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STANDARD CHARTERED PLC
渣打集團有限公司

(Incorporated as a public limited company in England and Wales with limited liability)
(Registered Number: 966425)
(Stock Code: 02888)

Full-Year and Fourth Quarter 2021 Results
Additional Financial information – Part 1

Highlights

Standard Chartered PLC (the Group) today releases its results for the year ended 31 December 2021. The following pages provide additional information related to the announcement.

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Risk update

All risk types, both financial and non-financial, are managed and reported in accordance with the Group's Enterprise Risk Management Framework. Our key highlights from the past year are shown here.

Key highlights 2021

- Asset quality has continued to improve in a challenging macroeconomic environment
- Credit impairment significantly reduced across all stages
- The Group has maintained a strong liquidity and capital position

Our portfolio quality

Wide-ranging disruption to supply chains and rising inflation levels, in addition to the human cost of the pandemic, continued to place intense pressure on the majority of our markets. Despite these extreme challenges, we have built a solid foundation that has helped us to deliver a good performance with a resilient risk profile. This year demonstrated our commitment to strong and sustainable growth, with continued improvements seen in a number of our metrics since the end of 2020. Credit Risk remains elevated as the Group continues to monitor the impact of the pandemic and ongoing volatility in the real estate sector in China. Through our stress testing capabilities and extensive portfolio reviews, we identified and proactively managed a number of portfolios that were at risk, especially areas with higher vulnerability to COVID-19 and volatile commodity prices, such as Aviation, Hospitality and Oil & Gas. To support our clients, we continued to enact comprehensive support schemes for retail and corporate customers, including loan and interest repayment holidays, covenant relief, fee waivers or cancellations, loan extensions and new facilities.

In the second half of the year, we began to see signs of recovery in some markets as actions taken by governments and vaccine roll-outs helped to alleviate the economic effects of the pandemic. However, the resurgence of COVID-19 infections and new variants saw increased cases as 2021 came to a close, and lockdowns were reintroduced in a number of territories. We remain vigilant as the recovery remains uneven globally, with some countries increasing reliance on vaccines as a means of managing the pandemic and other countries using a wider range of measures. The threat of prolonged weak economic outlooks may lead to a sustained period of increased risk aversion, uncertainty and emerging risks.

The Group's total gross loans and advances in 2021 were $304.1 billion, an increase of $15.8 billion from 2020. Stage 2 and 3 loans have improved since 2020 by $7 billion to $24.9 billion, as we continue to focus on high-quality origination. Stage 3 loans decreased to $8.1 billion (2020: $9.2 billion), with the overall contribution to the total remaining unchanged at 3 per cent.

In Corporate, Commercial and Institutional Banking, stage 1 gross loans increased by $11.4 billion to $122.4 billion, representing 85 per cent of the portfolio (2020: 80 per cent), on the back of transfers from stage 2 and continued focus on origination of investment grade lending. Compared to 2020, exposure in early alerts decreased by 49 per cent to $5.5 billion (2020: $10.7 billion), mainly due to reductions in counterparty exposure and clients being removed from early alert. While early alerts have decreased, the Group remains vigilant in view of persistent challenging conditions in some markets and sectors. Credit Grade 12 balances decreased to $1.7 billion (2020: $2.2 billion) mainly due to repayments and outflows to non-performing loans, that were partly offset by sovereign rating downgrades. The percentage of investment grade corporate exposure has also increased to 69 per cent compared to 62 per cent a year ago, reflecting an increase in repurchase agreement balances and high-quality originations. Exposure to our top 20 corporate clients as a percentage of Tier 1 capital has increased by 1 per cent to 61 per cent (2020: 60 per cent), driven by increased exposure to investment grade clients. The Corporate, Commercial and Institutional Banking portfolios remain predominantly short-tenor and continue to be diversified across industry sectors, products, and geographies.

Our Consumer, Private and Business Banking portfolio remains stable and resilient despite ongoing challenges posed by the pandemic, with stage 1 gross loans increasing by $8.0 billion in 2021 driven by growth in Mortgage and Secured wealth products. Stage 1 loans represent 97 per cent of the Consumer, Private and Business Banking portfolio (2020: 97 per cent) with 96 per cent rated as 'Strong'. Stage 2 loans reduced by $0.7 billion, mainly driven by mortgage loans movement from stage 2 to stage 1 due to forward-looking macroeconomic outlook improvement. Stage 3 loans remain stable at 1 per cent of the portfolio. The majority of Consumer, Private and Business Banking products continue to be fully secured loans at 86 per cent of total loans (2020: 86 per cent). The overall average loan-to-value of the mortgage portfolio remains low at 41 per cent. The unsecured portfolio has remained flat compared to the previous year and continues to make up a small proportion of total Consumer, Private and Business Banking exposure.

Average Group Value at Risk (VaR) in 2021 was $54.8 million, a significant decrease compared to the previous year (2020: $97.6 million) due to extreme market movements from 2020 dropping out of the one-year VaR time horizon. However, volatility started to increase in the second half of 2021, driven by the impact of new COVID-19 variants. Trading activities have remained relatively unchanged and primarily client driven.

The Group maintained strong liquidity ratios despite the continued impact of the COVID-19 stress. The liquidity coverage ratio (LCR) has remained unchanged at 143 per cent, despite revising our approach to calculating the LCR. We have re-assessed the methodology to better reflect the portability of liquidity across the Group, while still considering currency convertibility and regulatory intra group limits. The Group's advances-to-deposits ratio has decreased by 2 per cent to 59.1 per cent, driven by an 8 per cent growth in customer deposits, most of which came from corporate customers. Customer loan growth was mainly from mortgages in Singapore and Hong Kong, and corporate loans across the Group.

The Group's CET1 capital decreased by 28 basis points to 14.1 per cent (2020: 14.4 per cent). Further details, including explanation of pro forma changes as at 1 January 2022, can be found in the Capital Review section on Page 288.

Key indicators

	2021	2020	2019
Group total business[1]	304.1	288.3	274.3
Stage 1 loans ($ billion)	279.2	256.4	246.1
Stage 2 loans ($ billion)	16.8	22.7	20.8
Stage 3 loans, credit-impaired ($ billion)	8.1	9.2	7.4
Stage 3 cover ratio	58%	58%	68%
Stage 3 cover ratio (including collateral)	75%	76%	85%
Corporate, Commercial & Institutional Banking			
Investment grade corporate net exposures as a percentage of total corporate net exposures	69%	62%	61%
Loans and advances maturing in one year or less as a percentage of total loans and advances to customers	66%	61%	62%
Early alert portfolio net exposures ($ billion)	5.5	10.7	5.3
Credit grade 12 balances ($ billion)	1.7	2.2	1.6
Aggregate top 20 corporate net exposures as a percentage of Tier 1 capital	61%	60%	56%
Collateralisation of sub-investment grade net exposures maturing in more than one year	49%	46%	45%
Consumer, Private & Business Banking			
Loan-to-value ratio of Consumer, Private & Business Banking mortgages	41%	45%	45%

1 These numbers represent total gross loans and advances to customers.

COVID-19

A number of management actions were taken throughout the year to mitigate the effect of COVID-19 on our portfolios and risk profile, informed by stress testing of various COVID-19 related scenarios and deep-dives on specific portfolios. Various short-term relief measures were implemented and we have increased engagement with our customers to find appropriate financing options where available. This includes enhancing our monitoring of facility drawdowns, loan and interest repayment holidays, covenant relief, fee waivers or cancellations, loan extensions and new facilities.

In Corporate, Commercial and Institutional Banking, 0.2 per cent of the portfolio are subject to relief measures. Around 68 per cent of the amounts approved are for tenor extensions of 90 days or less and approximately 17 per cent of the reliefs granted are to clients in vulnerable sectors.

In Consumer, Private and Business Banking, less than 1 per cent of total Consumer, Private and Business Banking exposure has had relief measures approved as at 31 December 2021, of which 51 per cent is fully secured. Through the use of customer surveys and analysis of the COVID-19 impact and delinquency trends, we have identified a higher-risk cohort of Business Banking customers which are being actively managed. 56 per cent of the Business Banking portfolio is fully secured by property or government guarantees.

While the macroeconomic environment has stabilised for the majority of the markets in our footprint, we continue to be cognisant of the potential longer-term impact, especially as relief measures have now been eased in most of our major markets.

We are managing exposures to a set of identified vulnerable sectors including Aviation, Oil & Gas, Commodity Traders, Metals & Mining, Commercial Real Estate and Hotels & Tourism particularly closely. These sectors represent 28 per cent (31 December 2021: 27 per cent) of the total net exposure in Corporate, Commercial and Institutional Banking, with the increase of 10 per cent to $72.5 billion (2020: $65.6 billion) largely due to higher levels of undrawn commitments and financial guarantees, particularly in the Commodity Traders and Commercial Real Estate sectors.

Stage 3 loans

Overall, stage 3 gross loans and advances to customers decreased by 12 per cent in 2021, from $9.2 billion to $8.1 billion. Stage 3 provisions decreased by $0.7 billion to $4.7 billion.

In Corporate, Commercial and Institutional Banking, gross stage 3 loans decreased by $1.1 billion compared with 31 December 2020 due to debt sales and repayments in Asia, and Africa and Middle East regions. Provisions decreased by $0.7 billion to $3.9 billion driven by repayments and write-offs. Inflows into stage 3 were lower by 53 per cent at $1.7 billion, compared with $3.6 billion in 2020. The new inflows in 2021 were mainly in Asia, and Africa and the Middle East.

Gross stage 3 loans in Consumer, Private and Business Banking remained broadly stable at $1.6 billion.

The stage 3 cover ratio (excluding collateral) in the total customer loan book remained at 58 per cent. Corporate, Commercial and Institutional Banking cover ratio decreased by 1 per cent to 59 per cent as a result of write-offs and new accounts with a lower coverage than existing stage 3 loans. The Consumer, Private and Business Banking cover ratio is 51 per cent (2020: 47 per cent) primarily due to a new provision taken on a Business Banking client. The cover ratio including collateral decreased to 75 per cent (2020: 76 per cent).

Credit impairment

At Group level, total credit impairment charge including the restructuring portfolio significantly reduced to $0.3 billion (2020: $2.3 billion) representing a loan loss rate of 7 basis points (bps) of average customer loans and advances (2020: 66 bps). Decreases were seen across all stages, with stage 3 impairment down by $1.3 billion, majority of which was from Corporate, Commercial and Institutional Banking. Stage 1 and 2 impairment decreased by $749 million, partly due to reduction in stage 2 exposures from lower levels of early alerts, additional collateral and improvement in probability of default, and partly due to improving macroeconomic forecasts and reduction in COVID-19 management overlays.

Corporate, Commercial and Institutional Banking saw a release of $44 million, a significant improvement compared with the credit impairment charge of $1.5 billion last year. Stage 1 and 2 impairment is a net charge of $23 million mainly driven by charges from a post model adjustment for multiple economic scenarios and the sovereign downgrade of Sri Lanka. The COVID-19 management overlays also reduced by $95 million although this was offset by a new, separately assessed management overlay of $95 million over the end of 2021 for the Commercial Real Estate exposures in China. Stage 3 credit release of $67 million was due to significant recoveries during the year.

Consumer, Private and Business Banking credit impairment has decreased (2021: $285 million, 2020: $741 million). Stage 1 and 2 impairment were significantly lower compared with 2020 at $32 million, mainly due to ECL reversals as the forward-looking macroeconomic outlook improved in relative terms. Stage 3 credit impairment of $253 million decreased by 23 per cent driven by better recoveries.

Central and other items saw a total impairment of $22 million primarily due to multiple economic scenario post model adjustments.

There was a net $9 million impairment release from the Group's discontinued businesses.

	2021			2020		
	Stage 1 & 2 $million	Stage 3 $million	Total $million	Stage 1 & 2 $million	Stage 3 $million	Total $million
Ongoing business portfolio						
Corporate, Commercial & Institutional Banking[1]	23	(67)	(44)	390	1,139	1,529
Consumer, Private & Business Banking[1]	32	253	285	413	328	741
Central & other items	23	(1)	22	24	–	24
Credit impairment charge/(release)	78	185	263	827	1,467	2,294
Restructuring business portfolio						
Others	(2)	(7)	(9)	–	31	31
Credit impairment charge/(release)	(2)	(7)	(9)	–	31	31
Total credit impairment charge/(release)	76	178	254	827	1,498	2,325

1 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking; Private Banking and Retail Banking to Consumer, Private & Business Banking. Further, certain clients have been moved between the two new client segments. Prior period has been restated

Further details of the risk performance for 2021 is set out in the Risk profile section

Risk profile

Our risk profile in 2021

Our Enterprise Risk Management Framework (ERMF) enables us to closely manage enterprise-wide risks with the objective of maximising risk-adjusted returns while remaining within our Risk Appetite. Identification and assessment of potentially adverse risk events is an essential first step in managing the risks of any business or activity and in order to facilitate that, the Group maintains a dynamic risk-scanning process with inputs from the internal and external risk environment, as well as potential threats and opportunities from the business and client perspectives, enabling us to proactively manage our portfolio. The Group maintains a taxonomy of the Principal Risk Types (PRTs), Integrated Risk Types (IRTs) and risk sub-types that are inherent to the strategy and business model; as well as an emerging risks inventory that includes near-term risks as well as longer-term uncertainties.

Despite the challenges of the ongoing pandemic, our solid foundation has helped us to deliver a good performance with a resilient risk profile. Our corporate portfolios remain predominantly short-tenor and diversified across industry sectors, products and geographies. We have seen improvements in a number of our metrics that reflect our robust risk management during the pandemic. We remain vigilant to the continued impact of COVID-19 and an uneven global recovery. We are particularly closely managing exposures in identified vulnerable sectors including Aviation, Commercial Real Estate and Oil & Gas.

The table below highlights the Group's overall risk profile associated with our business strategy.

We have a robust risk management approach supported through our well-established ERMF

- Cross-cutting risks have been repositioned as IRTs and are defined as risks that are significant in nature and materialise primarily through the relevant PRTs
- Given their integrated nature, Digital Asset Risk and Third-Party Risk, in addition to Climate Risk, have been categorised as IRTs in the ERMF
- The Capital and Liquidity PRT has been renamed to Treasury Risk and the scope of the risk type has been expanded to cover Interest Rate Risk in the banking book
- Self-assessments performed in our footprint markets reflect the maturing ERMF adoption with emphasis on first-line ownership of risks
- The more mature financial risks continued to be more effectively managed on a relative basis compared to non-financial risks in 2021, and other aspects of the ERMF are established and operating to a more consistent standard
- The Group aims to further strengthen its risk management practices in 2022, through further improving on the management of non-financial risks within its businesses, functions and across the footprint, as well as management of risks which are integrated in nature

Our portfolios exhibit a resilient risk profile despite a challenging macroeconomic environment

- The proportion of the Group's gross loans and advances to customers in stage 1 and 2 has improved to 92 per cent and 6 per cent respectively (from 89 per cent and 8 per cent respectively in 2020)
- Exposure to investment grade clients has increased to 69 per cent (2020: 62 per cent) reflecting an increase in repurchase agreement balances and high-quality originations
- There has been a 49 per cent decrease to $5.5 billion (2020: $10.7 billion) in early alerts exposure, mainly due to reductions in counterparty exposure and clients being removed from early alert
- The total credit impairment charge significantly reduced to $0.3 billion (2020: $2.3 billion), with decreases seen across all three stages
- Stage 3 gross loans decreased to $8.1 billion (2020: $9.2 billion), with the overall contribution to the total remaining unchanged at 3 per cent. The overall stage 3 cover ratio remained stable at 58 per cent (2020: 58 per cent)
- The majority of our Consumer, Private & Business Banking products continue to be fully secured loans (stable at 86 per cent of the portfolio). The overall average loan-to-value of the mortgage portfolio is low at 41 per cent

Our capital and liquidity positions continue to be at healthy levels

- We remain well capitalised and our balance sheet remains highly liquid
- The Group liquidity coverage ratio has remained stable at 143 per cent
- We continue to have a strong advances-to-deposits ratio
- Our customer deposit base is diversified by type and maturity
- Our Common Equity Tier 1 ratio is 14.1 per cent (2020: 14.4 per cent). Further details, including explanation of pro forma changes as at 1 January 2022, can be found in the Capital Review section.

Further details on the ERMF can be found in the Risk management approach section

Credit Risk (audited)

Basis of preparation

Unless otherwise stated the balance sheet and income statement information presented within this section is based on the Group's management view. This is principally the location from which a client relationship is managed, which may differ from where it is financially booked and may be shared between businesses and/or regions. This view reflects how the client segments and regions are managed internally.

Loans and advances to customers and banks held at amortised cost in this Risk profile section include reverse repurchase agreement balances held at amortised cost, as per Note 14 Reverse repurchase and repurchase agreements including other similar secured lending and borrowing.

Credit Risk overview

Credit Risk is the potential for loss due to the failure of a counterparty to meet its contractual obligations to pay the Group. Credit exposures arise from both the banking and trading books.

Impairment model

IFRS 9 requires an impairment model that requires the recognition of expected credit losses (ECL) on all financial debt instruments held at amortised cost, fair value through other comprehensive income (FVOCI), undrawn loan commitments and financial guarantees.

Staging of financial instruments

Financial instruments that are not already credit-impaired are originated into stage 1 and a 12-month expected credit loss provision is recognised.

Instruments will remain in stage 1 until they are repaid, unless they experience significant credit deterioration (stage 2) or they become credit-impaired (stage 3).

Instruments will transfer to stage 2 and a lifetime expected credit loss provision recognised when there has been a significant change in the credit risk compared to what was expected at origination.

The framework used to determine a significant increase in credit risk is set out below.

Stage 3

- Credit-impaired
- Non-performing

Stage 2

- Lifetime expected credit loss
- Performing but has exhibited significant increase in credit risk (SICR)

Stage 1

- 12-month ECL
- Performing

IFRS 9 expected credit loss principles and approaches

The main methodology principles and approach adopted by the Group are set out in the following table.

Title	Description	Supplementary information
Approach to determining expected credit losses	For material loan portfolios, the Group has adopted a statistical modelling approach for determining expected credit losses that makes extensive use of credit modelling. These models leveraged existing advanced internal ratings based (IRB) models, where these were available. Where model performance breaches model monitoring thresholds or validation standards, a post model adjustment may be required to correct for identified model issues, which will be removed once those issues have been remedied.	IFRS 9 methodology Determining lifetime expected credit loss for revolving products Post model adjustments
Incorporation of forward-looking information	The determination of expected credit loss includes various assumptions and judgements in respect of forward-looking macroeconomic information. Refer below for incorporation of forward-looking information, forecast of key macroeconomic variables underlying the expected credit loss calculation and the impact on non-linearity and sensitivity of expected credit loss calculation to macroeconomic variables. Management overlays may also be used to capture risks not identified in the models.	Incorporation of forward-looking information and impact of non-linearity Forecast of key macroeconomic variables underlying the expected credit loss calculation Management overlay and sensitivity to macroeconomic variables
Significant increase in credit risk (SICR)	Expected credit loss for financial assets will transfer from a 12-month basis (stage 1) to a lifetime basis (stage 2) when there is a significant increase in credit risk (SICR) relative to that which was expected at the time of origination, or when the asset becomes credit-impaired. On transfer to a lifetime basis, the expected credit loss for those assets will reflect the impact of a default event expected to occur over the remaining lifetime of the instrument rather than just over the 12 months from the reporting date. SICR is assessed by comparing the risk of default of an exposure at the reporting date with the risk of default at origination (after considering the passage of time). 'Significant' does not mean statistically significant nor is it reflective of the extent of the impact on the Group's financial statements. Whether a change in the risk of default is significant or not is assessed using quantitative and qualitative criteria, the weight of which will depend on the type of product and counterparty.	Quantitative criteria Significant increase in credit risk thresholds Specific qualitative and quantitative criteria per segment: Corporate, Commercial & Institutional Banking clients Consumer Banking clients Private Banking clients Debt securities
Assessment of credit-impaired financial assets	Credit-impaired (stage 3) financial assets comprise those assets that have experienced an observed credit event and are in default. Default represents those assets that are at least 90 days past due in respect of principal and interest payments and/or where the assets are otherwise considered unlikely to pay. This definition is consistent with internal Credit Risk management and the regulatory definition of default. Unlikely to pay factors include objective conditions such as bankruptcy, debt restructuring, fraud or death. It also includes credit-related modifications of contractual cashflows due to significant financial difficulty (forbearance) where the Group has granted concessions that it would not ordinarily consider. Interest income for stage 3 assets is recognised by applying the original effective interest rate to the net asset amount (that is, net of credit impairment provisions). When financial assets are transferred from stage 3 to stage 2, any contractual interest recovered in excess of the interest income recognised while the asset was in stage 3 is reported within the credit impairment line.	Consumer Banking clients Corporate, Commercial & Institutional Banking and Private Banking clients

Transfers between stages	Assets will transfer from stage 3 to stage 2 when they are no longer considered to be credit-impaired. Assets will not be considered credit-impaired only if the customer makes payments such that they are paid to current in line with the original contractual terms. Assets may transfer to stage 1 if they are no longer considered to have experienced a significant increase in credit risk. This will be immediate when the original PD based transfer criteria are no longer met (and as long as none of the other transfer criteria apply). Where assets were transferred using other measures, the assets will only transfer back to stage 1 when the condition that caused the significant increase in credit risk no longer applies (and as long as none of the other transfer criteria apply).	Movement in loan exposures and expected credit losses
Modified financial assets	Where the contractual terms of a financial instrument have been modified, and this does not result in the instrument being derecognised, a modification gain or loss is recognised in the income statement representing the difference between the original cashflows and the modified cashflows, discounted at the effective interest rate. The modification gain/loss is directly applied to the gross carrying amount of the instrument. If the modification is credit related, such as forbearance or where the Group has granted concessions that it would not ordinarily consider, then it will be considered credit-impaired. Modifications that are not credit related will be subject to an assessment of whether the asset's credit risk has increased significantly since origination by comparing the remaining lifetime PD based on the modified terms with the remaining lifetime PD based on the original contractual terms.	COVID-19 relief measures Forbearance and other modified loans
Governance and application of expert credit judgement in respect of expected credit losses	The models used in determining ECL are reviewed and approved by the Group Credit Model Assessment Committee and have been validated by Group model validation, which is independent of the business. A quarterly model monitoring process is in place that uses recent data to compare the differences between model predictions and actual outcomes against approved thresholds. Where a model's performance breaches the monitoring thresholds then an assessment of whether an ECL adjustment is required to correct for the identified model issue is completed. The determination of expected credit losses requires a significant degree of management judgement which had an impact on governance processes, with the output of the expected credit models assessed by the IFRS 9 Impairment Committee.	Group Credit Model Assessment Committee IFRS 9 Impairment Committee

Maximum exposure to Credit Risk (audited)

The table below presents the Group's maximum exposure to Credit Risk for its on-balance sheet and off-balance sheet financial instruments as at 31 December 2021, before and after taking into account any collateral held or other Credit Risk mitigation.

The Group's on-balance sheet maximum exposure to Credit Risk increased by $36 billion to $796 billion (2020: $760 billion). Cash and balances at Central banks increased by $6 billion and loans and advances to customers grew by $17 billion. Of the $17 billion increase, $6 billion was in Corporate, Commercial and Institutional Banking. Consumer, Private and Business Banking increased by $7.4 billion largely in Mortgage and Secured wealth products, and Central and other items increased by $3 billion. There was an increase of $21 billion in fair value through profit and loss instruments and an increase of $10 billion in investment securities debt, offset by a $17 billion decrease in derivative exposures.

	2021				2020			
		Credit Risk management				Credit Risk management		
	Maximum exposure $million	Collateral[8] $million	Master netting agreements $million	Net exposure $million	Maximum exposure $million	Collateral[8] $million	Master netting agreements $million	Net exposure $million
On-balance sheet								
Cash and balances at central banks	72,663			72,663	66,712			66,712
Loans and advances to banks[1]	44,383	1,079		43,304	44,347	1,247		43,100
of which – reverse repurchase agreements and other similar secured lending[7]	1,079	1,079		–	1,247	1,247		–
Loans and advances to customers[1]	298,468	131,397		167,071	281,699	123,516		158,183
of which – reverse repurchase agreements and other similar secured lending[7]	7,331	7,331		–	2,919	2,919		–
Investment securities – debt securities and other eligible bills[2]	162,700			162,700	152,861			152,861
Fair value through profit or loss[3,7]	123,234	80,009	–	43,225	102,259	63,405	–	38,854
Loans and advances to banks	3,847			3,847	3,877			3,877
Loans and advances to customers	9,953			9,953	9,377			9,377
Reverse repurchase agreements and other similar lending[7]	80,009	80,009		–	63,405	63,405		–
Investment securities – debt securities and other eligible bills[2]	29,425			29,425	25,600			25,600
Derivative financial instrument[s4,7]	52,445	8,092	39,502	4,851	69,467	10,136	40,097	12,234
Accrued income	1,674			1,674	1,775			1,775
Assets held for sale	52			52	83			83
Other assets[5]	40,068			40,068	40,978			40,978
Total balance sheet	795,687	220,577	39,502	535,608	760,181	198,304	47,097	514,780
Off-balance sheet[6]								
Undrawn commitments	158,523	3,848		154,675	153,403	4,432		148,971
Financial guarantees and other equivalents	58,535	2,240		56,295	53,832	2,252		51,580
Total off-balance sheet	217,058	6,088	–	210,970	207,235	6,684	–	200,551
Total	1,012,745	226,665	39,502	746,578	967,416	204,988	47,097	715,331

1 Net of credit impairment. An analysis of credit quality is set out in the credit quality analysis section. Further details of collateral held by client segment and stage are set out in the collateral analysis section

2 Excludes equity and other investments of $737 million (31 December 2020: $454 million). Further details are set out in Note 13 Financial instruments

3 Excludes equity and other investments of $5,861 million (31 December 2020: $4,528 million). Further details are set out in Note 13 Financial instruments

4 The Group enters into master netting agreements, which in the event of default result in a single amount owed by or to the counterparty through netting the sum of the positive and negative mark-to-market values of applicable derivative transactions

5 Other assets include Hong Kong certificates of indebtedness, cash collateral, and acceptances, in addition to unsettled trades and other financial assets

6 Excludes ECL allowances which are reported under Provisions for liabilities and charges

7 Collateral capped at maximum exposure (over-collateralised)

8 Adjusted for over-collateralisation, which has been determined with reference to the drawn and undrawn component as this best reflects the effect on the amount arising from expected credit losses. Loans and advances to customers collateral now re-presented between on and off -balance sheet as it also includes guarantees

Analysis of financial instrument by stage (audited)

This table shows financial instruments and off-balance sheet commitments by stage, along with the total credit impairment loss provision against each class of financial instrument.

The proportion of financial instruments held within stage 1 improved by 1 per cent to 94.8 per cent (2020: 93.8 per cent). Total stage 1 balances increased by $47 billion, of which around $23 billion was in loans and advances to customers. Of the $23 billion increase in loans to customers, $11 billion was in Corporate, Commercial and Institutional Banking and $8 billion was in Consumer, Private and Business Banking across Mortgage and Secured wealth products. Off-balance sheet exposures increased by $11.3 billion due to an increase of $5.8 billion in undrawn commitments and a $5.4 billion increase in financial guarantees, trade credits and irrevocable letter of credit.

Stage 2 financial instruments reduced to $34.6 billion (2020: $39.9 billion) due to exposure changes and partly due to transfers to stage 1 in Corporate, Commercial and Institutional Banking as early alert balances reduced. As a result, the proportion of loans and advances to customers classified in stage 2 also reduced to $16.8 billion or 6 per cent (2020: $22.6 billion or 8 per cent).

Stage 3 financial instruments were stable at 1 per cent of the Group total.

	2021											
	Stage 1			Stage 2			Stage 3			Total		
	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million
Cash and balances at central banks	72,601	–	72,601	66	(4)	62	–	–	–	72,667	(4)	72,663
Loans and advances to banks (amortised cost)	43,776	(12)	43,764	580	(4)	576	54	(11)	43	44,410	(27)	44,383
Loans and advances to customers (amortised cost)	279,178	(473)	278,705	16,849	(524)	16,325	8,095	(4,657)	3,438	304,122	(5,654)	298,468
Debt securities and other eligible bills[5]	157,352	(67)		5,315	(42)		113	(66)		162,780	(175)	
Amortised cost	41,092	(13)	41,079	200	(1)	199	113	(66)	47	41,405	(80)	41,325
FVOCI[2]	116,260	(54)		5,115	(41)		–	–		121,375	(95)	–
Accrued income (amortised cost)[4]	1,674	–	1,674	–	–	–	–	–	–	1,674	–	1,674
Assets held for sale[4]	52	–	52	–	–	–	–	–	–	52	–	52
Other assets	40,067	–	40,067	–	–	–	4	(3)	1	40,071	(3)	40,068
Undrawn commitments[3]	149,530	(42)		8,993	(60)		–	–		158,523	(102)	
Financial guarantees, trade credits and irrevocable letters of credit[3]	54,923	(15)		2,813	(22)		799	(207)		58,535	(244)	
Total	799,153	(609)		34,616	(656)		9,065	(4,944)		842,834	(6,209)	

1 Gross carrying amount for off-balance sheet refers to notional values
2 These instruments are held at fair value on the balance sheet. The ECL provision in respect of debt securities measured at FVOCI is held within the OCI reserve
3 These are off-balance sheet instruments. Only the ECL is recorded on-balance sheet as a financial liability and therefore there is no "net carrying amount". ECL allowances on off-balance sheet instruments are held as liability provisions to the extent that the drawn and undrawn components of loan exposures can be separately identified. Otherwise they will be reported against the drawn component
4 Stage 1 ECL is not material
5 Stage 3 gross includes $33 million originated credit-impaired debt securities

	2020											
	Stage 1			Stage 2			Stage 3			Total		
	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million	Gross balance[1] $million	Total credit impairment $million	Net carrying value $million
Cash and balances at central banks	66,649	–	66,649	67	(4)	63	–	–	–	66,716	(4)	66,712
Loans and advances to banks (amortised cost)	44,015	(14)	44,001	349	(3)	346	–	–	–	44,364	(17)	44,347
Loans and advances to customers (amortised cost)	256,437	(534)	255,903	22,661	(738)	21,923	9,214	(5,341)	3,873	288,312	(6,613)	281,699
Debt securities and other eligible bills[5]	149,316	(56)		3,506	(26)		114	(58)		152,936	(140)	
Amortised cost	19,246	(15)	19,231	195	(2)	193	114	(58)	56	19,555	(75)	19,480
FVOCI[2]	130,070	(41)		3,311	(24)		–	–		133,381	(65)	
Accrued income (amortised cost)[4]	1,775	–	1,775	–	–	–	–	–	–	1,775	–	1,775
Assets held for sale[4]	83	–	83	–	–	–	–	–	–	83	–	83
Other assets	40,978	(1)	40,977	–	–	–	4	(3)	1	40,982	(4)	40,978
Undrawn commitments[3]	143,703	(39)		9,698	(78)		2	–		153,403	(117)	
Financial guarantees, trade credits and irrevocable letters of credit[3]	49,489	(20)		3,573	(36)		770	(194)		53,832	(250)	
Total	752,445	(664)		39,854	(885)		10,104	(5,596)		802,403	(7,145)	

1 Gross carrying amount for off-balance sheet refers to notional values
2 These instruments are held at fair value on the balance sheet. The ECL provision in respect of debt securities measured at FVOCI is held within the OCI reserve
3 These are off-balance sheet instruments. Only the ECL is recorded on-balance sheet as a financial liability and therefore there is no "net carrying amount". ECL allowances on off-balance sheet instruments are held as liability provisions to the extent that the drawn and undrawn components of loan exposures can be separately identified. Otherwise they will be reported against the drawn component
4 Stage 1 ECL is not material
5 Stage 3 gross includes $38 million originated credit-impaired debt securities

Credit quality analysis (audited)

Credit quality by client segment

For the Corporate, Commercial and Institutional Banking portfolio, exposures are analysed by credit grade (CG), which plays a central role in the quality assessment and monitoring of risk. All loans are assigned a CG, which is reviewed periodically and amended in light of changes in the borrower's circumstances or behaviour. CGs 1 to 12 are assigned to stage 1 and stage 2 (performing) clients or accounts, while CGs 13 and 14 are assigned to stage 3 (defaulted) clients. The mapping of credit quality is as follows.

Mapping of credit quality

The Group uses the following internal risk mapping to determine the credit quality for loans.

	Corporate, Commercial & Institutional Banking			Private Banking[1]	Consumer & Business Banking
Credit quality description	Internal grade mapping	S&P external ratings equivalent	Regulatory PD range (%)	Internal ratings	Number of days past due
Strong	1A to 5B	AAA to BB+	0 to 0.425	Class I and Class IV	Current loans (no past dues nor impaired)
Satisfactory	6A to 11C	BB to B-/CCC[2]	0.426 to 15.75	Class II and Class III	Loans past due till 29 days
Higher risk	Grade 12	CCC/C	15.751 to 99.999	GSAM managed	Past due loans 30 days and over till 90 days

1 For Private Banking, classes of risk represent the type of collateral held. Class I represents facilities with liquid collateral, such as cash and marketable securities. Class II represents unsecured/partially secured facilities and those with illiquid collateral, such as equity in private enterprises. Class III represents facilities with residential or commercial real estate collateral. Class IV covers margin trading facilities
2 Rating for Corporate/NBFIs. Banks' rating: BB to CCC/C

The table overleaf sets out the gross loans and advances held at amortised cost, expected credit loss provisions and expected credit loss coverage by business segment and stage. Expected credit loss coverage represents the expected credit loss reported for each segment and stage as a proportion of the gross loan balance for each segment and stage.

Stage 1:

Stage 1 gross loans and advances to customers increased by $23 billion compared with 31 December 2020 and represent an increase of 3 per cent. Stage 1 gross balances represent 92 per cent of loans and advances to customers (2020: 89 per cent). The stage 1 coverage ratio remained at 0.2 per cent compared with 31 December 2020.

In Corporate, Commercial and Institutional Banking, the proportion of stage 1 loans has increased to 85 per cent (2020: 80 per cent), and the percentage of stage 1 loans rated as strong is higher at 64 per cent (2020: 58 per cent) as the Group continues to focus on the origination of investment grade lending. Stage 1 loans increased by $11 billion, primarily in the Government, Manufacturing and Consumer durables sectors.

Consumer, Private and Business Banking stage 1 loans increased by $8 billion primarily driven by new lending in Mortgage and Secured wealth products. The proportion rated as strong remained stable at 96 per cent.

Stage 2:

Stage 2 gross loans and advances to customers decreased by $6 billion compared with 31 December 2020, and the proportion of stage 2 loans also reduced to 5.5 per cent from 7.9 per cent per cent due to changes in exposures and also due to transfers to stage 1 in Corporate, Commercial and Institutional Banking.

Consumer, Private and Business Banking stage 2 loans saw a decrease of $0.7 billion, mainly driven by mortgage loans movement from stage 2 to stage 1 due to forward-looking macroeconomic outlook improvement.

Stage 2 loans to customers classified as 'Higher risk' decreased by $0.9 billion, primarily driven by lower inflows from early alert non-purely precautionary, offset by outflows to stage 3.

The overall stage 2 cover ratio reduced from 3.3 per cent to 3.1 per cent.

Stage 3:

Stage 3 gross loans and advances to customers decreased by 12 per cent to $8.1 billion compared with 31 December 2020 of $9.2 billion. Stage 3 provisions decreased by $0.7 billion to $4.7 billion. The stage 3 cover ratio (excluding collateral) remained stable at 58 per cent.

In Corporate, Commercial and Institutional Banking, gross stage 3 loans decreased by $1.1 billion compared with 31 December 2020 due to debt sales and repayments in Asia and Africa and the Middle East regions. Provisions decreased by $0.7 billion to $3.9 billion also driven by repayments and write-offs. Corporate, Commercial and Institutional Banking cover ratio decreased by 1 per cent as a result of write-offs and new accounts with a lower coverage than existing stage 3 loans.

In Consumer, Private and Business Banking, stage 3 loans remained stable at 1 per cent of the portfolio while the cover ratio improved by 4 per cent to 51 per cent (2020: 47 per cent) due to a new provision taken on a Business Banking client.

Loans and advances by client segment (audited)

	2021						
		Customers					
Amortised cost	Banks $million	Corporate, Commercial & Institutional Banking $million	Consumer, Private & Business Banking $million	Central & other items $million	Customer Total $million	Undrawn commitments $million	Financial guarantees $million
Stage 1	43,776	122,368	134,371	22,439	279,178	149,530	54,923
– Strong	30,813	77,826	129,568	22,333	229,727	132,274	37,418
– Satisfactory	12,963	44,542	4,803	106	49,451	17,256	17,505
Stage 2	580	14,818	1,921	110	16,849	8,993	2,813
– Strong	126	2,366	1,253	–	3,619	2,786	714
– Satisfactory	105	11,180	308	–	11,488	5,235	1,546
– Higher risk	349	1,272	360	110	1,742	972	553
Of which (stage 2):							
– Less than 30 days past due	–	77	308	–	385	–	–
– More than 30 days past due	–	49	360	–	409	–	–
Stage 3, credit-impaired financial assets	54	6,520	1,575	–	8,095	–	799
Gross balance[1]	44,410	143,706	137,867	22,549	304,122	158,523	58,535
Stage 1	(12)	(103)	(370)	–	(473)	(42)	(15)
– Strong	(4)	(58)	(283)	–	(341)	(23)	(5)
– Satisfactory	(8)	(45)	(87)	–	(132)	(19)	(10)
Stage 2	(4)	(341)	(183)	–	(524)	(60)	(22)
– Strong	(2)	(62)	(104)	–	(166)	(6)	(1)
– Satisfactory	(2)	(179)	(32)	–	(211)	(46)	(9)
– Higher risk	–	(100)	(47)	–	(147)	(8)	(12)
Of which (stage 2):							
– Less than 30 days past due	–	(2)	(32)	–	(34)	–	–
– More than 30 days past due	–	(3)	(47)	–	(50)	–	–
Stage 3, credit-impaired financial assets	(11)	(3,861)	(796)	–	(4,657)	–	(207)
Total credit impairment	(27)	(4,305)	(1,349)	–	(5,654)	(102)	(244)
Net carrying value	44,383	139,401	136,518	22,549	298,468		
Stage 1	0.0%	0.1%	0.3%	0.0%	0.2%	0.0%	0.0%
– Strong	0.0%	0.1%	0.2%	0.0%	0.1%	0.0%	0.0%
– Satisfactory	0.1%	0.1%	1.8%	0.0%	0.3%	0.1%	0.1%
Stage 2	0.7%	2.3%	9.5%	0.0%	3.1%	0.7%	0.8%
– Strong	1.6%	2.6%	8.3%	0.0%	4.6%	0.2%	0.1%
– Satisfactory	1.9%	1.6%	10.4%	0.0%	1.8%	0.9%	0.6%
– Higher risk	0.0%	7.9%	13.1%	0.0%	8.4%	0.8%	2.2%
Of which (stage 2):							
– Less than 30 days past due	0.0%	2.6%	10.4%	0.0%	8.8%	0.0%	0.0%
– More than 30 days past due	0.0%	6.1%	13.1%	0.0%	12.2%	0.0%	0.0%
Stage 3, credit-impaired financial assets (S3)	20.4%	59.2%	50.5%	0.0%	57.5%	0.0%	25.9%
Cover ratio	0.1%	3.0%	1.0%	0.0%	1.9%	0.1%	0.4%
Fair value through profit or loss							
Performing	22,574	69,356	67	1,774	71,197	–	–
– Strong	20,132	53,756	67	1,772	55,595	–	–
– Satisfactory	2,442	15,600	–	2	15,602	–	–
– Higher risk	–	–	–	–	–	–	–
Defaulted (CG13–14)	–	38	–	–	38	–	–
Gross balance (FVTPL)[2]	22,574	69,394	67	1,774	71,235	–	–
Net carrying value (incl FVTPL)	66,957	208,795	136,585	24,323	369,703	–	–

1 Loans and advances includes reverse repurchase agreements and other similar secured lending of $7,331 million under Customers and of $1,079 million under Banks, held at amortised cost

2 Loans and advances includes reverse repurchase agreements and other similar secured lending of $61,282 million under Customers and of $18,727 million under Banks, held at fair value through profit or loss

	2020 (Restated)						
		Customers					
Amortised cost	Banks $million	Corporate, Commercial & Institutional Banking[3] $million	Consumer, Private & Business Banking[3] $million	Central & other items $million	Customer Total $million	Undrawn commitments $million	Financial Guarantees $million
Stage 1	44,015	110,993	126,294	19,150	256,437	143,703	49,489
– Strong[4]	34,961	64,277	120,892	18,889	204,058	122,792	30,879
– Satisfactory[4]	9,054	46,716	5,402	261	52,379	20,911	18,610
Stage 2	349	20,004	2,657	–	22,661	9,698	3,573
– Strong	95	2,756	1,522	–	4,278	3,537	386
– Satisfactory	233	15,105	665	–	15,770	5,522	2,399
– Higher risk	21	2,143	470	–	2,613	639	788
Of which (stage 2):							
– Less than 30 days past due	–	202	663	–	865	–	–
– More than 30 days past due	29	148	480	–	628	–	–
Stage 3, credit-impaired financial assets	–	7,652	1,562	–	9,214	2	770
Gross balance[1]	44,364	138,649	130,513	19,150	288,312	153,403	53,832
Stage 1	(14)	(95)	(438)	(1)	(534)	(39)	(20)
– Strong	(7)	(34)	(328)	–	(362)	(19)	(13)
– Satisfactory	(7)	(61)	(110)	(1)	(172)	(20)	(7)
Stage 2	(3)	(487)	(251)	–	(738)	(78)	(36)
– Strong	–	(42)	(100)	–	(142)	(3)	(3)
– Satisfactory	(3)	(291)	(85)	–	(376)	(44)	(19)
– Higher risk	–	(154)	(66)	–	(220)	(31)	(14)
Of which (stage 2):							
– Less than 30 days past due	–	(6)	(85)	–	(91)	–	–
– More than 30 days past due	–	(6)	(66)	–	(72)	–	–
Stage 3, credit-impaired financial assets	–	(4,610)	(731)	–	(5,341)	–	(194)
Total credit impairment	(17)	(5,192)	(1,420)	(1)	(6,613)	(117)	(250)
Net carrying value	44,347	133,457	129,093	19,149	281,699		
Stage 1	0.0%	0.1%	0.3%	0.0%	0.2%	0.0%	0.0%
– Strong	0.0%	0.1%	0.3%	0.0%	0.2%	0.0%	0.0%
– Satisfactory	0.1%	0.1%	2.0%	0.4%	0.3%	0.1%	0.0%
Stage 2	0.9%	2.4%	9.4%	0.0%	3.3%	0.8%	1.0%
– Strong	0.0%	1.5%	6.6%	0.0%	3.3%	0.1%	0.8%
– Satisfactory	1.3%	1.9%	12.8%	0.0%	2.4%	0.8%	0.8%
– Higher risk	0.0%	7.2%	14.0%	0.0%	8.4%	4.9%	1.8%
Of which (stage 2):							
– Less than 30 days past due	0.0%	3.0%	12.8%	0.0%	10.5%	0.0%	0.0%
– More than 30 days past due	0.0%	4.1%	13.8%	0.0%	11.5%	0.0%	0.0%
Stage 3, credit-impaired financial assets (S3)	0.0%	60.2%	46.8%	0.0%	58.0%	0.0%	25.2%
Cover ratio	0.0%	3.7%	1.1%	0.0%	2.3%	0.1%	0.5%
Fair value through profit or loss							
Performing	22,082	54,384	135	12	54,531	–	–
– Strong	18,100	29,527	133	8	29,668	–	–
– Satisfactory	3,982	24,775	2	4	24,781	–	–
– Higher risk	–	82	–	–	82	–	–
Defaulted (CG13-14)	–	46	–	–	46	–	–
Gross balance (FVTPL)[2]	22,082	54,430	135	12	54,577	–	–
Net carrying value (incl FVTPL)	66,429	187,887	129,228	19,161	336,276	–	–

1 Loans and advances includes reverse repurchase agreements and other similar secured lending of $2,919 million under Customers and of $1,247 million under Banks, held at amortised cost

2 Loans and advances includes reverse repurchase agreements and other similar secured lending of $45,200 million under Customers and of $18,205 million under Banks, held at fair value through profit or loss

3 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking; Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated

4 FY 2020 Consumer, Private & Business Banking Stage 1 Gross: Strong restated from $119,766 million to $120,892 million and Satisfactory restated from $6,528 million to $5,402 million. Stage 1 ECL: Strong restated from $307 million to $328 million and Satisfactory restated from $131 million to $110 million

Loans and advances by client segment credit quality analysis

			Corporate, Commercial & Institutional Banking							
			2021							
			Gross				Credit impairment			
Credit grade	Regulatory 1 year PD range (%)	S&P external ratings equivalent	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Strong			77,826	2,366	–	80,192	(58)	(62)	–	(120)
1A–2B	0–0.045	AA- and above	14,013	216	–	14,229	(1)	–	–	(1)
3A–4A	0.046–0.110	A+ to A-	23,173	515	–	23,688	(3)	–	–	(3)
4B–5B	0.111–0.425	BBB+ to BBB-/BB+	40,640	1,635	–	42,275	(54)	(62)	–	(116)
Satisfactory			44,542	11,180	–	55,722	(45)	(179)	–	(224)
6A–7B	0.426–1.350	BB+/BB to BB-	27,009	2,894	–	29,903	(21)	(40)	–	(61)
8A–9B	1.351–4.000	BB-/B+ to B+/B	11,910	5,592	–	17,502	(13)	(90)	–	(103)
10A–11C	4.001–15.75	B to B-/CCC	5,623	2,694	–	8,317	(11)	(49)	–	(60)
Higher risk			–	1,272	–	1,272	–	(100)	–	(100)
12	15.751–99.999	CCC/C	–	1,272	–	1,272	–	(100)	–	(100)
Defaulted			–	–	6,520	6,520	–	–	(3,861)	(3,861)
13–14	100	Defaulted	–	–	6,520	6,520	–	–	(3,861)	(3,861)
Total			122,368	14,818	6,520	143,706	(103)	(341)	(3,861)	(4,305)

			2020 (Restated[1])							
			Gross				Credit impairment			
Credit grade	Regulatory 1 year PD range (%)	S&P external ratings equivalent	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Strong			64,277	2,756	–	67,033	(34)	(42)	–	(76)
1A–2B	0–0.045	AA- and above	11,071	295	–	11,366	–	(4)	–	(4)
3A–4A	0.046–0.110	A+ to A-	16,753	815	–	17,568	(2)	(11)	–	(13)
4B–5B	0.111–0.425	BBB+ to BBB-/BB+	36,453	1,646	–	38,099	(32)	(27)	–	(59)
Satisfactory			46,716	15,105	–	61,821	(61)	(291)	–	(352)
6A–7B	0.426–1.350	BB+/BB to BB-	28,917	5,396	–	34,313	(31)	(74)	–	(105)
8A–9B	1.351 –4.000	BB-/B+ to B+/B	12,276	5,235	–	17,511	(20)	(108)	–	(128)
10A–11C	4.001–15.75	B to B-/CCC	5,523	4,474	–	9,997	(10)	(109)	–	(119)
Higher risk			–	2,143	–	2,143	–	(154)	–	(154)
12	15.751–99.999	CCC/C	–	2,143	–	2,143	–	(154)	–	(154)
Defaulted			–	–	7,652	7,652	–	–	(4,610)	(4,610)
13–14	100	Defaulted	–	–	7,652	7,652	–	–	(4,610)	(4,610)
Total			110,993	20,004	7,652	138,649	(95)	(487)	(4,610)	(5,192)

1 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking. Prior period has been restated

	Consumer, Private & Business Banking							
	2021							
	Gross				Credit impairment			
Credit grade	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Strong	129,568	1,253	–	130,821	(283)	(104)	–	(387)
Secured	112,167	884	–	113,051	(48)	(19)	–	(67)
Unsecured	17,401	369	–	17,770	(235)	(85)	–	(320)
Satisfactory	4,803	308	–	5,111	(87)	(32)	–	(119)
Secured	4,524	164	–	4,688	(44)	(1)	–	(45)
Unsecured	279	144	–	423	(43)	(31)	–	(74)
Higher risk	–	360	–	360	–	(47)	–	(47)
Secured	–	250	–	250	–	(11)	–	(11)
Unsecured	–	110	–	110	–	(36)	–	(36)
Defaulted	–	–	1,575	1,575	–	–	(796)	(796)
Secured			1,107	1,107			(516)	(516)
Unsecured	–	–	468	468	–	–	(280)	(280)
Total	134,371	1,921	1,575	137,867	(370)	(183)	(796)	(1,349)

	2020 (Restated[1])							
	Gross				Credit impairment			
Credit grade	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Strong	120,892	1,522	–	122,414	(328)	(100)	–	(428)
Secured	104,446	1,345	–	105,791	(59)	(30)	–	(89)
Unsecured[2]	16,446	177	–	16,623	(269)	(70)	–	(339)
Satisfactory	5,402	665	–	6,067	(110)	(85)	–	(195)
Secured	5,023	220	–	5,243	(11)	(3)	–	(14)
Unsecured[2]	379	445	–	824	(99)	(82)	–	(181)
Higher risk	–	470	–	470	–	(66)	–	(66)
Secured	–	316	–	316	–	(12)	–	(12)
Unsecured	–	154	–	154	–	(54)	–	(54)
Defaulted	–	–	1,562	1,562	–	–	(731)	(731)
Secured			1,061	1,061			(418)	(418)
Unsecured	–	–	501	501	–	–	(313)	(313)
Total	126,294	2,657	1,562	130,513	(438)	(251)	(731)	(1,420)

1 Following the Group's change in organisational structure, there has been an integration of Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated
2 FY 2020 Consumer, Private & Business Banking Stage 1 Gross: Strong Unsecured restated from $15,319 million to $16,446 million and Satisfactory Unsecured restated from $1,505 million to $379 million. Stage 1 ECL: Strong Unsecured restated from $249 million to $269 million and Satisfactory Unsecured restated from $118 million to $99 million

Credit quality by geographic region

The following table sets out the credit quality for gross loans and advances to customers and banks, held at amortised cost, by geographic region and stage.

Loans and advances to customers

	2021				2020 (Restated)			
Amortised cost	Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million	Asia[3] $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross (stage 1)	235,123	19,990	24,065	279,178	211,668	21,144	23,625	256,437
Provision (stage 1)	(371)	(86)	(16)	(473)	(423)	(96)	(15)	(534)
Gross (stage 2)	8,779	4,077	3,993	16,849	13,771	6,251	2,639	22,661
Provision (stage 2)	(318)	(137)	(69)	(524)	(418)	(255)	(65)	(738)
Gross (stage 3)[2]	4,448	2,918	729	8,095	4,790	3,473	951	9,214
Provision (stage 3)	(2,400)	(1,970)	(287)	(4,657)	(2,483)	(2,313)	(545)	(5,341)
Net loans[1]	245,261	24,792	28,415	298,468	226,905	28,204	26,590	281,699

1 Includes reverse repurchase agreements and other similar secured lending
2 Amounts do not include those purchased or originated credit-impaired financial assets
3 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated.

Loans and advances to banks

	2021				2020 (Restated)			
Amortised cost	Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million	Asia[2] $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross (stage 1)	29,916	5,828	8,032	43,776	31,448	5,539	7,028	44,015
Provision (stage 1)	(3)	(5)	(4)	(12)	(9)	(3)	(2)	(14)
Gross (stage 2)	346	144	90	580	107	207	35	349
Provision (stage 2)	(1)	(1)	(2)	(4)	(1)	(2)	–	(3)
Gross (stage 3)	54	–	–	54	–	–	–	–
Provision (stage 3)	(11)	–	–	(11)	–	–	–	–
Net loans[1]	30,301	5,966	8,116	44,383	31,545	5,741	7,061	44,347

1 Includes reverse repurchase agreements and other similar secured lending
2 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Movement in gross exposures and credit impairment for loans and advances, debt securities, undrawn commitments and financial guarantees (audited)

The tables overleaf set out the movement in gross exposures and credit impairment by stage in respect of amortised cost loans to banks and customers, undrawn commitments, financial guarantees and debt securities classified at amortised cost and FVOCI. The tables are presented for the Group, debt securities and other eligible bills.

Methodology

The movement lines within the tables are an aggregation of monthly movements over the year and will therefore reflect the accumulation of multiple trades during the year. The credit impairment charge in the income statement comprises the amounts within the boxes in the table below less recoveries of amounts previously written off. Discount unwind is reported in net interest income and related to stage 3 financial instruments only.

The approach for determining the key line items in the tables is set out below.

- Transfers – transfers between stages are deemed to occur at the beginning of a month based on prior month closing balances
- Net remeasurement from stage changes – the remeasurement of credit impairment provisions arising from a change in stage is reported within the stage that the assets are transferred to. For example, assets transferred into stage 2 are remeasured from a 12-month to a lifetime expected credit loss, with the effect of remeasurement reported in stage 2. For stage 3, this represents the initial remeasurement from specific provisions recognised on individual assets transferred into stage 3 in the year
- Net changes in exposures – new business written less repayments in the year. Within stage 1, new business written will attract up to 12 months of expected credit loss charges. Repayments of non-amortising loans (primarily within Corporate, Commercial and Institutional Banking) will have low amounts of expected credit loss provisions attributed to them, due to the release of provisions over the term to maturity. In stages 2 and 3, the amounts principally reflect repayments although stage 2 may include new business written where clients are on non-purely precautionary early alert, are credit grade 12, or when non-investment grade debt securities are acquired
- Changes in risk parameters – for stages 1 and 2, this reflects changes in the probability of default (PD), loss given default (LGD) and exposure at default (EAD) of assets during the year, which includes the impact of releasing provisions over the term to maturity. It also includes the effect of changes in forecasts of macroeconomic variables during the year and movements in management overlays. In stage 3, this line represents additional specific provisions recognised on exposures held within stage 3
- Interest due but not paid – change in contractual amount of interest due in stage 3 financial instruments but not paid, being the net of accruals, repayments and write-offs, together with the corresponding change in credit impairment

Changes to ECL models, which incorporates changes to model approaches and methodologies, is not reported as a separate line item as it has an impact over a number of lines and stages.

Movements during the year

Stage 1 gross exposures increased by $42 billion to $685 billion when compared with 31 December 2020. Half of this increase in exposures was in Corporate, Commercial and Institutional Banking, from new originations and transfers from stage 2 in part due to upgrades of accounts from non-purely precautionary early alert. There was a $9 billion increase in Consumer, Private and Business Banking which was mainly driven by new originations in mortgage and secured wealth products. Additionally, there was a $8 billion increase in debt securities in stage 1.

Total stage 1 provisions decreased by $54 million to $609 million, primarily in Consumer, Private and Business Banking unsecured lending, due to an improvement in macroeconomic forecasts for Singapore and Hong Kong. Corporate, Commercial and Institutional Banking provisions increased by $9 million primarily due to an overlay taken for China Commercial real estate exposures of $31 million offset by improvement in probability of default.

Stage 2 gross exposures decreased by $5 billion to $35 billion, primarily driven by $6 billion of net outflows from exposure changes and transfers to stage 1 in Corporate, Commercial and Institutional Banking, particularly in the Manufacturing and Commercial Real Estate sectors. Consumer, Private and Business Banking exposures decreased by $0.9 billion, of which $0.7 billion was from the secured portfolio (mainly mortgages in Asia), and $0.2 billion was from unsecured portfolios. Debt securities increased by $1.8 billion mainly due to the Sri Lanka sovereign downgrade.

Stage 2 provisions decreased by $229 million compared to 31 December 2020, $174 million of which was in Corporate, Commercial and Institutional Banking as a result of exposure changes and transfers to stage 1, repayment of exposures, increased collateral and a net reduction of $31 million in judgemental management overlays (which are reported in 'Changes in risk parameters' in the table). The COVID-19 management overlay reduced by $95 million as early alert balances fell, this was partly offset by an overlay taken for China Commercial Real Estate exposures of $64 million. Consumer, Private and Business Banking provisions decreased by $72 million, mainly in unsecured lending from improvement in macroeconomic forecasts, and lower delinquencies as conditions normalised in a number of our markets.

The impact of changes in macroeconomic forecasts decreased provisions by $5 million (2020: increase of $81 million), which includes a $51 million multiple economic scenario post model adjustment.

New ECL models implemented during the year decreased provisions by $3 million.

In Corporate, Commercial and Institutional Banking, gross stage 3 loans decreased by $1.1 billion compared with 31 December 2020 due to debt sales and repayments in Asia and Africa and the Middle East regions. Provisions decreased by $0.7 billion to $3.9 billion also driven by repayments and write-offs. Corporate, Commercial and Institutional Banking cover ratio decreased by 1 per cent as a result of write-offs and new accounts with a lower coverage than existing stage 3 loans. Consumer, Private and Business Banking total stage 3 loans remained broadly stable at $1.6 billion.

All segments (audited)

Amortised cost and FVOCI	Stage 1			Stage 2			Stage 3			Total		
	Gross balance[7] $million	Total credit impair-ment $million	Net $million	Gross balance[7] $million	Total credit impair-ment $million	Net $million	Gross balance[7] $million	Total credit impair-ment $million	Net $million	Gross balance[7] $million	Total credit impair-ment $million	Net $million
As at 1 January 2020	612,404	(514)	611,890	38,787	(458)	38,329	8,082	(5,255)	2,827	659,273	(6,227)	653,046
Transfers to stage 1	46,437	(712)	45,725	(46,393)	712	(45,681)	(44)	–	(44)	–	–	–
Transfers to stage 2	(91,067)	430	(90,637)	91,176	(431)	90,745	(109)	1	(108)	–	–	–
Transfers to stage 3	(451)	1	(450)	(4,684)	266	(4,418)	5,135	(267)	4,868	–	–	–
Net change in exposures[5]	63,223	(119)	63,104	(39,610)	142	(39,468)	(1,544)	233	(1,311)	22,069	256	22,325
Net remeasurement from stage changes	–	88	88	–	(409)	(409)	–	(789)	(789)	–	(1,110)	(1,110)
Changes in risk parameters	–	17	17	–	(546)	(546)	–	(1,186)	(1,186)	–	(1,715)	(1,715)
Write-offs	–	–	–	–	–	–	(1,913)	1,913	–	(1,913)	1,913	–
Interest due but unpaid	–	–	–	–	–	–	231	(231)	–	231	(231)	–
Discount unwind	–	–	–	–	–	–	–	85	85	–	85	85
Exchange translation differences and other movements[1]	12,414	146	12,560	511	(157)	354	262	(97)	165	13,187	(108)	13,079
As at 31 December 2020[2]	642,960	(663)	642,297	39,787	(881)	38,906	10,100	(5,593)	4,507	692,847	(7,137)	685,710
Income statement ECL (charge)/release[3]		(14)			(813)			(1,742)			(2,569)	
Recoveries of amounts previously written off		–			–			242			242	
Total credit impairment (charge)/release		(14)			(813)			(1,500)			(2,327)	
As at 1 January 2021	642,960	(663)	642,297	39,787	(881)	38,906	10,100	(5,593)	4,507	692,847	(7,137)	685,710
Transfers to stage 1	25,975	(620)	25,355	(25,924)	620	(25,304)	(51)	–	(51)	–	–	–
Transfers to stage 2	(53,994)	211	(53,783)	54,335	(220)	54,115	(341)	9	(332)	–	–	–
Transfers to stage 3	(212)	3	(209)	(2,822)	335	(2,487)	3,034	(338)	2,696	–	–	–
Net change in exposures[5]	84,288	(132)	84,156	(30,551)	169	(30,382)	(2,429)	661	(1,768)	51,308	698	52,006
Net remeasurement from stage changes	–	54	54	–	(157)	(157)	–	(212)	(212)	–	(315)	(315)
Changes in risk parameters	–	79	79	–	(89)	(89)	–	(915)	(915)	–	(925)	(925)
Write-offs	–	–	–	–	–	–	(1,215)	1,215	–	(1,215)	1,215	–
Interest due but unpaid	–	–	–	–	–	–	(189)	189	–	(189)	189	–
Discount unwind[6]	–	–	–	–	–	–	–	227	227	–	227	227
Exchange translation differences and other movements[1]	(14,258)	459	(13,799)	(275)	(429)	(704)	152	(184)	(32)	(14,381)	(154)	(14,535)
As at 31 December 2021[2]	684,759	(609)	684,150	34,550	(652)	33,898	9,061	(4,941)	4,120	728,370	(6,202)	722,168
Income statement ECL (charge)/release[3]		1			(77)			(466)			(542)	
Recoveries of amounts previously written off		–			–			288			288	
Total credit impairment (charge)/release[4]		1			(77)			(178)			(254)	

1 Includes fair value adjustments and amortisation on debt securities
2 Excludes Cash and balances at central banks, Accrued income, Assets held for sale and Other assets gross balances of $114,464 million (2020: $109,556 million) and Total credit impairment of $7 million (2020: $8 million)
3 Does not include Nil (2020: $2 million release) relating to Other assets
4 Statutory basis
5 Stage 3 gross includes $33 million (2020: $38 million) originated credit-impaired debt securities
6 Includes $171 million adjustment in relation to interest earned on impaired assets
7 The gross balance includes the notional amount of off-balance sheet instruments

Of which – movement of debt securities, alternative Tier 1 and other eligible bills (audited)

	Stage 1			Stage 2			Stage 3			Total		
Amortised cost and FVOCI	Gross balance $million	Total credit impair-ment $million	Net $million	Gross balance $million	Total credit impair-ment $million	Net $million	Gross balance $million	Total credit impair-ment $million	Net $million	Gross balance $million	Total credit impair-ment $million	Net[3] $million
As at 1 January 2020	138,782	(50)	138,732	4,644	(23)	4,621	75	(45)	30	143,501	(118)	143,383
Transfers to stage 1	1,732	(28)	1,704	(1,732)	28	(1,704)	–	–	–	–	–	–
Transfers to stage 2	(1,151)	18	(1,133)	1,151	(18)	1,133	–	–	–	–	–	–
Transfers to stage 3	–	–	–	–	–	–	–	–	–	–	–	–
Net change in exposures[2]	5,298	(35)	5,263	(470)	11	(459)	39	–	39	4,867	(24)	4,843
Net remeasurement from stage changes	–	16	16	–	(26)	(26)	–	–	–	–	(10)	(10)
Changes in risk parameters	–	15	15	–	(5)	(5)	–	(6)	(6)	–	4	4
Write-offs	–	–	–	–	–	–	–	–	–	–	–	–
Interest due but unpaid	–	–	–	–	–	–	–	–	–	–	–	–
Exchange translation differences and other movements[1]	4,655	8	4,663	(87)	7	(80)	–	(7)	(7)	4,568	8	4,576
As at 31 December 2020	149,316	(56)	149,260	3,506	(26)	3,480	114	(58)	56	152,936	(140)	152,796
Income statement ECL (charge)/release		(4)			(20)			(6)			(30)	
Recoveries of amounts previously written off		–			–			–			–	
Total credit impairment (charge)/release		(4)			(20)			(6)			(30)	
As at 1 January 2021	149,316	(56)	149,260	3,506	(26)	3,480	114	(58)	56	152,936	(140)	152,796
Transfers to stage 1	403	(11)	392	(403)	11	(392)	–	–	–	–	–	–
Transfers to stage 2	(2,358)	16	(2,342)	2,358	(16)	2,342	–	–	–	–	–	–
Transfers to stage 3	–	–	–	–	–	–	–	–	–	–	–	–
Net change in exposures[2]	14,670	(39)	14,631	(155)	(11)	(166)	–	1	1	14,515	(49)	14,466
Net remeasurement from stage changes	–	13	13	–	(17)	(17)	–	–	–	–	(4)	(4)
Changes in risk parameters	–	21	21	–	8	8	–	(3)	(3)	–	26	26
Write-offs	–	–	–	–	–	–	–	–	–	–	–	–
Interest due but unpaid	–	–	–	–	–	–	–	–	–	–	–	–
Exchange translation differences and other movements[1]	(4,679)	(11)	(4,690)	9	9	18	(1)	(6)	(7)	(4,671)	(8)	(4,679)
As at 31 December 2021	157,352	(67)	157,285	5,315	(42)	5,273	113	(66)	47	162,780	(175)	162,605
Income statement ECL (charge)/release		(5)			(20)			(2)			(27)	
Recoveries of amounts previously written off		–			–			–			–	
Total credit impairment (charge)/release		(5)			(20)			(2)			(27)	

1 Includes fair value adjustments and amortisation on debt securities

2 Stage 3 gross includes $33 million (2020: $38 million) originated credit-impaired debt securities

3 FVOCI instruments are not presented net of ECL. While the presentation is on a net basis for the table, the total net on-balance sheet amount is $162,700 million (31 December 2020: $152,861 million). Refer to the Analysis of financial instrument by stage table

Corporate, Commercial and Institutional Banking (restated[2]) (audited)

	Stage 1			Stage 2			Stage 3			Total		
Amortised cost and FVOCI	Gross balance[4] $million	Total credit impair-ment $million	Net $million	Gross balance[4] $million	Total credit impair-ment $million	Net $million	Gross balance[4] $million	Total credit impair-ment $million	Net $million	Gross balance[4] $million	Total credit impair-ment $million	Net $million
As at 1 January 2020	295,383	(158)	295,225	28,525	(253)	28,272	6,795	(4,688)	2,107	330,703	(5,099)	325,604
Transfers to stage 1	37,180	(310)	36,870	(37,180)	310	(36,870)	–	–	–	–	–	–
Transfers to stage 2	(79,882)	204	(79,678)	79,917	(205)	79,712	(35)	1	(34)	–	–	–
Transfers to stage 3	(337)	–	(337)	(3,665)	82	(3,583)	4,002	(82)	3,920	–	–	–
Net change in exposures	36,605	(51)	36,554	(36,363)	59	(36,304)	(1,201)	231	(970)	(959)	239	(720)
Net remeasurement from stage changes	–	15	15	–	(188)	(188)	–	(700)	(700)	–	(873)	(873)
Changes in risk parameters	–	69	69	–	(297)	(297)	–	(763)	(763)	–	(991)	(991)
Write-offs	–	–	–	–	–	–	(1,216)	1,216	–	(1,216)	1,216	–
Interest due but unpaid	–	–	–	–	–	–	115	(115)	–	115	(115)	–
Discount unwind	–	–	–	–	–	–	–	54	54	–	54	54
Exchange translation differences and other movements	3,504	77	3,581	508	(107)	401	(38)	43	5	3,974	13	3,987
As at 31 December 2020	292,453	(154)	292,299	31,742	(599)	31,143	8,422	(4,803)	3,619	332,617	(5,556)	327,061
Income statement ECL (charge)/release[1]		33			(426)			(1,232)			(1,625)	
Recoveries of amounts previously written off		–			–			22			22	
Total credit impairment (charge)/release		33			(426)			(1,210)			(1,603)	
As at 1 January 2021	292,453	(154)	292,299	31,742	(599)	31,143	8,422	(4,803)	3,619	332,617	(5,556)	327,061
Transfers to stage 1	21,123	(243)	20,880	(21,123)	243	(20,880)	–	–	–	–	–	–
Transfers to stage 2	(45,354)	103	(45,251)	45,556	(112)	45,444	(202)	9	(193)	–	–	–
Transfers to stage 3	(69)	–	(69)	(1,989)	164	(1,825)	2,058	(164)	1,894	–	–	–
Net change in exposures	50,762	(62)	50,700	(28,447)	133	(28,314)	(2,082)	636	(1,446)	20,233	707	20,940
Net remeasurement from stage changes	–	1	1	–	(27)	(27)	–	(145)	(145)	–	(171)	(171)
Changes in risk parameters	–	41	41	–	(105)	(105)	–	(434)	(434)	–	(498)	(498)
Write-offs	–	–	–	–	–	–	(510)	510	–	(510)	510	–
Interest due but unpaid	–	–	–	–	–	–	(224)	224	–	(224)	224	–
Discount unwind[3]	–	–	–	–	–	–	–	191	191	–	191	191
Exchange translation differences and other movements	(5,783)	151	(5,632)	(302)	(122)	(424)	(90)	(103)	(193)	(6,175)	(74)	(6,249)
As at 31 December 2021	313,132	(163)	312,969	25,437	(425)	25,012	7,372	(4,079)	3,293	345,941	(4,667)	341,274
Income statement ECL (charge)/release[1]		(20)			1			57			38	
Recoveries of amounts previously written off		–			–			19			19	
Total credit impairment (charge)/release		(20)			1			76			57	

1 Does not include Nil (2020: $2 million release) relating to Other assets
2 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking. Prior period has been restated
3 Includes a $166 million adjustment in relation to interest earned on impaired assets
4 The gross balance includes the notional amount of off-balance sheet instruments

Consumer, Private and Business Banking (restated[1]) (audited)

	Stage 1			Stage 2			Stage 3			Total		
Amortised cost and FVOCI	Gross balance[3] $million	Total credit impair-ment $million	Net $million	Gross balance[3] $million	Total credit impair-ment $million	Net $million	Gross balance[3] $million	Total credit impair-ment $million	Net $million	Gross balance[3] $million	Total credit impair-ment $million	Net $million
As at 1 January 2020	168,095	(310)	167,785	5,609	(180)	5,429	1,212	(521)	691	174,916	(1,011)	173,905
Transfers to stage 1	7,519	(373)	7,146	(7,475)	373	(7,102)	(44)	–	(44)	–	–	–
Transfers to stage 2	(10,033)	207	(9,826)	10,107	(207)	9,900	(74)	–	(74)	–	–	–
Transfers to stage 3	(113)	1	(112)	(1,023)	184	(839)	1,136	(185)	951	–	–	–
Net change in exposures	12,701	(34)	12,667	(2,777)	71	(2,706)	(390)	2	(388)	9,534	39	9,573
Net remeasurement from stage changes	–	57	57	–	(194)	(194)	–	(90)	(90)	–	(227)	(227)
Changes in risk parameters	–	(65)	(65)	–	(245)	(245)	–	(416)	(416)	–	(726)	(726)
Write-offs	–	–	–	–	–	–	(698)	698	–	(698)	698	–
Interest due but unpaid	–	–	–	–	–	–	116	(116)	–	116	(116)	–
Discount unwind	–	–	–	–	–	–	–	32	32	–	32	32
Exchange translation differences and other movements	3,875	72	3,947	93	(61)	32	303	(134)	169	4,271	(123)	4,148
As at 31 December 2020	182,044	(445)	181,599	4,534	(259)	4,275	1,561	(730)	831	188,139	(1,434)	186,705
Income statement ECL (charge)/release		(42)			(368)			(504)			(914)	
Recoveries of amounts previously written off		–			–			220			220	
Total credit impairment (charge)/release		(42)			(368)			(284)			(694)	
As at 1 January 2021	182,044	(445)	181,599	4,534	(259)	4,275	1,561	(730)	831	188,139	(1,434)	186,705
Transfers to stage 1	4,450	(365)	4,085	(4,399)	365	(4,034)	(51)	–	(51)	–	–	–
Transfers to stage 2	(6,279)	91	(6,188)	6,418	(91)	6,327	(139)	–	(139)	–	–	–
Transfers to stage 3	(144)	2	(142)	(833)	172	(661)	977	(174)	803	–	–	–
Net change in exposures	14,748	(31)	14,717	(2,060)	47	(2,013)	(347)	24	(323)	12,341	40	12,381
Net remeasurement from stage changes	–	40	40	–	(113)	(113)	–	(66)	(66)	–	(139)	(139)
Changes in risk parameters	–	17	17	–	8	8	–	(480)	(480)	–	(455)	(455)
Write-offs	–	–	–	–	–	–	(705)	705	–	(705)	705	–
Interest due but unpaid	–	–	–	–	–	–	35	(35)	–	35	(35)	–
Discount unwind[2]	–	–	–	–	–	–	–	36	36	–	36	36
Exchange translation differences and other movements	(3,277)	313	(2,964)	24	(316)	(292)	247	(77)	170	(3,006)	(80)	(3,086)
As at 31 December 2021	191,542	(378)	191,164	3,684	(187)	3,497	1,578	(797)	781	196,804	(1,362)	195,442
Income statement ECL (charge)/release		26			(58)			(522)			(554)	
Recoveries of amounts previously written off		–			–			269			269	
Total credit impairment (charge)/release		26			(58)			(253)			(285)	

1 Following the Group's change in organisational structure, there has been an integration of Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated
2 Includes a $5 million adjustment in relation to interest earned on impaired assets
3 The gross balance includes the notional amount of off-balance sheet instruments

Consumer, Private and Business Banking – secured (restated[1]) (audited)

	Stage 1			Stage 2			Stage 3			Total		
Amortised cost and FVOCI	Gross balance[3] $million	Total credit impair-ment $million	Net $million	Gross balance[3] $million	Total credit impair-ment $million	Net $million	Gross balance[3] $million	Total credit impair-ment $million	Net $million	Gross balance[3] $million	Total credit impair-ment $million	Net $million
As at 1 January 2020	118,160	(26)	118,134	4,526	(19)	4,507	779	(290)	489	123,465	(335)	123,130
Transfers to stage 1	5,560	(25)	5,535	(5,527)	25	(5,502)	(33)	–	(33)	–	–	–
Transfers to stage 2	(6,799)	11	(6,788)	6,862	(11)	6,851	(63)	–	(63)	–	–	–
Transfers to stage 3	(55)	–	(55)	(511)	6	(505)	566	(6)	560	–	–	–
Net change in exposures	8,285	(5)	8,280	(2,044)	1	(2,043)	(200)	2	(198)	6,041	(2)	6,039
Net remeasurement from stage changes	–	1	1	–	(7)	(7)	–	(12)	(12)	–	(18)	(18)
Changes in risk parameters	–	1	1	–	(55)	(55)	–	(102)	(102)	–	(156)	(156)
Write-offs	–	–	–	–	–	–	(106)	106	–	(106)	106	–
Interest due but unpaid	–	–	–	–	–	–	100	(100)	–	100	(100)	–
Discount unwind	–	–	–	–	–	–	–	11	11	–	11	11
Exchange translation differences and other movements	2,297	(29)	2,268	57	8	65	15	(27)	(12)	2,369	(48)	2,321
As at 31 December 2020	127,448	(72)	127,376	3,363	(52)	3,311	1,058	(418)	640	131,869	(542)	131,327
Income statement ECL (charge)/release		(3)			(61)			(112)			(176)	
Recoveries of amounts previously written off		–			–			50			50	
Total credit impairment (charge)/release		(3)			(61)			(62)			(126)	
As at 1 January 2021	127,448	(72)	127,376	3,363	(52)	3,311	1,058	(418)	640	131,869	(542)	131,327
Transfers to stage 1	2,884	(37)	2,847	(2,843)	37	(2,806)	(41)	–	(41)	–	–	–
Transfers to stage 2	(3,888)	9	(3,879)	4,007	(9)	3,998	(119)	–	(119)	–	–	–
Transfers to stage 3	(107)	1	(106)	(400)	8	(392)	507	(9)	498	–	–	–
Net change in exposures	13,611	(9)	13,602	(1,452)	3	(1,449)	(224)	24	(200)	11,935	18	11,953
Net remeasurement from stage changes	–	(1)	(1)	–	(2)	(2)	–	(1)	(1)	–	(4)	(4)
Changes in risk parameters	–	4	4	–	14	14	–	(144)	(144)	–	(126)	(126)
Write-offs	–	–	–	–	–	–	(125)	125	–	(125)	125	–
Interest due but unpaid	–	–	–	–	–	–	(3)	3	–	(3)	3	–
Discount unwind[2]	–	–	–	–	–	–	–	34	34	–	34	34
Exchange translation differences and other movements	(2,748)	9	(2,739)	10	(31)	(21)	50	(131)	(81)	(2,688)	(153)	(2,841)
As at 31 December 2021	137,200	(96)	137,104	2,685	(32)	2,653	1,103	(517)	586	140,988	(645)	140,343
Income statement ECL (charge)/release		(6)			15			(121)			(112)	
Recoveries of amounts previously written off		–			–			68			68	
Total credit impairment (charge)/release		(6)			15			(53)			(44)	

1 Following the Group's change in organisational structure, there has been an integration of Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated
2 Includes a $5 million adjustment in relation to interest earned on impaired assets
3 The gross balance includes the notional amount of off-balance sheet instruments

Consumer, Private and Business Banking – unsecured (restated[1]) (audited)

	Stage 1			Stage 2			Stage 3			Total		
Amortised cost and FVOCI	Gross balance[2] $million	Total credit impair-ment $million	Net $million	Gross balance[2] $million	Total credit impair-ment $million	Net $million	Gross balance[2] $million	Total credit impair-ment $million	Net $million	Gross balance[2] $million	Total credit impair-ment $million	Net $million
As at 1 January 2020	49,935	(284)	49,651	1,083	(161)	922	433	(231)	202	51,451	(676)	50,775
Transfers to stage 1	1,959	(348)	1,611	(1,948)	348	(1,600)	(11)	–	(11)	–	–	–
Transfers to stage 2	(3,234)	196	(3,038)	3,245	(196)	3,049	(11)	–	(11)	–	–	–
Transfers to stage 3	(58)	1	(57)	(512)	178	(334)	570	(179)	391	–	–	–
Net change in exposures	4,416	(29)	4,387	(733)	70	(663)	(190)	–	(190)	3,493	41	3,534
Net remeasurement from stage changes	–	56	56	–	(187)	(187)	–	(78)	(78)	–	(209)	(209)
Changes in risk parameters	–	(66)	(66)	–	(190)	(190)	–	(314)	(314)	–	(570)	(570)
Write-offs	–	–	–	–	–	–	(592)	592	–	(592)	592	–
Interest due but unpaid	–	–	–	–	–	–	16	(16)	–	16	(16)	–
Discount unwind	–	–	–	–	–	–	–	21	21	–	21	21
Exchange translation differences and other movements	1,578	101	1,679	36	(69)	(33)	288	(107)	181	1,902	(75)	1,827
As at 31 December 2020	54,596	(373)	54,223	1,171	(207)	964	503	(312)	191	56,270	(892)	55,378
Income statement ECL (charge)/release		(39)			(307)			(392)			(738)	
Recoveries of amounts previously written off		–			–			170			170	
Total credit impairment (charge)/release		(39)			(307)			(222)			(568)	
As at 1 January 2021	54,596	(373)	54,223	1,171	(207)	964	503	(312)	191	56,270	(892)	55,378
Transfers to stage 1	1,566	(328)	1,238	(1,556)	328	(1,228)	(10)	–	(10)	–	–	–
Transfers to stage 2	(2,391)	82	(2,309)	2,411	(82)	2,329	(20)	–	(20)	–	–	–
Transfers to stage 3	(37)	1	(36)	(433)	164	(269)	470	(165)	305	–	–	–
Net change in exposures	1,137	(22)	1,115	(608)	44	(564)	(123)	–	(123)	406	22	428
Net remeasurement from stage changes	–	41	41	–	(111)	(111)	–	(65)	(65)	–	(135)	(135)
Changes in risk parameters	–	13	13	–	(6)	(6)	–	(336)	(336)	–	(329)	(329)
Write-offs	–	–	–	–	–	–	(580)	580	–	(580)	580	–
Interest due but unpaid	–	–	–	–	–	–	38	(38)	–	38	(38)	–
Discount unwind	–	–	–	–	–	–	–	2	2	–	2	2
Exchange translation differences and other movements	(529)	304	(225)	14	(285)	(271)	197	54	251	(318)	73	(245)
As at 31 December 2021	54,342	(282)	54,060	999	(155)	844	475	(280)	195	55,816	(717)	55,099
Income statement ECL (charge)/release		32			(73)			(401)			(442)	
Recoveries of amounts previously written off		–			–			201			201	
Total credit impairment (charge)/release		32			(73)			(200)			(241)	

1 Following the Group's change in organisational structure, there has been an integration of Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated
2 The gross balance includes the notional amount of off-balance sheet instruments

Analysis of stage 2 balances

The table below analyses total stage 2 gross exposures and associated expected credit provisions by the key significant increase in credit risk (SICR) driver that caused the exposures to be classified as stage 2 as at 31 December 2021 and 31 December 2020 for each segment. This may not be the same driver that caused the initial transfer into stage 2.

Where multiple drivers apply, the exposure is allocated based on the table order. For example, a loan may have breached the PD thresholds and could also be on non-purely precautionary early alert; in this instance, the exposure is reported under 'Increase in PD'.

	2021											
	Corporate, Commercial & Institutional banking			Consumer, Private & Business Banking			Central & other items			Total		
	Gross $million	ECL $million	Coverage %	Gross $million	ECL $million	Coverage %	Gross $million	ECL $million	Coverage %	Gross $million	ECL $million	Coverage %
Increase in PD	14,737	187	1.3%	2,704	122	4.5%	4,691	22	0.5%	22,132	331	1.5%
Non-purely precautionary early alert	5,000	26	0.5%	83	–	0.0%	–	–	0.0%	5,083	26	0.5%
Higher risk (CG12)	1,075	37	3.4%	27	1	3.2%	631	20	3.1%	1,733	57	3.3%
Sub-investment grade	235	1	0.3%	–	–	0.0%	–	–	0.0%	235	1	0.3%
Top up/Sell down (Private Banking)	–	–	0.0%	493	1	0.2%	–	–	0.0%	493	1	0.2%
Others	4,390	8	0.2%	178	2	1.2%	173	2	1.3%	4,741	13	0.3%
30 days past due	–	–	0.0%	199	18	9.3%	–	–	0.0%	199	18	9.3%
Management overlay		166			42					–	208	
Total stage 2	25,437	425	1.7%	3,684	187	5.1%	5,495	44	0.8%	34,616	656	1.9%

	2020											
	Corporate, Commercial & Institutional banking			Consumer, Private & Business Banking			Central & other items			Total		
	Gross $million	ECL $million	Coverage %	Gross $million	ECL $million	Coverage %	Gross $million	ECL $million	Coverage %	Gross $million	ECL $million	Coverage %
Increase in PD	19,680	326	1.7%	3,219	152	4.7%	1,966	9	0.5%	24,865	487	2.0%
Non-purely precautionary early alert	6,983	28	0.4%	–	–	0.0%	–	–	0.0%	6,983	28	0.4%
Higher risk (CG12)	635	36	5.7%	–	–	0.0%	383	12	3.1%	1,018	48	4.7%
Sub-investment grade	317	4	1.3%	–	–	0.0%	1,018	2	0.2%	1,336	6	0.4%
Top up/Sell down (Private Banking)	–	–	0.0%	632	1	0.1%	–	–	0.0%	632	1	0.1%
Others	4,126	8	0.2%	411	1	0.3%	211	4	2.1%	4,748	14	0.3%
30 days past due	–	–	0.0%	272	27	10.0%	–	–	0.0%	272	27	10.0%
Management overlay		197			78			–			275	
Total stage 2	31,742	599	1.9%	4,534	259	5.7%	3,578	27	0.8%	39,854	885	2.2%

The majority of exposures and the associated expected credit loss provisions continue to be in stage 2 due to decreases in the probability of default.

The amount of exposures in Corporate, Commercial and Institutional Banking placed on non-purely precautionary early alert decreased during the year and as a result the proportion of stage 2 driven by this category decreased. Although 'Higher risk' lending balances decreased compared to 2020, the portion of exposures in stage 2 with a 'High risk' driver increased, as a higher proportion of CG12 accounts were included within 'Increase in PD' in 2020.

10 per cent of the provisions held against stage 2 Consumer, Private and Business Banking exposures arise from the application of the 30 days past due backstop, although this represents only 5 per cent of exposures. The proportion of PD driven exposures in stage 2 has reduced compared to 2020 as the impact of COVID-19 measures reduced in the Group's major Consumer Banking markets.

The Central and other items segment has seen a significant increase in the 'Higher risk' category at 31 December 2021 primarily due to newly downgraded sovereign counterparties in Sri Lanka.

'Others' primarily incorporates exposures where origination data is incomplete and the exposures are allocated into stage 2.

Credit impairment charge (restated[1]) (audited)

The ongoing credit impairment is a net charge of $263 million (2020: $2,294 million). The net charge of $263 million is divided across Consumer, Private and Business Banking $285 million and $22 million in Central and other items, partly offset by release of $44 million in Corporate, Commercial and Institutional Banking.

Stage 1 and 2 impairment is a net charge of $78 million.

Corporate, Commercial and Institutional Banking stage 1 and 2 is a net charge of $23 million, due to a $30 million charge from a post model adjustment for multiple economic scenarios, $24 million charge on sovereign downgrade of Sri Lanka, offset by decline in stage 2 exposures reflecting lower levels of non-purely precautionary early alert exposures, additional collateral and improvement in probability of default. The COVID-19 management overlay reduced by $95 million although this was offset by a new, separately assessed management overlay in Q4 2021 of $95 million for China Commercial Real Estate exposures.

Consumer, Private and Business Banking credit impairment has also decreased (2021: $285 million, 2020: $741 million). Stage 1 and 2 impairment reduced to $32 million at the end of 2021 (2020: $413 million) mainly due to ECL reversals as the forward-looking macroeconomic outlook improved in relative terms.

The Central and other items segment stage 1 and 2 is a net charge of $23 million primarily due to multiple economic scenario post model adjustments.

Stage 3 impairment is a net charge of $185 million.

There was a release of $67 million from Corporate, Commercial and Institutional Banking stage 3 credit impairment due to significant recoveries during the year. Consumer, Private and Business Banking stage 3 credit impairment of $253 million decreased from $328 million, driven by better recoveries.

Restructuring (audited)

There was a net $9 million impairment release from the Group's discontinued businesses.

	2021			2020 (Restated)		
	Stage 1 & 2 $million	Stage 3 $million	Total $million	Stage 1 & 2 $million	Stage 3 $million	Total $million
Ongoing business portfolio						
Corporate, Commercial & Institutional Banking[1]	23	(67)	(44)	390	1,139	1,529
Consumer, Private & Business Banking[1]	32	253	285	413	328	741
Central & other items	23	(1)	22	24	–	24
Credit impairment charge/(release)	78	185	263	827	1,467	2,294
Restructuring business portfolio						
Others	(2)	(7)	(9)	–	31	31
Credit impairment charge/(release)	(2)	(7)	(9)	–	31	31
Total credit impairment charge/(release)	76	178	254	827	1,498	2,325

1 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking and Private Banking and Retail Banking to Consumer, Private & Business Banking. Further, certain clients have been moved between the two new client segments. Prior period has been restated

COVID-19 relief measures

COVID-19 payment-related relief measures were in place across most of our markets during 2020 and 2021, particularly focused on Consumer, Private and Business Banking customers. Measures in most markets have now expired, although moratoria schemes in certain Africa and the
Middle East countries have been extended to 30 June 2022.

These schemes are generally initiated by country regulators and governments. Measures include principal and/or interest moratoria and term extensions, and are generally available to eligible borrowers (those that are current or less than 30 days past due, unless local regulators have specified different criteria). Certain schemes may be restricted to those in industries significantly impacted by COVID-19, such as aviation or consumer services, but are not borrower-specific in nature.

Relief measures are generally mandated or supported by regulators and governments and are available to all eligible customers who request it. However, in a number of countries, particularly in Asia and Africa and the Middle East, compulsory (regulatory approved) moratoria reliefs are applied to all eligible loans unless a customer has specifically asked to opt out.

In most major Consumer, Private and Business Banking markets, the initial period of relief provided was between 6 and 12 months. In some smaller markets, the initial period of relief was for 3 months.

COVID-19 related tenor extensions have also been made available to Corporate, Commercial and Institutional Banking clients, primarily for periods between 3 to 9 months, if they are expected to return to normal payments within 12 months.

Assessment for expected credit losses

COVID-19 payment reliefs that are generally available to a market or industry as a whole and are not borrower-specific in nature have not, on their own, resulted in an automatic change in stage (that is, individual customers are not considered to have experienced a significant increase in credit risk or an improvement in credit risk) nor have they been considered to be forborne.

A customer's stage and past due status reflects their status immediately prior to the granting of the relief, with past due amounts assessed based on the new terms as set out in the temporary payment reliefs.

If a customer requires additional support after the expiry of generally available payment reliefs, these will be considered at a borrower level, after taking into account their individual circumstances. Depending on the type of subsequent support provided, these customers may be classified within stage 2 or stage 3.

Where client level government guarantees are in place, these do not affect staging but are taken into account when determining the level of credit impairment.

Impact from temporary changes to loan contractual terms

The granting of COVID-19 payment-related relief measures may cause a time value of money loss for the Group where interest is not permitted to be compounded (that is, interest charged on interest) or where interest is not permitted to be charged or accrued during the relief period. As set out above, such reliefs do not impact a customer's stage and are not considered to be forborne even though a time value of money loss arises. As the relief periods are relatively short-term in nature, and a small percentage of the total loans outstanding, this has not resulted in a material impact for the Group.

The table below sets out the extent to which payment reliefs are in place across the Group's loan portfolio based on the amount outstanding at 31 December 2021.

The Consumer, Private and Business Banking portfolio under moratoria reduced to $1,182 million compared to $2,372 million at the end of 2020 and a peak of $8.9 billion in the first half of 2020, with the remaining balance primarily concentrated in Asia. This represents less than 1 per cent of the Group's gross loans and advances to banks and customers. 51 per cent of relief measures are fully secured. 31 per cent of the total amounts approved are to Business Banking customers, concentrated in industries that have been materially disrupted. 79 per cent of the total amounts approved are in stage 1 and 2 per cent in stage 2, the latter mainly in Malaysia where compulsory (regulatory mandated) relief measures are in place. 79 per cent of stage 2 accounts under relief measures are collateralised by immovable property.

In Corporate, Commercial and Institutional Banking, 0.2 per cent of the portfolio are subject to relief measures. Around 68 per cent of the amounts approved are for tenor extensions of 90 days or less and approximately 17 per cent of the reliefs granted are to clients in vulnerable sectors.

COVID-19 relief measures

	Total		Asia		Africa & Middle East[1]		Europe & Americas	
Segment/Product	Outstanding $million	% of portfolio[2]	Outstanding $million	% of portfolio[2]	Outstanding $million	% of portfolio[2]	Outstanding $million	% of portfolio[2]
Credit cards & Personal loans	217	1.2%	74	0.5%	143	7.7%		
Mortgages & Auto	600	0.7%	590	0.7%	10	0.6%		
Business banking	365	4.3%	365	4.4%	–	0.0%		
Total Consumer, Private and Business Banking	1,182	0.9%	1,029	0.9%	153	3.1%		
Corporate, Commercial & Institutional Banking	511	0.2%	388		113			10
Total at 31 December 2021	1,693	0.5%	1,417		266			10
Total Consumer, Private and Business Banking	2,372	1.8%	2,206		166			
Corporate, Commercial & Institutional Banking	1,195	0.6%	746		429			20
Total at 31 December 2020	3,567	1.0%	2,952		595			20

1 Bahrain's moratoria scheme expired on 31 December 2021. The scheme has been further extended to 30 June 2022 on an opt-in basis. Amount includes $151 million of customers who were under moratoria schemes that expired on 31 December 2021 have opted to continue under the extended scheme

2 Percentage of portfolio represents the outstanding amount at 31 December 2021 as a percentage of the gross loans and advances to banks and customers by product and segment and total loans and advances to banks and customers at 31 December 2021 and 2020

Problem credit management and provisioning (audited)

Forborne and other modified loans by client segment

A forborne loan arises when a concession has been made to the contractual terms of a loan in response to a customer's financial difficulties.

Net forborne loans decreased by $499 million to $1,529 million, compared with 31 December 2020, $718 million of which was in performing forborne loans offset by an increase of $219 million in non-performing forborne loans. Just under half of the total decrease in forborne loans was in Corporate, Commercial and Institutional Banking, primarily driven by cures out of performing forborne loans in Africa and the Middle East, with the remainder of the decrease due to lower performing forborne loans in Consumer, Private and Business Banking mainly driven by full repayment of a significant outstanding loan account in Private Banking.

The table below presents loans with forbearance measures by segment.

Amortised cost	2021 Corporate, Commercial & Institutional Banking $million	2021 Consumer, Private & Business Banking $million	2021 Total $million	2020 (Restated) Corporate, Commercial & Institutional Banking $million	2020 (Restated) Consumer, Private & Business Banking $million	2020 (Restated) Total $million
All loans with forbearance measures	2,526	406	2,932	2,890	703	3,593
Credit impairment (stage 1 and 2)	(4)	–	(4)	(3)	(1)	(4)
Credit impairment (stage 3)	(1,237)	(162)	(1,399)	(1,380)	(181)	(1,561)
Net carrying value	1,285	244	1,529	1,507	521	2,028
Included within the above table						
Gross performing forborne loans	272	59	331	698	351	1,049
Modification of terms and conditions[1]	257	59	316	696	351	1,047
Refinancing[2]	15	–	15	2	–	2
Impairment provisions	(4)	–	(4)	(3)	(1)	(4)
Modification of terms and conditions[1]	(4)	–	(4)	(3)	(1)	(4)
Refinancing[2]	–	–	–	–	–	–
Net performing forborne loans	268	59	327	695	350	1,045
Collateral	65	56	121	329	23	352
Gross non-performing forborne loans	2,253	348	2,601	2,192	352	2,544
Modification of terms and conditions[1]	2,095	348	2,443	2,022	352	2,374
Refinancing[2]	158	–	158	170	–	170
Impairment provisions	(1,237)	(162)	(1,399)	(1,380)	(181)	(1,561)
Modification of terms and conditions[1]	(1,106)	(162)	(1,268)	(1,248)	(181)	(1,429)
Refinancing[2]	(131)	–	(131)	(132)	–	(132)
Net non-performing forborne loans	1,016	186	1,202	812	171	983
Collateral	236	62	298	289	47	336

1 Modification of terms is any contractual change apart from refinancing, as a result of credit stress of the counterparty, i.e. interest reductions, loan covenant waivers
2 Refinancing is a new contract to a lender in credit stress, such that they are refinanced and can pay other debt contracts that they were unable to honour
3 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking and Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated

Forborne and other modified loans by region

Amortised cost	2021 Asia $million	2021 Africa & Middle East $million	2021 Europe & Americas $million	2021 Total $million	2020 (Restated) Asia[1] $million	2020 (Restated) Africa & Middle East $million	2020 (Restated) Europe & Americas $million	2020 (Restated) Total $million
Performing forborne loans	205	76	46	327	135	585	325	1,045
Stage 3 forborne loans	572	137	493	1,202	639	164	180	983
Net forborne loans	777	213	539	1,529	774	749	505	2,028

1 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Credit-impaired (stage 3) loans and advances by client segment (audited)

Gross stage 3 loans for the Group is $8.1 billion (2020: $9.2 billion). The reduction in loans was primarily driven by Corporate, Commercial and Institutional Banking debt sales and repayments in Asia and Africa and the Middle East regions.

Inflows into stage 3 for Corporate, Commercial and Institutional Banking were lower by 53 per cent at $1.7 billion, compared with $3.6 billion in 2020 and remain low compared to historical norms. The new inflows in 2021 were mainly in Asia and Africa and the Middle East.

Gross stage 3 loans in Consumer, Private and Business Banking remained broadly stable at $1.6 billion.

Stage 3 cover ratio (audited)

The stage 3 cover ratio measures the proportion of stage 3 impairment provisions to gross stage 3 loans, and is a metric commonly used in considering impairment trends. This metric does not allow for variations in the composition of stage 3 loans and should be used in conjunction with other Credit Risk information provided, including the level of collateral cover.

The balance of stage 3 loans not covered by stage 3 impairment provisions represents the adjusted value of collateral held and the net outcome of any workout or recovery strategies. Collateral provides risk mitigation to some degree in all client segments and supports the credit quality and cover ratio assessments post impairment provisions.

Further information on collateral is provided in the Credit Risk mitigation section.

The Corporate, Commercial and Institutional Banking cover ratio decreased by 1 per cent as a result of write-offs and new accounts with a lower coverage than existing stage 3 loans.

The Consumer, Private and Business Banking cover ratio is 51 per cent (2020: 47 per cent) due to a new provision taken on a Business Banking client.

	2021			2020 (Restated[1])		
Amortised cost	Corporate, Commercial & Institutional Banking $million	Consumer, Private & Business Banking $million	Total $million	Corporate, Commercial & Institutional Banking $million	Consumer, Private & Business Banking $million	Total $million
Gross credit-impaired	6,520	1,575	8,095	7,652	1,562	9,214
Credit impairment provisions	(3,861)	(796)	(4,657)	(4,610)	(731)	(5,341)
Net credit-impaired	2,659	779	3,438	3,042	831	3,873
Cover ratio	59%	51%	58%	60%	47%	58%
Collateral ($ million)	805	641	1,446	1,063	643	1,706
Cover ratio (after collateral)	72%	91%	75%	74%	88%	76%

1 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking and Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated

Credit-impaired (stage 3) loans and advances by geographic region

Stage 3 gross loans decreased by $1.1 billion or 12 per cent compared with 31 December 2020. The decrease was primarily driven by Corporate, Commercial and Institutional Banking debt sales and repayments in Asia and Africa and the Middle East regions.

	2021				2020 (Restated)			
Amortised cost	Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million	Asia[1] $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross credit-impaired	4,448	2,918	729	8,095	4,790	3,473	951	9,214
Credit impairment provisions	(2,401)	(1,970)	(286)	(4,657)	(2,483)	(2,313)	(545)	(5,341)
Net credit-impaired	2,047	948	443	3,438	2,307	1,160	406	3,873
Cover ratio	54%	68%	39%	58%	52%	67%	57%	58%

1 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Credit Risk mitigation

Potential credit losses from any given account, customer or portfolio are mitigated using a range of tools such as collateral, netting arrangements, credit insurance and credit derivatives, taking into account expected volatility and guarantees.

The reliance that can be placed on these mitigants is carefully assessed in light of issues such as legal certainty and enforceability, market valuation correlation and counterparty risk of the guarantor.

Collateral (audited)

The requirement for collateral is not a substitute for the ability to repay, which is the primary consideration for any lending decisions.

The unadjusted market value of collateral across all asset types, in respect of Corporate, Commercial and Institutional Banking, without adjusting for over-collateralisation, was $346 billion (2020: $313 billion).

The collateral values in the table below (which covers loans and advances to banks and customers, excluding those held at fair value through profit or loss) are adjusted where appropriate in accordance with our risk mitigation policy and for the effect of over-collateralisation. The extent of overcollateralization has been determined with reference to both the drawn and undrawn components of exposure as this best reflects the effect of collateral and other credit enhancements on the amounts arising from expected credit losses. The value of collateral reflects management's best estimate and is backtested against our prior experience. On average, across all types of non-cash collateral, the value ascribed is approximately half of its current market value.

In the Consumer, Private and Business Banking segment, a secured loan is one where the borrower pledges an asset as collateral of which the Group is able to take possession in the event that the borrower defaults. Total collateral for Consumer, Private and Business Banking has increased to $103 billion (2020: $100 billion) due to an increase in Mortgages and Secured wealth products.

Stage 2 collateral reduced by $2.9 billion to $6.1 billon, due to a decrease in Corporate, Commercial and Institutional Banking and Consumer, Private and Business Banking loan balances.

Total collateral for Central and other items increased by $4.3 billion to $6.4 billion compared with 2020 due to an increase in lending under reverse repurchase agreements.

Collateral held on loans and advances

The table below details collateral held against exposures, separately disclosing stage 2 and stage 3 exposure and corresponding collateral.

	2021								
	Net amount outstanding			Collateral			Net exposure		
Amortised cost	Total $million	Stage 2 financial assets $million	Credit-impaired financial assets $million	Total[2] $million	Stage 2 financial assets $million	Credit-impaired financial assets $million	Total $million	Stage 2 financial assets $million	Credit-impaired financial assets $million
Corporate, Commercial & Institutional Banking[1]	183,784	15,053	2,702	29,414	5,077	805	154,370	9,976	1,897
Consumer, Private & Business Banking	136,518	1,738	779	102,769	1,045	641	33,749	693	138
Central & other items	22,549	110	–	6,381	–	–	16,168	110	–
Total	342,851	16,901	3,481	138,564	6,122	1,446	204,287	10,779	2,035

	2020 (Restated)								
	Net amount outstanding			Collateral			Net exposure		
Amortised cost	Total $million	Stage 2 financial assets $million	Credit-impaired financial assets $million	Total[2] $million	Stage 2 financial assets $million	Credit-impaired financial assets $million	Total $million	Stage 2 financial assets $million	Credit-impaired financial assets $million
Corporate, Commercial & Institutional Banking[1,3]	177,804	19,863	3,042	29,002	7,373	1,063	148,802	12,490	1,979
Consumer, Private & Business Banking[3]	129,093	2,406	831	100,392	1,677	643	28,701	729	188
Central & other items	19,149	–	–	2,053	–	–	17,096	–	–
Total	326,046	22,269	3,873	131,447	9,050	1,706	194,599	13,219	2,167

1 Includes loans and advances to banks

2 Adjusted for over-collateralisation based on the drawn and undrawn components of exposures

3 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking and Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated

Collateral – Corporate, Commercial and Institutional Banking (audited)

Collateral held against Corporate, Commercial and Institutional Banking exposures amounted to $29 billion.

Collateral taken for longer-term and sub-investment grade corporate loans improved to 49 per cent (2020: 46 per cent).

Our underwriting standards encourage taking specific charges on assets and we consistently seek high-quality, investment-grade collateral.

75 per cent of tangible collateral (2020: 82 per cent) held comprises physical assets or is property based, with the remainder largely in cash and investment securities. The reduction in tangible collateral is due to decrease in property collateral from repayments in Asia. Overall collateral remained largely flat at $29 billion as the decrease in tangible collateral held that comprises physical assets or is property based, was offset by increases in cash and investment securities by $1.4 billion, and in financial guarantee and insurance by $1.1 billion.

Non-tangible collateral, such as guarantees and standby letters of credit, is also held against corporate exposures, although the financial effect of this type of collateral is less significant in terms of recoveries. However, this is considered when determining the probability of default and other credit-related factors. Collateral is also held against off-balance sheet exposures, including undrawn commitments and trade-related instruments.

Corporate, Commercial and Institutional Banking (restated[2])

Amortised cost	2021 $million	2020 $million
Maximum exposure	183,784	177,804
Property	10,589	12,872
Plant, machinery and other stock	1,411	1,585
Cash	3,549	2,066
Reverse repos	2,042	2,172
A- to AA+	122	438
BBB- to BBB+	483	742
Unrated	1,437	992
Financial guarantees and insurance	6,616	5,470
Commodities	198	222
Ships and aircraft	5,009	4,615
Total value of collateral[1]	29,414	29,002
Net exposure	154,370	148,802

1 Adjusted for over-collateralisation based on the drawn and undrawn components of exposures

2 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking. Prior period has been restated

Collateral – Consumer, Private and Business Banking (audited)

In Consumer, Private and Business Banking, 86 per cent of the portfolio is fully secured (2020: 86 per cent).

The following table presents an analysis of loans to individuals by product; split between fully secured, partially secured and unsecured.

	2021				2020			
Amortised cost	Fully secured $million	Partially secured $million	Unsecured $million	Total $million	Fully secured $million	Partially secured $million	Unsecured $million	Total $million
Maximum exposure	117,129	1,329	18,060	136,518	111,112	760	17,221	129,093
Loans to individuals								
Mortgages	89,222	–	–	89,222	85,597	–	–	85,597
CCPL	150	–	17,031	17,181	171	–	16,921	17,092
Auto	542	–	–	542	536	–	–	536
Secured wealth products	21,495	–	–	21,495	19,886	–	–	19,886
Other	5,720	1,329	1,029	8,078	4,922	760	300	5,982
Total collateral[1]				102,769				100,392
Net exposure[2]				33,749				28,701
Percentage of total loans	86%	1%	13%		86%	1%	13%	

1 Collateral values are adjusted where appropriate in accordance with our risk mitigation policy and for the effect of over-collateralisation

2 Amounts net of ECL

Mortgage loan-to-value ratios by geography (audited)

Loan-to-value (LTV) ratios measure the ratio of the current mortgage outstanding to the current fair value of the properties on which they are secured.

In mortgages, the value of property held as security significantly exceeds principal outstanding of the mortgage loans. The average LTV of the overall mortgage portfolio reduced from 45 per cent in 2020 to 41 per cent in 2021. Hong Kong, which represents 33 per cent of the mortgage portfolio, has an average LTV of 43.8 per cent. All of our other key markets continue to have low portfolio LTVs, (Korea, Singapore and Taiwan at 35.2 per cent, 43.2 per cent and 48.8 per cent respectively).

An analysis of LTV ratios by geography for the mortgage portfolio is presented in the table below.

	2021			
Amortised cost	Asia % Gross	Africa & Middle East % Gross	Europe & Americas % Gross	Total % Gross
Less than 50 per cent	68.2	27.6	16.8	66.4
50 per cent to 59 per cent	11.6	18.6	19.9	11.9
60 per cent to 69 per cent	8.1	19.6	37.5	8.9
70 per cent to 79 per cent	9.1	16.5	17.1	9.4
80 per cent to 89 per cent	2.4	9.1	8.7	2.7
90 per cent to 99 per cent	0.5	4.8	–	0.5
100 per cent and greater	0.1	3.8	–	0.2
Average portfolio loan-to-value	40.5	61.9	60.8	41.1
Loans to individuals – mortgages ($million)	85,765	1,651	1,806	89,222

	2020 (Restated)			
Amortised cost	Asia[1] % Gross	Africa & Middle East % Gross	Europe & Americas % Gross	Total % Gross
Less than 50 per cent	62.4	22.1	16.4	59.7
50 per cent to 59 per cent	15.0	15.0	28.0	15.4
60 per cent to 69 per cent	10.5	19.6	29.0	11.5
70 per cent to 79 per cent	8.6	20.7	21.7	9.4
80 per cent to 89 per cent	2.6	7.4	3.7	2.7
90 per cent to 99 per cent	0.9	6.0	0.6	1.0
100 per cent and greater	–	9.2	0.6	0.3
Average portfolio loan-to-value	44.1	64.7	60.4	44.7
Loans to individuals – mortgages ($million)	81,570	1,871	2,156	85,597

1 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Collateral and other credit enhancements possessed or called upon (audited)

The Group obtains assets by taking possession of collateral or calling upon other credit enhancements (such as guarantees). Repossessed properties are sold in an orderly fashion. Where the proceeds are in excess of the outstanding loan balance the excess is returned to the borrower.

Certain equity securities acquired may be held by the Group for investment purposes and are classified as fair value through profit or loss, and the related loan written off. The carrying value of collateral possessed and held by the Group is $11.8 million (2020: $23.2 million).

	2021 $million	2020 $million
Property, plant and equipment	5.8	18.2
Guarantees	6.0	4.8
Other	0.0	0.2
Total	11.8	23.2

Other Credit Risk mitigation (audited)

Other forms of Credit Risk mitigation are set out below.

Credit default swaps

The Group has entered into credit default swaps for portfolio management purposes, referencing loan assets with a notional value of $12.1 billion (2020: $10.5 billion). These credit default swaps are accounted for as financial guarantees as per IFRS 9 as they will only reimburse the holder for an incurred loss on an underlying debt instrument. The Group continues to hold the underlying assets referenced in the credit default swaps and it continues to be exposed to related Credit Risk and Foreign Exchange Rate Risk on these assets.

Credit linked notes

The Group has issued credit linked notes for portfolio management purposes, referencing loan assets with a notional value of $10.0 billion (2020: $8.0 billion). The Group continues to hold the underlying assets for which the credit linked notes provide mitigation.

Derivative financial instruments

The Group enters into master netting agreements, which in the event of default result in a single amount owed by or to the counterparty through netting the sum of the positive and negative mark-to-market values of applicable derivative transactions. These are set out in more detail under Derivative financial instruments Credit Risk mitigation.

Off-balance sheet exposures

For certain types of exposure, such as letters of credit and guarantees, the Group obtains collateral such as cash depending on internal Credit Risk assessments, as well as in the case of letters of credit holding legal title to the underlying assets should a default take place.

Other portfolio analysis

This section provides maturity analysis by credit quality by industry and industry and retail products analysis by region.

Maturity analysis of loans and advances by client segment

Loans and advances to the Corporate, Commercial and Institutional Banking segment remain predominantly short-term, with $95.5 billion or 66 per cent (2020: $84.6 billion or 61 per cent) maturing in less than one year. 98 per cent (2020: 94 per cent) of loans to banks mature in less than one year, an increase compared with 2020 as net exposures increased by $1.8 billion. Shorter maturities give us the flexibility to respond promptly to events and rebalance or reduce our exposure to clients or sectors that are facing increased pressure or uncertainty.

The Consumer, Private and Business Banking short-term book of one year or less and long-term book of over five years are stable at 26 per cent (2020: 25 per cent) and 62 per cent (2020: 62 per cent) of the total portfolio respectively.

	2021			
Amortised cost	One year or less $million	One to five years $million	Over five years $million	Total $million
Corporate, Commercial & Institutional Banking	95,454	36,953	11,299	143,706
Consumer, Private & Business Banking	35,991	16,783	85,093	137,867
Central & other items	22,318	224	7	22,549
Gross loans and advances to customers	153,763	53,960	96,399	304,122
Impairment provisions	(5,057)	(462)	(135)	(5,654)
Net loans and advances to customers	148,706	53,498	96,264	298,468
Net loans and advances to banks	43,274	955	154	44,383

Amortised cost	2020 (Restated) One year or less $million	One to five years $million	Over five years $million	Total $million
Corporate, Commercial & Institutional Banking[1]	84,554	41,133	12,962	138,649
Consumer, Private & Business Banking[1]	33,037	16,002	81,474	130,513
Central & other items	18,704	443	3	19,150
Gross loans and advances to customers	136,295	57,578	94,439	288,312
Impairment provisions	(5,722)	(743)	(148)	(6,613)
Net loans and advances to customers	130,573	56,835	94,291	281,699
Net loans and advances to banks	41,524	2,821	2	44,347

1 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking and Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated

Credit quality by industry

Loans and advances

This section provides an analysis of the Group's amortised cost portfolio by industry on a gross, total credit impairment and net basis.

From an industry perspective, gross loans and advances increased by $15.8 billion to $304.1 billion compared with 31 December 2020, of which $8.5 billion was from Corporate, Commercial and Institutional Banking and the Central and other items segments, and $7.4 billion in Consumer, Private and Business Banking.

Stage 1 loans increased by $23 billion to $279.2 billion. Of the $23 billion, $15 billion were corporate loans, mainly due to new lending in Manufacturing and primarily stage transfers in the Transport, telecom and utilities, Commercial real estate and Manufacturing sectors. Consumer, Private and Business Banking increased by $8 billion, mainly from the mortgage book and secured wealth products from new originations largely from Asia. Stage 2 loans decreased by $6 billion largely due to Corporate, Commercial and Institutional Banking, in part due to transfers to stage 1. Stage 3 loans reduced by $1.1 billion to $8.1 billion due to Corporate, Commercial and Institutional Banking debt sales and repayments in Asia and Africa and the Middle East regions.

	2021											
	Stage 1			Stage 2			Stage 3			Total		
	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million
Industry:												
Energy	10,454	(19)	10,435	2,067	(76)	1,991	998	(719)	279	13,519	(814)	12,705
Manufacturing	23,792	(9)	23,783	1,181	(30)	1,151	852	(562)	290	25,825	(601)	25,224
Financing, insurance and non-banking	24,380	(9)	24,371	1,257	(12)	1,245	268	(207)	61	25,905	(228)	25,677
Transport, telecom and utilities	12,778	(5)	12,773	4,926	(51)	4,875	966	(289)	677	18,670	(345)	18,325
Food and household products	8,093	(2)	8,091	721	(26)	695	380	(276)	104	9,194	(304)	8,890
Commercial real estate	17,680	(43)	17,637	1,787	(75)	1,712	833	(335)	498	20,300	(453)	19,847
Mining and quarrying	4,793	(3)	4,790	480	(20)	460	272	(167)	105	5,545	(190)	5,355
Consumer durables	7,069	(3)	7,066	407	(9)	398	425	(346)	79	7,901	(358)	7,543
Construction	2,279	(3)	2,276	506	(19)	487	914	(624)	290	3,699	(646)	3,053
Trading companies and distributors	1,144	(1)	1,143	117	(8)	109	143	(135)	8	1,404	(144)	1,260
Government	26,588	(2)	26,586	678	(1)	677	154	(8)	146	27,420	(11)	27,409
Other	5,757	(4)	5,753	801	(14)	787	316	(194)	122	6,874	(212)	6,662
Retail Products:												
Mortgage	87,987	(22)	87,965	862	(20)	842	599	(184)	415	89,448	(226)	89,222
CCPL and other unsecured lending	16,880	(278)	16,602	570	(132)	438	395	(254)	141	17,845	(664)	17,181
Auto	541	(1)	540	2	–	2	–	–	–	543	(1)	542
Secured wealth products	21,067	(61)	21,006	307	(10)	297	483	(291)	192	21,857	(362)	21,495
Other	7,896	(8)	7,888	180	(21)	159	97	(66)	31	8,173	(95)	8,078
Total value (customers)[1]	279,178	(473)	278,705	16,849	(524)	16,325	8,095	(4,657)	3,438	304,122	(5,654)	298,468

1 Includes reverse repurchase agreements and other similar secured lending held at amortised cost of $7,331 million

	2020											
	Stage 1			Stage 2			Stage 3			Total		
	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million
Industry:												
Energy	10,047	(25)	10,022	1,889	(87)	1,802	1,036	(777)	259	12,972	(889)	12,083
Manufacturing	20,164	(13)	20,151	2,763	(65)	2,698	1,554	(1,042)	512	24,481	(1,120)	23,361
Financing, insurance and non-banking	23,416	(8)	23,408	834	(7)	827	310	(209)	101	24,560	(224)	24,336
Transport, telecom and utilities	11,771	(12)	11,759	5,071	(124)	4,947	1,041	(473)	568	17,883	(609)	17,274
Food and household products	8,625	(7)	8,618	752	(24)	728	529	(346)	183	9,906	(377)	9,529
Commercial real estate	15,847	(13)	15,834	3,068	(34)	3,034	408	(186)	222	19,323	(233)	19,090
Mining and quarrying	4,723	(6)	4,717	887	(19)	868	286	(182)	104	5,896	(207)	5,689
Consumer durables	4,689	(3)	4,686	967	(36)	931	601	(413)	188	6,257	(452)	5,805
Construction	2,571	(3)	2,568	849	(28)	821	1,067	(527)	540	4,487	(558)	3,929
Trading companies and distributors	877	(1)	876	314	(7)	307	284	(237)	47	1,475	(245)	1,230
Government	23,099	(1)	23,098	1,064	(3)	1,061	220	(11)	209	24,383	(15)	24,368
Other	4,314	(4)	4,310	1,546	(53)	1,493	316	(207)	109	6,176	(264)	5,912
Retail Products:												
Mortgage	83,760	(18)	83,742	1,507	(36)	1,471	593	(209)	384	85,860	(263)	85,597
CCPL and other unsecured lending	16,708	(363)	16,345	785	(205)	580	450	(283)	167	17,943	(851)	17,092
Auto	531	(1)	530	5	–	5	1	–	1	537	(1)	536
Secured wealth products	19,375	(52)	19,323	319	(9)	310	466	(213)	253	20,160	(274)	19,886
Other	5,920	(4)	5,916	41	(1)	40	52	(26)	26	6,013	(31)	5,982
Total value (customers)[1]	256,437	(534)	255,903	22,661	(738)	21,923	9,214	(5,341)	3,873	288,312	(6,613)	281,699

1 Includes reverse repurchase agreements and other similar secured lending held at amortised cost of $2,919 million

Industry and Retail Products analysis of loans and advances by geographic region

This section provides an analysis of the Group's amortised cost loan portfolio, net of provisions, by industry and region.

In the Corporate, Commercial and Institutional Banking segment, our largest industry exposures are to Financing, insurance and non-banking, Government and Manufacturing sectors, with each constituting at least 15 per cent of Corporate, Commercial and Institutional Banking loans and advances to customers.

Financing, insurance and non-banking industry clients are mostly investment-grade institutions and this lending forms part of the liquidity management of the Group. The Manufacturing sector group is spread across a diverse range of industries, including automobiles and components, capital goods, pharmaceuticals, biotech and life sciences, technology hardware and equipment, chemicals, paper products and packaging, with lending spread over 3,500 clients.

Loans and advances to the Energy sector remained largely stable at $13.5 billion or 8 per cent (2020: $13.0 billion or 8 per cent) of total loans and advances to Corporate, Commercial and Institutional Banking. The Energy sector lending is spread across five sub-sectors and over 190 clients.

The Group provides loans to commercial real estate counterparties of $20 billion, which represents 7 per cent of total customer loans and advances. In total, $8.4 billion of this lending is to counterparties where the source of repayment is substantially derived from rental or sale of real estate and is secured by real estate collateral. The remaining commercial real estate loans comprise working capital loans to real estate corporates, loans with non-property collateral, unsecured loans and loans to real estate entities of diversified conglomerates. The average LTV ratio of the commercial real estate portfolio has decreased to 50 per cent, compared with 51 per cent in 2020. The proportion of loans with an LTV greater than 80 per cent has decreased to 2 per cent, compared with 4 per cent in 2020. The China Commercial Real Estate portfolio is being closely monitored and a management overlay of $95 million has been taken to account for risks not reflected in the ECL models.

The Mortgage portfolio continues to be the largest portion of the Retail Products portfolio, at $89.4 billion. CCPL and other unsecured lending remained largely stable at $17.8 billion.

	2021				2020 (Restated)			
Amortisecd cost	Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million	Asia[1] $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Industry:								
Energy	6,265	2,721	3,719	12,705	4,879	2,717	4,487	12,083
Manufacturing	20,771	1,751	2,702	25,224	17,899	2,202	3,260	23,361
Financing, insurance and non-banking	14,184	905	10,588	25,677	15,278	1,018	8,040	24,336
Transport, telecom and utilities	11,661	4,218	2,446	18,325	10,377	5,218	1,679	17,274
Food and household products	5,497	2,360	1,033	8,890	5,922	2,418	1,189	9,529
Commercial real estate	17,150	1,048	1,649	19,847	15,945	1,755	1,390	19,090
Mining and quarrying	3,833	572	950	5,355	4,080	717	892	5,689
Consumer durables	6,742	398	403	7,543	5,249	335	221	5,805
Construction	1,839	814	400	3,053	2,608	940	381	3,929
Trading companies and distributors	1,047	176	37	1,260	908	192	130	1,230
Government	22,987	4,117	305	27,409	19,416	4,880	72	24,368
Other	4,681	670	1,311	6,662	3,770	928	1,214	5,912
Retail Products:								
Mortgages	85,765	1,651	1,806	89,222	81,570	1,871	2,156	85,597
CCPL and other unsecured lending	15,090	1,991	100	17,181	14,977	2,019	96	17,092
Auto	500	42	–	542	481	55	–	536
Secured wealth products	19,984	545	966	21,495	18,120	383	1,383	19,886
Other	7,265	813	–	8,078	5,426	556	–	5,982
Net loans and advances to customers	245,261	24,792	28,415	298,468	226,905	28,204	26,590	281,699
Net loans and advances to banks	30,301	5,966	8,116	44,383	31,545	5,741	7,061	44,347

1 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Vulnerable sectors

Vulnerable sectors are those that the Group considers to be most at risk from COVID-19 and volatile energy prices, and we continue to monitor exposures to these sectors particularly carefully.

Total net on balance sheet exposure to vulnerable sectors increased by $0.5 billion to $33 billion compared to 31 December 2020 and the total net on and off-balance sheet exposure increased to 28 per cent (2020: 27 per cent) of the total net exposure in Corporate, Commercial and Institutional Banking. The increase is largely due to higher levels of undrawn commitments and financial guarantees, particularly in the Commercial real estate and Commodity traders sectors respectively.

Stage 2 loans decreased by $1.9 billion of loans to vulnerable sectors, as compared to 31 December 2020. This was primarily driven by a decrease in Commercial real estate portfolio due to transfers to stage 1.

Stage 3 loans to vulnerable sectors increased by $0.6 billion compared to 31 December 2020, mainly due to Commercial real estate and Oil and gas sectors from new downgrades from 'High risk' accounts.

The Group has net exposure of $4.0 billion (2020: $3.5 billion) to China Commercial Real Estate counterparties which are primarily booked in Hong Kong and China. $3.1 billion of this exposure is to property developers whose cashflows have been particularly impacted by policy changes to deleverage the property sector and $2.1 billion of these are on purely precautionary and non-purely precautionary early alert. As a result of ongoing uncertainties affecting this sector, the Group has taken a $95 million (2020: $nil) management overlay on credit impairment for the exposures on early alert at 31 December 2021. The Group is further indirectly exposed to China Commercial Real Estate through its associate investment in China Bohai Bank. Refer to Note 32 Investments in subsidiary undertakings, joint ventures and associates.

Maximum exposure

Amortised cost	2021 Maximum on-balance sheet exposure (net of credit impairment) $million	Collateral $million	Net on-balance sheet exposure $million	Undrawn commitments (net of credit impairment) $million	Financial guarantees (net of credit impairment) $million	Net off-balance sheet exposure $million	Total on & off-balance sheet net exposure $million
Industry:							
Aviation[1]	3,458	2,033	1,425	1,914	431	2,345	3,770
Commodity traders	8,732	262	8,470	2,434	6,832	9,266	17,736
Metals & mining	3,616	450	3,166	3,387	637	4,024	7,190
Commercial real estate	19,847	7,290	12,557	7,192	291	7,483	20,040
Hotels & tourism	2,390	789	1,601	1,363	121	1,484	3,085
Oil & gas	6,826	1,029	5,797	8,842	6,013	14,855	20,652
Total	44,869	11,853	33,016	25,132	14,325	39,457	72,473
Total Corporate, Commercial & Institutional Banking	139,401	26,294	113,107	96,406	49,666	146,072	259,179
Total Group	342,851	138,564	204,287	158,421	58,291	216,712	420,999

Amortised cost	2020 (Restated) Maximum on-balance sheet exposure (net of credit impairment) $million	Collateral $million	Net on-balance sheet exposure $million	Undrawn commitments (net of credit impairment) $million	Financial guarantees (net of credit impairment) $million	Net off-balance sheet exposure $million	Total on & off-balance sheet net exposure $million
Industry:							
Aviation[1 2]	4,255	2,106	2,149	1,321	531	1,852	4,001
Commodity traders	8,664	318	8,346	2,189	4,459	6,648	14,994
Metals & mining	3,882	513	3,369	2,850	886	3,736	7,105
Commercial real estate	19,090	8,004	11,086	5,283	313	5,596	16,682
Hotels & tourism	2,557	1,110	1,447	1,185	110	1,295	2,742
Oil & gas	7,199	1,032	6,167	8,332	5,587	13,919	20,086
Total	45,647	13,083	32,564	21,160	11,886	33,046	65,610
Total Corporate, Commercial & Institutional Banking	133,457	27,561	105,896	92,001	46,725	138,726	244,622
Total Group	326,046	131,447	194,599	153,286	53,582	206,868	401,467

1 As a result of industry classification changes in 2021, FY 2020 on-balance sheet exposure has been restated by $416 million to make the numbers comparable

2 In addition to the aviation sector loan exposures, the Group owns $3.1 billion (31 December 2020: $3.9 billion) of aircraft under operating leases. Refer to – Operating lease assets

Loans and advances by stage

	2021 Stage 1			Stage 2			Stage 3			Total		
	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million
Industry:												
Aviation	1,120	–	1,120	2,174	(11)	2,163	239	(64)	175	3,533	(75)	3,458
Commodity traders	8,482	(4)	8,478	195	(5)	190	713	(649)	64	9,390	(658)	8,732
Metals & mining	3,083	(1)	3,082	450	(17)	433	219	(118)	101	3,752	(136)	3,616
Commercial real estate	17,680	(43)	17,637	1,787	(75)	1,712	833	(335)	498	20,300	(453)	19,847
Hotels & tourism	1,562	(1)	1,561	722	(9)	713	182	(66)	116	2,466	(76)	2,390
Oil & gas	4,999	(5)	4,994	1,595	(34)	1,561	486	(215)	271	7,080	(254)	6,826
Total	36,926	(54)	36,872	6,923	(151)	6,772	2,672	(1,447)	1,225	46,521	(1,652)	44,869
Total Corporate, Commercial & Institutional Banking	122,368	(103)	122,265	14,818	(341)	14,477	6,520	(3,861)	2,659	143,706	(4,305)	139,401
Total Group	322,954	(485)	322,469	17,429	(528)	16,901	8,149	(4,668)	3,481	348,532	(5,681)	342,851

	2020 (Restated)											
	Stage 1			Stage 2			Stage 3			Total		
	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million	Gross balance $million	Total credit impair-ment $million	Net carrying amount $million
Industry:												
Aviation[1]	2,193	(1)	2,192	1,909	(26)	1,883	258	(78)	180	4,360	(105)	4,255
Commodity traders	8,067	(3)	8,064	473	(12)	461	799	(660)	139	9,339	(675)	8,664
Metals & mining	3,128	(3)	3,125	677	(18)	659	210	(112)	98	4,015	(133)	3,882
Commercial real estate	15,847	(13)	15,834	3,068	(34)	3,034	408	(186)	222	19,323	(233)	19,090
Hotels & tourism	1,318	(2)	1,316	1,168	(18)	1,150	138	(47)	91	2,624	(67)	2,557
Oil & gas	5,650	(7)	5,643	1,548	(69)	1,479	276	(199)	77	7,474	(275)	7,199
Total	36,203	(29)	36,174	8,843	(177)	8,666	2,089	(1,282)	807	47,135	(1,488)	45,647
Total Corporate, Commercial & Institutional Banking	110,993	(95)	110,898	20,004	(487)	19,517	7,652	(4,610)	3,042	138,649	(5,192)	133,457
Total Group	300,452	(548)	299,904	23,010	(741)	22,269	9,214	(5,341)	3,873	332,676	(6,630)	326,046

1 As a result of industry classification changes in 2021, FY 2020 gross has been restated by $416 million (Stage 1 $120 million and Stage 2 $296 million) to make the numbers comparable

Loans and advances by region (net of credit impairment)

	2021				2020 (Restated)			
	Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million	Asia[2] $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Industry:								
Aviation[1]	1,356	1,214	888	3,458	1,795	1,492	968	4,255
Commodity traders	4,352	660	3,720	8,732	4,617	780	3,267	8,664
Metals & mining	2,736	492	388	3,616	2,825	597	460	3,882
Commercial real estate	17,150	1,048	1,649	19,847	15,945	1,755	1,390	19,090
Hotel & tourism	1,464	397	529	2,390	1,692	512	353	2,557
Oil & gas	2,770	2,248	1,808	6,826	3,334	2,036	1,829	7,199
Total	29,828	6,059	8,982	44,869	30,208	7,172	8,267	45,647

1 As a result of industry classification changes in 2021, FY 2020 has been restated by $416 million (Europe &Americas) to make the numbers comparable
2 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Credit quality – loans and advances

Amortised cost	2021						
Credit grade	Aviation Gross $million	Commodity traders Gross $million	Metals & mining Gross $million	Commercial real estate Gross $million	Hotels & tourism Gross $million	Oil & gas Gross $million	Total Gross $million
Strong	896	5,878	1,730	9,581	731	3,594	22,410
Satisfactory	2,257	2,788	1,781	9,735	1,353	2,892	20,806
Higher risk	141	11	22	151	200	108	633
Defaulted	239	713	219	833	182	486	2,672
Total gross balance	3,533	9,390	3,752	20,300	2,466	7,080	46,521
Strong	–	(1)	–	(92)	–	–	(93)
Satisfactory	(8)	(5)	(14)	(21)	(4)	(24)	(76)
Higher risk	(3)	(3)	(4)	(5)	(6)	(15)	(36)
Defaulted	(64)	(649)	(118)	(335)	(66)	(215)	(1,447)
Total credit impairment	(75)	(658)	(136)	(453)	(76)	(254)	(1,652)
Strong	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%	0.4%
Satisfactory	0.4%	0.2%	0.8%	0.2%	0.3%	0.8%	0.4%
Higher risk	2.1%	27.3%	18.2%	3.3%	3.0%	13.9%	5.7%
Defaulted	26.8%	91.0%	53.9%	40.2%	36.3%	44.2%	54.2%
Cover ratio	2.1%	7.0%	3.6%	2.2%	3.1%	3.6%	3.6%

	2020 (Restated)						
Credit grade	Aviation[1] Gross $million	Commodity traders Gross $million	Metals & mining Gross $million	Commercial real estate Gross $million	Hotels & tourism Gross $million	Oil & gas Gross $million	Total Gross $million
Strong	1,406	4,968	1,055	7,795	696	3,177	19,097
Satisfactory	2,540	3,554	2,423	11,110	1,672	3,745	25,044
Higher risk	156	18	327	10	118	276	905
Defaulted	258	799	210	408	138	276	2,089
Total gross balance	4,360	9,339	4,015	19,323	2,624	7,474	47,135
Strong	(7)	(1)	(1)	(9)	–	(6)	(24)
Satisfactory	(7)	(12)	(16)	(37)	(19)	(53)	(144)
Higher risk	(13)	(2)	(4)	(1)	(1)	(17)	(38)
Defaulted	(78)	(660)	(112)	(186)	(47)	(199)	(1,282)
Total credit impairment	(105)	(675)	(133)	(233)	(67)	(275)	(1,488)
Strong	0.5%	0.0%	0.1%	0.1%	0.0%	0.2%	0.1%
Satisfactory	0.3%	0.3%	0.7%	0.3%	1.1%	1.4%	0.6%
Higher risk	8.3%	11.1%	1.2%	10.0%	0.8%	6.2%	4.2%
Defaulted	30.2%	82.6%	53.3%	45.6%	34.1%	72.1%	61.4%
Cover ratio	2.4%	7.2%	3.3%	1.2%	2.6%	3.7%	3.2%

1 As a result of industry classification changes in 2021, FY 2020 gross has been restated by $416 million (Satisfactory) to make the numbers comparable

Debt securities and other eligible bills (audited)

This section provides further detail on gross debt securities and treasury bills.

The standard credit ratings used by the Group are those used by Standard & Poor's or its equivalent. Debt securities held that have a short-term rating are reported against the long-term rating of the issuer. For securities that are unrated, the Group applies an internal credit rating, as described under the credit rating and measurement section.

Total gross debt securities and other eligible bills increased by $9.8 billion to $162.8 billion. The increase in holdings of debt securities and other eligible bills is mainly due to Treasury Markets utilising excess liquidity from the growth in the Group's balance sheet. Of the total increase, 82 per cent is in stage 1 with the remaining 18 per cent in stage 2. Most securities held are highly rated to meet liquidity regulatory requirement. This can be observed in the increase of stage 1 securities rated A- and above of $9.4 billion.

	2021			2020		
Amortised cost and FVOCI	Gross $million	ECL $million	Net[2] $million	Gross $million	ECL $million	Net[2] $million
Stage 1	157,352	(67)	157,285	149,316	(56)	149,260
AAA	75,920	(23)	75,897	64,209	(10)	64,199
AA- to AA+	40,577	(8)	40,569	40,377	(2)	40,375
A- to A+	23,993	(3)	23,990	26,551	(3)	26,548
BBB- to BBB+	11,071	(27)	11,044	12,588	(31)	12,557
Lower than BBB-	1,123	(1)	1,122	398	(1)	397
Unrated	4,668	(5)	4,663	5,193	(9)	5,184
Stage 2	5,315	(42)	5,273	3,506	(26)	3,480
AAA	641	(7)	634	24	–	24
AA- to AA+	592	(3)	589	–	–	–
A- to A+	22	(1)	21	50	(2)	48
BBB- to BBB+	2,869	(10)	2,859	2,693	(7)	2,686
Lower than BBB-	809	(21)	788	415	(11)	404
Unrated	382	–	382	324	(6)	318
Stage 3	113	(66)	47	114	(58)	56
Lower than BBB-	–	–	–	–	–	–
Unrated	113	(66)	47	114	(58)	56
Gross balance[1]	162,780	(175)	162,605	152,936	(140)	152,796

1 Stage 3 includes $33 million originated credit-impaired debt securities

2 FVOCI instruments are not presented net of ECL. While the presentation is on a net basis for the table, the total net on-balance sheet amount is $162,700 million (31 December 2020: $152,861 million). Refer to the Analysis of financial instrument by stage table

IFRS 9 expected credit loss methodology (audited)

Approach for determining expected credit losses

Credit loss terminology

Component	Definition
Probability of default (PD)	The probability that a counterparty will default, over the next 12 months from the reporting date (stage 1) or over the lifetime of the product (stage 2), incorporating the impact of forward-looking economic assumptions that have an effect on Credit Risk, such as unemployment rates and GDP forecasts. The PD estimates will fluctuate in line with the economic cycle. The lifetime (or term structure) PDs are based on statistical models, calibrated using historical data and adjusted to incorporate forward-looking economic assumptions.
Loss given default (LGD)	The loss that is expected to arise on default, incorporating the impact of forward-looking economic assumptions where relevant, which represents the difference between the contractual cashflows due and those that the bank expects to receive. The Group estimates LGD based on the history of recovery rates and considers the recovery of any collateral that is integral to the financial asset, taking into account forward-looking economic assumptions where relevant.
Exposure at default (EAD)	The expected balance sheet exposure at the time of default, taking into account expected changes over the lifetime of the exposure. This incorporates the impact of drawdowns of facilities with limits, repayments of principal and interest, and amortisation.

To determine the expected credit loss, these components are multiplied together: PD for the reference period (up to 12 months or lifetime) x LGD x EAD and discounted to the balance sheet date using the effective interest rate as the discount rate.

IFRS 9 expected credit loss models have been developed for the Corporate, Commercial and Institutional Banking businesses on a global basis, in line with their respective portfolios. However, for some of the key countries, country-specific models have also been developed.

The calibration of forward-looking information is assessed at a country or region level to take into account local macroeconomic conditions.

Retail expected credit loss models are country and product specific given the local nature of the Consumer, Private and Business Banking business.

For less material retail portfolios, the Group has adopted less sophisticated approaches based on historical roll rates or loss rates:

- For medium-sized retail portfolios, a roll rate model is applied, which uses a matrix that gives the average loan migration rate between delinquency states from period to period. A matrix multiplication is then performed to generate the final PDs by delinquency bucket over different time horizons.
- For smaller retail portfolios, loss rate models are applied. These use an adjusted gross charge-off rate, developed using monthly write-off and recoveries over the preceding 12 months and total outstanding balances.
- While the loss rate models do not incorporate forward-looking information, to the extent that there are significant changes in the macroeconomic forecasts an assessment will be completed on whether an adjustment to the modelled output is required.

For a limited number of exposures, proxy parameters or approaches are used where the data is not available to calculate the origination PDs for the purpose of applying the SICR criteria; or for some retail portfolios where a full history of LGD data is not available, estimates based on the loss experience from similar portfolios are used. The use of proxies is monitored and will reduce over time.

The following processes are in place to assess the ongoing performance of the models:

- Quarterly model monitoring that uses recent data to compare the differences between model predictions and actual outcomes against approved thresholds.
- Annual independent validations of the performance of material models by Group Model Valuation (GMV); an abridged validation is completed for non-material models.

Application of lifetime

Expected credit loss is estimated based on the period over which the Group is exposed to Credit Risk. For the majority of exposures this equates to the maximum contractual period. For retail credit cards and corporate overdraft facilities however, the Group does not typically enforce the contractual period, which can be as short as one day. As a result, the period over which the Group is exposed to Credit Risk for these instruments reflects their behavioural life, which incorporates expectations of customer behaviour and the extent to which Credit Risk management actions curtail the period of that exposure. The average behavioural life for retail credit cards
is between 3 and 6 years across our footprint markets.

In 2021, the behavioural life for corporate overdraft facilities was re-estimated using recent data, and it was confirmed that the existing lifetime of 24 months remains appropriate.

Composition of credit impairment provisions (audited)

The table below summarises the key components of the Group's credit impairment provision balances at 31 December 2021 and 31 December 2020.

Modelled ECL provisions, which includes post model adjustments, management overlays and the impact of multiple economic scenarios, were 23 per cent (31 December 2020: 24 per cent) of total credit impairment provisions at 31 December 2021. 24 per cent of the modelled ECL provisions at 31 December 2021 related to judgemental management overlays compared with 21 per cent at 31 December 2020. Post model adjustments (PMAs) reduced significantly compared with 31 December 2020 as the volatility in macroeconomic forecasts subsided which removed the need for PMAs to correct for a model's overreaction to the macroeconomic forecast.

31 December 2021	Corporate, Commercial & Institutional Banking $ million	Consumer, Private & Business Banking $ million	Central & other items $ million	Total $ million
Modelled ECL provisions (base forecast)	365	539	103	1,007
Impact of multiple economic scenarios[1]	32	14	9	55
Total ECL provisions before management overlays	397	553	112	1,062
Of which: Post model and other model adjustments	24	(8)	8	24
Management overlays[2]				-
– COVID-19	102	147	-	249
– China Commercial Real Estate	95	-	-	95
Total modelled provisions	594	700	112	1,406
Of which: Stage 1	163	378	68	609
Stage 2	425	187	44	656
Stage 3	6	135	-	141
Stage 3 non-modelled provisions	4,073	662	68	4,803
Total credit impairment provisions	4,667	1,362	180	6,209

31 December 2020				
Modelled ECL provisions (base forecast)	564	724	92	1,380
Impact of multiple economic scenarios	(8)		-	(8)
Total ECL provisions before management overlays	556	724	92	1,372
Of which: Post model and other model adjustments	(56)	(36)	(66)	(158)
Management overlay – COVID-19[2]	197	162	-	359
Total modelled provisions	753	886	92	1,731
Of which: Stage 1	154	445	65	664
Stage 2	599	259	27	885
Stage 3	-	182	-	182
Stage 3 non-modelled provisions	4,803	548	63	5,414
Total credit impairment provisions	5,556	1,434	155	7,145

1 Includes a PMA of $51 million

2 $115 million (2020: $78 million) is in stage 1, $208 million (2020: $275 million) in stage 2 and $21 million (2020: $6 million) in stage 3

Post model and other model adjustments

Where a model's performance breaches the monitoring thresholds or validation standards, an assessment is completed to determine whether an ECL PMA is required to correct for the identified model issue. PMAs will be removed when the models are updated to correct for the identified model issue or the estimates return to being within the monitoring thresholds.

The unprecedented volatility in the quarterly macroeconomic forecasts that was seen over 2020 meant that a number of the Group's IFRS 9 ECL models were operating outside the boundaries to which they were calibrated. Over the COVID-19 period we have commonly seen GDP decreases over a single quarter of around 10 to 20 per cent while a country is in lockdown, followed by a recovery of 10 to 20 per cent the following quarter when the lockdown is assumed to end. As the quarterly macroeconomic forecasts and associated model estimates have become less volatile in 2021, PMAs relating to volatility have not been required.

As at 31 December 2021, PMAs have been applied for 11 models out of the total of 172 models. In aggregate, the PMAs increase the Group's impairment provisions by $17 million (1 per cent of modelled provisions) compared with a $133 million decrease at 31 December 2020, and primarily relate to a non-linearity PMA (see below for the impact of multiple economic scenarios) and unsecured Consumer lending models. The PMAs range between a $51 million increase (the non-linearity PMA) to a $16 million decrease in ECL (for Malaysia Business Clients). Corporate, Commercial and Institutional Banking PMAs reduced significantly compared to 31 December 2020 as new models were implemented during the period.

As at 31 December 2021, judgemental model adjustments have been applied to certain Consumer, Private and Business Banking models to hold back releases of ECL identified from model monitoring breaches because moratoria and other support schemes have suppressed observed defaults. These will be released when the observed defaults normalise.

As set out below, a separate management overlay that covers risk not captured by the models has been applied after taking into account these PMAs.

	31.12.21 $ million	31.12.20 $ million
Volatility-related PMAs		
Corporate, Commercial & Institutional Banking	–	17
Consumer, Private & Business Banking	–	(12)
Central & other items	–	(66)
	–	(61)
Model performance PMAs		
Corporate, Commercial & Institutional Banking	24	(73)
Consumer, Private & Business Banking	(15)	1
Central & other items	8	–
	17	(72)
Total PMAs	17	(133)
Judgemental model adjustments		
Consumer, Private & Business Banking	7	(25)
Total model adjustments	24	(158)

Key assumptions and judgements in determining expected credit loss

Incorporation of forward-looking information

The evolving economic environment is a key determinant of the ability of a bank's clients to meet their obligations as they fall due. It is a fundamental principle of IFRS 9 that the provisions banks hold against potential future credit risk losses should depend not just on the health of the economy today but should also take into account potential changes to the economic environment. For example, if a bank were to anticipate a sharp slowdown in the world economy over the coming year, it should hold more provisions today to absorb the credit losses likely to occur in the near future.

To capture the effect of changes to the economic environment, the PDs and LGDs used to calculate ECL incorporate forward-looking information in the form of forecasts of the values of economic variables and asset prices that are likely to have an effect on the repayment ability of the Group's clients.

The 'Base Forecast' of the economic variables and asset prices is based on management's view of the five-year outlook, supported by projections from the Group's in-house research team and outputs from a third-party model that project specific economic variables and asset prices. The research team takes consensus views into consideration, and senior management reviews projections for some core country variables against consensus when forming their view of the outlook. For the period beyond five years, management utilises the in-house research view and third-party model outputs, which allow for a reversion to long-term growth rates or norms. All projections are updated on a quarterly basis.

Forecast of key macroeconomic variables underlying the expected credit loss calculation and the impact on non-linearity
In the Base Forecast – management's view of the most likely outcome – the world economy is expected to grow by just over 4 per cent in 2022, easing from an almost 6 per cent expansion in 2021. The strong growth last year was driven by vaccine rollouts and government stimulus and follows a contraction of more than 3 per cent in 2020, the worst performance since the Great Depression of 1929–31. Currently, the near-term recovery momentum is being curtailed by supply-side disruptions and elevated inflation. Despite this, world GDP growth in 2022 is still expected to be above the average of 3.7 per cent for the 10 years between 2010 and 2019.

Vaccines against COVID-19 have allowed economies to reopen, but constantly evolving virus strains have resulted in intermittent recoveries, and sectors like hospitality and tourism remain under pressure. In general, developed markets have been much better than emerging markets in rolling out vaccines; it is therefore not surprising that developed markets have led the recovery so far. The improvement in vaccine access in emerging markets in recent months should help to narrow the growth gap in 2022.

The balance of risks to the 2022 growth forecast is to the downside. The emergence of the new Omicron variant across many markets is likely to be felt in slowing the pace of reopening of economies or the re-introduction of restrictions limiting public contact and movement. This will pose downside risks to economic activity and employment. A delayed employment recovery would likely extend supply chain disruptions, weakening growth and keeping inflation elevated for longer. This combination will create challenges for policy-makers globally as they attempt to strike a delicate balance between responding to upward inflationary pressures and managing downside risks to the economic outlook.

While the quarterly Base Forecasts inform the Group's strategic plan, one key requirement of IFRS 9 is that the assessment of provisions should consider multiple future economic environments. For example, the global economy may grow more quickly or more slowly than the Base Forecast, and these variations would have different implications for the provisions that the Group should hold today. As the negative impact of an economic downturn on credit losses tends to be greater than the positive impact of an economic upturn, if the Group sets provisions only on the ECL under the Base Forecast it might maintain a level of provisions that does not appropriately capture the range of potential outcomes. To address this property of skewness (or non-linearity), IFRS 9 requires reported ECL to be a probability-weighted ECL, calculated over a range of possible outcomes.

To assess the range of possible outcomes the Group simulates a set of 50 scenarios around the Base Forecast, calculates the ECL under each of them and assigns an equal weight of 2 per cent to each scenario outcome. These scenarios are generated by a Monte Carlo simulation, which addresses the challenges of crafting many realistic alternative scenarios in the many countries in which the Group operates by means of a model, which produces these alternative scenarios while considering the degree of historical uncertainty (or volatility) observed from Q1 1990 to Q3 2020 around economic outcomes and how these outcomes have tended to move in relation to one another (or correlation). This naturally means that each of the 50 scenarios do not have a specific narrative, although collectively they explore a range of hypothetical alternative outcomes for the global economy, including scenarios that turn out better than expected and scenarios that amplify anticipated stresses.

The table below provides a summary of the Group's Base Forecast for key footprint markets, alongside the corresponding range seen across the multiple scenarios. The peak/trough amounts in the table show the highest and lowest points within the Base Forecast, and the GDP graphs illustrate the shape of the Base Forecast in relation to prior periods' actuals and the long-term growth rates.

China's growth is expected to ease from over 8 per cent in 2021 to 5.6 per cent in 2022. After excluding the COVID-19 related weakness of 2020 when the economy grew by 2.3 per cent this will be the slowest pace of expansion since 1990 when GDP grew by 3.9 per cent. Headwinds to China's outlook include the spread of the new variant of COVID-19 and concerns over the real estate sector. Hong Kong is also expected to show a sharp slowdown in 2022 from a growth of almost 7 per cent in 2021. While hopes are rising that quarantine-free travel between Hong Kong and the mainland may resume, full reopening of the border is unlikely until H2 2022 at the earliest as the authorities are expected to take a cautious approach. The resumption of international travel to other destinations could take even longer. In Singapore, growth is expected to hold up better in 2022 compared with Hong Kong. Earlier progress with border reopening and a high domestic vaccination rate should support economic activity. Korea and India's growth are also expected to be relatively more robust compared with 2021. Easing COVID-19 restrictions and a recovery in employment will provide support to Korea. In India, a rapid pick-up in vaccine distribution and expansionary policies are supporting the recovery.

Momentum from the strong rebound in 2021 is also expected to ease in western economies. The United States is facing increasing headwinds in 2022. This follows robust growth last year as the rapid pace of vaccinations in the first half of 2021 allowed activity to normalise. US GDP growth is expected to moderate to 3.7 per cent in 2022 from 5.7 per cent in 2021 as supply-side constraints start to bite and high inflation squeezes real incomes. Europe also faces similar challenges with the growth in the eurozone expected to ease to around 4 per cent from 4.9 per cent in 2021.

The slowdown in world GDP growth will translate to a softening in the growth of demand for commodities in 2022. Supply disruptions from COVID-19 are also expected to diminish this year. The tightness in the supply-demand balance in the oil market is therefore likely to ease and the price of Brent Crude oil is expected to average $66.6 in 2022 compared with $70.0 in 2021.

Long-term growth = forward-looking future GDP growth potential

	2021							
	China				Hong Kong			
	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY %)	GDP growth (YoY %)	Unemployment %	3-month interest rates %	House prices (YoY %)
Base forecast								
2022	5.6	3.4	2.3	2.4	3.0	4.2	0.3	4.2
2023	5.5	3.4	2.6	4.1	2.5	3.8	1.1	3.0
2024	5.4	3.4	2.8	4.4	2.5	3.7	1.7	2.8
2025	5.3	3.4	3.0	4.4	2.5	3.7	2.1	2.8
2026	5.2	3.4	3.1	4.4	2.5	3.7	2.3	2.7
5-year average	5.4	3.4	2.8	4.0	2.6	3.8	1.5	3.1
Peak	6.1	3.4	3.1	4.5	3.5	4.4	2.3	5.3
Trough	4.7	3.4	2.1	1.8	1.8	3.7	0.3	2.7
Monte Carlo								
Low[2]	2.6	3.3	1.3	(2.8)	(1.7)	2.4	(0.3)	(12.4)
High[3]	8.3	3.5	4.6	11.1	6.9	5.8	5.0	22.8

	2021							
	Singapore				Korea			
	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY %)
Base forecast[1]								
2022	3.6	3.3	0.5	3.6	2.7	3.7	1.2	5.8
2023	2.7	3.1	1.0	3.3	2.5	3.4	1.3	0.0
2024	2.0	3.0	1.5	3.4	2.5	3.3	1.6	2.2
2025	2.0	3.0	1.9	3.6	2.5	3.2	1.9	2.8
2026	2.0	3.1	2.1	3.8	2.5	3.1	2.1	2.8
5-year average	2.5	3.1	1.4	3.6	2.5	3.3	1.6	2.7
Peak	4.8	3.4	2.2	4.2	2.8	3.7	2.2	10.9
Trough	1.8	3.0	0.5	3.3	2.4	3.1	1.2	(0.3)
Monte Carlo								
Low[2]	(4.0)	2.1	0.1	(4.1)	(3.1)	2.7	0.5	(5.2)
High[3]	9.4	4.5	4.2	15.4	7.1	4.5	4.3	9.5

	2021				
	India[4]				
	GDP growth (YoY%)	Unemployment %	3month interest rates %	House prices (YoY%)	Brent Crude $ pb
Base forecast					
2022	8.0	N/A[5]	4.6	6.9	66.6
2023	5.5	N/A[5]	5.2	7.2	60.0
2024	6.0	N/A[5]	5.7	7.2	63.0
2025	6.0	N/A[5]	6.1	7.2	65.0
2026	6.5	N/A[5]	6.2	7.1	64.0
5-year average	6.4	N/A[5]	5.4	7.1	63.7
Peak	16.6	N/A[5]	6.2	7.2	73.5
Trough	4.2	N/A[5]	4.0	5.8	60.0
Monte Carlo					
Low[2]	2.0	N/A[5]	3.2	(1.9)	8.9
High[3]	10.5	N/A[5]	8.8	24.9	211.4

	2020							
	China				Hong Kong			
	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)
5-year average	6.0	3.4	2.3	5.8	2.8	3.9	0.9	3.7
Peak	19.4	3.7	2.4	6.2	5.5	6.3	1.3	7.5
Trough	3.2	3.4	2.2	4.7	2.5	3.1	0.7	(4.3)
Monte Carlo								
Low[2]	1.9	3.3	0.9	1.2	(1.9)	2.3	(0.3)	(12.8)
High[3]	20.4	3.7	4.5	8.7	7.3	7.2	3.2	23.0

	2020							
	Singapore				Korea			
	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)
5-year average	2.8	3.5	0.7	4.0	2.8	3.3	1.2	2.3
Peak	13.7	4.3	1.2	4.3	5.3	3.7	2.3	3.2
Trough	(2.3)	3.1	0.5	1.5	1.4	3.0	0.5	0.4
Monte Carlo								
Low[2]	(5.4)	2.0	0.0	(4.4)	(1.4)	2.6	(0.1)	(2.3)
High[3]	17.5	5.5	2.2	16.9	7.9	4.5	3.5	7.6

	2020							
	Singapore				Korea			
	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)
5-year average	2.8	3.5	0.7	4.0	2.8	3.3	1.2	2.3
Peak	13.7	4.3	1.2	4.3	5.3	3.7	2.3	3.2
Trough	(2.3)	3.1	0.5	1.5	1.4	3.0	0.5	0.4
Monte Carlo								
Low[2]	(5.4)	2.0	0.0	(4.4)	(1.4)	2.6	(0.1)	(2.3)
High[3]	17.5	5.5	2.2	16.9	7.9	4.5	3.5	7.6

	2020				
	India				
	GDP growth (YoY%)	Unemployment %	3-month interest rates %	House prices (YoY%)	Brent crude $ pb
5-year average	6.4	N/A[5]	4.3	6.7	54.0
Peak	32.6	N/A[5]	5.4	7.2	61.0
Trough	0.0	N/A[5]	3.3	4.8	39.0
Monte Carlo					
Low[2]	(2.1)	N/A[5]	2.0	(4.1)	22.0
High[3]	34.9	N/A[5]	6.9	21.8	116.0

1 Base forecasts are evaluated from Q1 2022 to Q4 2026. The forward-looking simulation starts from Q1 2022
2 Represents the 10th percentile in the range of economic scenarios used to determine non-linearity
3 Represents the 90th percentile in the range of economic scenarios used to determine non-linearity
4 India GDP follows the Fiscal Year beginning in Q2. All other variables are on a calendar year basis
5 N/A – Not available

Impact of multiple economic scenarios

The final probability-weighted ECL reported by the Group is a simple average of the ECL for each of the 50 scenarios simulated using a Monte Carlo model. The Monte Carlo approach has the advantage that it generates many plausible alternative scenarios that cover our global footprint; however, a recognised challenge with the Monte Carlo approach is that the range of scenarios it forecasts can be narrow.

The Monte Carlo model is being redeveloped to widen the range of the scenarios; however, prior to this new model being implemented a $51 million non-linearity PMA has been applied. The total amount of non-linearity has been estimated by assigning probability weights of 70 per cent, 25 per cent and 5 per cent respectively to the ECL from the Base Forecast, Supply Chain Disruption and New COVID-19 Variant scenarios which are presented on pages 240 to 241 and comparing this to the unweighted base forecast ECL. The non-linearity PMA represents the difference between the probability weighted ECL calculated using the three scenarios and the probability weighted ECL calculated by the Monte Carlo model.

The impact of multiple economic scenarios (which includes the non-linearity PMA) on stage 1, stage 2 and stage 3 modelled ECL is set out in the table below together with the management overlay.

	Base forecast $million	Multiple economic scenarios $million	Management overlay $million	Total $million
Total expected credit loss at 31 December 2021[1]	1,007	55	344	1,406
Total expected credit loss at 31 December 2020[1]	1,380	(8)	359	1,731

1 Total modelled ECL comprises stage 1 and stage 2 balances of $1,265 million (31 December 2020: $1,549 million) and $141 million (31 December 2020: $182 million) of modelled ECL on stage 3 loans

The average expected credit loss under multiple scenarios is 5 per cent higher than the expected credit loss calculated using only the most likely scenario (the Base Forecast). Portfolios that are more sensitive to non-linearity include those with greater leverage and/or a longer tenor, such as Project and Shipping Finance and credit card portfolios. Other portfolios display minimal non-linearity owing to limited responsiveness to macroeconomic impacts for structural reasons such as significant collateralisation as with the Consumer, Private and Business Banking mortgage portfolios.

Management overlay

As at 31 December 2021, the Group held:

- A $249 million (31 December 2020: $359 million) management overlay relating to uncertainties as a result of the COVID-19 pandemic, $102 million (31 December 2020: $197 million) of which relates to Corporate, Commercial and Institutional Banking and $147 million (31 December 2020: $162 million) to Consumer, Private and Business Banking. $84 million (31 December 2020: $78 million) of the overlay is held in stage 1, $144 million (31 December 2020: $275 million) in stage 2 and $21 million (31 December 2020: $6 million) in stage 3.
- A $95 million (31 December 2020: $nil) management overlay relating to uncertainties around exposures to China Commercial Real Estate, all of which relates to Corporate, Commercial and Institutional Banking. $31 million is held in stage 1 and $64 million in stage 2.

The overlays have been determined after taking account of the PMAs reported and they are re-assessed quarterly. They are reviewed and approved by the IFRS 9 Impairment Committee.

COVID-19 overlay

Corporate, Commercial and Institutional Banking

Although the amount of loans placed on non-purely precautionary early alert has decreased compared with 31 December 2020, balances remain higher than before the pandemic. The impact of the rapid deterioration in the economic environment in 2020 has not yet been fully observed in customers' financial performance, in part due to ongoing government support measures across the Group's markets. Accordingly, we have not yet seen a significant increase in the level of stage 3 loans relating to COVID-19 up to 31 December 2021. To take account of the heightened Credit Risk and the continuing uncertainties in the pace and timing of economic recovery, a judgemental overlay has been taken by estimating the impact of further deterioration to the non-purely precautionary early alert portfolio. The overlay is held in stage 2. The basis of determining the overlay remained unchanged during 2020 and 2021, although the assumed level of further deterioration was reduced in 2021 in line with our experience. The overlay has steadily reduced from $197 million at 31 December 2020 to $102 million at 31 December 2021 as the level of non-purely precautionary early alerts has reduced.

Consumer, Private and Business Banking

A number of components contribute to the judgemental overlay for Consumer, Private and Business Banking. Within Business Banking, the Group has evaluated those sectors that have been adversely impacted by COVID-19, both through internal credit processes as well as through a 'Voice of Customer' survey to understand how customers have been affected. The Group has also considered the extent to which lockdowns have impacted collections and recoveries, and the extent to which payment reliefs may mask underlying credit risks, particularly in those markets where compulsory extended moratoria schemes were in place. For those markets, the Group has estimated the impact of increased delinquencies and flows to defaults when the moratoria are lifted as well as the extent to which customers in stage 1 may have experienced a significant increase in credit risk if not for the moratoria. The Group assessment also considered employee banking relationships with high-impact sectors and the impact on Mortgages in Africa and the Middle East which generally have high LTVs. $84 million of the overlay is held in stage 1, $42 million in stage 2 and $21 million in stage 3. The basis of determining the overlay remained unchanged during 2020 and 2021. The overlay has reduced from $162 million at 31 December 2020 to $147 million at 31 December 2021. While general moratoria schemes have ended in a number of markets and increased delinquency flows were captured by the ECL models, moratoria schemes were further extended in certain Asian and Africa and Middle East markets.

China Commercial Real Estate overlay

Chinese property developers are experiencing liquidity issues, triggered by government policy changes aimed at deleveraging the property sector and ensuring property developers have the financial ability to complete residential properties under construction. The government's 'three red lines' matrix was introduced in August 2020 to tighten the funding conditions for property developers by limiting the growth rate in external debt. With additional controls on sales of properties to end buyers (e.g. mortgage lending control, pricing control, eligibility control) and on restricting developers' ability to access cash from 'escrow accounts' with cash paid by retail residential buyers, the cashflow of developers has been significantly squeezed. Also, with capital markets reacting negatively to the tightening policies, we have seen greater volatility in bond pricing and reduced access to capital markets liquidity for developers. As such, some developers have faced/are facing difficulties in servicing and repaying financing obligations.

The Group's banking book net exposure to China Commercial Real Estate was $4.0 billion at 31 December 2021. Client level analysis continues to be done, with the high-risk clients being placed on purely precautionary or non-purely precautionary early alert. Given the evolving nature of the risks in the China Commercial Real Estate sector, a management overlay of $95 million has been taken by estimating the impact of further deterioration to those clients placed on early alert.

Stage 3 assets

Credit-impaired assets managed by Group Special Assets Management incorporate forward-looking economic assumptions in respect of the recovery outcomes identified, and are assigned individual probability weightings. These assumptions are not based on a Monte Carlo simulation but are informed by the Base Forecast.

Sensitivity of expected credit loss calculation to macroeconomic variables

The ECL calculation relies on multiple variables and is inherently non-linear and portfolio-dependent, which implies that no single analysis can fully demonstrate the sensitivity of the ECL to changes in the macroeconomic variables. The Group has conducted a series of analyses with the aim of identifying the macroeconomic variables which might have the greatest impact on the overall ECL. These encompassed single variable and multi-variable exercises, using simple up/down variation and extracts from actual calculation data, as well as bespoke scenario design assessments.

The primary conclusion of these exercises is that no individual macroeconomic variable is materially influential. The Group believes this is plausible as the number of variables used in the ECL calculation is large. This does not mean that macroeconomic variables are uninfluential; rather, that the Group believes that consideration of macroeconomics should involve whole scenarios, as this aligns with the multi-variable nature of the calculation.

The Group faces downside risks in the operating environment related to the uncertainties surrounding the macroeconomic outlook. To explore this, a sensitivity analysis of ECL was undertaken to explore the effect of slower economic recoveries across the Group's footprint markets. Two downside scenarios were considered. In the first scenario the current supply chain disruptions prove more persistent than expected. Labour and material shortages persist throughout 2022 and higher commodity and other input prices add to inflationary pressure. The global recovery in investment and consumption disappoints and financial markets weaken. The impact on the global economy is temporary, however. Supply chain disruptions ease significantly from 2023. In the second scenario, new COVID-19 virus variants are assumed to lead to a new infection wave in emerging markets and developing economies, resulting in the re-introduction of severe lockdown measures. Travel restrictions significantly impact the Aviation and Hotels and tourism sectors.

	Baseline		Supply chain disruption		New COVID-19 variant	
	Five year average	Peak/Trough	Five year average	Peak/Trough	Five year average	Peak/Trough
China GDP	5.4	6.1/4.7	5.0	5.5/3.6	5.2	13.4/(5.2)
China unemployment	3.4	3.4/3.4	3.5	4.0/3.4	4.1	5.9/3.4
China property prices	4.0	4.5/1.8	3.4	4.5/(1.5)	3.8	6.6/(1.6)
Hong Kong GDP	2.6	3.5/1.8	2.0	2.5/0.1	2.3	11.6/(9.1)
Hong Kong unemployment	3.8	4.4/3.7	4.0	4.6/3.7	4.7	6.8/3.8
Hong Kong property prices	3.1	5.3/2.7	1.9	3.8/(2.0)	3.5	25.2/(21.3)
US GDP	2.3	4.7/1.7	1.6	4.0/(0.4)	2.0	13.1/(11.6)
Singapore GDP	2.5	4.8/1.8	1.9	3.3/(0.2)	2.2	11.1/(8.9)
India GDP	6.4	16.6/4.2	5.4	15.0/1.4	6.0	19.3/(12.4)
Crude oil	63.7	73.5/60.0	66.3	76.2/62.0	49.4	57.0/32.7

	Base (GDP, YoY%)					Supply chain disruption (GDP, YoY%)					Difference from Base				
	2022	2023	2024	2025	2026	2022	2023	2024	2025	2026	2022	2023	2024	2025	2026
China	5.6	5.5	5.4	5.3	5.2	4.3	4.8	5.4	5.3	5.2	(1.4)	(0.8)	0.0	0.0	0.0
Hong Kong	3.0	2.5	2.5	2.5	2.5	1.1	1.4	2.5	2.5	2.5	(1.9)	(1.1)	0.0	0.0	0.0
US	3.7	2.3	1.8	1.8	1.8	1.6	1.0	1.8	1.8	1.8	(2.1)	(1.3)	0.0	0.0	0.0
Singapore	3.6	2.7	2.0	2.0	2.0	2.0	1.7	2.0	2.0	2.0	(1.7)	(1.0)	0.0	0.0	0.0
India[1]	8.0	5.5	6.0	6.0	6.5	5.6	4.3	5.4	5.6	6.5	(2.4)	(1.2)	(0.6)	(0.4)	0.0

	Base (GDP, YoY%)					New COVID-19 variant (GDP, YoY%)					Difference from Base				
	2022	2023	2024	2025	2026	2022	2023	2024	2025	2026	2022	2023	2024	2025	2026
China	5.6	5.5	5.4	5.3	5.2	(3.5)	8.9	9.5	5.7	5.2	(9.2)	3.3	4.1	0.3	0.0
Hong Kong	3.0	2.5	2.5	2.5	2.5	(7.2)	6.2	7.1	2.9	2.5	(10.2)	3.7	4.6	0.4	0.0
US	3.7	2.3	1.8	1.8	1.8	(8.4)	6.7	7.3	2.3	1.8	(12.1)	4.4	5.5	0.5	0.0
Singapore	3.6	2.7	2.0	2.0	2.0	(6.0)	6.2	6.3	2.4	2.0	(9.7)	3.5	4.3	0.3	0.0
India[1]	8.0	5.5	6.0	6.0	6.5	(6.5)	15.8	10.3	6.2	6.5	(14.5)	10.3	4.3	0.2	0.0

1 With the exception of India each year is defined as calendar years, starting in Q1 and ending in Q4. For India the variables are presented for the fiscal year with each year starting in Q2 and ending in Q1 of the next year

The total reported stage 1 and 2 ECL provisions (including both on and off-balance sheet instruments) would be approximately $110 million higher under the supply chain disruption scenario and $545 million higher under the new Covid-19 variant scenario than the baseline ECL provisions (which excluded the impact of multiple economic scenarios and management overlays which may already capture some of the risks in these scenarios). The proportion of stage 2 assets would increase from 4.2 per cent to 4.6 per cent and 7.7 per cent respectively under the supply chain disruption and New Covid-19 Variant scenarios. This includes the impact of exposures transferring to stage 2 from stage 1 but does not consider an increase in stage 3 defaults.

Under both scenarios the majority of the increase was in Corporate, Commercial and Institutional Banking with the main corporate portfolios in the United Kingdom, Hong Kong and the United States being impacted. Under both scenarios around 26 per cent of the increase was in Consumer, Private and Business Banking portfolios with most of the increases coming from the big unsecured retail portfolios (the Korea and Hong Kong Personal Loan portfolios were impacted under the supply chain disruption scenario, whereas the Malaysia and Singapore Credit Cards portfolios were impacted under the new Covid-19 variant scenario).

There was no material change in modelled stage 3 provisions as these primarily relate to unsecured Consumer, Private and Business Banking exposures for which the LGD is not sensitive to changes in the macroeconomic forecasts. There is also no material change for non-modelled stage 3 exposures as these are more sensitive to client specific factors than to alternative macroeconomic scenarios.

The actual outcome of any scenario may be materially different due to, among other factors, the effect of management actions to mitigate potential increases in risk and changes in the underlying portfolio.

Modelled provisions

	Base forecast ECL $m	Supply chain disruption ECL $m	New COVID-19 variant ECL $m
Corporate, Commercial & Institutional Banking	359	437	749
Consumer, Private & Business Banking	425	455	570
Central & other items	103	105	112
Total stage 1 and 2 before overlays and multiple scenarios	887	997	1,432
Stage 1 and 2 management overlay	323		
Impact of multiple economic scenarios	55		
Total reported stage 1 and 2 ECL	1,265		
Stage 3 ECL[1]	4,944		
Total ECL	6,209		

1 Includes $21 million management overlay

Proportion of assets in stage 2[1]

	Base forecast scenario %	Supply chain disruption scenario %	New COVID-19 variant scenario %
Corporate, Consumer & Institutional Banking	6.9	7.9	14.2
Consumer, Private & Business Banking	1.5	1.6	2.3
Central & other items	2.2	2.2	2.3
Total	4.2	4.6	7.7

1 Excludes cash and balances at central banks, accrued income, assets held for sale and other assets

Significant increase in credit risk (SICR)

Quantitative criteria

SICR is assessed by comparing the risk of default at the reporting date to the risk of default at origination. Whether a change in the risk of default is significant or not is assessed using quantitative and qualitative criteria. These quantitative significant deterioration thresholds have been separately defined for each business and where meaningful are consistently applied across business lines.

Assets are considered to have experienced SICR if they have breached both relative and absolute thresholds for the change in the average annualised lifetime probability of default over the residual term of the exposure.

The absolute measure of increase in credit risk is used to capture instances where the PDs on exposures are relatively low at initial recognition as these may increase by several multiples without representing a significant increase in credit risk. Where PDs are relatively high at initial recognition, a relative measure is more appropriate in assessing whether there is a significant increase in credit risk, as the PDs increase more quickly.

The SICR thresholds have been calibrated based on the following principles:

- Stability – The thresholds are set to achieve a stable stage 2 population at a portfolio level, trying to minimise the number of accounts moving back and forth between stage 1 and stage 2 in a short period of time
- Accuracy – The thresholds are set such that there is a materially higher propensity for stage 2 exposures to eventually default than is the case for stage 1 exposures
- Dependency from backstops – The thresholds are stringent enough such that a high proportion of accounts transfer to stage 2 due to movements in forward-looking PDs rather than relying on backward-looking backstops such as arrears
- Relationship with business and product risk profiles – The thresholds reflect the relative risk differences between different products, and are aligned to business processes

For Corporate, Commercial and Institutional Banking clients, the relative threshold is a 100 per cent increase in PD and the absolute change in PD is between 50 and 100 bps.

For Consumer and Business Banking clients, the relative threshold is a 100 per cent increase in PD and the absolute change in PD is between 100 and 350 bps depending on the product. Certain countries have a higher absolute threshold reflecting the lower default rate within their personal loan portfolios compared with the Group's other personal loan portfolios.

Private Banking clients are assessed qualitatively, based on a delinquency measure relating to collateral top-ups or sell-downs.

Debt securities originated before 1 January 2018 with an internal credit rating mapped to an investment grade equivalent are allocated to stage 1 and all other debt securities to stage 2. Debt securities originated after 1 January 2018 apply the same approach and thresholds as for Corporate, Commercial and Institutional Banking clients.

Qualitative criteria

Qualitative factors that indicate that there has been a significant increase in credit risk include processes linked to current risk management, such as placing loans on non-purely precautionary early alert.

Backstop

Across all portfolios, accounts that are 30 or more days past due (DPD) on contractual payments of principal and/or interest that have not been captured by the criteria above are considered to have experienced a significant increase in credit risk.

Expert credit judgement may be applied in assessing significant increase in credit risk to the extent that certain risks may not have been captured by the models or through the above criteria. Such instances are expected to be rare, for example due to events and material uncertainties arising close to the reporting date.

Corporate, Commercial and Institutional Banking clients

Quantitative criteria

Exposures are assessed based on both the absolute and the relative movement in the PD from origination to the reporting date as described above.

To account for the fact that the mapping between internal credit grades (used in the origination process) and PDs is non-linear (e.g. a one-notch downgrade in the investment grade universe results in a much smaller PD increase than in the sub-investment grade universe), the absolute thresholds have been differentiated by credit quality at origination, as measured by internal credit grades being investment grade or sub-investment grade.

Qualitative criteria

All assets of clients that have been placed on early alert (for non-purely precautionary reasons) are deemed to have experienced a significant increase in credit risk.

An account is placed on non-purely precautionary early alert if it exhibits risk or potential weaknesses of a material nature requiring closer monitoring, supervision or attention by management. Weaknesses in such a borrower's account, if left uncorrected, could result in deterioration of repayment prospects and the likelihood of being downgraded. Indicators could include a rapid erosion of position within the industry, concerns over management's ability to manage operations, weak/deteriorating operating results, liquidity strain and overdue balances, among other factors.

All client assets that have been assigned a CG12 rating, equivalent to 'Higher risk', are deemed to have experienced a significant increase in credit risk. Accounts rated CG12 are managed by the GSAM unit. All Corporate, Commercial and Institutional Banking clients are placed in CG12 when they are 30 DPD unless they are granted a waiver through a strict governance process.

Consumer and Business Banking clients

Quantitative criteria

Material portfolios (defined as a combination of country and product, for example Hong Kong mortgages, Taiwan credit cards) for which a statistical model has been built, are assessed based on both the absolute and relative movement in the PD from origination to the reporting date as described previously. For these portfolios, the original lifetime PD term structure is determined based on the original Application Score or Risk Segment of the client.

Qualitative criteria

Accounts that are 30 DPD that have not been captured by the quantitative criteria are considered to have experienced a significant increase in credit risk. For less material portfolios, which are modelled based on a roll-rate or loss-rate approach, SICR is primarily assessed through the 30 DPD trigger.

Private Banking clients

For Private Banking clients, SICR is assessed by referencing the nature and the level of collateral against which credit is extended (known as 'Classes of Risk').

Qualitative criteria

For all Private Banking classes, in line with risk management practice, an increase in credit risk is deemed to have occurred where margining or loan-to-value covenants have been breached.

For Class I assets (lending against diversified liquid collateral), if these margining requirements have not been met within 30 days of a trigger, a significant increase in credit risk is assumed to have occurred.

For Class I and Class III assets (real-estate lending), a significant increase in credit risk is assumed to have occurred where the bank is unable to 'sell down' the applicable assets to meet revised collateral requirements within five days of a trigger.

Class II assets are typically unsecured or partially secured, or secured against illiquid collateral such as shares in private companies. Significant credit deterioration of these assets is deemed to have occurred when any early alert trigger has been breached.

Debt securities

Quantitative criteria

For debt securities originated before 1 January 2018, the bank is utilising the low Credit Risk simplified approach, where debt securities with an internal credit rating mapped to an investment grade equivalent are allocated to stage 1 and all other debt securities are allocated to stage 2. Debt securities originated after 1 January 2018 are assessed based on the absolute and relative movements in PD from origination to the reporting date.

Qualitative criteria

Debt securities utilise the same qualitative criteria as the Corporate, Commercial and Institutional Banking client segments, including being placed on early alert or being classified as CG12.

Assessment of credit-impaired financial assets

Consumer and Business Banking clients

The core components in determining credit-impaired expected credit loss provisions are the value of gross charge-off and recoveries. Gross charge-off and/or loss provisions are recognised when it is established that the account is unlikely to pay through the normal process. Recovery of unsecured debt post credit impairment is recognised based on actual cash collected, either directly from clients or through the sale of defaulted loans to third-party institutions. Release of credit impairment provisions for secured loans is recognised if the loan outstanding is paid in full (release of full provision), or the provision is higher than the loan outstanding (release of the excess provision).

Corporate, Commercial and Institutional Banking, and Private Banking clients

Credit-impaired accounts are managed by the Group's specialist recovery unit, Group Special Assets Management (GSAM), which is independent from its main businesses. Where any amount is considered irrecoverable, a stage 3 credit impairment provision is raised. This stage 3 provision is the difference between the loan-carrying amount and the probability-weighted present value of estimated future cash flows, reflecting a range of scenarios (typically the best, worst and most likely recovery outcomes). Where the cashflows include realisable collateral, the values used will incorporate the impact of forward-looking economic information.

The individual circumstances of each client are considered when GSAM estimates future cashflows and the timing of future recoveries which involves significant judgement. All available sources, such as cashflow arising from operations, selling assets or subsidiaries, realising collateral or payments under guarantees are considered. In any decision relating to the raising of provisions, the Group attempts to balance economic conditions, local knowledge and experience, and the results of independent asset reviews.

Write-offs

Where it is considered that there is no realistic prospect of recovering a portion of an exposure against which an impairment provision has been raised, that amount will be written off.

Governance and application of expert credit judgement in respect of expected credit losses

The Group's Credit Policy and Standards framework details the requirements for continuous monitoring to identify any changes in credit quality and resultant ratings, as well as ensuring a consistent approach to monitoring, managing and mitigating Credit Risks. The framework aligns with the governance of ECL estimation through the early recognition of significant deteriorations in ratings which drive stage 2 and 3 ECL.

The models used in determining expected credit losses are reviewed and approved by the Group Credit Model Assessment Committee (CMAC) which is appointed by the Model Risk Committee. CMAC has the responsibility to assess and approve the use of models and to review all IFRS 9 interpretations related to models. CMAC also provides oversight on operational matters related to model development, performance monitoring and model validation activities including standards, regulatory and Group Internal Audit matters.

Prior to submission to CMAC for approval, the models are validated by Group Model Validation (GMV), a function which is independent of the business and the model developers. GMV's analysis comprises review of model documentation, model design and methodology, data validation, review of the model development and calibration process, out-of-sample performance testing, and assessment of compliance review against IFRS 9 rules and internal standards.

A quarterly model monitoring process is in place that uses recent data to compare the differences between model predictions and actual outcomes against approved thresholds. Where a model's performance breaches the monitoring thresholds, an assessment of whether a PMA is required to correct for the identified model issue is completed.

Key inputs into the calculation and resulting expected credit loss provisions are subject to review and approval by the IFRS 9 Impairment Committee (IIC) which is appointed by the Group Risk Committee. The IIC consists of senior representatives from Risk, Finance, and Group Economic Research. It meets at least twice every quarter, once before the models are run to approve key inputs into the calculation, and once after the models are run to approve the expected credit loss provisions and any judgemental overrides that may be necessary.

The IFRS 9 Impairment Committee:

- Oversees the appropriateness of all Business Model Assessment and Solely Payments of Principal and Interest (SPPI) tests
- Reviews and approves expected credit loss for financial assets classified as stages 1, 2 and 3 for each financial reporting period
- Reviews and approves stage allocation rules and thresholds
- Approves material adjustments in relation to expected credit loss for fair value through other comprehensive income (FVOCI) and amortised cost financial assets
- Reviews, challenges and approves base macroeconomic forecasts and the multiple macroeconomic scenarios approach that are utilised in the forward-looking expected credit loss calculations

The IFRS 9 Impairment Committee is supported by an Expert Panel which also reviews and challenges the base case projections and multiple macroeconomic scenarios. The Expert Panel consists of members of Enterprise Risk Management (which includes the Scenario Design team), Finance, Group Economic Research and country representatives of major jurisdictions.

PMAs may be applied to account for identified weaknesses in model estimates. The processes for identifying the need for, calculating the level of, and approving PMAs are prescribed in the Credit Risk IFRS9 ECL Model Family Standards which are approved by the Global Head, Model Risk Management. PMA calculation methodologies are reviewed by GMV and submitted to CMAC as the model approver or the IIC. All PMAs have a remediation plan to fix the identified model weakness, and these plans are reported to and tracked at CMAC.

In addition, Risk Event Overlays account for events that are sudden and therefore not captured in the Base Case Forecast or the resulting ECL calculated by the models. All Risk Event Overlays must be approved by the IIC having considered the nature of the event, why the risk is not captured in the model, and the basis on which the quantum of the overlay has been calculated. Risk Event Overlays are subject to quarterly review and re-approval by the IIC and will be released when the risks are no longer relevant.

Traded Risk

Traded Risk is the potential for loss resulting from activities undertaken by the Group in financial markets. Under the Enterprise Risk Management Framework, the Traded Risk Framework brings together Market Risk, Counterparty Credit Risk and Algorithmic Trading. Traded Risk Management is the core risk management function supporting market-facing businesses, predominantly Financial Markets and Treasury Markets.

Market Risk (audited)

Market Risk is the potential for loss of economic value due to adverse changes in financial market rates or prices. The Group's exposure to Market Risk arises predominantly from the following sources:

- Trading book:
  - The Group provides clients access to financial markets, facilitation of which entails the Group taking moderate Market Risk positions. All trading teams support client activity. There are no proprietary trading teams. Hence, income earned from Market Risk-related activities is primarily driven by the volume of client activity rather than risk-taking
- Non-trading book:
  - The Treasury Markets desk is required to hold a liquid assets buffer, much of which is held in high-quality marketable debt securities
  - The Group has capital invested and related income streams denominated in currencies other than US dollars. To the extent that these are not hedged, the Group is subject to Structural Foreign Exchange Risk which is reflected in reserves

A summary of our current policies and practices regarding Market Risk management is provided in the Principal Risks section.

The primary categories of Market Risk for the Group are:

- Interest Rate Risk: arising from changes in yield curves and implied volatilities on interest rate options
- Foreign Exchange Rate Risk: arising from changes in currency exchange rates and implied volatilities on foreign exchange options
- Commodity Risk: arising from changes in commodity prices and implied volatilities on commodity options; covering energy, precious metals, base metals and agriculture as well as commodity baskets
- Credit Spread Risk: arising from changes in the price of debt instruments and credit-linked derivatives, driven by factors other than the level of risk-free interest rates
- Equity Risk: arising from changes in the prices of equities, equity indices, equity baskets and implied volatilities on related options

Market risk changes (audited)

Value-at Risk (VaR) allows the Group to manage market risk across the trading book and most of the fair valued non-trading books[1]. The scope of instruments included in the VaR was changed in 2021 to exclude instruments held at amortised cost. The 2020 VaR numbers presented reflect the revised scope.

The average level of total trading and non-trading VaR in 2021 was $54.8 million, 43.9 per cent lower than in 2020 ($97.6 million). The actual level of total trading and non-trading VaR as at the year end of 2021 was $43.4 million, 65.3 per cent lower than in 2020 ($125.2 million). The decrease in total average VaR was driven by the extreme market movements from 2020 dropping out of the one-year VaR timeseries. However, during second half of 2021 volatility started to increase driven by the impact of new COVID variants.

For the trading book, the average level of VaR in 2021 was $17.2 million, 1.2 per cent higher than in 2020 ($17.0 million). Trading activities have remained relatively unchanged and client-driven.

Daily value at risk (VaR at 97.5%, one day) (audited)

	2021				2020			
Trading and non-trading[1]	Average $million	High[2] $million	Low[2] $million	Year End $million	Average $million	High[2] $million	Low[2] $million	Year End $million
Interest Rate Risk[6]	31.3	68.3	16.4	26.0	38.0	46.9	25.1	41.1
Credit Spread Risk[6]	34.0	97.6	14.8	21.5	69.2	103.1	20.2	81.0
Foreign Exchange Risk	7.3	19.0	4.2	7.0	6.3	15.1	3.0	15.1
Commodity Risk	4.5	10.4	2.3	3.6	2.5	5.5	0.7	4.9
Equity Risk	1.3	1.7	1.0	1.4	2.6	5.4	1.5	1.5
Total[3]	54.8	140.7	30.7	43.4	97.6	135.0	28.9	125.2

	2021				2020			
Trading[4]	Average $million	High[2] $million	Low[2] $million	Year End $million	Average $million	High[2] $million	Low[2] $million	Year End $million
Interest Rate Risk[6]	7.6	10.2	5.2	7.2	8.4	12.5	5.0	9.1
Credit Spread Risk[6]	8.6	19.2	4.2	6.2	13.0	19.3	4.8	16.3
Foreign Exchange Risk	7.3	19.0	4.2	7.0	6.3	15.1	3.0	15.1
Commodity Risk	4.5	10.4	2.3	3.6	2.5	5.5	0.7	4.9
Equity Risk	–	–	–	–	–	–	–	–
Total[3]	17.2	28.4	12.3	15.3	17.0	26.9	8.3	24.7

	2021				2020			
Non-trading[1]	Average $million	High[2] $million	Low[2] $million	Year End $million	Average $million	High[2] $million	Low[2] $million	Year End $million
Interest Rate Risk	32.4	68.2	18.2	24.3	34.7	44.5	21.6	43.0
Credit Spread Risk	29.2	80.0	14.4	20.2	57.1	81.9	18.1	66.5
Equity Risk[5]	1.3	1.7	1.0	1.4	2.6	5.4	1.4	1.5
Total[3]	47.1	106.3	25.3	38.3	69.4	94.8	27.5	85.9

1 The non-trading book VaR does not include syndicated loans. 2020 non-trading book VaR is restated to reflect the revised scope
2 Highest and lowest VaR for each risk factor are independent and usually occur on different days
3 The Total VaR shown in the tables above is not equal to the sum of the component risks due to offsets between them
4 Trading book for Market Risk is defined in accordance with the UK onshored Capital Requirements Regulation Part 3 Title I Chapter 3, which restricts the positions permitted in the trading book
5 Non-trading Equity Risk VaR includes only listed equities
5 Comparative information for 2020 has been represented to reflect the split between Interest Rate Risk and Credit Spread Risk

The following table sets out how trading and non-trading VaR is distributed across the Group's products:

	2021				2020			
	Average $million	High[2] $million	Low[2] $million	Year End $million	Average $million	High[2] $million	Low[2] $million	Year End $million
Trading and non-trading[1]	54.8	140.7	30.7	43.4	97.6	135.0	28.9	125.2
Trading[4]								
Rates	6.9	9.3	4.8	7.1	7.6	11.1	4.5	8.5
Foreign Exchange	7.3	19.0	4.2	7.0	6.3	15.1	3.0	15.1
Credit Trading & Capital Markets	6.9	18.7	3.6	4.8	7.8	14.6	3.3	8.4
Commodities	4.7	10.4	2.5	3.8	2.5	5.5	0.7	4.9
Equities	–	–	–	–	–	–	–	–
XVA	5.2	11.9	2.5	2.5	9.0	13.7	2.7	11.2
Total[3]	17.2	28.4	12.3	15.3	17.0	26.9	8.3	24.7
Non-trading[1]								
Treasury Markets	40.5	83.1	22.7	36.4	57.9	74.7	24.7	71.8
Treasury Capital Management	9.2	22.7	4.9	6.5	10.2	14.9	4.6	14.4
Global Credit	5.2	11.7	2.3	2.5	4.9	7.5	2.7	5.0
Listed Private Equity	1.3	1.7	1.0	1.4	2.6	5.4	1.4	1.5
Total[3]	47.1	106.3	25.3	38.3	69.4	94.8	27.5	85.9

1 The non-trading book VaR does not include syndicated loans. 2020 non-trading book VaR is restated to reflect the revised scope
2 Highest and lowest VaR for each risk factor are independent and usually occur on different days
3 The Total VaR is not equal to the sum of the component risks due to offsets between them
4 Trading book for Market Risk is defined in accordance with the UK onshored Capital Requirements Regulation Part 3 Title I Chapter 3, which restricts the positions permitted in the trading book

Risks not in VaR

In 2021, the main market risks not reflected in VaR were:

- Potential depeg risk from currencies currently pegged or managed, as the historical one-year VaR observation period does not reflect the possibility of a change in the currency regime such as sudden depegging
- Basis risks for which the historical market price data is limited and is therefore proxied, giving rise to potential proxy basis risk that is not captured in VaR
- Deal contingent risk where a client is granted the right to cancel a hedging trade contingent on conditions not being met within a time window
- Volatility skew risk due to movements in options volatilities at different strikes while VaR reflects only movements in at-the-money volatilities

Additional capital is set aside to cover such 'risks not in VaR'. For further details on Market Risk capital, see the Market Risk section in the Standard Chartered PLC Pillar 3 Disclosures for 31 December 2021.

Backtesting

In 2021, there were three regulatory backtesting negative exceptions at Group level (in 2020, there were three regulatory backtesting negative exceptions at Group level). Group exceptions occurred on:

- 18 October: When markets fell and yields rose following hawkish central bank comments and higher than expected core inflation results in New Zealand
- 26 October: When Nigerian FX Non Deliverable Forward fixings dropped sharply, raising implied Non Deliverable Forward yields; oil prices and options implied volatilities also fell
- 1 December: When oil and financial markets fell with concerns about the efficacy of COVID-19 vaccines against the Omicron variant

In total, there have been three Group exceptions in the previous 250 business days which is within the 'green zone' applied internationally to internal models by bank supervisors (Basel Committee on Banking Supervision, Supervisory framework for the use of backtesting in conjunction with the internal models approach to market risk capital requirements, January 1996).

The graph below illustrates the performance of the VaR model used in capital calculations. It compares the 99 percentile loss confidence level given by the VaR model with the hypothetical profit and loss of each day given the actual market movement without taking into account any intra-day trading activity.

Trading loss days

	2021	2020
Number of loss days reported for Financial Markets trading book total product income[1]	15	15

1 Reflects total product income for Financial Markets:
- Including credit valuation adjustment (CVA) and funding valuation adjustment (FVA)
- Excluding Treasury Markets business (non-trading) and periodic valuation changes for Capital Markets, expected loss provisions and overnight indexed swap (OIS) discounting and accounting adjustments such as debit valuation adjustments

Average daily income earned from Market Risk-related activities[1]

The average level of total trading daily income in 2021 was $9.8 million, 8.4 per cent lower than in 2020 ($10.7 million), due to lower trading income compared to prior year which had witnessed unprecedented levels of market volatility and hence increased trading activity and wider spreads.

Trading[2]	2021 $million	2020 $million
Interest Rate Risk	3.3	3.6
Credit Spread Risk	0.9	1.1
Foreign Exchange Risk	4.7	5.1
Commodity Risk	0.9	0.9
Equity Risk	–	–
Total	9.8	10.7

Non-trading[2]	$million	$million
Interest Rate Risk	0.4	1.2
Credit Spread Risk	0.2	0.2
Equity Risk	–	–
Total	0.6	1.4

1 Reflects total product income which is the sum of client income and own account income. Includes elements of trading income, interest income and other income which are generated from Market Risk-related activities. Rates, XVA and Treasury income are included under Interest Rate Risk whilst Credit Trading income is included under Credit Spread Risk

2 2020 figures have been restated to exclude income from non fair value positions

Structural foreign exchange exposures

The table below sets out the principal structural foreign exchange exposures (net of investment hedges) of the Group.

	2021 $million	2020 $million
Hong Kong dollar	4,757	8,739
Indian rupee	4,323	4,222
Renminbi	4,186	4,071
Singapore dollar	2,228	2,543
Korean won	1,756	2,856
Taiwanese dollar	1,188	1,556
UAE dirham	643	1,863
Malaysian ringgit	1,532	1,575
Thai baht	775	892
Indonesian rupiah	289	332
Pakistani rupee	429	471
Other	4,976	4,422
	27,082	33,542

As at 31 December 2021, the Group had taken net investment hedges using derivative financial investments to partly cover its exposure to the Korean won of $2,856 million (2020: $1,984 million), Taiwanese dollar of $1,149 million (2020: $834 million), Renminbi of $1,642 million (2020: $1,527 million), Indian rupee of $656 million (2020: $652 million), Hong Kong dollar of $4,975 million (2020: Nil), UAE dirham of $1,198 million (2020: Nil) and Singapore dollar of $729 million (2020: Nil). An analysis has been performed on these exposures to assess the impact of a 1 per cent fall in the US dollar exchange rates, adjusted to incorporate the impacts of correlations of these currencies to the US dollar. The impact on the positions above would be an increase of $399 million (2020: $381 million). Changes in the valuation of these positions are taken to reserves. For analysis of the Group's capital position and requirements, refer to the Capital Review.

Counterparty Credit Risk

Counterparty Credit Risk is the potential for loss in the event of the default of a derivative counterparty, after taking into account the value of eligible collaterals and risk mitigation techniques. The Group's counterparty credit exposures are included in the Credit Risk section.

Derivative financial instruments Credit Risk mitigation

The Group enters into master netting agreements, which in the event of default result in a single amount owed by or to the counterparty through netting the sum of the positive and negative mark-to-market values of applicable derivative transactions. The value of exposure under master netting agreements is $39,502 million (2020: $47,097 million).

In addition, the Group enters into credit support annexes (CSAs) with counterparties where collateral is deemed a necessary or desirable mitigant to the exposure. Cash collateral includes collateral called under a variation margin process from counterparties if total uncollateralised mark-to-market exposure exceeds the threshold and minimum transfer amount specified in the CSA. With certain counterparties, the CSA is reciprocal and requires us to post collateral if the overall mark-to-market values of positions are in the counterparty's favour and exceed an agreed threshold.

Liquidity and Funding Risk

Liquidity and Funding Risk is the risk that we may not have sufficient stable or diverse sources of funding to meet our obligations as they fall due.

The Group's Liquidity and Funding Risk framework requires each country to ensure that it operates within predefined liquidity limits and remains in compliance with Group liquidity policies and practices, as well as local regulatory requirements.

The Group achieves this through a combination of setting Risk Appetite and associated limits, policy formation, risk measurement and monitoring, prudential and internal stress testing, governance and review.

Despite the challenges brought by COVID-19, the Group has been resilient throughout and kept a strong liquidity position. The Group continues to focus on improving the quality of its funding mix and remains committed to supporting its clients during these uncertain times.

Primary sources of funding (audited)

The Group's funding strategy is largely driven by its policy to maintain adequate liquidity at all times, in all geographic locations and for all currencies, and hence to be in a position to meet all obligations as they fall due. The Group's funding profile is therefore well diversified across different sources, maturities and currencies.

Our assets are funded predominantly by customer deposits, supplemented with wholesale funding (which is diversified by type and maturity).

We maintain access to wholesale funding markets in all major financial centres in which we operate. This seeks to ensure that we have market intelligence, maintain stable funding lines and can obtain optimal pricing when performing our Interest Rate Risk management activities.

In 2021, the Group issued approximately $6.8 billion of senior debt securities, $1.2 billion of subordinated debt securities and $2.75 billion of Additional Tier 1 securities from its holding company (HoldCo) Standard Chartered PLC. (2020: $6.8 billion of term senior debt, $2.4 billion of subordinated securities and $1 billion of Additional Tier 1). In the next 12 months approximately $7.5 billion of the Group's senior debt, subordinated debt and Additional Tier 1 securities in total are either falling due for repayment contractually or callable by the Group.

Liquidity and Funding Risk metrics

We monitor key liquidity metrics regularly at country, regional, and aggregate Group level.

The following liquidity and funding Board Risk Appetite metrics define the maximum amount and type of risk that the Group is willing to assume in pursuit of its strategy: liquidity coverage ratio (LCR), liquidity stress survival horizons, external wholesale borrowing, and advances-to-deposits ratio. As of January 2022, the Net Stable Funding Ratio will also be included within Board Risk Appetite.

Liquidity coverage ratio (LCR)

The LCR is a regulatory requirement set to ensure that the Group has sufficient unencumbered high-quality liquid assets to meet its liquidity needs in a 30-calendar-day liquidity stress scenario.

The Group monitors and reports its liquidity positions under UK onshored Commission Delegated Regulation 2015/61 and has maintained its LCR above the prudential requirement. The Group maintained strong liquidity ratios despite the continued impacts of the COVID-19 stress. For further detail see the Liquidity section in the Standard Chartered PLC Pillar 3 Disclosures for FY 2021.

The LCR has remained unchanged at 143 per cent (2020: 143 per cent), despite revising our approach to calculating the LCR. We have re-assessed the methodology to more prudently reflect the portability of liquidity across the Group, whilst still considering currency convertibility and regulatory intra group limits. Portable liquidity is defined as unsecured liquidity, usually in the form of cash, that is freely transferable across Group entities during a period of stress, thereby enabling the Group to meet its financial obligations as they fall due.

We also held adequate liquidity across our footprint to meet all local prudential LCR requirements where applicable.

	2021 $million	2020 $million
Liquidity buffer	172,178	175,948
Total net cash outflows	120,788	122,664
Liquidity coverage ratio	143%	143%

Stressed coverage

The Group intends to maintain a prudent and sustainable funding and liquidity position, in all countries and currencies, such that it can withstand a severe but plausible liquidity stress.

Our approach to managing liquidity and funding is reflected in the following Board-level Risk Appetite Statement:

"The Group should hold an adequate buffer of high-quality liquid assets to survive extreme but plausible liquidity stress scenarios for at least 60 days without recourse to extraordinary central bank support."

The Group's internal liquidity stress testing framework covers the following stress scenarios:

Standard Chartered-specific – Captures the liquidity impact from an idiosyncratic event affecting Standard Chartered only i.e. the rest of the market is assumed to operate normally.

Market wide – Captures the liquidity impact from a market-wide crisis affecting all participants in a country, region or globally.

Combined – Assumes both Standard Chartered-specific and Market-wide events affecting the Group simultaneously and hence is the most severe scenario.

All scenarios include, but are not limited to, modelled outflows for retail and wholesale funding, Off-Balance Sheet Funding Risk, Cross-currency Funding Risk, Intraday Risk, Franchise Risk and risks associated with a deterioration of a firm's credit rating.

Stress testing results show that a positive surplus was maintained under all scenarios at 31 December 2021, i.e. respective countries are able to survive for a period of time as defined under each scenario. The results take into account currency convertibility and portability constraints while calculating the liquidity surplus at Group level.

Standard Chartered Bank's credit ratings as at 31 December 2021 were A+ with negative outlook (Fitch), A+ with stable outlook (S&P) and A1 with stable outlook (Moody's). At 31 December 2021, the estimated contractual outflow of a three-notch long-term ratings downgrade is $1.7 billion.

External wholesale borrowing

The Board sets a risk limit to prevent excessive reliance on wholesale borrowing. Within the definition of Wholesale Borrowing, limits are applied to all branches and operating subsidiaries in the Group and as at the reporting date, the Group remained within Board Risk Appetite.

Advances-to-deposits ratio

This is defined as the ratio of total loans and advances to customers relative to total customer accounts. An advances-to-deposits ratio of below 100 per cent demonstrates that customer deposits exceed customer loans as a result of the emphasis placed on generating a high level of funding from customers.

The Group's advances-to-deposits ratio has decreased by 2.0 per cent to 59.1 per cent, driven by an 8 per cent growth in customer deposits, most of which came from corporate customers.

	2021 $million	2020 $million
Total loans and advances to customers[1,2]	285,922	273,861
Total customer accounts[3]	483,861	448,236
Advances-to-deposits ratio	59.1%	61.1%

1 Excludes reverse repurchase agreement and other similar secured lending of $7,331 million and includes loans and advances to customers held at fair value through profit and loss of $9,953million
2 Loans and advances to customers for the purpose of the advances-to-deposits ratio excludes $15,168 million of approved balances held with central banks, confirmed as repayable at the point of stress (31 December 2020: $14,296 million)
3 Includes customer accounts held at fair value through profit or loss of $9,291 million (31 December 2020: $8,897 million)

Net stable funding ratio (NSFR)

The NSFR is a balance sheet metric which requires institutions to maintain a stable funding profile in relation to an assumed duration of their assets and off-balance sheet activities over a one-year horizon. It is the ratio between the amount of available stable funding (ASF) and the amount of required stable funding (RSF). ASF factors are applied to balance sheet liabilities and capital, based on their perceived stability and the amount of stable funding they provide. Likewise, RSF factors are applied to assets and off-balance sheet exposures according to the amount of stable funding they require. The NSFR became a regulatory requirement in January 2022 with a minimum of 100 per cent. At the last reporting date, the Group NSFR remained above 100 per cent.

Liquidity pool

The liquidity value of the Group's LCR eligible liquidity pool at the reporting date was $ 172 billion. The figures in the table below account for haircuts, currency convertibility and portability constraints, and therefore are not directly comparable with the consolidated balance sheet. Liquidity pool is held to offset stress outflows as defined in UK onshored Commission Delegated Regulation 2015/61. Following the Group's reassessment of the portability methodology, on a like-for-like approach December 2021 HQLA increased which was offset by a similar size decrease in HQLA.

	2021			
	Asia $ million	Africa & Middle East $ million	Europe & Americas $ million	Total $ million
Level 1 securities				
Cash and balances at central banks	28,076	890	46,973	75,939
Central banks, governments/public sector entities	40,328	2,096	27,389	69,813
Multilateral development banks and international organisations	7,812	356	7,366	15,534
Other	–	–	478	478
Total Level 1 securities	76,216	3,342	82,206	161,764
Level 2A securities	3,447	186	5,047	8,680
Level 2B securities	114	–	1,620	1,734
Total LCR eligible assets	79,777	3,528	88,873	172,178

	2020 (Restated)			
	Asia[1] $ million	Africa & Middle East $ million	Europe & Americas $ million	Total $ million
Level 1 securities				
Cash and balances at central banks	26,726	1,421	42,502	70,649
Central banks, governments/public sector entities	41,014	1,569	33,652	76,235
Multilateral development banks and international organisations	5,372	236	6,818	12,426
Other	–	14	1,645	1,659
Total Level 1 securities	73,112	3,240	84,617	160,969
Level 2A securities	11,515	79	2,891	14,485
Level 2B securities	207	–	287	494
Total LCR eligible assets	84,834	3,319	87,795	175,948

1 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Encumbrance

Encumbered assets

Encumbered assets represent on-balance sheet assets pledged or subject to any form of arrangement to secure, collateralise or credit enhance a transaction from which it cannot be freely withdrawn. Cash collateral pledged against derivatives and Hong Kong Government certificates of indebtedness, which secure the equivalent amount of Hong Kong currency notes in circulation, are included within Other assets.

Unencumbered – readily available for encumbrance

Unencumbered assets that are considered by the Group to be readily available in the normal course of business to secure funding, meet collateral needs, or be sold to reduce potential future funding requirements and are not subject to any restrictions on their use for these purposes.

Unencumbered – other assets capable of being encumbered

Unencumbered assets that, in their current form, are not considered by the Group to be readily realisable in the normal course of business to secure funding, meet collateral needs, or be sold to reduce potential future funding requirements and are not subject to any restrictions on their use for these purposes. Included within this category are loans and advances which would be suitable for use in secured funding structures such as securitisations.

Unencumbered – cannot be encumbered

Unencumbered assets that have not been pledged and cannot be used to secure funding, meet collateral needs, or be sold to reduce potential future funding requirements, as assessed by the Group.

Derivatives, reverse repurchase assets and stock lending

These assets are shown separately as these on-balance sheet amounts cannot be pledged. However, these assets can give rise to off-balance sheet collateral which can be used to raise secured funding or meet additional funding requirements.

The following table provides a reconciliation of the Group's encumbered assets to total assets.

	2021									
		Assets encumbered as a result of transactions with counterparties other than central banks			Other assets (comprising assets encumbered at the central bank and unencumbered assets)					
						Assets not positioned at the central bank				
	Assets $million	As a result of securitisations $million	Other $million	Total $million	Assets positioned at the central bank (ie pre-positioned plus encumbered) $million	Readily available for encumbrance $million	Other assets that are capable of being encumbered $million	Derivatives and reverse repo/stock lending $million	Cannot be encumbered $million	Total $million
Cash and balances at central banks	72,663	–	–	–	8,147	64,516	–	–	–	72,663
Derivative financial instruments	52,445	–	–	–	–	–	–	52,445	–	52,445
Loans and advances to banks[1]	66,957	–	89	89	–	34,834	9,931	19,806	2,297	66,868
Loans and advances to customers[1]	369,703	–	4,539	4,539	–	–	282,761	68,612	13,791	365,164
Investment securities[2]	198,723	–	13,940	13,940	96	142,965	35,637	–	6,085	184,783
Other assets	49,958	–	16,501	16,501	–	–	13,140	–	20,317	33,457
Current tax assets	766	–	–	–	–	–	–	–	766	766
Prepayments and accrued income	2,176	–	–	–	–	–	937	–	1,239	2,176
Interests in associates and joint ventures	2,147	–	–	–	–	–	–	–	2,147	2,147
Goodwill and intangible assets	5,471	–	–	–	–	–	–	–	5,471	5,471
Property, plant and equipment	5,616	–	–	–	–	–	448	–	5,168	5,616
Deferred tax assets	859	–	–	–	–	–	–	–	859	859
Assets classified as held for sale	334	–	–	–	–	–	–	–	334	334
Total	827,818	–	35,069	35,069	8,243	242,315	342,854	140,863	58,474	792,749

1 Includes held at fair value through profit or loss and amortised cost balances

2 Includes held at fair value through profit or loss, fair value through other comprehensive income and amortised cost balances

	2020									
		Assets encumbered as a result of transactions with counterparties other than central banks			Other assets (comprising assets encumbered at the central bank and unencumbered assets)					
						Assets not positioned at the central bank				
	Assets $million	As a result of securitisations $million	Other $million	Total $million	Assets positioned at the central bank (ie pre-positioned plus encumbered) $million	Readily available for encumbrance $million	Other assets that are capable of being encumbered $million	Derivatives and reverse repo/stock lending $million	Cannot be encumbered $million	Total $million
Cash and balances at central banks	66,712	–	–	–	7,341	59,371	–	–	–	66,712
Derivative financial instruments	69,467	–	–	–	–	–	–	69,467	–	69,467
Loans and advances to banks[1]	66,429	–	–	–	–	38,023	8,091	19,452	863	66,429
Loans and advances to customers[1]	336,276	–	3,826	3,826	–	–	268,930	48,118	15,402	332,450
Investment securities[2]	183,443	–	11,282	11,282	–	131,304	36,097	–	4,760	172,161
Other assets	48,688	–	19,054	19,054	–	–	18,741	–	10,893	29,634
Current tax assets	808	–	–	–	–	–	–	–	808	808
Prepayments and accrued income	2,122	–	–	–	–	–	980	–	1,142	2,122
Interests in associates and joint ventures	2,162	–	–	–	–	–	–	–	2,162	2,162
Goodwill and intangible assets	5,063	–	–	–	–	–	–	–	5,063	5,063
Property, plant and equipment	6,515	–	–	–	–	–	448	–	6,067	6,515
Deferred tax assets	919	–	–	–	–	–	–	–	919	919
Assets classified as held for sale	446	–	–	–	–	–	–	–	446	446
Total	789,050	–	34,162	34,162	7,341	228,698	333,287	137,037	48,525	754,888

1 Includes held at fair value through profit or loss and amortised cost balances

2 Includes held at fair value through profit or loss, fair value through other comprehensive income and amortised cost balances

The Group received $117,408 million (31 December 2020: $99,238 million) as collateral under reverse repurchase agreements that was eligible for repledging; of this, the Group sold or repledged $57,879 million (31 December 2020: $46,209 million) under repurchase agreements.

Liquidity analysis of the Group's balance sheet (audited)

Contractual maturity of assets and liabilities

The following table presents assets and liabilities by maturity groupings based on the remaining period to the contractual maturity date as at the balance sheet date on a discounted basis. Contractual maturities do not necessarily reflect actual repayments or cashflows.

Within the tables below, cash and balances with central banks, interbank placements and investment securities that are fair value through other comprehensive income are used by the Group principally for liquidity management purposes.

As at the reporting date, assets remain predominantly short-dated, with 59 per cent maturing in under one year.
Our less than three-month cumulative net funding position remained in surplus and the scale of the surplus increased from the previous year, largely due to an increase in customer accounts as the Group focused on improving the quality of its deposit base. In practice, these deposits are recognised as stable and have behavioural profiles that extend beyond their contractual maturities.

	2021								
	One month or less $million	Between one month and three months $million	Between three months and six months $million	Between six months and nine months $million	Between nine months and one year $million	Between one year and two years $million	Between two years and five years $million	More than five years and undated $million	Total $million
Assets									
Cash and balances at central banks	64,516	–	–	–	–	–	–	8,147	72,663
Derivative financial instruments	11,695	10,489	7,332	3,583	2,731	4,738	6,493	5,384	52,445
Loans and advances to banks[1,2]	25,486	17,987	11,347	4,415	4,506	1,455	1,466	295	66,957
Loans and advances to customers[1,2]	92,181	68,361	26,276	13,255	14,992	21,391	36,299	96,948	369,703
Investment securities	11,813	13,590	12,070	13,266	13,407	26,424	53,189	54,964	198,723
Other assets	24,283	19,776	989	67	491	35	32	21,654	67,327
Total assets	229,974	130,203	58,014	34,586	36,127	54,043	97,479	187,392	827,818
Liabilities									
Deposits by banks[1,3]	34,858	1,134	1,244	408	477	116	206	4	38,447
Customer accounts[1,4]	430,071	52,051	27,436	11,738	12,023	4,857	2,152	2,127	542,455
Derivative financial instruments	11,715	11,573	7,254	4,061	2,788	5,042	7,117	3,849	53,399
Senior debt[5]	190	642	1,036	320	397	5,336	15,225	11,845	34,991
Other debt securities in issue[1]	2,233	12,968	7,786	3,118	3,281	782	1,411	320	31,899
Other liabilities	14,545	22,582	2,044	1,148	1,180	797	990	14,059	57,345
Subordinated liabilities and other borrowed funds	1,007	64	24	240	894	2,430	2,593	9,394	16,646
Total liabilities	494,619	101,014	46,824	21,033	21,040	19,360	29,694	41,598	775,182
Net liquidity gap	(264,645)	29,189	11,190	13,553	15,087	34,683	67,785	145,794	52,636

1 Loans and advances, investment securities, deposits by banks, customer accounts and debt securities in issue include financial instruments held at fair value through profit or loss, see Note 13 Financial instruments
2 Loans and advances include reverse repurchase agreements and other similar secured lending of $88.4 billion
3 Deposits by banks include repurchase agreements and other similar secured borrowing of $7.1 billion
4 Customer accounts include repurchase agreements and other similar secured borrowing of $58.6 billion
5 Senior debt maturity profiles are based upon contractual maturity, which may be later than call options over the debt held by the Group

	2020								
	One month or less $million	Between one month and three months $million	Between three months and six months $million	Between six months and nine months $million	Between nine months and one year $million	Between one year and two years $million	Between two years and five years $million	More than five years and undated $million	Total $million
Assets									
Cash and balances at central banks	59,371	–	–	–	–	–	–	7,341	66,712
Derivative financial instruments	14,091	13,952	9,630	6,210	3,840	5,555	9,492	6,697	69,467
Loans and advances to banks[1,2]	29,325	17,120	8,375	4,455	2,876	1,091	2,910	277	66,429
Loans and advances to customers[1,2]	84,657	48,152	26,205	11,740	11,635	21,454	38,009	94,424	336,276
Investment securities	11,191	20,426	11,960	13,260	13,792	30,783	45,718	36,313	183,443
Other assets	22,440	18,753	1,314	191	120	43	37	23,825	66,723
Total assets	221,075	118,403	57,484	35,856	32,263	58,926	96,166	168,877	789,050
Liabilities									
Deposits by banks[1,3]	33,082	1,288	2,563	216	545	221	194	42	38,151
Customer accounts[1,4]	389,896	52,604	20,345	9,126	11,364	5,313	1,647	1,859	492,154
Derivative financial instruments	15,247	13,633	10,449	6,739	4,221	5,976	11,223	4,045	71,533
Senior debt[5]	1,215	2,138	2,181	515	168	3,253	13,090	12,482	35,042
Other debt securities in issue[1]	1,275	7,619	10,441	2,863	2,424	61	1,132	504	26,319
Other liabilities	18,795	19,958	3,089	669	914	485	314	14,244	58,468
Subordinated liabilities and other borrowed funds	–	17	–	–	–	1,956	3,766	10,915	16,654
Total liabilities	459,510	97,257	49,068	20,128	19,636	17,265	31,366	44,091	738,321
Net liquidity gap	(238,435)	21,146	8,416	15,728	12,627	41,661	64,800	124,786	50,729

1 Loans and advances, investment securities, deposits by banks, customer accounts and debt securities in issue include financial instruments held at fair value through profit or loss, see Note 13 Financial instruments
2 Loans and advances include reverse repurchase agreements and other similar secured lending of $67.6 billion
3 Deposits by banks include repurchase agreements and other similar secured borrowing of $6.6 billion
4 Customer accounts include repurchase agreements and other similar secured borrowing of $43.9 billion
5 Senior debt maturity profiles are based upon contractual maturity, which may be later than call options over the debt held by the Group

Behavioural maturity of financial assets and liabilities

The cashflows presented in the previous section reflect the cashflows that will be contractually payable over the residual maturity of the instruments. However, contractual maturities do not necessarily reflect the timing of actual repayments or cashflow. In practice, certain assets and liabilities behave differently from their contractual terms, especially for short-term customer accounts, credit card balances and overdrafts, which extend to a longer period than their contractual maturity. On the other hand, mortgage balances tend to have a shorter repayment period than their contractual maturity date. Expected customer behaviour is assessed and managed on a country basis using qualitative and quantitative techniques, including analysis of observed customer behaviour over time.

Maturity of financial liabilities on an undiscounted basis (audited)

The following table analyses the contractual cashflows payable for the Group's financial liabilities by remaining contractual maturities on an undiscounted basis. The financial liability balances in the table below will not agree with the balances reported in the consolidated balance sheet as the table incorporates all contractual cashflows, on an undiscounted basis, relating to both principal and interest payments. Derivatives not treated as hedging derivatives are included in the 'On demand' time bucket and not by contractual maturity.

Within the 'More than five years and undated' maturity band are undated financial liabilities, the majority of which relate to subordinated debt, on which interest payments are not included as this information would not be meaningful, given the instruments are undated. Interest payments on these instruments are included within the relevant maturities up to five years.

	2021								
	One month or less $million	Between one month and three months $million	Between three months and six months $million	Between six months and nine months $million	Between nine months and one year $million	Between one year and two years $million	Between two years and five years $million	More than five years and undated $million	Total $million
Deposits by banks	34,866	1,140	1,246	409	481	117	208	3	38,470
Customer accounts	430,190	52,112	27,510	11,813	12,120	4,930	2,212	2,495	543,382
Derivative financial instruments[1]	52,783	9	22	12	106	76	212	179	53,399
Debt securities in issue	2,526	13,618	9,015	3,586	3,891	6,743	17,966	17,659	75,004
Subordinated liabilities and other borrowed funds	1,114	134	48	261	928	2,546	3,030	16,044	24,105
Other liabilities	17,759	22,460	1,952	1,133	1,170	797	990	9,955	56,216
Total liabilities	539,238	89,473	39,793	17,214	18,696	15,209	24,618	46,335	790,576

	2020								
	One month or less $million	Between one month and three months $million	Between three months and six months $million	Between six months and nine months $million	Between nine months and one year $million	Between one year and two years $million	Between two years and five years $million	More than five years and undated $million	Total $million
Deposits by banks	33,107	1,297	2,574	227	576	225	195	54	38,255
Customer accounts	390,203	52,749	20,446	9,188	11,507	5,362	1,679	2,144	493,278
Derivative financial instruments[1]	70,216	48	219	160	60	199	510	121	71,533
Debt securities in issue	2,494	9,596	12,924	3,401	2,921	3,945	15,556	14,456	65,293
Subordinated liabilities and other borrowed funds	–	–	251	–	371	2,591	5,202	15,466	23,881
Other liabilities	17,002	19,754	2,996	657	904	483	317	9,914	52,027
Total liabilities	513,022	83,444	39,410	13,633	16,339	12,805	23,459	42,155	744,267

1 Derivatives are on a discounted basis

Interest Rate Risk in the Banking Book

The following table provides the estimated impact to a hypothetical base case projection of the Group's earnings under the following scenarios:

- A 50 basis point parallel interest rate shock (up and down) to the current market-implied path of rates, across all yield curves
- A 100 basis point parallel interest rate shock (up) to the current market-implied path of rates, across all yield curves

These interest rate shock scenarios assume all other economic variables remain constant. The sensitivities shown represent the estimated change to a hypothetical base case projected net interest income (NII), plus the change in interest rate implied income and expense from FX swaps used to manage banking book currency positions, under the different interest rate shock scenarios.

The interest rate sensitivities are indicative and based on simplified scenarios, estimating the aggregate impact of an instantaneous parallel shock across all yield curves over one-year horizon, including the time taken to implement changes to pricing before becoming effective. The assessment assumes that the size and mix of the balance sheet remain constant and that there are no specific management actions in response to the change in rates. No assumptions are made in relation to the impact on credit spreads in a changing rate environment.

Significant modelling and behavioural assumptions are made regarding scenario simplification, market competition, pass-through rates, asset and liability re-pricing tenors, and price flooring. In particular, the assumption that interest rates of all currencies and maturities shift by the same amount concurrently, and that no actions are taken to mitigate the impacts arising from this are considered unlikely. Reported sensitivities will vary over time due to a number of factors including changes in balance sheet composition, market conditions, customer behaviour and risk management strategy and should therefore not be considered an income or profit forecast.

Estimated one-year impact to earnings from a parallel shift in yield curves at the beginning of the period of:	2021						
	USD bloc $million	HKD bloc $million	SGD bloc $million	KRW bloc $million	CNY bloc $million	Other currency bloc $million	Total $million
+ 50 basis points	200	150	70	50	50	140	660
- 50 basis points	(210)	(170)	(70)	(40)	(50)	(130)	(670)
+ 100 basis points	380	280	130	80	90	300	1,260

Estimated one-year impact to earnings from a parallel shift in yield curves at the beginning of the period of:	2020						
	USD bloc[1] $million	HKD bloc[1] $million	SGD bloc $million	KRW bloc $million	CNY bloc $million	Other currency bloc $million	Total[1] $million
+ 50 basis points	100	100	50	50	10	60	370
- 50 basis points	(180)	(70)	(50)	(60)	(20)	(70)	(450)
+ 100 basis points	200	90	90	100	30	110	620

1 Sensitivity for 2020 has been restated due to correction of interest rate basis for certain USD denominated interest rate swaps and HKD denominated mortgages

As at 31 December 2021, the Group estimates the one-year impact of an instantaneous, parallel increase across all yield curves of 50 basis points to increase projected NII by $660 million. The equivalent impact from a parallel decrease of 50 basis points would result in a reduction in projected NII of $670 million. The Group estimates the one-year impact of an instantaneous, parallel increase across all yield curves of 100 basis points to increase projected NII by $1,260 million.

The benefit from rising interest rates is primarily from reinvesting at higher yields and from assets re-pricing faster and to a greater extent than deposits. NII sensitivity in all scenarios has increased versus 31 December 2020 due to changes in modelling assumptions to reflect expected re-pricing activity on Retail and Transaction Banking current accounts and savings accounts in the current interest rate environment, and to recognise the interest rate sensitivity of banking book income when providing funding to the trading book. The inclusion of this item now aligns the measurement scope to that used for the calculation of the Group's net interest margin, and has increased the reported sensitivity to the 50 basis point parallel shocks by $170 million, and to a 100 basis point parallel up shock by $340 million, primarily in US dollars.

The asymmetry between the up and down 50 basis point shock is primarily due to the low level of interest rates, which may constrain the Group's ability to reprice assets and liabilities should rates fall by a further 50 basis points, as well as differing behavioural assumptions, which are scenario specific. The level of asymmetry has changed since 31 December 2020 due to an increase in the proportion of the Group's assets whose pricing is assumed to be floored under the 50 basis point parallel down shock, and which now largely offsets the assumed impact of flooring liability pricing under the same scenario, primarily in Greater China and North Asia. The decision to pass on changes in interest rates is highly subjective and depends on a range of factors including market environment and competitor behaviour.

Operational and Technology Risk

Operational Risk is defined as the "Potential for loss from inadequate or failed internal processes, technology events, human error, or from the impact of external events (including legal risks)". It is inherent in the Group carrying out business and can be impacted from a range of operational risks.

Operational Risk profile

In 2021, the Group has taken steps for further embedding of the enhanced framework to augment the management of operational risk with the aim of ensuring that risk is managed within Risk Appetite and we continue to deliver services to our clients.

The Group has continued to provide a stable level of service to clients during the period of COVID-19 and adapted swiftly to changes in operations brought by the pandemic. As a result of the changes in internal and external operating environment due to COVID-19, particular areas of focus are Fraud, Information & Cyber Security, Privacy, Conduct and Resilience.

Operational Risk events and losses

Operational losses are one indicator of the effectiveness and robustness of the non-financial risk control environment. As at 31 December 2021, recorded impact from operational losses for the year was higher than 2020, primarily driven by the regulatory penalty of $61.7 million imposed by the PRA on the back of liquidity misreporting between 2018 and 2019 due to execution delivery and process management issues.

The Group's profile of operational loss events in 2021 and 2020 is summarised in the table below. It shows the percentage distribution of gross operational losses by Basel business line.

	% Loss	
Distribution of Operational Losses by Basel business line	2021	2020[1]
Agency Services	0.0%	1.2%
Asset Management	0.0%	–
Commercial Banking	5.6%	18.4%
Corporate Finance	–	–
Corporate Items	43.2%	23.8%
Payment and Settlements	35.8%	16.1%
Retail Banking	10.1%	29.9%
Retail Brokerage	0.0%	0.2%
Trading and Sales	5.4%	10.2%

1 Losses in 2020 have been restated to include incremental events recognised in 2021

The Group's profile of operational loss events in 2021 and 2020 is also summarised by Basel event type in the table below. It shows the percentage distribution of gross operational losses by Basel event type.

	% Loss	
Distribution of Operational Losses by Basel event type	2021	2020[1]
Business disruption and system failures	3.4%	2.0%
Clients products and business practices	1.1%	5.8%
Damage to physical assets	0.0%	0.1%
Employment practices and workplace safety	0.0%	0.5%
Execution delivery and process management	79.7%	70.3%
External fraud	9.0%	20.7%
Internal fraud	6.7%	0.6%

1 Losses in 2020 have been restated to include incremental events recognised in 2021

Other principal risks

Losses arising from operational failures for other principal risks are reported as operational losses. Operational losses do not include Operational Risk-related credit impairments.

Enterprise Risk Management Framework

Effective risk management is essential in delivering consistent and sustainable performance for all our stakeholders and is a central part of the financial and operational management of the Group. The Group adds value to clients and the communities in which they operate by taking and managing appropriate levels of risk, which in turn generates returns for shareholders.

The Enterprise Risk Management Framework (ERMF) enables the Group to manage enterprise-wide risks, with the objective of maximising risk-adjusted returns while remaining within our Risk Appetite. The ERMF has been designed with the explicit goal of improving the Group's risk management, and since its launch in January 2018, it has been embedded across the Group and rolled out to its branches and subsidiaries[1].

In 2021, we completed a comprehensive review of the ERMF, and the following changes were approved by the Board:

- Cross-cutting risks have been repositioned as Integrated Risk Types (IRT) and are defined as "risks that are significant in nature and materialise primarily through the relevant Principal Risk Types". The ERMF sets out the roles and responsibilities and minimum governance requirements for management of IRTs.
- Given their integrated nature, Digital Asset Risk and Third-Party Risk, in addition to Climate Risk, have been categorised as Integrated Risk Types in the ERMF.
- The Capital and Liquidity Principal Risk Type has been renamed to Treasury Risk and the scope of the risk type has been expanded to cover Interest Rate Risk in the Banking Book (IRRBB).

The revised ERMF was approved in February 2022 and will become effective in March 2022.

1 The Group's Risk Management Framework and System of Internal Control applies only to wholly controlled subsidiaries of the Group, and not to Associates, Joint Ventures or Structured Entities of the Group.

Risk culture

The Group's risk culture provides guiding principles for the behaviours expected from our people when managing risk. The Board has approved a risk culture statement that encourages the following behaviours and outcomes:

- An enterprise-level ability to identify and assess current and future risks, openly discuss these and take prompt actions.
- The highest level of integrity by being transparent and proactive in disclosing and managing all types of risks.
- A constructive and collaborative approach in providing oversight and challenge, and taking decisions in a timely manner.
- Everyone to be accountable for their decisions and feel safe in using their judgement to make these considered decisions.

We acknowledge that banking inherently involves risk-taking and undesired outcomes will occur from time to time; however, we shall take the opportunity to learn from our experience and formalise what we can do to improve. We expect managers to demonstrate a high awareness of risk and control by self-identifying issues and managing them in a manner that will deliver lasting change.

Strategic risk management

The Group approaches strategic risk management as follows:

- By conducting an impact analysis on the risk profile from growth plans, strategic initiatives and business model vulnerabilities, with the aim of proactively identifying and managing new risks or existing risks that need to be reprioritised as part of the strategy review process.
- By confirming that growth plans and strategic initiatives can be delivered within the approved Risk Appetite and/or proposing additional Risk Appetite for Board consideration as part of the strategy review process.
- By validating the Corporate Plan against the approved or proposed Risk Appetite Statement to the Board. The Board approves the strategy review and the five-year Corporate Plan with a confirmation from the Group Chief Risk Officer that it is aligned with the ERMF and the Group Risk Appetite Statement where projections allow.
- Country Risk management approach and Country Risk reviews are used to ensure the country limits and exposures are reasonable and in line with Group strategy, country strategy, and the operating environment, considering the identified risks.

Roles and responsibilities

Senior Managers Regime[2]

Roles and responsibilities under the ERMF are aligned to the objectives of the Senior Managers Regime. The Group Chief Risk Officer is responsible for the overall development and maintenance of the Group's ERMF and for identifying material risk types to which the Group may be potentially exposed. The Group Chief Risk Officer delegates effective implementation of the Risk Type Frameworks (RTFs) to Risk Framework Owners who provide second line of defence oversight for the Principal Risk Types (PRTs). In addition, the Group Chief Risk Officer has been formally identified as the relevant senior manager responsible for the development of the Group's Digital Asset Risk Assessment Approach, as well as the senior manager responsible for Climate Risk management as it relates to financial and non-financial risks to the Group arising from climate change. This does not include elements of corporate social responsibility, the Group's contribution to climate change and the Sustainable Finance strategy supporting a low-carbon transition, which are the responsibility of other relevant senior managers.

2 Senior managers' refers to individuals designated as senior management functions under the FCA and PRA Senior Managers Regime (SMR)

The Risk function

The Risk function is responsible for the sustainability of our business through good management of risk across the Group by providing oversight and challenge, thereby ensuring that business is conducted in line with regulatory expectations.

The Group Chief Risk Officer directly manages the Risk function, which is separate and independent from the origination, trading and sales functions of the businesses. The Risk function is responsible for:

- Maintaining the ERMF, ensuring that it remains relevant and appropriate to the Group's business activities, and is effectively communicated and implemented across the Group, and administering related governance and reporting processes.
- Upholding the overall integrity of the Group's risk and return decisions to ensure that risks are properly assessed, that these decisions are made transparently on the basis of proper assessments and that risks are controlled in accordance with the Group's standards and Risk Appetite.
- Overseeing and challenging the management of Principal Risk Types and Integrated Risk Types under the ERMF.

The independence of the Risk function ensures that the necessary balance in making risk and return decisions is not compromised by short-term pressures to generate revenues.

In addition, the Risk function is a centre of excellence that provides specialist capabilities of relevance to risk management processes in the broader organisation.

The Risk function supports the Group's commitment to be 'Here for good' by building a sustainable framework that places regulatory and compliance standards and a culture of appropriate conduct at the forefront of the Group's agenda, in a manner proportionate to the nature, scale and complexity of the Group's business.

Conduct, Financial Crime and Compliance (CFCC), under the Management Team leadership of the Group Head, CFCC, works alongside the Risk function within the framework of the ERMF to deliver a unified second line of defence.

Three lines of defence model

Roles and responsibilities for risk management are defined under a three lines of defence model. Each line of defence has a specific set of responsibilities for risk management and control as shown in the table below.

Lines of defence	Definition	Key responsibilities include
1st	The businesses and functions engaged in or supporting revenue-generating activities that own and manage the risks	• Propose the risks required to undertake revenue-generating activities • Identify, assess, monitor and escalate risks and issues to the second line and senior management[1] and promote a healthy risk culture and good conduct • Validate and self-assess compliance to RTFs and policies, confirm the quality of validation, and provide evidence-based affirmation to the second line • Manage risks within Risk Appetite, set and execute remediation plans and ensure laws and regulations are being complied with • Ensure systems meet risk data aggregation, risk reporting and data quality requirements set by the second line.
2nd	The control functions independent of the first line that provide oversight and challenge of risk management to provide confidence to the Group Chief Risk Officer, senior management and the Board	• Identify, monitor and escalate risks and issues to the Group Chief Risk Officer, senior management and the Board and promote a healthy risk culture and good conduct • Oversee and challenge first-line risk-taking activities and review first-line risk proposals • Propose Risk Appetite to the Board, monitor and report adherence to Risk Appetite and intervene to curtail business if it is not in line with existing or adjusted Risk Appetite, there is material non-compliance with policy requirements or when operational controls do not effectively manage risk • Set risk data aggregation, risk reporting and data quality requirements • Ensure that there are appropriate controls to comply with applicable laws and regulations, and escalate significant non-compliance matters to senior management and the appropriate committees.
3rd	The Internal Audit function provides independent assurance on the effectiveness of controls that support first line's risk management of business activities, and the processes maintained by the second line	• Independently assess whether management has identified the key risks in the businesses and whether these are reported and governed in line with the established risk management processes • Independently assess the adequacy of the design of controls and their operating effectiveness.

1 Senior management in this table refers to individuals designated as senior management functions under the FCA and PRA Senior Managers Regime (SMR)

Risk Appetite and profile

We recognise the following constraints which determine the risks that we are willing to take in pursuit of our strategy and the development of a sustainable business:

- Risk capacity is the maximum level of risk the Group can assume, given its current capabilities and resources, before breaching constraints determined by capital and liquidity requirements and internal operational capability (including but not limited to technical infrastructure, risk management capabilities, expertise), or otherwise failing to meet the expectations of regulators and law enforcement agencies.
- Risk Appetite is defined by the Group and approved by the Board. It is the maximum amount and type of risk the Group is willing to assume in pursuit of its strategy. Risk Appetite cannot exceed risk capacity.

The Board has approved a Risk Appetite Statement, which is underpinned by a set of financial and operational control parameters known as Risk Appetite metrics and their associated thresholds. These directly constrain the aggregate risk exposures that can be taken across the Group.

The Group Risk Appetite is reviewed at least on an annual basis to ensure that it is fit for purpose and aligned with strategy, and focus is given to emerging or new risks. The Risk Appetite Statement is supplemented by an overarching statement outlining the Group's Risk Appetite principles.

Risk Appetite principles

The Group Risk Appetite is defined in accordance with risk management principles that inform our overall approach to risk management and our risk culture. We follow the highest ethical standards and ensure a fair outcome for our clients, as well as facilitating the effective operation of financial markets, while at the same time meeting expectations of regulators and law enforcement agencies. We set our Risk Appetite to enable us to grow sustainably and to avoid shocks to earnings or our general financial health, as well as manage our Reputational Risk in a way that does not materially undermine the confidence of our investors and all internal and external stakeholders.

Risk Appetite Statement

The Group will not compromise adherence to its Risk Appetite in order to pursue revenue growth or higher returns. The Group Risk Appetite is supplemented by risk control tools such as granular level limits, policies, standards and other operational control parameters that are used to keep the Group's risk profile within Risk Appetite. The Group's risk profile is its overall exposure to risk at a given point in time, covering all applicable risk types. Status against Risk Appetite is reported to the Board, Board Risk Committee and the Group Risk Committee, including the status of breaches and remediation plans where applicable. To keep the Group's risk profile within Risk Appetite (and therefore also risk capacity), we have cascaded critical Group Risk Appetite metrics across our Principal Risk Types to our footprint markets with significant business operations.

Country Risk Appetite is managed at a country or local level with Group and regional oversight. In addition to Risk Appetite Statements for the Principal Risk Types, the Group also has a Risk Appetite Statement for Climate Risk which is an Integrated Risk Type that can manifest through other risk types. Consideration for standalone Risk Appetite Statements will be given in 2022 for additional integrated risks such as Third-Party Risk and Digital Asset Risk. These risk types are currently supported by Risk Appetite metrics embedded within the respective PRTs. The Group Risk Committee, the Group Financial Crime Risk Committee, the Group Non-Financial Risk Committee and the Group Asset and Liability Committee are responsible for ensuring that our risk profile is managed in compliance with the Risk Appetite set by the Board. The Board Risk Committee and the Board Financial Crime Risk Committee (for Financial Crime Compliance) advise the Board on and monitor the Group's compliance with the Risk Appetite Statement.

The individual Principal Risk Types' Risk Appetite Statements approved by the Board are set out in the Principal Risks section.

Risk identification and assessment

Identification and assessment of potentially adverse risk events is an essential first step in managing the risks of any business or activity. To ensure consistency in communication we use Principal Risk Types to classify our risk exposures.

Nevertheless, we also recognise the need to maintain a holistic perspective since a single transaction or activity may give rise to multiple types of risk exposure; risk concentrations may arise from multiple exposures that are closely correlated; and a given risk exposure may change its form from one risk type to another. There are also sources of risk that arise beyond our own operations such as the Group's dependency on suppliers for the provision of services and technology.

As the Group remains accountable for risks arising from the actions of such third-parties, failure to adequately monitor and manage these relationships could materially impact the Group's ability to operate and could have an impact on our ability to continue to provide services that are material to the Group.

To facilitate risk identification and assessment, the Group maintains a dynamic risk-scanning process with inputs from the internal and external risk environment, as well as potential threats and opportunities from the business and client perspectives. The Group maintains a taxonomy of the Principal Risk Types, Integrated Risk Types and risk sub-types that are inherent to the strategy and business model; as well as an emerging risks inventory that includes near-term as well as longer-term uncertainties. Near-term risks are those that are on the horizon and can be measured and mitigated to some extent, while uncertainties are longer-term matters that should be on the radar but are not yet fully measurable.

The Group Chief Risk Officer and the Group Risk Committee review regular reports on the risk profile for the Principal Risk Types, adherence to the approved Risk Appetite and the Group risk inventory including emerging risks. They use this information to escalate material developments in each risk event and make recommendations to the Board annually on any potential changes to our Corporate Plan.

Further information can be found in the Group's emerging risks section.

Stress testing

The objective of stress testing is to support the Group in assessing that it:

- does not have a portfolio with excessive risk concentration that could produce unacceptably high losses under severe but plausible scenarios
- has sufficient financial resources to withstand severe but plausible scenarios
- has the financial flexibility to respond to extreme but plausible scenarios
- understands the key business model risks and considers what kind of event might crystallise those risks - even if extreme with a low likelihood of occurring - and identifies as required, actions to mitigate the likelihood or impact as required.

Enterprise stress tests incorporate Capital and Liquidity Adequacy Stress Tests, including in the context of capital adequacy, recovery and resolution, and stress tests that assess scenarios where our business model becomes challenged, such as the BoE Biennial Exploratory Scenario, or unviable, such as reverse stress tests.

Stress tests are performed at Group, country, business and portfolio level under a wide range of risks and at varying degrees of severity. Unless set by the Bank of England, scenario design is a bespoke process that aims to explore risks that can adversely impact the Group.

The Board delegates approval of stress test submissions to the Bank of England to the Board Risk Committee, which reviews the recommendations from the Group Risk Committee.

Based on the stress test results, the Group Chief Financial Officer and Group Chief Risk Officer can recommend strategic actions to the Board to ensure that the Group strategy remains within the Board-approved Risk Appetite.

Principal Risk Types

Principal Risk Types are risks that are inherent in our strategy and business model and have been formally defined in the Group's ERMF. These risks are managed through distinct RTFs which are approved by the Group Chief Risk Officer.

The Principal Risk Types and associated Risk Appetite Statements are approved by the Board.

The Group currently recognises Climate Risk, Digital Asset Risk and Third-Party Risk as Integrated Risk Types. Climate Risk is defined as "the potential for financial loss and non-financial detriments arising from climate change and society's response to it"; Digital Asset Risk is defined as "the potential for regulatory penalties, financial loss and or reputational damage to the Group resulting from digital asset exposure or digital asset related activities arising from the Group's Clients, Products and Projects" and Third-Party risk is defined as "the potential for loss or adverse impact from failure to manage multiple risks arising from the use of third parties, and is the aggregate of these risks."

In line with the Group's strategy to explore digital-asset related opportunities, the Group continued to develop and enhance its Digital Asset Risk Management approach during 2021 in order to further embed risk management practices and ensure that digital asset activities across the Group are appropriately risk managed, and within the Group's Risk Appetite. The approach requires comprehensive assessments of risks arising from such initiatives and seeks to integrate the approach within existing risk management practices. The approach recognises the need for digital asset subject matter experts to assess and advise on the specific risks presented by digital assets. A Digital Assets Risk Management policy, outlining requirements for digital asset initiatives, has been implemented and is supported by defined processes, templates and guidance relating to the identification of higher-risk digital asset activities, coin admission requirements, and enhanced due diligence practices for products, projects and clients. The Group has formalised a stand-alone committee to oversee digital asset related risks.

In future reviews, we will continue to consider if existing Principal Risk Types or incremental risks should be treated as Integrated Risk Types. The table below shows the Group's current Principal Risk Types.

Principal Risk Types	Definition
Credit Risk	• Potential for loss due to the failure of a counterparty to meet its agreed obligations to pay the Group.
Traded Risk	• Potential for loss resulting from activities undertaken by the Group in financial markets.
Treasury Risk	• Treasury Risk is formed of Capital and Liquidity Risk, and Interest Rate Risk in the Banking Book. Capital Risk is the potential for insufficient level, composition or distribution of capital, own funds and eligible liabilities to support our normal activities. Liquidity Risk is the risk that we may not have sufficient stable or diverse sources of funding to meet our obligations as they fall due. Interest Rate Risk in the Banking Book is the potential for a reduction in earnings or economic value due to movements in interest rates on banking book assets, liabilities and off-balance sheet items.
Operational and Technology Risk	• Potential for loss resulting from inadequate or failed internal processes, technology events, human error, or from the impact of external events (including legal risks).
Information and Cyber Security Risk	• Risk to the Group's assets, operations and individuals due to the potential for unauthorised access, use, disclosure, disruption, modification, or destruction of information assets and/or information systems.
Compliance Risk	• Potential for penalties or loss to the Group or for an adverse impact to our clients, stakeholders or to the integrity of the markets we operate in through a failure on our part to comply with laws or regulations.
Financial Crime Risk	• Potential for legal or regulatory penalties, material financial loss or reputational damage resulting from the failure to comply with applicable laws and regulations relating to international sanctions, anti-money laundering, anti-bribery and corruption, and fraud.
Model Risk	• Potential loss that may occur as a consequence of decisions or the risk of mis-estimation that could be principally based on the output of models, due to errors in the development, implementation or use of such models.
Reputational and Sustainability Risk	• Potential for damage to the franchise (such as loss of trust, earnings or market capitalisation), because of stakeholders taking a negative view of the Group through actual or perceived actions or inactions, including a failure to uphold responsible business conduct or lapses in our commitment to do no significant environmental and social harm through our client, third-party relationships or our own operations.

Further details of our principal risks and how these are being managed are set out in the Principal Risks section.

ERMF effectiveness reviews

The Group Chief Risk Officer is responsible for annually affirming the effectiveness of the ERMF to the Board Risk Committee. To facilitate this, an ERMF effectiveness review was established in 2018, which follows the principle of evidence-based self-assessments for all the Risk Type Frameworks and relevant policies. A top-down review and challenge of the results is conducted by the Group Chief Risk Officer with all Risk Framework Owners, and an opinion on the internal control environment is provided by Group Internal Audit.

The ERMF effectiveness review is conducted annually and enables measurement of progress against the 2018 baseline. The key outcomes of the 2021 effectiveness review are:

- While the ERMF has evolved over the past four years to reflect changes in the risk profile, the focus in 2021 continued on the effective embedding of the framework across the organisation.
- The more mature financial risks continued to be more effectively managed on a relative basis compared to non-financial risks, and other aspects of the ERMF are established and operating to a more consistent standard, including the key risk committees and key supporting standards.
- Self-assessments performed in our footprint markets reflect the maturing ERMF adoption with emphasis on first-line ownership of risks. Country and regional risk committees continue to play an active and vital role in managing and overseeing material issues arising in countries.

Over the course of 2022, the Group aims to further strengthen its risk management practices through further improving on the management of non-financial risks within its businesses, functions and across the footprint, as well as management of risks which are integrated in nature.

Executive and Board risk oversight

Overview

The Board has ultimate responsibility for risk management and is supported by six Board-level committees. The Board approves the ERMF based on the recommendation from the Board Risk Committee, which also recommends the Group Risk Appetite Statement for all Principal Risk Types other than Financial Crime Risk. Financial Crime Risk Appetite is reviewed and recommended to the Board by the Board Financial Crime Risk Committee. In addition, the Culture and Sustainability Committee (CSC) oversees the Group's culture and key sustainability priorities.

Board and Executive level risk committee governance structure

The Committee governance structure below presents the view as of 2021.

Group Risk Committee

The Group Risk Committee, which derives its authority from the Group Chief Risk Officer, is responsible for ensuring the effective management of risk throughout the Group in support of the Group's strategy. The Group Chief Risk Officer chairs the Group Risk Committee, whose members are drawn from the Group's Management Team. The Committee determines the ERMF and oversees its effective implementation across the Group, including the delegation of any part of its authorities to appropriate individuals or properly constituted sub-committees.

Group Risk Committee sub-committees

The Group Non-Financial Risk Committee, co-chaired by the Global Head, Enterprise Risk Management and Deputy CRO SC Bank and Group Head, Central Finance and Deputy CFO SC Bank, governs the non-financial risks across clients, businesses, products and functions. The non-financial Risk Types in scope are Operational and Technology Risk, Compliance Risk, Conduct Risk, Information and Cyber Security Risk, Fraud Risk and Secondary Reputational Risk that is consequential in nature arising from risks pertaining to Principal Risk Types. The Committee also reviews the adequacy of the internal control system across all Principal Risk Types.

The Group Financial Crime Risk Committee, chaired by the Group Head, Conduct, Financial Crime and Compliance governs the Financial Crime Risk Type (excluding Fraud Risk and Secondary Reputational Risk that is consequential in nature arising from risks pertaining to Financial Crime Risk) across the Group. The Committee ensures that the Financial Crime Risk profile is managed within approved Risk Appetite and policies. The Committee is also responsible for recommending the Financial Crime Risk Appetite Statement and Risk Appetite metrics to the Board Financial Crime Risk Committee.

The Group Responsibility and Reputational Risk Committee, chaired by the Group Head, Conduct, Financial Crime and Compliance, ensures the effective management of Reputational and Sustainability Risk across the Group. This includes providing oversight of matters arising from clients, products, transactions and strategic coverage-related decisions and matters escalated by the respective Risk Framework Owners.

The IFRS 9 Impairment Committee, chaired by the Global Head, Enterprise Risk Management, ensures the effective management of the expected credit loss computations as well as stage allocation of financial assets for quarterly financial reporting within the authorities set by the Group Risk Committee.

The Model Risk Committee, chaired by the Global Head, Enterprise Risk Management, ensures the effective measurement and management of Model Risk in line with internal policies and Model Risk Appetite.

The Corporate, Commercial and Institutional Banking (CCIB) Risk Committee, chaired by the Chief Risk Officer, CCIB and Europe & Americas, ensures the effective management of risk throughout CCIB in support of the Group's strategy.

The Consumer, Private and Business Banking (CPBB) Risk Committee, chaired by the Chief Risk Officer, CPBB, ensures the effective management of risk throughout CPBB in support of the Group's strategy.

The two regional risk committees are chaired by the Chief Risk Officer for the respective region. These ensure the effective management of risk in the regions in support of the Group's strategy.

The Investment Committee ensures the optimised wind-down of the Group's existing direct investment activities in equities, quasi-equities (excluding mezzanine), funds and other alternative investments (excluding debt/debt-like instruments). The Committee is chaired by a representative of the Risk function (which includes the Global Head, Enterprise Risk Management, Global Head, Group Special Assets Management and other members appointed by the Group Chief Risk Officer).

The Investment Committee for Transportation Assets, chaired by the Chief Risk Officer, CCIB and Europe & Americas, ensures the optimisation of the Group's investment in aviation and shipping operating lease assets, with the aim of delivering better returns through the cycle.

The Standard Chartered Ventures (SCV) Committee, chaired by the Chief Risk Officer, SCV, receives authority directly from the GCRO and ensures the effective management of risk throughout SCV and individual entities operating under SCV.

Group Asset and Liability Committee

The Group Asset and Liability Committee is chaired by the Group Chief Financial Officer. Its members are drawn principally from the Management Team. The Committee is responsible for determining the Group's approach to balance sheet strategy and recovery planning. The Committee is also responsible for ensuring that, in executing the Group's strategy, the Group operates within internally approved Risk Appetite and external requirements relating to capital, loss-absorbing capacity, liquidity, leverage, Interest Rate Risk in the Banking Book, Banking Book Basis Risk and Structural Foreign Exchange Risk, and meets internal and external recovery planning requirements.

The committee governance structure ensures that risk-taking authority and risk management policies are cascaded down from the Board to the appropriate functional, client segment and country-level senior management and committees. Information regarding material risk issues and compliance with policies and standards is communicated to the appropriate country, client segment, functional and Group-level senior management and committees.

Principal risks

We manage and control our Principal Risk Types through distinct Risk Type Frameworks, policies and Board-approved Risk Appetite.

Credit Risk

The Group defines Credit Risk as the potential for loss due to the failure of a counterparty to meet its agreed obligations to pay the Group.

Risk Appetite Statement

The Group manages its credit exposures following the principle of diversification across products, geographies, client segments and industry sectors.

Roles and responsibilities

The Credit Risk Type Frameworks for the Group are set and owned by the Chief Risk Officers for the business segments. The Credit Risk function is the second-line control function responsible for independent challenge, monitoring and oversight of the Credit Risk management practices of the business and functions engaged in or supporting revenue-generating activities which constitute the first line of defence. In addition, they ensure that credit risks are properly assessed and transparent; and that credit decisions are controlled in accordance with the Group's Risk Appetite, credit policies and standards.

Mitigation

Segment-specific policies are in place for the management of Credit Risk. The Credit Policy for Corporate, Commercial and Institutional Banking Client Coverage sets the principles that must be followed for the end-to-end credit process including credit initiation, credit grading, credit assessment, product structuring, Credit Risk mitigation, monitoring and control, and documentation.

The Consumer, Private and Business Banking Credit Risk Management Policy sets the principles for the management of Consumer, Private and Business Banking segments, that must be followed for end-to-end credit process including credit initiation, credit assessment and monitoring for lending to these segments.

The Group also sets out standards for the eligibility, enforceability and effectiveness of Credit Risk mitigation arrangements. Potential credit losses from a given account, client or portfolio are mitigated using a range of tools such as collateral, netting agreements, credit insurance, credit derivatives and guarantees.

Risk mitigants are also carefully assessed for their market value, legal enforceability, correlation and counterparty risk of the protection provider.

Collateral must be valued prior to drawdown and regularly thereafter as required, to reflect current market conditions, the probability of recovery and the period of time to realise the collateral in the event of liquidation. The Group also seeks to diversify its collateral holdings across asset classes and markets.

Where guarantees, credit insurance, standby letters of credit or credit derivatives are used as Credit Risk mitigation, the creditworthiness of the protection provider is assessed and monitored using the same credit approval process applied to the obligor.

Governance committee oversight

At Board level, the Board Risk Committee oversees the effective management of Credit Risk. At the executive level, the Group Risk Committee (GRC) oversees and appoints sub-committees for the management of Credit Risk – in particular the Corporate, Commercial and Institutional Banking Risk Committee (CCIBRC), Consumer, Private and Business Banking Risk Committee (CPBBRC), and the regional risk committees for Asia, and Africa & Middle East. The GRC also receives reports from other key Group Committees such as the Standard Chartered Bank Executive Risk Committee.

These committees are responsible for overseeing the Credit Risk profile of the Group within the respective business areas and regions. Meetings are held regularly, and the committees monitor all material Credit Risk exposures, as well as key internal developments and external trends, and ensure that appropriate action is taken.

Decision-making authorities and delegation

The Credit Risk Type Frameworks are the formal mechanism which delegate Credit Risk authorities cascading from the Group Chief Risk Officer, as the Senior Manager of the Credit Risk Type, to individuals such as the business segments' Chief Risk Officers. Named individuals further delegate credit authorities to individual credit officers based on risk-adjusted scales by customer type or portfolio.

Credit Risk authorities are reviewed at least annually to ensure that they remain appropriate. In Corporate, Commercial and Institutional Banking Client Coverage, the individuals delegating the Credit Risk authorities perform oversight by reviewing a sample of the limit applications approved by the delegated credit officers on a monthly basis. In Consumer, Private and Business Banking, in most cases credit decision systems and tools (e.g. application scorecards) are used for credit decisioning. Where manual or discretionary credit decisions are applied, these are subject to periodic quality control assessment and assurance checks.

Monitoring

We regularly monitor credit exposures, portfolio performance, and external trends that may impact risk management outcomes. Internal risk management reports that are presented to risk committees contain information on key political and economic trends across major portfolios and countries, portfolio delinquency and loan impairment performance.

The Industry Portfolio Mandate, developed jointly by the Corporate, Commercial and Institutional Banking Client Coverage business and the Risk function, provides a forward-looking assessment of risk using a platform from which business strategy, risk considerations and client planning are performed with one consensus view of the external industry outlook, portfolio overviews, Risk Appetite, underwriting principles and stress test insights.

In Corporate, Commercial and Institutional Banking Client Coverage, clients and portfolios are subjected to additional review when they display signs of actual or potential weakness; for example, where there is a decline in the client's position within the industry, financial deterioration, a breach of covenants, or non-performance of an obligation within the stipulated period. Such accounts are subjected to a dedicated process overseen by the Credit Issues Committees in the relevant countries where client account strategies and credit grades are re-evaluated. In addition, remedial actions, including exposure reduction, security enhancement or exiting the account, could be undertaken, and certain accounts could also be transferred into the control of Group Special Assets Management (GSAM), which is our specialist recovery unit for Corporate, Commercial and Institutional Banking Client Coverage that operates independently from our main business.

For Consumer, Private and Business Banking, exposures and collateral monitoring are performed at the counterparty and/or portfolio level across different client segments to ensure transactions and portfolio exposures remain within Risk Appetite. Portfolio delinquency trends are monitored on an ongoing basis. Accounts that are past due (or perceived as high risk but not yet past due) are subject to a collections or recovery process managed by a specialist function independent from the origination function. In some countries, aspects of collections and recovery activities are outsourced. For discretionary lending portfolios, similar processes as of Commercial client coverage are followed.

In addition, an independent Credit Risk Review team (part of Enterprise Risk Management), performs judgement-based assessments of the Credit Risk profiles at various portfolio levels, with focus on selected countries and segments through deep dives, comparative analysis, and review and challenge of the basis of credit approvals. The review ensures that the evolving Credit Risk profiles of Corporate, Commercial and Institutional Banking and Consumer, Private and Business Banking are well managed within our Risk Appetite and policies through prompt and forward-looking mitigating actions.

Credit rating and measurement

All credit proposals are subject to a robust Credit Risk assessment. It includes a comprehensive evaluation of the client's credit quality, including willingness, ability and capacity to repay. The primary lending consideration is based on the client's credit quality and the repayment capacity from operating cashflows for counterparties, and personal income or wealth for individual borrowers. The risk assessment gives due consideration to the client's liquidity and leverage position. Where applicable, the assessment includes a detailed analysis of the Credit Risk mitigation arrangements to determine the level of reliance on such arrangements as the secondary source of repayment in the event of a significant deterioration in a client's credit quality leading to default.

Risk measurement plays a central role, along with judgement and experience, in informing risk-taking and portfolio management decisions. Since 1 January 2008, we have used the advanced internal ratings-based approach under the Basel regulatory framework to calculate Credit Risk capital requirements. The Group has also established a global programme to undertake a comprehensive assessment of capital requirements necessary to be implemented to meet the latest revised Basel III finalisation (Basel IV) regulations.

A standard alphanumeric Credit Risk grade system is used for Corporate, Commercial and Institutional Banking Client Coverage. The numeric grades run from 1 to 14 and some of the grades are further sub-classified. Lower numeric credit grades are indicative of a lower likelihood of default. Credit grades 1 to 12 are assigned to performing customers, while credit grades 13 and 14 are assigned to non-performing or defaulted customers.

Consumer, Private and Business Banking internal ratings-based portfolios use application and behavioural credit scores that are calibrated to generate a probability of default and then mapped to the standard alphanumeric Credit Risk grade system. We refer to external ratings from credit bureaus (where these are available); however, we do not rely solely on these to determine CPBB credit grades. Risk Decision Framework (RDF) as a credit rating system supports the delivery of optimum risk-adjusted-returns with controlled volatility and is used to define the portfolio/new booking segmentation, shape and decision criteria for the unsecured consumer business segment.

Advanced internal ratings-based models cover a substantial majority of our exposures and are used in assessing risks at a customer and portfolio level, setting strategy and optimising our risk-return decisions. Material internal ratings-based risk measurement models are approved by the Model Risk Committee. Prior to review and approval, all internal ratings-based models are validated in detail by a model validation team, which is separate from the teams that develop and maintain the models. Models undergo annual validation by an independent model validation team. Reviews are also triggered if the performance of a model deteriorates materially against predetermined thresholds during the ongoing model performance monitoring process which takes place between the annual validations.

Credit Concentration Risk

Credit Concentration Risk may arise from a single large exposure to a counterparty or a group of connected counterparties, or from multiple exposures across the portfolio that are closely correlated. Large exposure Concentration Risk is managed through concentration limits set for a counterparty or a group of connected counterparties based on control and economic dependence criteria. Risk Appetite metrics are set at portfolio level and monitored to control concentrations, where appropriate, by industry, specific products, tenor, collateralisation level, top clients and exposure to holding companies. Single name credit concentration thresholds are set by client group depending on credit grade, and by customer segment. For concentrations that are material at a Group level, breaches and potential breaches are monitored by the respective governance committees and reported to the Group Risk Committee and Board Risk Committees.

Credit impairment

Expected credit losses (ECL) are determined for all financial assets that are classified as amortised cost or fair value through other comprehensive income. ECL is computed as an unbiased, probability-weighted provision determined by evaluating a range of plausible outcomes, the time value of money, and forward-looking information such as critical global or country-specific macroeconomic variables. For more detailed information on macroeconomic data feeding into IFRS 9 ECL calculations, please refer to the Risk profile section.

At the time of origination or purchase of a non-credit-impaired financial asset (stage 1), ECL represent cash shortfalls arising from possible default events up to 12 months into the future from the balance sheet date. ECL continue to be determined on this basis until there is a significant increase in the Credit Risk of the asset (stage 2), in which case an ECL is recognised for default events that may occur over the lifetime of the asset. If there is observed objective evidence of credit impairment or default (stage 3), ECL continue to be measured on a lifetime basis. To provide the Board with oversight and assurance that the quality of assets originated are aligned to the Group's strategy, there is a Risk Appetite metric to monitor the stage 1 and stage 2 expected credit losses from assets originated in the past 12 months.

In Corporate, Commercial and Institutional Banking Client Coverage, a loan is considered credit-impaired where analysis and review indicate that full payment of either interest or principal, including the timeliness of such payment, is questionable, or as soon as payment of interest or principal is 90 days overdue. These credit-impaired accounts are managed by our specialist recovery unit (GSAM). Where appropriate, non-material credit-impaired accounts are co-managed with the business under the supervision of GSAM.

In Consumer, Private and Business Banking, a loan is considered credit-impaired as soon as payment of interest or principal is 90 days overdue or meets other objective evidence of impairment such as bankruptcy, debt restructuring, fraud or death. Financial assets are written-off when it meets certain threshold conditions which are set at the point where empirical evidence suggests that the client is unlikely to meet their contractual obligations, or a loss of principal is expected.

Estimating the amount and timing of future recoveries involves significant judgement and considers the assessment of matters such as future economic conditions and the value of collateral, for which there may not be a readily accessible market. The total amount of the Group's impairment provision is inherently uncertain, being sensitive to changes in economic and credit conditions across the regions in which the Group operates. For further details on sensitivity analysis of expected credit losses under IFRS 9, please refer to the Risk profile section.

Stress testing

Stress testing is a forward-looking risk management tool that constitutes a key input into the identification, monitoring and mitigation of Credit Risk, as well as contributing to Risk Appetite calibration. Periodic stress tests are performed on credit portfolios/segments to anticipate vulnerabilities from stressed conditions and initiate timely right-sizing and mitigation plans. Additionally, multiple enterprise-wide and country-level stress tests are mandated by regulators to assess the ability of the Group and its subsidiaries to continue to meet their capital requirements during a plausible, adverse shock to the business. These regulatory stress tests are conducted in line with the principles stated in the Enterprise Stress Testing Policy. Stress tests for key portfolios are reviewed by the Credit Risk Type Framework Owners (or delegates) as part of portfolio oversight; and matters considered material to the Group are escalated to the Group Chief Risk Officer and respective regional risk committee.

Traded Risk

The Group defines Traded Risk as the potential for loss resulting from activities undertaken by the Group in financial markets.

Risk Appetite Statement

The Group should control its trading portfolio and activities to ensure that Traded Risk losses (financial or reputational) do not cause material damage to the Group's franchise.

The Traded Risk Type Framework (TRTF) brings together all risk sub-types exhibiting risk features common to Traded Risk. These risk sub-types include Market Risk, Counterparty Credit Risk and Algorithmic Trading. Traded Risk Management (TRM) is the core risk management function supporting market-facing businesses, specifically Financial Markets and Treasury.

Roles and responsibilities

The TRTF, which sets the roles and responsibilities in respect of Traded Risk for the Group, is owned by the Global Head, Traded Risk Management. The business, acting as first line of defence, is responsible for the effective management of risks within the scope of its direct organisational responsibilities set by the Board. The TRM function is the second-line control function that performs independent challenge, monitoring and oversight of the Traded Risk management practices of the first line of defence. The first and second lines of defence are supported by the organisation structure, job descriptions and authorities delegated by Traded Risk control owners.

Mitigation

The Group controls its trading portfolio and activities within Risk Appetite by assessing the various Traded Risk factors. These are captured and analysed using proprietary analytical tools, in addition to risk managers' specialist market and product knowledge.

The Group's Traded Risk exposure is aligned with its Risk Appetite for Traded Risk, and assessment of potential losses that might be incurred by the Group as a consequence of extreme but plausible events.

All businesses incurring Traded Risk must be in compliance with the TRTF. The TRTF requires that Traded Risk limits are defined at a level appropriate to ensure that the Group remains within Traded Risk Appetite.

The TRTF, and underlying policies and standards ensure that these Traded Risk limits are implemented. All Traded Risk exposures throughout the Group aggregate up to TRM's Group-level reporting. This aggregation approach ensures that the limits structure across the Group is consistent with the Group's Risk Appetite.

The TRTF and Enterprise Stress Testing Policy ensure that adherence to stress-related Risk Appetite metrics is achieved. Stress testing aims at supplementing other risk metrics used within the Group by providing a forward-looking view of positions and an assessment of their resilience to stressed market conditions. Stress testing is performed on all Group businesses with Traded Risk exposures, either where the risk is actively traded or where material risk remains. This additional information is used to inform the management of the Traded Risk taken within the Group. The outcome of stress tests is discussed across the various business lines and management levels so that existing and potential risks can be reviewed, and related management actions can be decided upon where appropriate.

Policies are reviewed and approved by the Global Head, TRM annually to ensure their ongoing effectiveness.

Governance committee oversight

At Board level, the Board Risk Committee oversees the effective management of Traded Risk. At the executive level, the Group Risk Committee delegates responsibilities to the CCIBRC to act as the primary risk governance for Traded Risk. Where Traded Risk limits are set at a country level, committee governance is:

- Subsidiary authority for setting Traded Risk limits, where applicable, is delegated from the local board to the local risk committee, Country Chief Risk Officer and Traded Risk managers.
- Branch authority for setting Traded Risk limits remains with TRM which retains responsibility for monitoring and reporting excesses.

Decision-making authorities and delegation

The Group's Risk Appetite Statement, along with the key associated Risk Appetite metrics, is approved by the Board with responsibility for Traded Risk limits, then tiered accordingly.

Subject to the Group's Risk Appetite for Traded Risk, the Group Risk Committee sets Group-level Traded Risk limits, via delegation to the Group Chief Risk Officer. The Group Chief Risk Officer delegates authority for all Traded Risk limits to the TRTF Owner (Global Head, TRM) who in turn delegates approval authorities to individual Traded Risk managers.

Additional limits are placed on specific instruments, positions, and portfolio concentrations where appropriate. Authorities are reviewed at least annually to ensure that they remain appropriate and to assess the quality of decisions taken by the authorised person. Key risk-taking decisions are made only by certain individuals with the skills, judgement and perspective to ensure that the Group's control standards and risk-return objectives are met. Authority delegators are responsible for monitoring the quality of the risk decisions taken by their delegates and the ongoing suitability of their authorities.

Market Risk

The Group uses a Value at Risk (VaR) model to measure the risk of losses arising from future potential adverse movements in market rates, prices and volatilities. VaR is a quantitative measure of Market Risk that applies recent historical market conditions to estimate the potential future loss in market value that will not be exceeded in a set time period at a set statistical confidence level. VaR provides a consistent measure that can be applied across trading businesses and products over time and can be set against actual daily trading profit and loss outcomes.

For day-to-day risk management, VaR is calculated as at the close of business, generally at UK time for expected market movements over one business day and to a confidence level of 97.5 per cent. Intra-day risk levels may vary from those reported at the end of the day.

The Group applies two VaR methodologies:

- Historical simulation: this involves the revaluation of all existing positions to reflect the effect of historically observed changes in Market Risk factors on the valuation of the current portfolio. This approach is applied for general Market Risk factors and the majority of specific (credit spread) risk VaRs.

- Monte Carlo simulation: this methodology is similar to historical simulation but with considerably more input risk factor observations. These are generated by random sampling techniques, but the results retain the essential variability and correlations of historically observed risk factor changes. This approach is applied for some of the specific (credit spread) risk VaRs in relation to idiosyncratic exposures in credit markets.

A one-year historical observation period is applied in both methods.

As an input to regulatory capital, trading book VaR is calculated for expected movements over 10 business days and to a confidence level of 99 per cent. Some types of Market Risk are not captured in the regulatory VaR measure, and these Risks not in VaR (RNIVs) are subject to capital add-ons.

An analysis of VaR and backtesting results in 2021 is available in the Risk profile section.

Counterparty Credit Risk

The Counterparty Credit Risk arising from activities in financial markets is in scope of the Risk Appetite set by the Group for Traded Risk.

The Group uses a Potential Future Exposure (PFE) model to measure the credit exposure arising from the positive mark-to-market of traded products and future potential movements in market rates, prices and volatilities. PFE is a quantitative measure of Counterparty Credit Risk that applies recent historical market conditions to estimate the potential future credit exposure that will not be exceeded in a set time period at a confidence level of 97.5 per cent.

PFE is calculated for expected market movements over different time horizons based on the tenor of the transactions.

The Group applies two PFE methodologies: simulation based, which is predominantly used, and an add-on based PFE methodology.

Underwriting

The underwriting of securities and loans is in scope of the Risk Appetite set by the Group for Traded Risk. Additional limits approved by the Group Chief Risk Officer are set on the underwriting portfolio stress loss, and the maximum holding period. The Underwriting Committee, under the authority of the Group Chief Risk Officer, approves individual proposals to underwrite new security issues and loans for our clients.

Monitoring

TRM monitors the overall portfolio risk and ensures that it is within specified limits and therefore Risk Appetite. Limits are typically reviewed twice a year.

Most of the Traded Risk exposures are monitored daily against approved limits. Traded Risk limits apply at all times unless separate intra-day limits have been set. Limit excess approval decisions are based on an assessment of the circumstances driving the excess and of the proposed remediation plan.

Limits and excesses can only be approved by a Traded Risk manager with the appropriate delegated authority.

TRM reports and monitors limits applied to stressed exposures. Stress scenario analysis is performed on all Traded Risk exposures in financial markets and in portfolios outside financial markets such as syndicated loans and principal finance. Stress loss excesses are discussed with the business and approved where appropriate, based on delegated authority levels.

Stress testing

The VaR and PFE measurements are complemented by weekly stress testing of Market Risk and Counterparty Credit Risk to highlight the potential risk that may arise from severe but plausible market events.

Stress testing is an integral part of the Traded Risk management framework and considers both historical market events and forward-looking scenarios. A consistent stress testing methodology is applied to trading and non- trading books. The stress testing methodology assumes that scope for management action would be limited during a stress event, reflecting the decrease in market liquidity that often occurs.

Regular stress test scenarios are applied to interest rates, credit spreads, exchange rates, commodity prices and equity prices. This covers all asset classes in the Financial Markets and Treasury books. Ad hoc scenarios are also prepared, reflecting specific market conditions and for particular concentrations of risk that arise within the business.

Stress scenarios are regularly updated to reflect changes in risk profile and economic events. The TRM function reviews stress testing results and, where necessary, enforces reductions in overall Traded Risk exposures. The Group Risk Committee considers the results of stress tests as part of its supervision of Risk Appetite.

Where required, Group and business-wide stress testing will be supplemented by entity stress testing at a country level. This stress testing is coordinated at the country level and subject to the relevant local governance.

Treasury Risk

Treasury Risk is formed of Capital and Liquidity Risk, and Interest Rate Risk in the Banking Book. Capital Risk is the potential for an insufficient level, composition or distribution of capital, own funds and eligible liabilities to support our normal activities. Liquidity Risk is the risk that we may not have sufficiently stable or diverse sources of funding to meet our obligations as they fall due. Interest Rate Risk in the Banking Book is the potential for a reduction in earnings or economic value due to movements in interest rates on banking book assets, liabilities and off-balance sheet items.

Risk Appetite Statement

The Group should maintain a strong capital position including the maintenance of management buffers sufficient to support its strategic aims and hold an adequate buffer of high quality liquid assets to survive extreme but plausible liquidity stress scenarios for at least 60 days without recourse to extraordinary central bank support.

Roles and responsibilities

The Global Head, Enterprise Risk Management is responsible for the Risk Type Framework for Treasury Risk.

The Group Treasurer is supported by teams in Treasury and Finance to implement the Treasury Risk Type Framework as the first line of defence, and is responsible for managing Treasury Risk.

From 2022, the second line of defence responsibility for Pension risk sub-type will move from Traded Risk to Treasury Risk, and the risk will be governed under the Treasury Risk Type Framework.

Mitigation

The Group develops policies to address material Treasury Risks and aims to maintain its risk profile within Risk Appetite. In order to do this, metrics are set against Capital Risk, Liquidity and Funding Risk and Interest Rate Risk in the Banking Book (IRRBB). Where appropriate, Risk Appetite metrics are cascaded down to regions and countries in the form of limits and management action triggers.

Capital Risk

In order to manage Capital Risk, strategic business and capital plans are drawn up covering a five-year horizon and are approved by the Board annually. The capital plan ensures that adequate levels of capital, including loss-absorbing capacity, and an efficient mix of the different components of capital are maintained to support our strategy and business plans.

Treasury is responsible for the ongoing assessment of the demand for capital and the updating of the Group's capital plan.

Risk Appetite metrics including capital, leverage, minimum requirement for own funds and eligible liability (MREL) and double leverage are assessed within the Corporate Plan to ensure that our business plan can be achieved within risk tolerances.

Structural FX Risk

The Group's structural position results from the Group's non-US dollar investment in the share capital and reserves of subsidiaries and branches. The FX translation gains, or losses are recorded in the Group's translation reserves with a direct impact on the Group's Common Equity Tier 1 ratio.

The Group contracts hedges to manage its structural FX position in accordance with the Board-approved Risk Appetite, and as a result the Group has taken net investment hedges to partially cover its exposure to certain non-US dollar currencies to mitigate the FX impact of such positions on its capital ratios.

Liquidity and Funding Risk

At Group, region and country level we implement various business-as-usual and stress risk metrics and monitor these against limits and management action triggers. This ensures that the Group maintains an adequate and well-diversified liquidity buffer, as well as a stable funding base, and that it meets its liquidity and funding regulatory requirements. The approach to managing risks and the Board Risk Appetite are assessed annually through the Internal Liquidity Adequacy Assessment Process. A funding plan is also developed for efficient liquidity projections to ensure that the Group is adequately funded in the required currencies, to meet its obligations and client funding needs.

Interest Rate Risk in the Banking Book

This risk arises from differences in the repricing profile, interest rate basis, and optionality of banking book assets, liabilities and off-balance sheet items. IRRBB represents an economic and commercial risk to the Group and its capital adequacy. The Group monitors IRRBB against the Board Risk Appetite.

Recovery and Resolution Planning

In line with PRA requirements, the Group maintains a Recovery Plan which is a live document to be used by management in the event of stress in order to restore the Group to a stable and sustainable position. The Recovery Plan includes a set of recovery indicators, an escalation framework and a set of management actions capable of being implemented in a stress. A Recovery Plan is also maintained within each major entity, and all recovery plans are subject to periodic fire-drill testing.

As the UK resolution authority, the Bank of England (BoE) is required to set a preferred resolution strategy for the Group. The BoE's preferred resolution strategy is whole Group single point of entry bail-in at the ultimate holding company level (Standard Chartered PLC) and would be led by the BoE as the Group's home resolution authority. In support of this strategy, the Group has been developing a set of capabilities, arrangements and resources to achieve the required outcomes. The Group expects to disclose a summary of its preparations in 2022, alongside a public statement from the BoE on the resolvability of each in-scope firm.

Governance committee oversight

At the Board level, the Board Risk Committee oversees the effective management of Treasury Risk. At the executive level, the Group Asset and Liability Committee ensures the effective management of risk throughout the Group in support of the Group's strategy, guides the Group's strategy on balance sheet optimisation and ensures that the Group operates within the internally approved Risk Appetite and other internal and external treasury requirements.

Regional and country oversight resides with regional and country Asset and Liability Committees. Regions and countries must ensure that they remain in compliance with Group Treasury policies and practices, as well as local regulatory requirements.

Decision-making authorities and delegation

The Group Chief Financial Officer has responsibility for capital, funding and liquidity under the Senior Managers Regime. The Group Chief Risk Officer has delegated the Risk Framework Owner responsibilities associated with Treasury Risk to the Global Head, Enterprise Risk Management. The Global Head, Enterprise Risk Management delegates second-line oversight and challenge responsibilities to relevant and suitably qualified Treasury Chief Risk Officer and Country Chief Risk Officers.

Monitoring

On a day-to-day basis, the management of Treasury Risk is performed by the Group Treasurer, Country Chief Executive Officer and Treasury Markets. The Group regularly reports and monitors Treasury Risk inherent in its business activities and those that arise from internal and external events.

Internal risk management reports covering the balance sheet and the capital and liquidity position are presented to the relevant Asset and Liability Committee. The reports contain key information on balance sheet trends, exposures against Risk Appetite and supporting risk measures which enable members to make informed decisions around the overall management of the balance sheet.

In addition, an independent Treasury Chief Risk Officer as part of Enterprise Risk Management reviews the prudency and effectiveness of Treasury Risk management.

Stress testing

Stress testing and scenario analysis are an integral part of the Treasury Risk Framework and are used to ensure that the Group's internal assessment of capital and liquidity considers the impact of extreme but plausible scenarios on its risk profile. A number of stress scenarios, some designed internally, some required by regulators, are run periodically.

They provide an insight into the potential impact of significant adverse events on the Group's capital and liquidity position and how this could be mitigated through appropriate management actions to ensure that the Group remains within the approved Risk Appetite and regulatory limits.

Daily liquidity stress scenarios are also run to ensure that the Group holds sufficient high-quality liquid assets to withstand extreme liquidity events. The Group relies on these stress tests to understand the Group level vulnerabilities given the significant overlap between the Group and PLC Group's Treasury Risk.

Operational and Technology Risk

The Group defines Operational and Technology Risk as the potential for loss resulting from inadequate or failed internal processes, technology events, human error or from the impact of external events (including legal risks).

Risk Appetite Statement

The Group aims to control operational and technology risks to ensure that operational losses (financial or reputational), including any related to conduct of business matters, do not cause material damage to the Group's franchise.

Roles and responsibilities

The Operational and Technology Risk Type Framework (O&T RTF) sets the roles and responsibilities in respect of Operational Risk for the Group, and is owned by the Global Head of Risk, Functions and Operational Risk (GHRFOR). This framework collectively defines the Group's Operational Risk sub-types which have not been classified as Principal Risk Types (PRTs) and sets standards for the identification, control, monitoring and treatment of risks. These standards are applicable across all PRTs and risk sub-types in the O&T RTF. These risk sub-types relate to execution capability, governance, reporting and obligations, legal enforceability, and operational resilience (including client service, change management, people management, safety and security, and technology risk).

The O&T RTF reinforces clear accountability for managing risk throughout the Group and delegates second line of defence responsibilities to identified subject matter experts. For each risk sub-type, the expert sets policies and standards for the organisation to comply with, and provides guidance, oversight and challenge over the activities of the Group. They ensure that key risk decisions are only taken by individuals with the requisite skills, judgement, and perspective to ensure that the Group's risk-return objectives are met.

Mitigation

The O&T RTF sets out the Group's overall approach to the management of Operational Risk in line with the Group's Operational and Technology Risk Appetite. This is supported by Risk and Control Self-Assessment (RCSA) which defines roles and responsibilities for the identification, control and monitoring of risks (applicable to all PRTs and risk sub-types).

The RCSA is used to determine the design strength and reliability of each process, and requires:

- the recording of processes run by client segments, products and functions into a process universe
- the identification of potential breakdowns to these processes and the related risks of such breakdowns
- an assessment of the impact of the identified risks based on a consistent scale
- the design and monitoring of controls to mitigate prioritised risks
- assessments of residual risk and timely actions for elevated risks.

Risks that exceed the Group's Operational and Technology Risk Appetite require treatment plans to address underlying causes.

Governance committee oversight

At Board level, the Board Risk Committee oversees the effective management of Operational Risk. At the executive level, the Group Risk Committee is responsible for the governance and oversight of Operational Risk for the Group, monitors the Group's Operational and Technology Risk Appetite and relies on other key Group committees for the management of Operational Risk, in particular the Group Non-Financial Risk Committee (GNFRC).

Regional business segments and functional committees also provide enterprise oversight of their respective processes and related operational risks. In addition, Country Non-Financial Risk Committees (CNFRCs) oversee the management of Operational Risk at the country (or entity) level. In smaller countries, the responsibilities of the CNFRC may be exercised directly by the Country Risk Committee (for branches) or Executive Risk Committee (for subsidiaries).

Decision-making authorities and delegation

The O&T RTF is the formal mechanism through which the delegation of Operational Risk authorities is made. The GHRFOR places reliance on the respective Senior Managers who are outside the Risk function for second-line oversight of the risk sub-types through this framework. The Senior Managers may further delegate their second-line responsibilities to designated individuals at a global business, product and function level, as well as regional or country level.

Monitoring

To deliver services to clients and to participate in the financial services sector, the Group runs processes which are exposed to operational risks. The Group prioritises and manages risks which are significant to clients and to the financial services sectors. Control indicators are regularly monitored to determine the residual risk the Group is exposed to.

The residual risk assessments and reporting of events form the Group's Operational Risk profile. The completeness of the Operational Risk profile ensures appropriate prioritisation and timeliness of risk decisions, including risk acceptances with treatment plans for risks that exceed acceptable thresholds.

The Board is informed on adherence to Operational and Technology Risk Appetite through metrics reported for selected risks. These metrics are monitored, and escalation thresholds are devised based on the materiality and significance of the risk. These Operational and Technology Risk Appetite metrics are consolidated on a regular basis and reported at relevant Group committees. This provides senior management with the relevant information to inform their risk decisions.

Stress testing

Stress testing and scenario analysis are used to assess capital requirements for operational risks. This approach considers the impact of extreme but plausible scenarios on the Group's Operational Risk profile. A number of scenarios have been identified to test the robustness of the Group's processes and assess the potential impact on the Group. These scenarios include anti-money laundering and sanctions, as well as information and cyber security.

Information and Cyber Security (ICS) Risk

The Group defines Information and Cyber Security Risk as the risk to the Group's assets, operations and individuals due to the potential for unauthorised access, use, disclosure, disruption, modification, or destruction of information assets and/or information systems.

Risk Appetite Statement

The Group seeks to minimise ICS risk from threats to the Group's most critical information assets and systems, and has a low appetite for material incidents affecting these or the wider operations and reputation of the Group.

Roles and responsibilities

The Group's Information and Cyber Security Risk Type Framework (ICS RTF) defines the roles and responsibilities of the first and second lines of defence in managing and governing ICS Risk respectively across the Group with emphasis on business ownership and individual accountability.

The Group Chief Operating Officer has overall first line of defence responsibility for ICS Risk and holds accountability for the Group's ICS strategy. The Group Chief Information Security Officer (CISO) leads the development and execution of the ICS strategy.

The Group Chief Information Security Risk Officer (CISRO) function within Group Risk, led by the Group CISRO, operates as the second line of defence and sets the strategy and methodology for assessing, scoring and prioritising ICS risks across the Group. This function has overall responsibility for governance, oversight and independent challenge of ICS Risk.

Mitigation

ICS Risk is managed through a structured ICS Risk framework comprising a risk assessment methodology and supporting policy, standards and methodologies which are aligned to industry best practice models.

In 2021, the ICS RTF was extended to include ICS end-to-end Risk Management and Governance and an enhanced threat-led risk assessment.

The Group CISRO function monitors compliance to the ICS framework through the review of the ICS risk assessments conducted by Group CISO.

All key ICS risks, breaches and risk treatment plans are managed under Group CISRO oversight and assurance. ICS Risk posture, Risk Appetite breaches and remediation status are reported at key Group, business, functional and country governance committees.

Governance committee oversight

At Board level, the Board Risk Committee oversees the effective management of ICS Risk. The Group Risk Committee (GRC) has delegated authority to the Group Non-Financial Risk Committee (GNFRC) to ensure effective implementation of the ICS RTF. The GRC and GNFRC are responsible for oversight of ICS Risk posture and Risk Appetite breaches rated very high and high. Sub-committees of the GNFRC have oversight of ICS Risk management arising from business, country and functional areas.

At a management level, the Group has also created the Cyber Security Advisory Forum, chaired by the Group Chief Executive Officer, as a way of ensuring the Management Team, the Group Chairman and several non-executive directors are well informed on ICS Risk, and to increase business understanding and awareness so that business priorities drive the security and cyber resilience agenda.

Decision-making authorities and delegation

The ICS RTF defines how ICS Risk Management will operate within the Group. The Group CISRO delegates authority to designated individuals through the ICS RTF, including second-line ownership at a business and function level as well as regional or country level The ICS RTF defines the levels of approval required for different risk ratings.

The Group CISO is responsible for implementing and operating ICS Security Risk Management within the Group, leveraging Business Heads of ICS to extend ICS risk management into the businesses, functions, countries and Information Asset and System owners to comply with the ICS RTF, policy and standards.

Monitoring

The risk assessment is performed by Group CISO to identify key ICS risks, breaches and weaknesses, and to ascertain the severity of the Risk posture.

The Risk postures of all businesses, functions and countries are consolidated to present a holistic Group-level ICS Risk posture for ongoing ICS Risk monitoring.

During these reviews, the status of each risk is assessed to identify any changes to materiality, impact and likelihood, which in turn affects the overall ICS Risk score and rating. Risks which exceed defined thresholds are reviewed with Group CISRO for approval and escalated to appropriate Group governance committees.

Monitoring and reporting on the ICS Risk Appetite profile ensures that performance which falls outside the approved Risk Appetite is highlighted and reviewed at the appropriate governance committee or authority levels and ensures that adequate remediation actions are in place where necessary.

Stress testing

The Group's cyber resilience testing approach entails:

- The Group CISRO is responsible for risk based, intelligence led, scenario driven assessments that simulate the actions of real-world cyber adversaries targeting the organisation. This layered testing approach is used to validate the effectiveness of the measures taken to prevent, detect and respond to cyber threats targeting our critical business.
- Group CISO is responsible for supporting control improvement and risk reduction by emulating cyber attacks to enhance the Group's cyber defence capabilities.

Compliance Risk

The Group defines Compliance Risk as the potential for penalties or loss to the Group or for an adverse impact to our clients, stakeholders or to the integrity of the markets which we operate in through a failure on our part to comply with laws or regulations.

Risk Appetite Statement

The Group has no appetite for breaches in laws and regulations related to regulatory non-compliance; recognising that whilst incidents are unwanted, they cannot be entirely avoided.

Roles and responsibilities

The Group Head, Conduct, Financial Crime and Compliance (Group Head, CFCC) as Risk Framework Owner for Compliance Risk provides support to senior management on regulatory and compliance matters by:

- providing interpretation and advice on CFCC regulatory requirements and their impact on the Group
- setting enterprise-wide standards for management of compliance risks through the establishment and maintenance of the Compliance Risk Type Framework (Compliance RTF)
- setting a programme for monitoring Compliance Risk.

The Compliance RTF sets out the Group's overall approach to the management of Compliance Risk and the roles and responsibilities in respect of Compliance Risk for the Group. All activities that the Group engages in must be designed to comply with the applicable laws and regulations in the countries in which we operate. The CFCC function is the second line that provides oversight and challenge of the first-line risk management activities that relate to Compliance Risk.

Where Compliance Risk arises, or could arise, from failure to manage another Principal Risk Type or sub-type, the Compliance RTF outlines that the responsibility rests with the respective Risk Framework Owner or control function to ensure that effective oversight and challenge of the first line can be provided by the appropriate second-line function.

Each of the assigned second-line functions has responsibilities including monitoring relevant regulatory developments from Non-Financial Services regulators at both Group and country levels, policy development, implementation, and validation as well as oversight and challenge of first-line processes and controls.

In addition, the Compliance RTF has been simplified in 2021 via rationalisation of the Compliance Risk types.

Mitigation

The CFCC function develops and deploys relevant policies and standards setting out requirements and controls for adherence by the Group to ensure continued compliance with applicable laws and regulations. Through a combination of standard setting, risk assessment, control monitoring and assurance activities, the Compliance Risk Framework Owner seeks to ensure that all policies are operating as expected to mitigate the risk that they cover. The installation of appropriate processes and controls is the primary tool for the mitigation of Compliance Risk. In this, the requirements of the Operational and Technology Risk Type Framework are followed to ensure a consistent approach to the management of processes and controls. Deployment of technological solutions to improve efficiencies and simplify processes has continued in 2021. These include further expansion of digital chatbots.

Governance committee oversight

At a management level, Compliance Risk and the risk of non-compliance with laws and regulations resulting from failed processes and controls are overseen by the respective Country, Business, Product and Function Non-Financial Risk Committees including the Risk and CFCC Non-Financial Risk Committee for CFCC owned processes. Relevant matters, as required, are further escalated to the Group Non-Financial Risk Committee and Group Risk Committee.

At Board level, oversight of Compliance Risk is primarily provided by the Audit Committee, and also by the Board Risk Committee for relevant issues.

While not a formal committee, the Compliance Risk Framework Owner has also established a CFCC Oversight Group to provide oversight of CFCC risks including the effective implementation of the Compliance RTF.

Decision-making authorities and delegation

The Compliance Risk Type Framework is the formal mechanism through which the delegation of Compliance Risk authorities is made. The Group Head, CFCC has the authority to delegate second-line responsibilities within the CFCC function to relevant and suitably qualified individuals.

Monitoring

The monitoring of controls designed to mitigate the risk of regulatory non-compliance in processes is governed in line with the Operational and Technology Risk Type Framework. The Group has a monitoring and reporting process in place for Compliance Risk, which includes escalation and reporting to Risk and CFCC Non-Financial Risk Committee, Group Non-Financial Risk Committee, Group Risk Committee, Board Risk Committee and Audit Committee, as appropriate.

Stress testing

Stress testing and scenario analysis are used to assess capital requirements for Compliance Risk and form part of the overall scenario analysis portfolio managed under the Operational and Technology Risk Type Framework. Specific scenarios are developed annually with collaboration between the business, which owns and manages the risk, and the CFCC function, which is second line to incorporate significant Compliance Risk tail events. This approach considers the impact of extreme but plausible scenarios on the Group's Compliance Risk profile.

Financial Crime Risk

The Group defines Financial Crime Risk as the potential for legal or regulatory penalties, material financial loss or reputational damage resulting from the failure to comply with applicable laws and regulations relating to international sanctions, anti-money laundering, anti-bribery and corruption, and fraud.

Risk Appetite Statement

The Group has no appetite for breaches in laws and regulations related to financial crime, recognising that while incidents are unwanted, they cannot be entirely avoided.

Roles and responsibilities

The Group Head, CFCC has overall responsibility for Financial Crime Risk and is responsible for the establishment and maintenance of effective systems and controls to meet legal and regulatory obligations in respect of Financial Crime Risk. The Group Head, CFCC is the Group's Compliance and Money-Laundering Reporting Officer and performs the Financial Conduct Authority (FCA) controlled function and senior management function in accordance with the requirements set out by the FCA, including those set out in their handbook on systems and controls. As the first line, the business unit process owners have responsibility for the application of policy controls and the identification and measurement of risks relating to financial crime. Business units must communicate risks and any policy non-compliance to the second line for review and approval following the model for delegation of authority.

Mitigation

There are four Group policies in support of the Financial Crime Risk Type Framework:

- Group Anti-Bribery and Corruption Policy
- Group Anti-Money Laundering and Counter Terrorist Financing Policy
- Group Sanctions Policy
- Group Fraud Risk Management Policy.

The Group operates risk-based assessments and controls in support of its Financial Crime Risk programme, including (but not limited to):

- Group Risk Assessment - the Group monitors enterprise-wide Financial Crime Risks through the CFCC Risk Assessment process consisting of Financial Crime Risk and Compliance Risk assessments. The Financial Crime Risk assessment is a Group-wide risk assessment undertaken annually to assess the inherent Financial Crime Risk exposures and the associated processes and controls by which these exposures are mitigated.
- Financial Crime Surveillance – risk-based systems and processes to prevent and detect financial crime.

The strength of controls is tested and assessed through the Group's Operational and Technology Risk Type Framework, in addition to oversight by CFCC Assurance and Group Internal Audit.

Governance committee oversight

Financial Crime Risk within the Group is governed by the Group Financial Crime Risk Committee (GFCRC) and the Group Non-Financial Risk Committee (GNFRC) for Fraud Risk which is appointed by and reports into the Group Risk Committee.

Throughout the Group, the GFCRC is responsible for ensuring effective oversight for Operational Risk relating to Financial Crime Risk, while the GNFRC is responsible for ensuring effective oversight of Operational Risk relating to Non-Financial Risks including Fraud Risk. The Board appoints the Board Financial Crime Risk Committee to provide oversight on anti-bribery and corruption, anti-money laundering (and terrorist financing) and sanctions, and the Board Risk Committee for oversight on Fraud Risk. The committees provide oversight of the effectiveness of the Group's policies, procedures, systems, controls and assurance mechanisms designed to identify, assess, manage, monitor, detect or prevent money laundering, non-compliance with sanctions, bribery, corruption, internal/external fraud and tax crime by third parties.

Decision-making authorities and delegation

The Financial Crime Risk Type Framework is the formal mechanism through which the delegation of Financial Crime Risk authorities is made. The Group Head, CFCC is the Risk Framework Owner for Financial Crime Risk under the Group's Enterprise Risk Management Framework. Certain aspects of Financial Crime Compliance, second-line oversight and challenge, are delegated within the CFCC function. Approval frameworks are in place to allow for risk-based decisions on client onboarding, potential breaches of sanctions regulation or policy, situations of potential money laundering (and terrorist financing), bribery and corruption or internal and external fraud.

Monitoring

The Group monitors Financial Crime Risk compliance against a set of Risk Appetite metrics that are approved by the Board. These metrics are reviewed periodically and reported regularly to the Group Financial Crime Risk Committee, Group Non-Financial Risk Committee, Board Risk Committee and Board Financial Crime Risk Committee.

Stress testing

The assessment of Financial Crime vulnerabilities under stressed conditions or extreme events with a low likelihood of occurring is carried out through enterprise stress testing where scenario analysis is used to assess capital requirements for Financial Crime Risk as part of the overall scenario analysis portfolio managed under the Operational and Technology Risk Type Framework. Specific scenarios are developed annually with collaboration between the business, which owns and manages the risk, and the CFCC function, which is second line to incorporate significant Financial Crime Risk events. This approach considers the impact of extreme but plausible scenarios on the Group's Financial Crime Risk profile.

Model Risk

The Group defines Model Risk as potential loss that may occur as a consequence of decisions or the risk of mis-estimation that could be principally based on the output of models, due to errors in the development, implementation or use of such models.

Risk Appetite Statement

The Group has no appetite for material adverse implications arising from misuse of models or errors in the development or implementation of models; whilst accepting model uncertainty.

Roles and responsibilities

The Global Head, Enterprise Risk Management is the Risk Framework Owner for Model Risk under the Group's Enterprise Risk Management Framework. Responsibility for the oversight and implementation of the Model Risk Type Framework is delegated to the Global Head, Model Risk Management.

The Model Risk Type Framework sets out clear accountability and roles for Model Risk management through a three lines of defence model. First-line ownership of Model Risk resides with Model Sponsors, who are the business or function heads and assign a Model Owner for each model. Model Owners mainly represent model developers and users, and are responsible for end-to-end model development, ensuring model performance through regular model monitoring, and communicating model limitations, model assumptions and risks. Model Owners also coordinate the submission of models for validation and approval and ensure appropriate model implementation and use. Second-line oversight is provided by Model Risk Management, which comprises Group Model Validation and Model Risk Policy and Governance.

Group Model Validation independently reviews and grades models, in line with design objectives, business uses and compliance requirements, and highlights identified model risks by raising model related issues. The Model Risk Policy and Governance team provides oversight of Model Risk activities, performing regular Model Risk Assessment and risk profile reporting to senior management.

Mitigation

The Model Risk policy and standards define requirements for model development and validation activities, including regular model performance monitoring. Any model issues or deficiencies identified through the validation process are mitigated through the application of model monitoring, model overlays and/or a model redevelopment plan, which undergo robust review, challenge and approval. Operational controls govern all Model Risk-related processes, with regular risk assessments performed to assess appropriateness and effectiveness of those controls, in line with the Operational and Technology Risk Type Framework, with remediation plans implemented where necessary.

Governance committee oversight

At Board level, the Board Risk Committee exercises oversight of Model Risk within the Group. At the executive level, the Group Risk Committee has appointed the Model Risk Committee to ensure effective measurement and management of Model Risk. Sub-committees such as the Credit Model Assessment Committee and Traded Risk Model Assessment Committee oversee their respective in-scope models and escalate material Model Risks to the Model Risk Committee. In parallel, business and function-level risk committees provide governance oversight of the models used in their respective processes.

Decision-making authorities and delegation

The Model Risk Type Framework is the formal mechanism through which the delegation of Model Risk authorities is made.

The Global Head, Enterprise Risk Management delegates authorities to designated individuals or Policy Owners through the RTF. The second-line ownership for Model Risk at country level is delegated to Country Chief Risk Officers at the applicable branches and subsidiaries.

The Model Risk Committee is responsible for approving models for use. Model approval authority is also delegated to the Credit Model Assessment Committee, Traded Risk Model Assessment Committee and individual designated model approvers for less material models.

Monitoring

The Group monitors Model Risk via a set of Risk Appetite metrics that are approved by the Board. Adherence to Model Risk Appetite and any threshold breaches are reported regularly to the Board Risk Committee, Group Risk Committee and Model Risk Committee. These metrics and thresholds are reviewed on an annual basis to ensure that threshold calibration remains appropriate and the themes are adequately covering the current risks.

Models undergo regular monitoring based on their level of perceived Model Risk, with monitoring results and breaches presented to Model Risk Management and delegated model approvers.

Model Risk Management produces Model Risk reports covering the model landscape, which include performance metrics, identified model issues and remediation plans. These are presented for discussion at the Model Risk governance committees on a regular basis.

Stress testing

Models play an integral role in the Group's stress testing and are rigorously user-tested to ensure that they are fit-for-use under stressed market conditions. Compliance with Model Risk management requirements and regulatory guidelines are also assessed as part of each stress test, with any identified gaps mitigated through model overlays and defined remediation plans.

Reputational and Sustainability Risk

The Group defines Reputational and Sustainability Risk as the potential for damage to the franchise (such as loss of trust, earnings or market capitalisation), because of stakeholders taking a negative view of the Group through actual or perceived actions or inactions, including a failure to uphold responsible business conduct or lapses in our commitment to do no significant environmental and social harm through our client, third-party relationships or our own operations.

Risk Appetite Statement

The Group aims to protect the franchise from material damage to its reputation by ensuring that any business activity is satisfactorily assessed and managed by the appropriate level of management and governance oversight. This includes a potential failure to uphold responsible business conduct or lapses in our commitment to do no significant environmental and social harm.

Sustainability Risk continues to be an area of growing importance, driving a need for strategic transformation across business activities and risk management to ensure that we uphold the principles of Responsible Business Conduct and continue to do the right thing for our stakeholders, the environment and affected communities. Throughout 2021, we have laid the foundation to integrate Sustainability Risk management for clients, third parties and our operations and continued to invest in infrastructure and technology to keep pace with emerging environmental, social and governance (ESG) regulatory obligations and accelerating commitments across our markets.

Roles and responsibilities

The Global Head, Enterprise Risk Management is the Risk Framework Owner for Reputational and Sustainability Risk under the Group's Enterprise Risk Management Framework.

The responsibility for Reputational and Sustainability Risk management is delegated to Reputational and Sustainability Risk Leads in ERM as well as Chief Risk Officers at region, country and client-business levels. They constitute the second line of defence, overseeing and challenging the first line of defence, which resides with the Chief Executive Officers, Business Heads, Product Heads and Function Heads in respect of risk management activities of reputational and sustainability-related risks respectively. The Environmental and Social Risk Management team (ESRM), which is in the first line of defence, also provides dedicated support on the management of environmental and social risks and impacts arising from the Group's client relationships and transactions.

Mitigation

In line with the principles of Responsible Business Conduct and Do No Significant Harm, the Group deems Reputational and Sustainability Risk to be driven by:

- negative shifts in stakeholder perceptions due to decisions related to clients, products, transactions, third parties and strategic coverage
- potential material harm or degradation to the natural environment (environmental) through actions/inactions of the Group
- potential material harm to individuals or communities (social) risks through actions/inactions of the Group.

The Group's Reputational Risk policy sets out the principal sources of Reputational Risk driven by negative shifts in stakeholder perceptions as well as responsibilities, control and oversight standards for identifying, assessing, escalating and effectively managing Reputational Risk. The Group takes a structured approach to the assessment of risks associated with how individual client, transaction, product and strategic coverage decisions may affect perceptions of the organisation and its activities, based on explicit principles including, but not limited to gambling, defence and dual use goods. Whenever potential for stakeholder concerns is identified, issues are subject to prior approval by a management authority commensurate with the materiality of matters being considered. Such authorities may accept or decline the risk or impose conditions upon proposals, to protect the Group's reputation.

The Group's Sustainability Risk policy sets out the requirements and responsibilities for managing environmental and social risks for the Group's operations, clients and third parties, as guided by various industry standards such as the OECD's Due Diligence Guidance for Responsible Business Conduct, Equator Principles, UN Sustainable Development Goals and the Paris Agreement.

Through our operations, the Group seeks to minimise its impact on the environment and have targets to reduce energy, water and waste. Clients are expected to adhere to minimum regulatory and compliance requirements, including criteria from the Group's Position Statements. Suppliers must comply with the Group's Supplier Charter which sets out the Group's expectations on ethics, anti-bribery and corruption, human rights, environmental, health and safety standards, labour and protection of the environment.

Governance committee oversight

At Board level, the Culture and Sustainability Committee provides oversight for our Sustainability strategy while the Board Risk Committee oversees Reputational and Sustainability Risk as part of the ERMF. The Group Risk Committee (GRC) provides executive-level committee oversight and delegates the authority to ensure effective management of Reputational and Sustainability Risk to the Group Responsibility and Reputational Risk Committee (GRRRC).

The GRRRC's remit is to:

- Challenge, constrain and, if required, stop business activities where risks are not aligned with the Group's Risk Appetite.
- Make decisions on Reputational Risk matters assessed as high or very high based on the Group's primary Reputational Risk materiality assessment matrix, and matters escalated from the regions or client businesses.
- Provide oversight of material Reputational Risk and/or thematic issues arising from the potential failure of other risk types.
- Oversee Sustainability Risk management of the Group.

The Sustainable Finance Governance Committee, appointed by the GRRRC provides leadership, governance and oversight for delivering the Group's sustainable finance offering. This includes:

- Reviewing and supporting the Group's frameworks for Green and Sustainable Products, and Transition Finance for approval of GRRRC. These frameworks set out the guidelines for approval of products and transactions which carry the sustainable finance and/or transition finance label.
- Decision-making authority on the eligibility of a sustainable asset for any risk-weighted assets (RWA) relief.

The Group Non-Financial Risk Committee has oversight of the control environment and effective management of Reputational Risk incurred when there are negative shifts in stakeholder perceptions of the Group due to failure of other PRTs. The regional and client-business risk committees provide oversight on the Reputational and Sustainability Risk profile within their remit. The Country Non-Financial Risk Committee (CNFRC) provides oversight of the Reputational and Sustainability Risk profile at a country level.

Decision-making authorities and delegation

The Reputational and Sustainability RTF is the formal mechanism through which the delegation of Reputational and Sustainability Risk authorities is made. The Global Head, Enterprise Risk Management delegates risk acceptance authorities for stakeholder perception risks to designated individuals in the first line and second line or to committees such as the GRRRC via risk authority matrices.

These risk authority matrices are tiered at country, regional, business segment or Group levels and are established for risks incurred in strategic coverage, clients, products or transactions. For environmental and social risks, the ESRM must review and support the risk assessments for clients and transactions and escalate to the Reputational and Sustainability Risk leads as required.

Monitoring

Reputational and Sustainability Risk policies and standards are applicable to all Group entities. However, local regulators in some markets may impose additional requirements on how banks manage and track Reputational and Sustainability Risk. In such cases, these are complied with in addition to Group policies and standards.

Exposure to stakeholder perception risks arising from transactions, clients, products and strategic coverage are monitored through established triggers outlined in risk materiality matrices to prompt the right levels of risk-based consideration by the first line and escalations to the second line where necessary. Risk acceptance decisions and thematic trends are also being reviewed on a periodic basis.

Exposure to Sustainability Risk is monitored through triggers embedded within the first-line processes where environmental and social risks are considered for clients and transactions via the Environmental and Social Risk Assessments, and considered for vendors in our supply chain through the Modern Slavery questionnaires.

In 2021, we have approved new Risk Appetite metrics for Environmental and Social risks as well as managing modern slavery risks in our supply chain.

Stress testing

Reputational Risk outcomes are taken into account in enterprise stress tests and incorporated into the Group's stress testing scenarios. For example, the Group might consider what impact a hypothetical event leading to loss of confidence among liquidity providers in a particular market might have, or what the implications might be for supporting part of the organisation in order to protect the brand. As Sustainability Risk continues to evolve as an area of emerging regulatory focus with various markets developing ESG regulatory guidance, we are keeping pace with external developments to enable us to explore meaningful scenario analysis with the aim of advancing Reputational and Sustainability Risk management.

Climate Risk

The Group recognises Climate Risk as an Integrated Risk Type. Climate Risk is defined as the potential for financial loss and non-financial detriments arising from climate change and society's response to it.

Risk Appetite Statement

The Group aims to measure and manage financial and non-financial risks from climate change, and reduce emissions related to our own activities and those related to the financing of clients in alignment with the Paris Agreement.

Climate Risk has been recognised as an emerging risk since 2017 and was elevated to an Integrated Risk Type (previously known as material cross-cutting risk) within the ERMF, our central risk framework in 2019. We have introduced Climate Risk into mainstream risk management in alignment with the Bank of England's Supervisory Statement 3/19 requirements and in 2021 greatly improved our scenario analysis and stress testing abilities to deliver the 2021 Climate Biennial Exploratory Scenario (CBES). However, it is still a relatively nascent risk area which will mature and stabilise over the years to come.

Roles and responsibilities

The three lines of defence model as per the Enterprise Risk Management Framework applies to Climate Risk. The Group Chief Risk Officer (GCRO) has the ultimate second-line and senior management responsibility for Climate Risk. The GCRO is supported by the Global Head, Enterprise Risk Management who has day-to-day oversight and central responsibility for second-line Climate Risk activities. As Climate Risk is integrated into the relevant Principal Risk Types (PRTs), second-line responsibilities lie with the Risk Framework Owner (at Group, regional and country level), with subject matter expertise support from the central Climate Risk team.

Mitigation

As an Integrated Risk Type manifests through other PRTs, risk mitigation activities are specific to individual PRTs. The Group has undertaken initial development and integration of Climate Risk into PRT processes. Climate Risk assessments are considered as part of Reputational and Sustainability transaction reviews for clients and transactions in high carbon sectors. We have directly engaged with clients on their adaptation and mitigation plans using client level Climate Risk questionnaires and a first phase of integration into the credit decisioning process is under way for CCIB Credit Risk. As part of quarterly credit portfolio reviews in CPBB, physical risk assessments for the residential mortgage portfolios are also being monitored for concentration levels. Within Traded Risk, a physical risk scenario is now part of their stress testing framework while the focus for Operational and Technology Risk has been on Resilience and Third-Party Risk management. Relevant policies and standards across PRTs have been updated to factor in Climate Risk considerations and a focus area in 2022 will be to deliver the implementation of these requirements.

Governance committee oversight

Board-level oversight is exercised through the Board Risk Committee (BRC), and regular Climate Risk updates are provided to the Board and BRC. At the executive level, the Group Risk Committee oversees implementation of the Climate Risk workplan. The GCRO has also appointed a Climate Risk Management Forum consisting of senior representatives from the business, risk, strategy and other functions such as sustainability and legal. The Climate Risk Management Forum meets quarterly to discuss development and implementation of the Climate Risk workplan, and to provide structured governance around engagement with the relevant PRTs impacted by Climate Risk. Through 2022, we will strengthen country and regional governance oversight for the Climate Risk profile across our key markets.

Tools and methodologies

Applying existing risk management tools to quantify Climate Risk is challenging given inherent data and methodology challenges, including the need to be forward-looking over long time horizons. To quantify climate physical and transition risk we leverage and have invested in a number of areas, including tools and partnerships:

- Munich Re – we are using Munich Re's physical risk assessment tool, which is built on extensive re-insurance experience.
- Baringa Partners – we are using Baringa's flagship climate models to understand climate scenarios, and compute transition risk and temperature alignment.
- Standard & Poor – we are leveraging S&P and Trucost's wealth of climate data covering asset locations, energy mixes and emissions.
- Imperial College – we are leveraging Imperial's academic expertise to advance our understanding of climate science, upskill our staff and senior management, and progress the state of independent research on climate risks with an acute focus on emerging markets.

Decision-making authorities and delegation

The Global Head, Enterprise Risk Management is supported by a centralised Climate Risk team within the ERM function. The Global Head, Climate Risk and Net Zero Oversight is responsible for ensuring and executing the delivery of the Climate Risk workplan which will define decision-making authorities and delegations across the Group.

Monitoring

The Climate Risk Appetite Statement is approved and reviewed annually by the Board.

The Group has developed its first-generation Climate Risk reporting and Management Team level Risk Appetite metrics. The first version of these metrics was shared with the relevant committees as part of the Group Risk Information Report and Board Risk Information Report, respectively, in September 2021. Going forward, these will be included in the Group and Board risk reports quarterly, and management information is also being progressively rolled out at the regional and country level.

Stress testing

Climate Risk intensifies over time, and future global temperature rises depend on today's transition pathway. Considering different transition scenarios is crucial to assessing Climate Risk over the next 10, 20 and 50 years. Stress testing and scenario analysis are used to assess capital requirements for Climate Risk and since 2020, physical and transition risks have been included in the Group Internal Capital Adequacy Assessment Process (ICAAP). In 2021, we undertook a number of Climate Risk stress tests, including by the Hong Kong Monetary Authority and the Bank of England's Climate Biennial Exploratory Scenario (CBES). This required significant client engagement and helped grow our understanding and management of Climate Risk.

In 2022, the Group intends to develop management scenarios, strengthening business strategy and financial planning and supporting the Group's net zero journey.

Details on the Group's Taskforce on Climate-related Financial Disclosures can be found on sc.com/tcfd.

Emerging risks

In addition to our Principal Risk Types that we manage through Risk Type Frameworks, policies and Risk Appetite, we also maintain an inventory of emerging risks. Emerging risks refer to unpredictable and uncontrollable events with the potential to materially impact our business. These include near-term risks that are on the horizon and can be measured or mitigated to some extent, as well as longer-term uncertainties that are on the radar but not yet fully measurable.

In 2021, we undertook a thorough review of our Emerging Risks, using the approach described in the Enterprise Risk Management Framework[1] section. The key results of the review are detailed below.

1 The Group's Risk Management Framework and System of Internal Control applies only to wholly controlled subsidiaries of the Group, and not to Associates, Joint Ventures or Structured Entities of the Group.

Key changes to our emerging risks:

The following items have been removed as emerging risks:

- 'Middle East geopolitical tensions' – The risk has been removed as the immediate impact to the Group's credit portfolio is manageable
- 'Interbank Offered Rate discontinuation and transition' – This risk has been removed given the Group has a well-established global IBOR Transition Programme to consider all aspects of the transition and how risks from the transition can be mitigated

The following items have been amended or added as new emerging risks:

- 'Crystallisation of inflation fears' – Interest rates have already increased or are likely to rise in several countries as central banks respond to inflationary pressure. Drivers of price increases include shortages of materials and labour, increased demand as economic recoveries take hold and long-term monetary stimulus, with growing acceptance that the inflationary shock will last longer than initially expected
- 'Energy security' – Increased industrial demand and accelerated transitions to cleaner energy sources have put a strain on supply lines. This has increased tensions between nations as power shifts towards energy exporters, and energy security becomes questionable across developed markets and emerging markets alike. A lack of investment by oil producers as we transition could also lead to an increase in oil prices in the short term
- 'Supply chain dislocations' – Global supply chains have been disrupted both by COVID-19 lockdowns and deglobalisation. As economies recover there are shortages in some key source materials and delivery delays which are affecting many industries' ability to meet the rapid increase in demand
- 'Expanding stakeholder expectations for environmental, social and corporate governance (ESG)' – Added as an emerging risk to reflect the broader sustainability agenda of the Group and capture ESG concerns beyond Climate Risk such as biodiversity loss and depletion of natural resources, which are increasing areas of focus for regulators, investors and non-governmental organisations. The speed of transition to meet the requirements could be faster in developed markets
- 'Expanding array of global tensions' – Expanded to cover a proliferation of global political and economic agenda items that create disruption and potential flashpoints between countries. These are reshaping global political alliances and disrupting traditional economic corridors
- 'Adapting to endemic COVID-19 and a K-shaped recovery' – Encapsulates the shift towards living with COVID-19 and what the new post-COVID normal will look like. Varying vaccination rates and levels of economic stimulus have widened the recovery gap and threaten a K-shaped global recovery, where countries or sectors recover at different rates depending on their ability to adapt to a post-COVID world
- 'New business structures, channels and competition' – Reflects the linkage between the Group's increasing reliance on partnerships and alliances in exploring new technologies and digital enhancement, and the heightened risks that are intrinsically linked to such activities. Digital assets are also covered within this emerging risk
- 'Talent pools of the future' – Expanded to consider the risks of widening skills gaps and shifting expectations of the future workforce, beyond just the practical challenges of increased remote working

Our list of emerging risks, based on our current knowledge and assumptions, is set out below, with our subjective assessment of their impact, likelihood and velocity of change. This reflects the latest internal assessment of material risks that the Group faces as identified by senior management. This list is not designed to be exhaustive and there may be additional risks which could materialise or have an adverse effect on the Group.

Our mitigation approach for these risks may not eliminate them but shows the Group's attempt to reduce or manage the risk. As certain risks develop and materialise over time, management will take appropriate steps to mitigate the risk based on its impact on the Group.

Geopolitical considerations (Risk ranked according to severity)

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Expanding array of global tensions[2] Potential impact: High Likelihood: Medium Velocity of change: Moderate	↑	• Relations between China and the West remain fragile. The US and China are engaged in a security competition that has ramifications across many aspects of their complex interdependencies • There has also been increasing volatility within China, with turbulence in the property development sector and targeted legislation for specific industries such as education, technology and real estate, which could have spillover effects into other markets given the size of China's economy • Tensions are also increasing regarding Russia's presence on the Ukrainian border. Although the Group's exposure to the region is limited, the potential impact on the rest of the world from economic or military action could be significant, and cause further fractures between East and West • In addition, tensions are rising between historic allies within NATO and the G7, around flashpoints such as the withdrawal from Afghanistan, the launch of AUKUS, and tensions on the Korean peninsula. These may intensify with elections due in some major countries in 2022 • Areas of collaboration exist – such as agreements made at the COP26 climate summit – but there are a number of issues that remain, including public health and safety, trade, national security, sovereignty, and territorial disputes • A focus on domestic recovery in the wake of COVID-19 has led to protectionist policies and disruption to global supply chains • Some governments have used the pandemic as an opportunity to consolidate power, which could lead to further tension and potential retaliatory actions • Increased demand has created shortages in some key sectors, such as electronics and energy, which could tip the balance of power towards producers. Investment in local technological infrastructure has become a key focus to reduce dependence on external counterparties and ensure national security • The Group, with its notable exposure and presence in China, faces a high risk of being caught in the crossfire of escalating geopolitical tensions between the East and West • The Group also derives significant revenues from supporting cross-border trade and material offshore support operations	• Sharp slowdowns in the US, China, and more broadly, world trade and global growth are a feature of Group stress scenarios. These stress tests provide visibility to key vulnerabilities so that management can implement timely interventions • Detailed portfolio reviews are conducted on an ongoing basis, most recently regarding increasing tensions around Ukraine, and action is taken where necessary • The Group is closely monitoring the China–G7 relationship and assessing the impact on our business with teams in the first and second line of defence • The Group remains vigilant in monitoring geopolitical relationships • Increased scrutiny is applied when onboarding clients in sensitive industries and in ensuring compliance with sanctions requirements

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Energy security Potential impact: High Likelihood: Medium Velocity of change: Fast	↑	• Increased demand for energy, bottlenecks in the production of renewables and pressure to accelerate the transition to new clean sources are driving an emerging energy supply shortage, causing price inflation and exacerbating disruptions in global supply chains • Emerging markets which rely on imports of energy risk being disadvantaged due to the massive energy needs required to develop • Developed nations also face a trade-off, as pressure to adopt clean energy has constrained their ability to rely on traditional sources to meet demand, likely leading to significant price volatility until production capacity for renewable sources is sufficient to meet the energy gap • There are increasing geopolitical tensions as the balance of power shifts towards energy exporters. The reluctance of some nations to commit to climate goals also adds to pressure for a global transition, and the political advantage accruing to traditional oil-producing nations may further complicate the goals of a net zero economy • Lack of investment by oil producers as we transition could also lead to an increase in oil prices in the short term	• As part of our stress tests, an oil shock scenario was developed • Sovereign ratings, outlooks and country risk limits are regularly monitored with periodic updates to senior stakeholders • The Group is implementing a Climate Risk workplan and aims to embed climate risks across all relevant principal risks in 2022. This includes scenario analysis and stress testing capability to understand financial risks and opportunities from climate change

1 The risk trend refers to the overall risk score trend, which is a combination of potential impact, likelihood and velocity of change
2 This theme was previously covered under 'US–China trade tensions driven by geopolitics and trade imbalance'

Macroeconomic considerations (Risk ranked according to severity)

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Crystallisation of inflation fears[3] Potential impact: High Likelihood: High Velocity of change: Moderate	↑	• In the second part of 2021, several key developed economies experienced rates of inflation that far exceeded central bank forecasts. Several central banks have acknowledged their surprise and altered their stance on monetary policy, starting to raise rates or signalling their willingness to do so • There is a risk that the confluence of supply and demand pressures could have effects on inflation that are longer-lasting than expected • The easing of COVID-19 restrictions has created a demand surge in developed market economies that have reopened, and labour supply shortages have compounded price pressures • There is still a lack of firm consensus within the industry on some key inflation questions, such as whether it is transitory or unlikely to ease in the near future, caused by excess demand or limited supply, and whether it is limited to specific industries or a general problem for the economy. Rising interest rates also introduce a risk of stagflation in 2022 where economic growth is muted but inflation persists • It is possible that monetary policy tightening in Western countries could lead to a depreciation in emerging markets currencies versus the US dollar, increasing debt refinancing costs for emerging market economies. Sharp increases in the price of energy and agricultural products also pose risks to emerging markets that will face higher import costs, feeding into higher domestic inflation • The prices of risky financial assets have been artificially supported through the crisis following multi-trillion dollar central bank asset purchases and record low interest rates. As fiscal and monetary support is withdrawn and countries start to raise interest rates, there is an elevated risk of widespread price corrections	• As part of our stress tests, a severe stress in the global economy associated with a sharp slow-down was assessed • Both Group-wide management and Traded Risk scenarios are being developed to examine the impact of a rapid build-up in inflationary pressures around the world • Sovereign ratings, outlooks and country risk limits are regularly monitored with periodic updates to senior stakeholders

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Adapting to endemic COVID-19 and a K-shaped recovery[4,5] Potential impact: High Likelihood: High Velocity of change: Moderate	↔	• Countries with high vaccination rates are moving towards accepting COVID-19 as endemic. Nevertheless, domestic policies on managing the spread of the virus differ vastly among nations, and the longer-term impacts (including health and mental wellbeing) are still uncertain • The effectiveness of vaccines is confirmed to diminish after several months, thus the policy response to new waves of infection or new variants tends to quickly revert to forms of restriction, including lockdowns, as seen with the recent Omicron variant • COVID-19 continues to disrupt economies, however another notable emerging effect is on politics. The COVID-19 theme is increasingly inter-woven with both domestic social unrest and the geopolitical agenda • Differences in the pace and scale of vaccine rollouts and disparities in financial resources have widened the recovery gap and threaten a K-shaped global recovery, where countries or sectors recover at a different rate depending on their ability to adapt to a post-COVID world • Emerging markets have lagged behind in their ability to combat the pandemic which may result in longer-term economic scarring. There has been limited fiscal stimulus for the third world, and short-term support may take precedence over longer-term structural transformation, which is especially relevant for the Group's footprint • Deeper structural transformations of traditional economic systems are being observed. A shift in priorities, particularly among younger generations, may lead to fundamental changes in the workforce, including a permanent drop in the labour supply and a desire to move away from traditional industries. Vaccine mandates are causing domestic tensions, and may lead to labour shortages in some states or industries • There is a risk that further variants or other diseases may emerge	• As part of our stress tests, a severe stress in the global economy associated with a sharp slow-down was assessed • Sensitive sectors (e.g. aviation and hospitality) are regularly reviewed and exposures to these sectors are actively managed as part of Credit Risk reviews • Exposures that could result in material credit impairment charges and risk weighted asset inflation under stress tests are regularly reviewed and actively managed • The Group's priority remains the health and safety of our clients and employees and continuation of normal operations by leveraging our robust Business Continuity Plans which enable the majority of our colleagues to work remotely where possible

3 This theme was previously covered under 'Unintended consequences of accommodative monetary policy and the risk of asset bubbles and inflation'
4 A K-shaped global recovery occurs where countries or sectors recover at different rates following a recession
5 This theme was previously covered under 'The COVID-19 outbreak and the emergence of new diseases'

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Supply chain dislocations[6] Potential impact: High Likelihood: Medium Velocity of change: Moderate	↑	• The emergence of supply chain disruptions can be attributed to a combination of demand and supply factors, some of which may prove to be transitory while others remain more entrenched. A key risk is that supply chain disruptions raise inflation expectations on a sustained basis, prompting central banks to tighten monetary policy • Pandemic-related changes, such as a surge in demand for electronics and furniture, has resulted in a rundown of inventories. Furthermore, the shift towards online shopping tends to be more import intensive and Asia-focused, thereby exacerbating shipping backlogs • Severe weather events have caused a reduction in supplies of natural gas and some agricultural products. Supply of goods such as semi-conductors has also been hampered by labour lockdowns and shortages, licensing regulations and backlogs at ports • As well as disruption to existing chains, there may be a fundamental shift in the supply chains in the future. Companies may be required to set up parallel supply chains as contingencies, as well as moving production closer to the end user. Some of this may also be mandated by protectionist policies which drive fragmentation for strategic industries	• Exposures that may result in material credit impairment and increased risk-weighted assets are closely monitored and actively managed • Sectors which exhibit high supply chain pressure and vulnerability (e.g. electronics) are regularly reviewed and exposures to these sectors are actively managed as part of Credit Risk reviews • We actively utilise Credit Risk mitigation techniques including credit insurance and collateral
Emerging markets sovereign risk[7] Potential impact: Medium Likelihood: Medium Velocity of change: Moderate	↔	• COVID-19, and the response to it, have exacerbated already deteriorating market conditions, causing liquidity and potentially solvency issues for a number of the world's poorest countries • Declining government revenue combined with higher spending, has raised government deficits and debt to unprecedented levels across all country income groups • Several emerging markets have seen negative sovereign rating and country risk limit actions, reflecting the higher level of sovereign risk as compared to pre-pandemic levels • 48 countries have requested participation in the G20 Debt Service Suspension Initiative (DSSI), while three countries (Zambia, Ethiopia, Chad) have requested debt restructuring as part of the Common Framework beyond DSSI • A sharp tightening of financial conditions, possibly triggered by a rise in bond yields in advanced economies or a deterioration in global risk sentiment, could push up debt-servicing costs for emerging markets	• Exposures that may result in material credit impairment and increased risk-weighted assets are closely monitored and actively managed • We conduct stress tests and portfolio reviews at a Group, country and business level to assess the impact of extreme but plausible events and manage the portfolio accordingly • We actively utilise Credit Risk mitigation techniques including credit insurance and collateral • We actively track the participation of our footprint countries in G20's Common Framework Agreement and Debt Service Suspension Initiative for Debt Treatments and the associated exposure

6 This theme was previously covered under 'Rise of populism and nationalism driven by unemployment and a shift in global supply chains'

7 This theme was previously covered under 'Rising sovereign default risk and private sector creditor participation in the Common Framework Agreement'

Environmental and social considerations (Risk ranked according to severity)

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Expanding stakeholder expectations for environmental, social and corporate governance (ESG) Potential impact: High Likelihood: High Velocity of change: Fast	↑	• There are risks if the Group is unable to adapt to new regulation quickly, as well as meeting publicly stated sustainability goals and helping clients transition • Environmental targets are being incorporated into many countries' domestic policy, with increased pressure to set ambitious sustainability goals. However, complexity remains in driving sustainability across diverse markets which prioritise topics differently • Climate change is a factor in biodiversity loss, pollution and depletion of resources. This poses a risk to food and health systems, energy security and the disruption of supply chains. Understanding of other environmental risks remains limited • Sustainable Finance and Climate Risk continue as a core focus of regulatory policy making across all jurisdictions, enhanced by COP26-related initiatives. Corporations are expected to incorporate environmental risks and sustainability in their business models. This exposes the Group to transition risks and emerging themes in regulatory compliance • Disclosure requirements are increasing each year as regulators and other stakeholders require greater transparency. There is a clear trend toward mandatory disclosures with developed markets leading the way. We expect the regulatory focus to gradually expand beyond climate to other environmental risks. There is risk of fragmentation of requirements across regions over time • The speed of transition to meet requirements could be faster for UK entities than those in emerging markets, and we are already observing fragmentation in the pace and scale of adoption around the world • Banks are already making commercial decisions on account of emissions and lack of credible reduction targets. At the same time, companies are being celebrated for progress around reducing emissions despite the presence of other social and governance risks – highlighting a tension between Environmental and Social risk assessments. This 'carbon-tunnel-vision', combined with increasing fragmentation in ESG taxonomies, may lead to unintended consequences • The COVID-19 pandemic, climate change and geopolitical risk have underscored the importance of supply chain transparency. This is creating pressure to expand supply chain metrics to include greater visibility around human rights issues, carbon emissions and governance factors	• We remain committed to being a responsible bank, minimising our environmental impact and embedding our values through our strengthened Position Statements for sensitive sectors and a list of Prohibited Activities that the Group will not finance • We are proactively participating in industry initiatives and framework development on both climate and biodiversity, to help inform our internal efforts and capabilities. Increased scrutiny is applied to environmental and social standards in providing services to clients • Detailed portfolio reviews are conducted on an ongoing basis and action is taken where necessary • Stress tests are conducted to test resilience to climate-related risks in line with local regulatory requirements • The Group has announced our net zero pathway and specific emission reduction targets for carbon sensitive sectors. The Group's TCFD report includes more details on Climate Risk and net zero • Our Green and Sustainable Product Framework, developed with the support of Sustainalytics, has been informed by industry and supervisory principles and standards such as the Green Bond Principles and EU Taxonomy for sustainable activities • We have defined three Stands to use our unique ability to work across boundaries and connect capital, people, ideas and best practices to help address some key socioeconomic challenges and enable a just transition. • We are developing an approach to further integrate ESG risk management across the ERMF Read more about our position statements: sc.com/positionstatements See the full Annual Report for a full list of our 2022 Sustainability Aspirations
Social unrest[8] Potential impact: Medium Likelihood: Medium Velocity of change: Moderate	↓	• Governmental restrictions on movement as a result of the COVID-19 pandemic, combined with longer-term trends of resurgent nationalism and ideology, have heightened existing social tensions • Vaccine mandates are causing domestic tensions and may lead to labour shortages in some states or industries such as healthcare and aviation. There have also been tensions in some markets where lockdowns have been reintroduced despite higher vaccination rates • In addition, COVID-19 has continued to exacerbate economic equality, including reducing the availability or quality of work. Collectively, these issues have given rise to societal disturbances in a number of markets. There have also been thematic disturbances connected to a common cause such as Black Lives Matter, or climate protests around high-profile events such as the COP26 climate summit • Longer-term impacts of climate change may force mass relocation in some areas which could heighten local tensions	• The Group is committed to managing human rights impacts through our social safeguards in our Position Statements • The Human Rights Working Group has developed an approach to monitor, report and escalate human rights issues to our Management Team for consideration with our Group's strategy • We continue to support our operations and communities who are greatly impacted by COVID-19 through various aid programmes and financing • We conduct portfolio reviews at a Group, country and business level to assess the impact of extreme but plausible geopolitical events

8 This theme was previously covered under 'Social unrest driven by economic downturns, water crises, medical provision and food security'

Technological considerations (Risk ranked according to severity)

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Data and digital[9] Potential impact: High Likelihood: High Velocity of change: Moderate	↑	• Regulatory requirements and client expectations are increasing in areas such as data management, data protection and data sovereignty and privacy, including the ethical use of data and artificial intelligence • The Group, as well as the industry, continues to face challenges to keep pace with the volume of data related regulatory change. Regulatory drivers such as BCBS 239's requirements on effective risk data aggregation and risk reporting require enhanced controls over data lineage and quality. There has been increased use of powers afforded under data legislation by regulators to impose punitive fines or to demand data disclosures. Regulatory drivers and requirements vary by market, and the risk of fragmentation of requirements across our markets is growing over time • There are increased bilateral geopolitical disputes, prompting some governments to issue data sovereignty legislation, in some cases extraterritorial in nature, which may impact Group processes. In some instances there is conflicting guidance from different regulatory authorities within the same jurisdiction • Rapid adoption of new technologies such as Big Data requires that we need to determine how the Group's Data Management Policies, Standards and Controls are updated and applied • As information assumes an increasingly fundamental role and the migration to Cloud infrastructure continues, data is becoming concentrated in the hands of governments and large private companies. Data related risks need to be continuously gauged to ensure Group processes and controls are effective • There is an increasing trend of highly organised threat actors, both state sponsored and through organised crime. Tactics are becoming more sophisticated and attacks more targeted over time. New techniques and developments of weapons such as ransomware are available as a service, reducing the cost of complex attack methods • Increasing connectivity is driving growth and new technologies, but also increasing the Group's cyber-attack surface and possible entry points for cyber criminals	• The Group accepts invitations from its regulators to lead on specific data and artificial intelligence (AI) related industry consultations. The Group also actively works with AI industry bodies to help influence AI regulations • The Group actively monitors, both in house and through external counsel, regulatory developments in relation to data management, including records management, data protection and privacy, data sovereignty and AI • The Group has further embedded the existing risk control framework for data management risks, which has strengthened and streamlined risk oversight • Given the growth of AI tools and the inherent risks, the deployment and release into Group operational processes is monitored through an AI Council • Controls from the cyber and cloud domains are leveraged for data management risks where appropriate • The Group established a dedicated Data and Privacy Operations team and mobilised a Group-wide transformation programme to build data management capabilities and expertise to ensure compliance with data management regulations • We have an inflight programme of work to drive compliance to BCBS 239 requirements on effective risk data aggregation and risk reporting • We continue to deliver new controls and capabilities to increase our ability to identify, detect, protect and respond to ICS threats

9 This theme was previously covered under 'Increased data privacy and security risks from strategic and wider use of data'

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
New business structures, channels and competition[10] Potential impact: High Likelihood: High Velocity of change: Fast	↑	• There is increasing usage of partnerships and alliances by banks to respond to disruption and changes to the industry, particularly from new technologies. Thus partnerships and alliances are integral to banks' emerging business models and value proposition to clients. However, this also exposes the banks to third-party risks. There are also new business models such as Revenue Sharing Partnerships that present new risks and due diligence considerations • Technological advances such as AI, Machine Learning (ML) and cloud-based systems are creating new opportunities but also bringing new challenges. There is also a risk that failure to expediently adapt and harness such technologies would place the Group at a competitive disadvantage • As new technologies grow in sophistication and become further embedded across the banking and financial services industry, banks may become more susceptible to technology-related risks. Banks may also face increased risks of business model disruption as new products and technologies continue to emerge. There is also potential for inadequate risk assessment for new and unfamiliar activities • The health and social impact of COVID-19, the economic fallout and associated increased cyber threats have impacted companies globally, resulting in significant pressure on the financial health and security of suppliers, vendors and other third parties that the Group relies on • A remote workforce introduces new vulnerabilities which were easier to manage in an office environment. Particular focus should be given to highly privileged or high-risk roles • The Group is subject to significant competition from local banks and other international banks in the markets in which it operates, including competitors that may have greater financial and other resources. In addition, the Group may experience increased competition from new entrants such as fintechs delivering digital-only banking offerings with a differentiated user experience, value proposition and product pricing • In Corporate, Commercial and Institutional Banking, there is an increasing focus on process digitisation to provide scalable and personalised solutions for corporate clients. There are a growing number of use cases for blockchain technologies • In addition, digital assets are gaining adoption and linked business models are increasing in prominence. These present material opportunities as well as risks	• We monitor emerging trends, opportunities and risk developments in technology that may have implications on the banking sector • We are enhancing capabilities to ensure our systems are resilient, we remain relevant and can capitalise quickly on technology trends • Enhanced digital capabilities have been rolled out in Consumer, Private and Business Banking, particularly around onboarding, sales and marketing • We have developed and implemented a risk management approach to address the specific risks arising from digital asset activities, as well as internal guidance on how to leverage existing risk management practices for new activities and nascent risks • Strategic partnerships and alliances are being set up with fintechs to better compete in the markets in which we operate. A tiered security model has been established to ensure appropriate security oversight and governance is in place for different types of strategic partnerships • Third-Party Risk management policies, procedures and governance are being reviewed to ensure adequate coverage across all Group activities

10 This theme was previously covered under 'Third-party dependency' and 'New technologies and digitisation'

Emerging risk	Risk trend since 2020[1]	Context	How these are mitigated/next steps
Talent pools of the future[11] Potential impact: Medium Likelihood: High Velocity of change: Moderate	↑	• COVID-19 accelerated the move towards remote working for employees. While this initially enabled better safety and was found to benefit productivity, it also raised concerns around effective mitigation and management of operational, information and cyber security, compliance and conduct risks • The extended nature of the COVID-19 pandemic is continuing to restrict employees' ability to operate in their preferred hybrid working location format (between home and office), causing potential risks to wellbeing, ease of collaboration and learning from others • As demand for new skills and capabilities gains momentum with the rapid change in technology and new ways of working, the shortage of key skills is driving a war for talent in the financial services industry. This, combined with cross-border mobility restrictions and government protectionist policies, will especially intensify competition for local talent. A compelling purpose, combined with flexible and agile working models, upskilling and reskilling opportunities, and career mobility options becomes critical to attract, motivate and retain talent • Hybrid-working at-scale also demands concerted efforts towards inclusive behaviours and actions to ensure a consistent experience for employees working remotely, in office or hybrid, as well as those representing our diverse workforce or dealing with challenges that may not be visible or may be accentuated when working remotely	• The Group proactively assesses and manages people-related risks; for example, organisation, capability, conduct and culture, as part of our Group risk management framework and our People Strategy • The Group undertook a Future of Work change risk assessment which considered operational, compliance, data privacy and cyber security risks in addition to wellbeing, culture and leadership • The Group has rolled out hybrid-working options across 28 markets and over 73 per cent of colleagues in these locations are now on flexi-working arrangements • Wellbeing is one of the key pillars of the Group's Diversity and Inclusion strategy and we have embedded multiple tools and resources to support colleague wellbeing. These include toolkits for managers and employees, a confidential Employee Assistance Programme, an online programme to support physical wellbeing, increased training for Mental Health First Aiders, an on-the-go mobile app and proactive training in resilience • The Group has embarked on a multi-year journey focused on upskilling and re-skilling our workforce by building a culture of continuous learning and leveraging technology to enable employees to build future ready skills through content and cross-functional experiences

11 This theme was previously covered under 'Increase in long-term remote working providing new challenges'

↑ Risk heightened in 2021 ←→ Risk remained consistent with 2020 levels ↓ Risk reduced in 2021

Potential impact Refers to the extent to which a risk event might affect the Group	Likelihood Refers to the possibility that a given event will occur	Velocity of change Refers to when the risk event might materialise
High (significant financial or non-financial risk)	High (almost certain)	Fast (risk of sudden developments with limited time to respond)
Medium (some financial or non-financial risk)	Medium (likely or possible)	Moderate (moderate pace of developments for which we expect there will be time to respond)
Low (marginal financial or non-financial risk)	Low (unlikely or rare)	Steady (gradual or orderly developments)

Capital review

The Capital review provides an analysis of the Group's capital and leverage position, and requirements.

Capital summary

The Group's capital, leverage and minimum requirements for own funds and eligible liabilities (MREL) position is managed within the Board-approved Risk Appetite. The Group is well capitalised with low leverage and high levels of loss-absorbing capacity.

	2021	2020
CET1 capital	14.1%	14.4%
Tier 1 capital	16.6%	16.5%
Total capital	21.3%	21.2%
UK leverage	4.9%	5.2%
MREL ratio	31.7%	30.9%
Risk-weighted assets (RWA) $million	271,233	268,834

The Group's capital, leverage and MREL positions were all above current requirements and Board-approved Risk Appetite. For further detail see the Capital section in the Standard Chartered PLC Pillar 3 Disclosures for FY 2021.

The Group's CET1 capital decreased 28 basis points to 14.1 per cent of RWA since FY2020. Profits were more than offset by distributions (including ordinary share buy-backs of $0.5 billion during the year), RWA growth, movements in reserves and an increase in regulatory deductions.

The PRA updated the Group's Pillar 2A requirement during H2 2021. As at 31 December 2021 the Group's Pillar 2A was 3.4 per cent of RWA, of which at least 1.9 per cent must be held in CET1 capital. The Group's minimum CET1 capital requirement was 10.1 per cent at 31 December 2021. The UK counter cyclical buffer will increase to 1.0 per cent from December 2022; however, the impact on the Group's minimum CET1 capital requirement is expected to be immaterial.

Following updated guidance from the PRA, Structural Foreign Exchange risk will be capitalised under the Pillar 1 approach for Market Risk from 31 December 2021. This change in regulatory treatment contributed $3.7 billion to the reported Market Risk RWA at year-end. To avoid any possible double count of capital requirements for Structural Foreign Exchange risk across Pillar 1 and Pillar 2, the PRA has agreed to reset the Group's Pillar 2A requirement for this specific risk.

There are three policy changes expected to impact the calculation of CET1 and or RWAs in 2022. Firstly, the PRA has confirmed that software relief will be excluded from CET1 from 1 January 2022 which will reduce CET1 by 32 basis points. Secondly, recent industry wide regulatory changes to align IRB model performance (the IRB model repair program) will add approximately $4.7 billion of additional RWA from 1 January 2022. Finally, the introduction of standardised rules for counterparty credit risk on derivatives and other instruments (SA-CCR) will add approximately $1.6 billion of additional RWA. The combination of the IRB model repair program and SA-CCR are expected to reduce the CET1 ratio by approximately 31 basis points from 1 January 2022. On a pro forma basis, after the deduction of software relief and other regulatory changes and adjustments, the CET1 ratio as at 1 January 2022 is 13.5 per cent.

The Group CET1 capital ratio at 31 December 2021 reflects the share buy-backs of $254 million completed in the first quarter of 2021 and $250 million completed in the third quarter of 2021. The CET1 capital ratio also includes an accrual for the FY 2021 dividend. The Board has recommended a final dividend for FY 2021 of $277 million or 9 cents per share resulting in a total 2021 dividend of 12 cents per share, a one-third increase on the 2020 dividend. In addition, the Board has announced a share buy-back of $750 million, the impact of this will reduce the Group's CET1 capital by around 28 basis points in the first quarter of 2022.

The Group expects to manage CET1 capital dynamically within our 13–14 per cent target range in support of our aim of delivering future sustainable shareholder distributions.

The Group's fully phased MREL will be 26.4 per cent of RWA from 1 January 2022. This is composed of a minimum requirement of 22.7 per cent of RWA and the Group's combined buffer (comprising the capital conservation buffer, the G-SII buffer and the countercyclical buffer). The Group's MREL ratio was 31.7 per cent of RWA and 9.4 per cent of UK leverage exposure at 31 December 2021.

During 2021, the Group successfully raised around $10.8 billion of MREL eligible securities from its holding company, Standard Chartered PLC. Issuance was across the capital structure including $2.8 billion of Additional Tier 1 (AT1), $1.2 billion of Tier 2 and around $6.8 billion of callable senior debt.

During 2021 the Group repurchased $1 billion 7.5 per cent AT1 securities via a tender offer alongside a new 4.3 per cent AT1 issue of $1.5 billion. This transaction was part of the Group's proactive approach to capital management and reduced the weighted average cost of the Group's AT1 capital base.

The Group successfully completed the formation of an ASEAN hub during 2021 in which our existing businesses in Malaysia, Thailand and Vietnam were moved under our existing Singapore subsidiary entity, which itself remains under Standard Chartered Bank.

The Group is a G-SII, with a 1.0 per cent G-SII CET1 capital buffer. The Standard Chartered PLC G-SII disclosure is published at: sc.com/en/investors/financial-results.

CRD capital base[1] (audited)

	2021 $million	2020 $million
CET1 capital instruments and reserves		
Capital instruments and the related share premium accounts	5,528	5,564
Of which: share premium accounts	3,989	3,989
Retained earnings[2]	24,968	25,723
Accumulated other comprehensive income (and other reserves)	11,805	12,688
Non-controlling interests (amount allowed in consolidated CET1)	201	180
Independently audited year-end profits	2,346	718
Foreseeable dividends	(493)	(481)
CET1 capital before regulatory adjustments	44,355	44,392
CET1 regulatory adjustments		
Additional value adjustments (prudential valuation adjustments)	(665)	(490)
Intangible assets (net of related tax liability)[3]	(4,392)	(4,274)
Deferred tax assets that rely on future profitability (excludes those arising from temporary differences)	(150)	(138)
Fair value reserves related to net losses on cashflow hedges	34	52
Deduction of amounts resulting from the calculation of excess expected loss	(580)	(701)
Net gains on liabilities at fair value resulting from changes in own Credit Risk	15	52
Defined-benefit pension fund assets	(159)	(40)
Fair value gains arising from the institution's own Credit Risk related to derivative liabilities	(60)	(48)
Exposure amounts which could qualify for risk weighting of 1,250%	(36)	(26)
Total regulatory adjustments to CET1	(5,993)	(5,613)
CET1 capital	38,362	38,779
Additional Tier 1 capital (AT1) instruments	6,811	5,632
AT1 regulatory adjustments	(20)	(20)
Tier 1 capital	45,153	44,391
Tier 2 capital instruments	12,521	12,687
Tier 2 regulatory adjustments	(30)	(30)
Tier 2 capital	12,491	12,657
Total capital	57,644	57,048
Total risk-weighted assets (unaudited)	271,233	268,834

1 CRD capital is prepared on the regulatory scope of consolidation
2 Retained earnings includes IFRS 9 capital relief (transitional) of $252 million, including dynamic relief of $40 million
3 The deduction of intangible assets includes software deduction relief of $1,005 million available as per CRR 'Quick Fix' measures. (FY20 software deduction relief of $677 million)

Movement in total capital (audited)

	2021 $million	2020 $million
CET1 at 1 January	38,779	36,513
Ordinary shares issued in the period and share premium	–	–
Share buy-back	(506)	(242)
Profit for the period	2,346	718
Foreseeable dividends deducted from CET1	(493)	(481)
Difference between dividends paid and foreseeable dividends	(303)	476
Movement in goodwill and other intangible assets	(118)	1,044
Foreign currency translation differences	(652)	700
Non-controlling interests	21	(543)
Movement in eligible other comprehensive income	(306)	324
Deferred tax assets that rely on future profitability	(12)	(9)
Decrease/(increase) in excess expected loss	121	121
Additional value adjustments (prudential valuation adjustment)	(175)	125
IFRS 9 transitional impact on regulatory reserves including day one	(142)	35
Exposure amounts which could qualify for risk weighting	(10)	36
Fair value gains arising from the institution's own Credit Risk related to derivative liabilities	(12)	(10)
Other	(176)	(28)
CET1 at 31 December	38,362	38,779
AT1 at 1 January	5,612	7,164
Net issuances (redemptions)	1,736	(995)
Foreign currency translation difference	(2)	8
Excess on AT1 grandfathered limit (ineligible)	(555)	(565)
AT1 at 31 December	6,791	5,612
Tier 2 capital at 1 January	12,657	12,288
Regulatory amortisation	(1,035)	(463)
Net issuances (redemptions)	573	(69)
Foreign currency translation difference	(181)	257
Tier 2 ineligible minority interest	(81)	82
Recognition of ineligible AT1	555	565
Other	3	(3)
Tier 2 capital at 31 December	12,491	12,657
Total capital at 31 December	57,644	57,048

The main movements in capital in the period were:

- CET1 capital decreased by $0.4 billion as retained profits of $2.3 billion were more than offset by share buy-backs of $0.5 billion, distributions paid and foreseeable of $0.8 billion, foreign currency translation impact of $0.7 billion, movement in other comprehensive income of $0.3 billion and an increase in regulatory deductions and other movements of $0.4 billion.
- AT1 capital increased by $1.2 billion following the issuance of $1.25 billion 4.75 per cent and $1.5 billion 4.3 per cent AT1 securities partly offset by the repurchase of $1 billion 7.5 per cent AT1 securities via a tender offer and the phasing out of $0.6 billion of grandfathered instruments.
- Tier 2 capital decreased by $0.2 billion as issuance of $1.2 billion of new Tier 2 instruments and recognition of ineligible AT1 were more than offset by regulatory amortisation and the redemption of $0.5 billion of Tier 2 during the year.

Risk-weighted assets by business

	2021			
	Credit Risk $million	Operational Risk $million	Market Risk $million	Total risk $million
Corporate, Commercial & Institutional Banking	125,904	16,595	20,789	163,288
Consumer, Private & Business Banking	42,733	8,504	–	51,237
Central & other items	50,951	2,017	3,740	56,708
Total risk-weighted assets	219,588	27,116	24,529	271,233

	2020 (Restated)			
	Credit Risk $million	Operational Risk $million	Market Risk $million	Total risk $million
Corporate, Commercial & Institutional Banking[1]	127,663	15,963	21,465	165,091
Consumer, Private & Business Banking[1]	44,755	8,338	–	53,093
Central & other items	48,023	2,499	128	50,650
Total risk-weighted assets	220,441	26,800	21,593	268,834

1 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking and Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated

Risk-weighted assets by geographic region

	2021 $million	2020 (Restated) $million
Asia[1]	170,381	174,283
Africa & Middle East	48,852	51,149
Europe & Americas	50,283	45,758
Central & other items	1,717	(2,356)
Total risk-weighted assets	271,233	268,834

1 Following the Group's change in organisational structure, there has been an integration of Greater China & North Asia and ASEAN & South Asia to Asia. Prior period has been restated

Movement in risk-weighted assets

	Credit Risk						
	Commercial, Corporate & Institutional Banking[2] $million	Consumer, Private & Business Banking[2] $million	Central & other items $million	Total $million	Operational Risk $million	Market Risk $million	Total risk $million
At 31 December 2019	123,667	42,819	49,178	215,664	27,620	20,806	264,090
At 1 January 2020[1]	123,611	42,875	49,178	215,664	27,620	20,806	264,090
Assets growth mix	(9,743)	520	3,711	(5,512)	–	–	(5,512)
Asset quality	12,190	323	2,409	14,922	–	–	14,922
Risk-weighted assets efficiencies	(71)	–	–	(71)	–	–	(71)
Model, methodology and policy changes	247	134	661	1,042	–	(1,500)	(458)
Disposals	–	–	(7,859)	(7,859)	(1,003)	(159)	(9,021)
Foreign currency translation	1,429	903	(77)	2,255	–	–	2,255
Other non-credit risk movements	–	–	–	–	183	2,446	2,629
At 31 December 2020	127,663	44,755	48,023	220,441	26,800	21,593	268,834
Assets growth mix	2,278	3,614	4,350	10,242	–	–	10,242
Asset quality	(1,537)	(662)	13	(2,186)	–	–	(2,186)
Risk-weighted assets efficiencies	(415)	(30)	(657)	(1,102)	–	–	(1,102)
Model, methodology and policy changes	–	(3,701)	–	(3,701)	–	2,065	(1,636)
Disposals	–	–	–	–	–	–	–
Foreign currency translation	(2,085)	(1,243)	(1,106)	(4,434)	–	–	(4,434)
Other non-credit risk movements	–	–	328	328	316	871	1,515
At 31 December 2021	125,904	42,733	50,951	219,588	27,116	24,529	271,233

1 Following a reorganisation of certain clients, there has been a reclassification of balances across client segments. 1 January 2020 balances have been restated
2 Following the Group's change in organisational structure, there has been an integration of Corporate & Institutional Banking and Commercial Banking to Corporate, Commercial & Institutional Banking and Private Banking and Retail Banking to Consumer, Private & Business Banking. Prior period has been restated

Movements in risk-weighted assets

RWA increased by $2.4 billion, or 0.9 per cent from 31 December 2020 to $271.2 billion. This was mainly due to increases in Market Risk RWA of $2.9 billion and Operational Risk RWA of $0.3 billion, partly offset by a decrease in Credit Risk RWA of $0.9 billion.

Corporate, Commercial & Institutional Banking

Credit Risk RWA decreased by $1.8 billion to $125.9 billion mainly due to:

- $2.1 billion decrease from foreign currency translation
- $1.5 billion decrease due to improvement in asset quality reflecting client upgrades and actions concerning specific stage 3 exposures
- $0.4 billion decrease from RWA efficiencies relating to unsecured recoveries
- $2.2 billion increase due to asset balance growth mainly from Lending in Asia.

Consumer, Private & Business Banking

Credit Risk RWA decreased by $2.0 billion to $42.7 billion mainly due to:

- $3.7 billion decrease from a model change benefit in Korea
- $1.2 billion decrease from foreign currency translation
- $0.7 billion decrease due to improvement in asset quality across retail portfolios in Asia
- $3.6 billion increase in asset balance growth in Asia.

Central & other items

Central & other items RWA mainly relate to the Treasury Markets liquidity portfolio, equity investments and current & deferred tax assets.

Credit Risk RWA increased by $2.9 billion to $51.0 billion mainly due to:

- $4.4 billion increase from asset balance growth primarily in Europe and the Americas and Africa and the Middle East, partially offset by asset balance decline in Asia
- $0.3 billion increase relating to software intangible assets with a corresponding deduction to CET1
- $1.1 billion decrease from foreign currency translation
- $0.7 billion decrease due to efficiencies relating to covered bonds.

Market Risk

Total Market Risk RWA increased by $2.9 billion, or 14 per cent from 31 December 2020 to $24.5 billion.

The increase was mainly due to the impact of updated PRA guidance ($2 billion). Structural Foreign Exchange risk of $3.7 billion is now treated as Pillar 1 market risk RWA. Previously this was recognised entirely as Pillar 2A risk. This increase was offset in part by the $1.6 billion benefit of PRA permission to consolidate market risk RWA for SCB Malaysia Berhad, SCB Thai PCL and SCB (Vietnam) Ltd. Consolidation reflects diversification and thus gives lower RWA.

Other movements contributed a $0.9 billion increase due to:

- $1.1 billion increase in Standardised Approach Specific Interest Rate Risk RWA due to increased credit spread positions
- $1.0 billion increase in Internal Models Approach (IMA) stressed VaR RWA due to increased IMA positions
- $1.0 billion decrease in IMA VaR RWA with reduced market volatility in the one-year historical rates applied for daily VaR
- $0.5 billion decrease in IMA Risks not in VaR
- $0.3 billion of other small increases.

Operational Risk

Operational Risk RWA increased by $0.3 billion, or 1 per cent from 31 December 2020 to $27.1 billion. This was mainly due to an increase in average income as measured over a rolling three-year time horizon, with higher 2020 income replacing lower 2017 income.

UK leverage ratio

The Group's UK leverage ratio was 4.9 per cent at FY2021, which was above the current minimum requirement of 3.7 per cent. The leverage ratio was 29 basis points lower than FY20. Leverage exposure increased by $76 billion from an increase in on-balance sheet items (excluding derivatives) of $58 billion, off-balance sheet items of $11 billion and a securities financing transactions add-on of $9 billion. End point Tier 1 increased by $1.3 billion as CET1 capital reduced by $0.4 billion and the issuance of $1.25 billion 4.75 per cent and $1.5 billion 4.3 per cent AT1 securities completed during the year was partly offset by the repurchase of $1 billion 7.5 per cent AT1 securities via a tender offer.

In October 2021, the PRA published a policy statement outlining changes to the UK leverage ratio framework. The minimum leverage ratio requirement applicable to the Group was maintained at 3.25 per cent. Additional buffers based on the countercyclical and G-SII buffers are set at 35 per cent of their risk-weighted equivalent and must be met with 100 per cent of CET1 capital. Firms that breach their leverage ratio buffers will not face any capital distribution restrictions. The exposure value of derivative contracts will be based on the standardised approach to Counterparty Credit Risk, while central bank reserves continue to be excluded from the UK leverage ratio exposure measure. The rules came into force on 1 January 2022. The impact from implementation of the new leverage rules is estimated to be immaterial.

UK leverage ratio

	2021 $million	2020 $million
Tier 1 capital (transitional)	45,153	44,391
Additional Tier 1 capital subject to phase out	(557)	(1,114)
Tier 1 capital (end point)[1]	44,596	43,277
Derivative financial instruments	52,445	69,467
Derivative cash collateral	9,217	11,759
Securities financing transactions (SFTs)	88,418	67,570
Loans and advances and other assets	677,738	640,254
Total on-balance sheet assets	827,818	789,050
Regulatory consolidation adjustments[2]	(63,704)	(60,059)
Derivatives adjustments		
Derivatives netting	(34,819)	(44,257)
Adjustments to cash collateral	(17,867)	(21,278)
Net written credit protection	1,534	1,284
Potential future exposure on derivatives	50,857	42,410
Total derivatives adjustments	(295)	(21,841)
Counterparty Risk leverage exposure measure for SFTs	13,724	4,969
Off-balance sheet items	139,505	128,167
Regulatory deductions from Tier 1 capital	(5,908)	(5,521)
UK leverage exposure (end point)	911,140	834,765
UK leverage ratio (end point)	4.9%	5.2%
UK leverage exposure quarterly average	897,992	837,147
UK leverage ratio quarterly average	5.0%	5.2%
Countercyclical leverage ratio buffer	0.1%	0.0%
G-SII additional leverage ratio buffer	0.4%	0.4%

1 Tier 1 capital (end point) is adjusted only for grandfathered Additional Tier 1 instruments
2 Includes adjustment for qualifying central bank claims

Statement of directors' responsibilities

The directors are responsible for preparing the Annual Report and the Group and Company financial statements in accordance with applicable law and regulations.

Company law requires the directors to prepare Group and Company financial statements for each financial year. Under that law they are required to prepare the Group financial statements in accordance with UK-adopted international accounting standards in conformity with the requirements of the Companies Act 2006.

- The Group financial statements have been prepared in accordance with UK adopted international accounting standards and International Financial Reporting Standards as adopted by the European Union;
- The Company financial statements have been properly prepared in accordance with UK adopted international accounting standards as applied in accordance with section 408 of the Companies Act 2006; and
- The financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and Company and of their profit or loss for that period. In preparing each of the Group and Company financial statements, the directors are required to:

- Select suitable accounting policies and then apply them consistently;
- Make judgements and estimates that are reasonable, relevant and reliable;
- State whether they have been prepared in accordance with UK and EU IFRS;
- Assess the Group and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and
- Use the going concern basis of accounting unless they either intend to liquidate the Group or the Company or to cease operations, or have no realistic alternative but to do so

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that its financial statements comply with the Companies Act 2006. They are responsible for such internal control[1] as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the Group and to prevent and detect fraud and other irregularities.

1 The Group's Risk Management Framework and System of Internal Control applies only to wholly controlled subsidiaries of the Group, and not to Associates, Joint Ventures or Structured Entities of the Group.

Under applicable law and regulations, the directors are also responsible for preparing a Strategic Report, Directors' Report, Directors' Remuneration Report and Corporate Governance Statement that complies with that law and those regulations.

The directors are responsible for the maintenance and integrity of the corporate and financial information included on the Company's website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Responsibility statement of the directors in respect of the annual financial report

We confirm that to the best of our knowledge:

- The financial statements, prepared in accordance with the applicable set of accounting standards, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the undertakings included in the consolidation taken as a whole; and
- The Strategic report includes a fair review of the development and performance of the business and the position of the Company and the undertakings included
  in the consolidation taken as a whole, together with a description of the emerging risks and uncertainties that they face

We consider the Annual Report and Accounts, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's position and performance, business model and strategy.

By order of the Board

Andy Halford
Group Chief Financial Officer

17 February 2022

Shareholder information

Important notices

Forward-looking statements

This document may contain 'forward-looking statements' that are based on current expectations or beliefs, as well as assumptions about future events. These forward-looking statements can be identified by the fact that they do not relate only to historical or current facts. Forward-looking statements often use words such as 'may', 'could', 'will', 'expect', 'intend', 'estimate', 'anticipate', 'believe', 'plan', 'seek', 'continue' or other words of similar meaning.

By their very nature, forward-looking statements are subject to known and unknown risks and uncertainties and can be affected by other factors that could cause actual results, and the Group's plans and objectives, to differ materially from those expressed or implied in the forward-looking statements. Recipients should not place reliance on, and are cautioned about relying on, any forward-looking statements. There are several factors which could cause actual results to differ materially from those expressed or implied in forward-looking statements. The factors that could cause actual results to differ materially from those described in the forward-looking statements include (but are not limited to): changes in global, political, economic, business, competitive and market forces or conditions; future exchange and interest rates; changes in environmental, social or physical risks; legislative, regulatory and policy developments; the development of standards and interpretations; the ability of the Group to mitigate the impact of climate change effectively; risks arising out of health crisis and pandemics; changes in tax rates, future business combinations or dispositions; and other factors specific to the Group. Any forward-looking statement contained in this document is based on past or current trends and/or activities of the Group and should not be taken as a representation that such trends or activities will continue in the future.

No statement in this document is intended to be a profit forecast or to imply that the earnings of the Group for the current year or future years will necessarily match or exceed the historical or published earnings of the Group. Each forward-looking statement speaks only as of the date of the particular statement. Except as required by any applicable laws or regulations, the Group expressly disclaims any obligation to revise or update any forward-looking statement contained within this document, regardless of whether those statements are affected as a result of new information, future events or otherwise.

Financial instruments

Nothing in this document shall constitute, in any jurisdiction, an offer or solicitation to sell or purchase any securities or other financial instruments, nor shall it constitute a recommendation or advice in respect of any securities or other financial instruments or any other matter.

Caution regarding climate and environment related information

Some of the climate and environment related information in this document is subject to certain limitations, and therefore the reader should treat the information provided, as well as conclusions, projections and assumptions drawn from such information, with caution. The information may be limited due to a number of factors, which include (but are not limited to): a lack of reliable data; a lack of standardisation of data; and future uncertainty. The information includes externally sourced data that may not have been verified. Furthermore, some of the data, models and methodologies used to create the information is subject to adjustment which is beyond our control, and the information is subject to change without notice.

By Order of the Board
Scott Corrigan
Interim Group Company Secretary

Hong Kong, 17 February 2022

As at the date of this announcement, the Board of Directors of Standard Chartered PLC comprises:

Chairman:
José María Viñals Iñiguez

Executive Directors:
William Thomas Winters, CBE and Andrew Nigel Halford

Independent Non-Executive Directors:
David Philbrick Conner; Byron Elmer Grote; Christine Mary Hodgson, CBE (Senior Independent Director); Gay Huey Evans, CBE; Naguib Kheraj (Deputy Chairman); Maria da Conceicao das Neves Calha Ramos; Philip George Rivett; David Tang; Carlson Tong and Jasmine Mary Whitbread