
HSBC Executor & Trustee Company (UK) Limited	100.00		17
HSBC Factoring (France)	100.00	(99.99)	35
HSBC Finance (Netherlands)	100.00		2, 18
HSBC Finance Corporation	100.00		15
HSBC Finance Limited	100.00		18
HSBC Finance Mortgages Inc.	100.00		83
HSBC Finance Transformation (UK) Limited	100.00		18
HSBC Financial Advisors Singapore Pte. Ltd.	100.00		1, 20
HSBC Financial Services (Lebanon) s.a.l.	99.65		84
HSBC Financial Services (Uruguay) S.A. (In Liquidation)	100.00		85
HSBC FinTech Services (Shanghai) Company Limited	100.00		86
HSBC Global Asset Management (Bermuda) Limited	100.00		3, 23
HSBC Global Asset Management (Canada) Limited	100.00		65
HSBC Global Asset Management (Deutschland) GmbH	100.00		87
HSBC Global Asset Management (France)	100.00	(99.99)	54
HSBC Global Asset Management (Hong Kong) Limited	100.00		46
HSBC Global Asset Management (Malta) Limited	100.00	(70.03)	88
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 (Singapore) Limited	100.00		20
HSBC Global Asset Management (Switzerland) AG	100.00		4, 89
HSBC Global Asset Management (Taiwan) Limited	100.00		46
HSBC Global Asset Management (UK) Limited	100.00		18
HSBC Global Asset Management (USA) Inc.	100.00		91
HSBC Global Asset Management Argentina S.A. Sociedad Gerente de Fondos Comunes de Inversión	100.00		51
HSBC Global Asset Management Holdings (Bahamas) Limited	100.00		92
HSBC Global Asset Management Limited	100.00		2, 18
HSBC Global Custody Nominee (UK) Limited	100.00		18
HSBC Global Custody Proprietary Nominee (UK) Limited	100.00		1, 18
HSBC Global Services (Canada) Limited	100.00		83
HSBC Global Services (China) Holdings Limited	100.00		18
HSBC Global Services (Hong Kong) Limited	100.00		46
HSBC Global Services (UK) Limited	100.00		18
HSBC Global Services Limited	100.00		2, 18
HSBC Global Shared Services (India) Private Limited (In Liquidation)	99.99		1, 50
HSBC Group Management Services Limited	100.00		18
HSBC Group Nominees UK Limited	100.00		2, 18
HSBC Holdings B.V.	100.00		18
HSBC IM Pension Trust Limited	100.00		18

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Infrastructure Debt GP 1 S.à r.l.	N/A		0, 93
HSBC Infrastructure Debt GP 2 S.à r.l.	N/A		0, 93
HSBC Infrastructure Limited	100.00		18
HSBC Institutional Trust Services (Asia)	100.00		46
HSBC Institutional Trust Services (Bermuda) Limited	100.00		23
HSBC Institutional Trust Services (Mauritius) Limited	100.00		94
HSBC Institutional Trust Services (Singapore) Limited	100.00		20
HSBC Insurance (Asia) Limited	100.00		95
HSBC Insurance (Asia-Pacific) Holdings Limited	100.00		46
HSBC Insurance (Bermuda) Limited	100.00		23
HSBC Insurance (Singapore) Pte. Limited	100.00		20
HSBC Insurance Agency (USA) Inc.	100.00		91
HSBC Insurance Brokerage Company Limited	100.00		1, 96
HSBC Insurance Brokers Greater China Limited	100.00		1, 46
HSBC Insurance Holdings Limited	100.00		2, 18
HSBC Insurance SAC 1 (Bermuda) Limited	100.00		23
HSBC Insurance SAC 2 (Bermuda) Limited	100.00		1, 23
HSBC Insurance Services Holdings Limited	100.00		18
HSBC International Finance Corporation (Delaware)	100.00		97
HSBC International Trustee (BVI) Limited	100.00		98
HSBC International Trustee (Holdings) Pte. Limited	100.00		20
HSBC International Trustee Limited	100.00		99
HSBC Inversiones S.A.	100.00		56
HSBC InvestDirect (India) Private Limited	100.00		52
HSBC InvestDirect Financial Services (India) Limited	99.99	(99.98)	52
HSBC InvestDirect Sales & Marketing (India) Limited	98.99	(98.98)	50
HSBC InvestDirect Securities (India) Private Limited	99.99		52
HSBC Investment and Insurance Brokerage, Philippines Inc.	99.99		100
HSBC Investment Bank Holdings B.V.	100.00		18
HSBC Investment Bank Holdings Limited	100.00		18
HSBC Investment Company Limited	100.00		2, 18
HSBC Investment Funds (Canada) Inc.	100.00		65
HSBC Investment Funds (Hong Kong) Limited	100.00		46
HSBC Investment Funds (Luxembourg) SA	100.00		101
HSBC Invoice Finance (UK) Limited	100.00		102
HSBC Issuer Services Common Depositary Nominee (UK) Limited	100.00		18
HSBC Issuer Services Depositary Nominee (UK) Limited	100.00		18
HSBC Latin America B.V.	100.00		18
HSBC Latin America Holdings (UK) Limited	100.00		2, 18
HSBC Leasing (Asia) Limited	100.00		46
HSBC Life (Bermuda) Limited	100.00		23
HSBC Life (Cornell Centre) Limited	100.00		95
HSBC Life (Edwick Centre) Limited	100.00		95
HSBC Life (International) Limited	100.00		23
HSBC Life (Property) Limited	100.00		95
HSBC Life (Tsing Yi Industrial) Limited	100.00		95
HSBC Life (UK) Limited	100.00		18
HSBC Life (Workshop) Limited	100.00		1, 95
HSBC Life Assurance (Malta) Limited	100.00	(70.03)	88
HSBC Life Insurance Company Limited	100.00		12, 57
HSBC LU Nominees Limited	100.00		18
HSBC Management (Guernsey) Limited	100.00		103
HSBC Markets (USA) Inc.	100.00		15

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Marking Name Nominee (UK) Limited	100.00		18
HSBC Master Trust Trustee Limited	100.00		18
HSBC Mexico, S.A., Institucion de Banca Multiple, Grupo Financiero HSBC	99.99		16
HSBC Middle East Asset Co. LLC	100.00		104
HSBC Middle East Holdings B.V.	100.00		2, 68
HSBC Middle East Leasing Partnership	N/A		0, 68
HSBC Middle East Securities L.L.C	100.00		105
HSBC Mortgage Corporation (Canada)	100.00		65
HSBC Mortgage Corporation (USA)	100.00		15
HSBC Nominees (Asing) Sdn Bhd	100.00		49
HSBC Nominees (Hong Kong) Limited	100.00		46
HSBC Nominees (New Zealand) Limited	100.00		106
HSBC Nominees (Tempatan) Sdn Bhd	100.00		49
HSBC North America Holdings Inc.	100.00		3, 15
HSBC Operational Services GmbH	80.00		87
HSBC Overseas Holdings (UK) Limited	100.00		2, 18
HSBC Overseas Investments Corporation (New York)	100.00		107
HSBC Overseas Nominee (UK) Limited	100.00		18
HSBC Participaciones (Argentina) S.A.	100.00		51
HSBC PB Corporate Services 1 Limited	100.00		74
HSBC PB Services (Suisse) SA	100.00		108
HSBC Pension Trust (Ireland) DAC	100.00		109
HSBC Pensiones, S.A. (In Liquidation)	100.00		16
HSBC PI Holdings (Mauritius) Limited	100.00		94
HSBC Portfoy Yonetimi A.S.	100.00		63
HSBC Preferential LP (UK)	100.00		18
HSBC Private Bank (Luxembourg) S.A.	100.00		101
HSBC Private Bank (Suisse) SA	100.00		108
HSBC Private Bank (UK) Limited	100.00		18
HSBC Private Banking Holdings (Suisse) SA	100.00		108
HSBC Private Banking Nominee 3 (Jersey) Limited	100.00		74
HSBC Private Equity Investments (UK) Limited	100.00		18
HSBC Private Investment Counsel (Canada) Inc.	100.00		65
HSBC Private Markets Management SARL	N/A		0, 110
HSBC Private Trustee (Hong Kong) Limited	100.00		46
HSBC Professional Services (India) Private Limited	100.00		50
HSBC Property (UK) Limited	100.00		18
HSBC Property Funds (Holding) Limited	100.00		18
HSBC Provident Fund Trustee (Hong Kong) Limited	100.00		46
HSBC Qianhai Securities Limited	90.00		12, 111
HSBC Real Estate Leasing (France)	100.00	(99.99)	35
HSBC REGIO Fund General Partner S.à r.l.	100.00		1, 93
HSBC REIM (France)	100.00	(99.99)	54
HSBC Retirement Benefits Trustee (UK) Limited	100.00		1, 2, 18
HSBC Retirement Services Limited	100.00		1, 18
HSBC Saudi Arabia, Closed Joint Stock Company	66.19		112
HSBC Savings Bank (Philippines) Inc.	99.99		113
HSBC Securities (Canada) Inc.	100.00		83
HSBC Securities (Egypt) S.A.E. (In Liquidation)	100.00	(94.65)	66
HSBC Securities (Japan) Co., Ltd.	100.00		1, 53
HSBC Securities (Japan) Limited	100.00		18
HSBC Securities (Singapore) Pte Limited	100.00		20
HSBC Securities (South Africa) (Pty) Limited	100.00		114
HSBC Securities (Taiwan) Corporation Limited	100.00		60
HSBC Securities (USA) Inc.	100.00		15

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
HSBC Securities and Capital Markets (India) Private Limited	99.99		50
HSBC Securities Brokers (Asia) Limited	100.00		46
HSBC Securities Investments (Asia) Limited	100.00		46
HSBC Securities Services (Bermuda) Limited	100.00		23
HSBC Securities Services (Guernsey) Limited	100.00		22
HSBC Securities Services (Ireland) DAC	100.00		109
HSBC Securities Services (Luxembourg) S.A.	100.00		101
HSBC Securities Services Holdings (Ireland) DAC	100.00		109
HSBC Securities Services Nominees Limited	100.00		1, 46
HSBC Seguros de Retiro (Argentina) S.A.	100.00	(99.99)	51
HSBC Seguros de Vida (Argentina) S.A.	100.00	(99.99)	51
HSBC Seguros, S.A de C.V., Grupo Financiero HSBC	100.00	(99.99)	16
HSBC Service Company Germany GmbH	100.00	(99.99)	1, 87
HSBC Service Delivery (Polska) Sp. z o.o.	100.00		115
HSBC Services (France)	100.00	(99.99)	35
HSBC Services Japan Limited	100.00		92
HSBC Services USA Inc.	100.00		116
HSBC Servicios Financieros, S.A. de C.V	100.00	(99.99)	16
HSBC Servicios, S.A. DE C.V., Grupo Financiero HSBC	100.00	(99.99)	16
HSBC SFH (France)	100.00	(99.99)	4, 54
HSBC SFT (C.I.) Limited	100.00		22
HSBC Software Development (Guangdong) Limited	100.00		117
HSBC Software Development (India) Private Limited	100.00		118
HSBC Software Development (Malaysia) Sdn Bhd	100.00		78
HSBC Specialist Investments Limited	100.00		18
HSBC Technology & Services (China) Limited	100.00		57
HSBC Technology & Services (USA) Inc.	100.00		15
HSBC Titan GmbH & Co. KG	100.00	(99.99)	1, 87
HSBC Transaction Services GmbH	100.00	(99.99)	6, 87
HSBC Trinkaus & Burkhardt (International) S.A.	100.00	(99.99)	119
HSBC Trinkaus & Burkhardt Gesellschaft fur Bankbeteiligungen mbH	100.00	(99.99)	87
HSBC Trinkhaus & Burkhardt GmbH	100.00	(99.99)	87
HSBC Trinkaus Europa Immobilien-Fonds Nr. 5 GmbH	100.00	(99.99)	87
HSBC Trinkaus Family Office GmbH	100.00	(99.99)	6, 87
HSBC Trinkaus Real Estate GmbH	100.00	(99.99)	6, 87
HSBC Trust Company (Canada)	100.00		65
HSBC Trust Company (Delaware), National Association	100.00		97
HSBC Trust Company (UK) Limited	100.00		18
HSBC Trustee (C.I.) Limited	100.00		74
HSBC Trustee (Cayman) Limited	100.00		120
HSBC Trustee (Guernsey) Limited	100.00		22
HSBC Trustee (Hong Kong) Limited	100.00		46
HSBC Trustee (Singapore) Limited	100.00		20
HSBC UK Bank plc	100.00		2, 17
HSBC UK Client Nominee Limited	100.00		17
HSBC UK Covered Bonds LLP	N/A		0, 17
HSBC UK Holdings Limited	100.00		2, 18
HSBC USA Inc.	100.00		107
HSBC Ventures USA Inc.	100.00		15
HSBC Violet Investments (Mauritius) Limited	100.00		75
HSBC Wealth Client Nominee Limited	100.00		1, 17
HSBC Yatirim Menkul Degerler A.S.	100.00		63
HSI Asset Securitization Corporation	100.00		15
HSI International Limited	100.00	(62.14)	38
HSIL Investments Limited	100.00		18

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
Hubei Macheng HSBC Rural Bank Company Limited	100.00		121
Hubei Suizhou Cengdu HSBC Rural Bank Company Limited	100.00		12, 122
Hubei Tianmen HSBC Rural Bank Company Limited	100.00		123
Hunan Pingjiang HSBC Rural Bank Company Limited	100.00		12, 124
Imenson Limited	100.00	(62.14)	38
INKA Internationale Kapitalanlagegesellschaft mbH	100.00	(99.99)	87
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 (Nominees) Limited	100.00		18
James Capel (Taiwan) Nominees Limited	100.00		18
John Lewis Financial Services Limited	100.00		18
Keyser Ullmann Limited	100.00	(99.99)	18
L&T Investment Management Limited	100.00	(99.99)	1, 52
Lion Corporate Services Limited	100.00		46
Lion International Corporate Services Limited	100.00		1, 99
Lion International Management Limited	100.00		99
Lion Management (Hong Kong) Limited	100.00		1, 46
Lyndholme Limited	100.00		46
Marks and Spencer Financial Services plc	100.00		125
Marks and Spencer Unit Trust Management Limited	100.00		125
Maxima S.A. AFJP (In Liquidation)	99.98		51
Midcorp Limited	100.00		18
Midland Bank (Branch Nominees) Limited	100.00		17
Midland Nominees Limited	100.00		17
MIL (Cayman) Limited	100.00		73
MP Payments Group Limited	100.00		1, 18
MP Payments Operations Limited	100.00		1, 18
MP Payments UK Limited	100.00		1, 18
MW Gestion SA	100.00		51
Prudential Client HSBC GIS Nominee (UK)	100.00		18
PT Bank HSBC Indonesia	99.99	(98.93)	126
PT HSBC Sekuritas Indonesia	85.00		126
R/CLIP Corp.	100.00		15
Real Estate Collateral Management Company	100.00		15
Republic Nominees Limited	100.00		22
RLUKREF Nominees (UK) One Limited	100.00		1, 18
RLUKREF Nominees (UK) Two Limited	100.00		1, 18
S.A.P.C. - Ufipro Recouvrement	99.99		35
Saf Baiyun	100.00	(99.99)	4, 35
Saf Guangzhou	100.00	(99.99)	4, 35
SCI HSBC Assurances Immo	100.00	(99.99)	54
Serai Limited	100.00		46
Serai Technology Development (Shanghai) Limited	100.00		1, 12, 57
SFM	100.00	(99.99)	35
SFSS Nominees (Pty) Limited	100.00		114
Shandong Rongcheng HSBC Rural Bank Company Limited	100.00		12, 127
Shenzhen HSBC Development Company Ltd	100.00		1, 12, 128
Sico Limited	100.00		129
SNC Les Oliviers D'Antibes	60.00	(59.99)	11, 54
SNCB/M6 - 2008 A	100.00	(99.99)	35
SNCB/M6-2007 A	100.00	(99.99)	4, 35
SNCB/M6-2007 B	100.00	(99.99)	4, 35
Société Française et Suisse	100.00	(99.99)	35
Somers Dublin DAC	100.00	(99.99)	109
Somers Nominees (Far East) Limited	100.00		23
Sopingest	100.00	(99.99)	35
South Yorkshire Light Rail Limited	100.00		18

Subsidiaries	% of share class held by immediate parent company (or by the Group where this varies)		Footnotes
St Cross Trustees Limited	100.00		17
Sun Hung Kai Development (Lujiazui III) Limited	100.00		12, 57
Swan National Limited	100.00		18
The Hongkong and Shanghai Banking Corporation Limited	100.00		5, 46
The Venture Catalysts Limited	100.00		18
Tooley Street View Limited	100.00		2, 18
Tower Investment Management	100.00		130
Trinkaus Australien Immobilien Fonds Nr. 1 Brisbane GmbH & Co. KG	100.00	(99.99)	87
Trinkaus Australien Immobilien-Fonds Nr. 1 Treuhand-GmbH	100.00	(99.99)	6, 87
Trinkaus Europa Immobilien-Fonds Nr.3 Objekt Utrecht Verwaltungs-GmbH	100.00	(99.99)	87
Trinkaus Immobilien-Fonds Geschaeftsfuehrungs-GmbH	100.00	(99.99)	6, 87
Trinkaus Immobilien-Fonds Verwaltungs-GmbH	100.00	(99.99)	6, 87
Trinkaus Private Equity Management GmbH	100.00	(99.99)	87
Trinkaus Private Equity Verwaltungs GmbH	100.00	(99.99)	6, 87
Tropical Nominees Limited	100.00		73
Turnsonic (Nominees) Limited	100.00		17
Valeurs Mobilières Elysées	100.00	(99.99)	35
Wardley Limited	100.00		46
Wayfoong Nominees Limited	100.00		46
Westminster House, LLC	N/A		0, 15
Woodex Limited	100.00		23
Yan Nin Development Company Limited	100.00	(62.14)	38

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
Climate Asset Management Limited	40.00	1, 131
Global Payments Technology Mexico S.A. De C.V	50.00	16
HCM Holdings Limited (In Liquidation)	50.99	45
Pentagreen Capital Pte. Ltd	50.00	1, 132
ProServe Bermuda Limited	50.00	133
The London Silver Market Fixing Limited	N/A	0 1, 134
Vaultex UK Limited	50.00	135

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	136
Barrowgate Limited	15.31	137
BGF Group PLC	24.61	138
Bud Financial Limited	5.36	1, 139
Canara HSBC Life Insurance Company Limited	26.00	140
Contour Pte Ltd	12.65	1, 141
Divido Financial Services Limited	5.56	1, 142
Electronic Payment Services Company (Hong Kong) Limited	38.66	46
Episode Six Limited	7.02	1, 143
EPS Company (Hong Kong) Limited	38.66	46
EURO Secured Notes Issuer	16.67	144
GZHS Research Co Ltd	20.50	145
HSBC Jintrust Fund Management Company Limited	49.00	57
Liquidity Match LLC	N/A	0, 1, 146
London Precious Metals Clearing Limited	30.00	1, 147
MENA Infrastructure Fund (GP) Ltd	33.33	145
Monese Ltd	5.39	1, 149
Quantexa Ltd	10.10	131
Services Epargne Entreprise	14.18	150
The London Gold Market Fixing Limited	25.00	134
The Saudi British Bank	31.00	152
Threadneedle Software Holdings Limited	6.56	1, 153
Trade Information Network Limited	16.67	1, 154
Trinkaus Europa Immobilien-Fonds Nr. 7 Frankfurt Mertonviertel KG	N/A	0, 87
Vizolution Limited	17.95	1, 155
We Trade Innovation Designated Activity Company	9.88	1, 156

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	*1 Centenary Square, Birmingham, United Kingdom, B1 1HQ*
18	*8 Canada Square, London, United Kingdom, E14 5HQ*
19	*5 Donegal Square South, Northern Ireland, Belfast, United Kingdom, BT1 5JP*
20	*10 Marina Boulevard #48-01 Marina Bay Financial Centre, Singapore, 018983*
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	*First Floor, Xinhua Bookstore Xindong Road (SE of roundabout), Miyun District, Beijing, China*
25	*Oak House Hirzel Street, St Peter Port, Guernsey, GY1 2NP*
26	*2929 Walden Avenue, Depew, New York, United States of*
27	*Corporation Service Company 251 Little Falls Drive, Wilmington, Delaware, United States of America, 19808*
28	*Solidere - Rue Saad Zaghloul Immeuble - 170 Marfaa, P.O. Box 17 5476 Mar Michael, Beyrouth, Lebanon, 11042040*
29	*No 1, Bei Huan East Road Dazu County, Chongqing, China*
30	*No 107 Ping Du Avenue (E), Sanhe Town, Fengdu County, Chongqing, China*
31	*No. 3, 5, 7, Haitang Erzhi Road Changyuan, Rongchang, Chongqing, China, 402460*
32	*c/o Walkers Corporate Services Limited Walker House, 87 Mary Street, George Town, Grand Cayman, Cayman Islands, KY1-9005*
33	*First & Second Floor, No.3 Nanshan Road, Pulandian , Dalian, Liaoning, China*
34	*160 Mine Lake CT, Ste 200, Raleigh, North Carolina, United States Of America, 27615-6417*
35	*38 avenue Kléber, Paris, France, 75116*
36	*MMG Tower, 23 floor Ave. Paseo del Mar Urbanizacion Costa del Este, Panama*

Registered offices

37	*No. 1 1211 Yanjiang Zhong Road, Yongan, Fujian, China*
38	*83 Des Voeux Road Central, Hong Kong*
39	*No.44 Xin Ping Road Central, Encheng, Enping, Guangdong, China, 529400*
40	*Room 311, Cheng Hui No. 2, Nan Sha Street, Nan Sha District, Guangzhou, Guangdong, China*
41	*34/F, 36/F, Unit 031 of 45/F, and 46/F, Hang Seng Bank Tower, 1000 Lujiazui Ring Road, Pilot Free Trade Zone, Shanghai, China, 200120*
42	*Gustav Mahlerplein 2 1082 MA, Amsterdam, Netherlands*
43	*8/F, Prince's Building, 10 Chater Road, Central, Hong Kong*
44	*1001, T2 Office Building, Qianhai Kerry Business Center, Qianhai Avenue, Nanshan Street, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen, Guangdong, China*
45	*156 Great Charles Street, Queensway, Birmingham, West Midlands, United Kingdom, B3 3HN*
46	*1 Queen's Road, Central, Hong Kong*
47	*Commerce House, Wickhams Cay 1, P.O. Box 3140, Road Town, Tortola, British Virgin Islands, VG1110*
48	*The Corporation Trust Company of Nevada 311 S. Division Street, Carson City, Nevada, United States of America, 89703*
49	*Menara IQ, Lingkaran TRX, Tun Razak Exchange, Kuala Lumpur, Malaysia, 55188*
50	*52/60 M G Road Fort, Mumbai, India, 400 001*
51	*557 Bouchard Level 20, Ciudad de Buenos Aires, Capital Federal, Argentina, C1106ABG*
52	*9-11 Floors, NESCO IT Park Building No. 3 Western Express Highway, Goregaon (East), Mumbai, India, 400063*
53	*HSBC Building 11-1, Nihonbashi 3-chome, Chuo-ku, Tokyo, Japan, 103-0027*
54	*Immeuble Cœur Défense, 110 Esplanade du Général de Gaulle, Courbevoie, France, 92400*
55	*Level 36, Tower 1, International Towers Sydney, 100 Barangaroo Avenue, Sydney, New South Wales, Australia, 2000*
56	*Isidora Goyenechea 2800. 23rd Floor, Las Condes, Santiago, Chile, 7550647*
57	*HSBC Building Shanghai ifc, 8 Century Avenue, Pudong, Shanghai, China, 200120*
58	*IconEbene, Level 5 Office 1 (West Wing), Rue de L'institut, Ebene, Mauritius*
59	*2 Paveletskaya Square Building 2, Moscow, Russian Federation, 115054*
60	*54F, 7 Xinyi Road Sec. 5, Xinyi District, Taipei, Taiwan*
61	*1266 Dr Luis Bonativa, 1266 Piso 30 (Torre IV WTC), Montevideo, Uruguay, CP 11.000*
62	*The Metropolitan, 235 Dong Khoi Street, District 1, Ho Chi Minh City, Viet Nam*
63	*Esentepe mah. Büyükdere Caddesi No.128, Istanbul, Türkiye, 34394*
64	*66 Teryan Street, Yerevan, Armenia, 0009*
65	*885 West Georgia Street, 3rd Floor, Vancouver, British Columbia, Canada, V6C 3E9*
66	*306 Corniche El Nil, Maadi, Egypt, 11728*
67	*116 Archbishop Street, Valletta, Malta*
68	*401, Level 4 Gate Precinct Building 2, Dubai International Financial Centre, P.O. Box 30444, Dubai, United Arab Emirates*
69	*Majer Consulting, Office 54/44, Building A1, Residence Ryad Anfa, Boulevard Omar El Khayam, Casa Finance City (CFC), Casablanca, Morocco*
70	*Al Khuwair Office, PO Box 1727, PC111 CPO Seeb, Muscat, Oman*
71	*1800 Tysons Boulevard Suite 50, Tysons, Virginia, United States of America, 22102*
72	*66 Wellington Street West, Suite 5300, Toronto, Ontario, Canada, M5K 1E6*

Registered offices

73	P.O. Box 1109, Strathvale House, Ground Floor, 90 North Church Street , George Town, Grand Cayman, Cayman Islands, KY1-1102
74	HSBC House Esplanade, St. Helier, Jersey, JE1 1HS
75	c/o Rogers Capital St. Louis Business Centre, Cnr Desroches & St Louis Streets, Port Louis, Mauritius
76	49 avenue J.F. Kennedy, Luxembourg, 1855
77	4-17/F, Office Tower 2 TaiKoo Hui, No. 381 Tian He Road, Tian He District, Guangzhou, Guangdong, China
78	Suite 1005, 10th Floor, Wisma Hamzah Kwong, Hing No. 1, Leboh Ampang, Kuala Lumpur, Malaysia, 50100
79	Filinvest One Building, Northgate Cyberzone, Filinvest Corporate City, Alabang, Muntinlupa City, Philippines
80	HSBC House, Plot No.8, Survey No.64 (Part), Hightec City Layout Madhapur, Hyderabad, India, 500081
81	439, Sri Jayawardenapura Mawatha Welikada, Rajagiriya, Colombo, Sri Lanka
82	Smart Village 28th Km Cairo- Alexandria Desert Road Building, Cairo, Egypt
83	16 York Street, 6th Floor, Toronto, Ontario, Canada, M5J 0E6
84	Centre Ville 1341 Building, 4th Floor, Patriarche Howayek Street (facing Beirut Souks), PO Box Riad El Solh, Lebanon, 9597
85	World Trade Center, Montevideo Avenida Luis Alberto de Herrera 1248, Torre 1, Piso 15, Oficina 1502, Montevideo, Uruguay, CP 11300
86	Room 655, Building A, No. 888, Huan Hu West Two Road, Lin Gang New Area of Shanghai (Pilot) Free Trade Zone, Shanghai, China
87	Hansaallee 3, Düsseldorf, Germany, 40549
88	80 Mill Street, Qormi, Malta, QRM 3101
89	26 Gartenstrasse, Zurich, Switzerland, 8002
90	24th Floor, 97-99, Sec.2, Tunhwa S. Road, Taipei, Taiwan
91	452 Fifth Avenue, New York, United States of America, NY10018
92	Mareva House, 4 George Street, Nassau, Bahamas
93	4 rue Peternelchen, Howald, Luxembourg, 2370
94	6th floor HSBC Centre 18, Cybercity, Ebene, Mauritius, 72201
95	18th Floor, Tower 1, HSBC Centre, 1 Sham Mong Road, Kowloon, Hong Kong
96	Unit 201 Floor 2, Building 3, No. 12, Anxiang Street, Shunyi District, Beijing, China
97	300 Delaware Avenue, Suite 1401, Wilmington, Delaware, United States of America, 19801
98	Woodbourne Hall, Road Town, Tortola, British Virgin Islands, P.O. Box 916
99	PO Box 71, Craigmuir Chambers, Road Town Tortola, British Virgin Islands
100	5/F HSBC Centre 3058 Fifth Ave West, Bonifacio Global City, Taguig City, Philippines
101	18 Boulevard de Kockelscheuer, Luxembourg, 1821
102	21 Farncombe Road Worthing, United Kingdom, BN11 2BW
103	Arnold House, St Julians Avenue, St Peter Port, Guernsey, GY1 1WA
104	345-6791, HSBC Tower, Burj Khalifa Community, Dubai, United Arab Emirates
105	Office No.16, Owned by HSBC Bank Middle East Limited, Dubai Branch, Bur Dubai, Burj Khalifa, Dubai, United Arab Emirates
106	HSBC Tower, Level 21, 188 Quay Street, Auckland, New Zealand, 1010
107	The Corporation Trust Incorporated, 2405 York Road, Suite 201, Lutherville Timonium, Maryland, United States of America, 21093
108	Quai des Bergues 9-17, Geneva, Switzerland, 1201
109	1 Grand Canal Square, Grand Canal Harbour, Dublin 2, Ireland, D02 P820

Registered offices

110	5 rue Heienhaff, Senningerberg, Luxembourg, 1736
111	Block 27 A&B, Qianhai Enterprise Dream Park No. 63 Qianwan Yi Road, Shenzhen-Hong Kong Cooperation Zone, Shenzhen, China, 518052
112	HSBC Building 7267 Olaya - Al Murrooj, Riyadh, Saudi Arabia, 12283 - 2255
113	Unit 1 GF The Commerical Complex Madrigal Avenue, Ayala Alabang Village, Muntinlupa City, Philippines, 1780
114	1 Mutual Place, 107 Rivonia Road, Sandton, Gauteng, South Africa, 2196
115	Kapelanka 42A , Krakow, Poland, 30-347
116	C T Corporation System 820 Bear Tavern Road, West Trenton, New Jersey, United States of America, 08628
117	L22, Office Tower 2, Taikoo Hui, 381 Tianhe Road, Tianhe District, Guangzhou, Guangdong, China
118	Business Bay, Wing 2, Tower B, Survey no 103, Hissa no. 2, Airport road, Yerwada, Pune, India, 411006
119	16 Boulevard d'Avranches, Luxembourg, Luxembourg, L-1160
120	P.O. Box 309 Ugland House, Grand Cayman, Cayman Islands, KY1-1104
121	No. 56 Yu Rong Street, Macheng, China, 438300
122	No. 205 Lie Shan Road Suizhou, Hubei, China
123	Building 3, Yin Zuo Di Jing Wan Tianmen New City, Tianmen, Hubei Province, China
124	RM101, 102 & 106 Sunshine Fairview, Sunshine Garden, Pedestrian Walkway, Pingjiang, China
125	Kings Meadow Chester Business Park , Chester, United Kingdom, CH99 9FB
126	World Trade Center 1, Jalan Jenderal Sudirman Kavling 29 - 31, Jakarta, Indonesia, 12920
127	No. 198-2 Chengshan Avenue (E), Rongcheng, China, 264300
128	Room 1303-13062 Marine Center Main Tower, 59 Linhai Road, Nanshan District, Shenzhen, China
129	Woodbourne Hall, Road Town, Tortola, British Virgin Islands, P.O. Box 3162
130	25 Main St. P.O. Box 694, Grand Cayman KY1 1107, Cayman Islands, KY1 1107
131	Hill House, 1 Little New Street, London , United Kingdom, EC4A 3TR
132	60B Orchard Road #06-18, The Atrium @Orchard, Singapore, 238891
133	c/o MUFG Fund Services (Bermuda) Limited, Cedar House, 4th Floor North, 41 Cedar Avenue, Hamilton, Bermuda, HM 12
134	c/o Hackwood Secretaries Limited, One Silk Street, London, United Kingdom, EC2Y 8HQ
135	All Saints Triangle, Caledonian Road, London, United Kingdom, N19UT
136	No.188, Yin Cheng Zhong Road China (Shanghai), Pilot Free Trade Zone, Shanghai, China
137	50/F, Lee Garden One, 33 Hysan Avenue, Hong Kong
138	13-15 York Buildings, London, United Kingdom, WC2N 6JU
139	Linen Court, Floor 3, 10 East Road, London, United Kingdom, N1 6AD
140	Unit No. 208, 2nd Floor, Kanchenjunga Building 18, Barakhamba Road, New Delhi, India, 110001
141	50 Raffles Place, #32-01 Singapore Land Tower, Singapore, 048623
142	Office 7, 35-37 Ludgate Hill, London, United Kingdom, EC4M 7JN
143	100 Town Square Place, Suite 201, Jersey City, New Jersey, United States Of America, 07310
144	7th Floor, 62 Threadneedle Street, London, United Kingdom, EC2R 8HP
145	Precinct Building 4, Level 3, Dubai International Financial Centre, Dubai, United Arab Emirates, PO Box 506553

Registered offices

146	*9/F Amtel Building, 148 des Voeux Road Central, Central, Hong Kong*
147	*3 Avenue de l'Opera , Paris, France, 75001*
148	*Room 1303, 106 Feng Ze Dong Road, Nansha District, Guangzhou, Guangdong, China*
149	*Eagle House, 163 City Road, London, United Kingdom, EC1V 1NR*
150	*32 rue du Champ de Tir, Nantes, France, 44300*
151	*Ernst-Schneider-Platz 1 , Duesseldorf, Germany, 40212*
152	*Al Amir Abdulaziz Ibn Mossaad Ibn Jalawi Street, Riyadh, Saudi Arabia*
153	*2nd Floor, Regis House, 45 King William Street, London, United Kingdom, EC4R 9AN*
154	*3 More London Riverside, London, United Kingdom, SE1 2AQ*
155	*Office Block A, Bay Studios Business Park, Fabian Way, Swansea, Wales, United Kingdom, SA1 8QB*
156	*10 Earlsfort Terrace, Dublin, Ireland, DO2 T380*