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 2020 Results
Additional Financial information – Part 1

Highlights

Standard Chartered PLC (the Group) today releases its results for the year ended 31 December 2020. 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 2020

- Asset quality has deteriorated against a challenging macroeconomic environment
- Credit impairment more than doubled, reflecting the impact of COVID-19
- The Group remains highly liquid and our capital position has strengthened further

Our portfolio quality

COVID-19 and the related economic shock has impacted our loan portfolio. The wide-ranging disruption to supply chains and normal business practices, in addition to the human cost of the pandemic, has placed intense pressure on the majority of our markets. Despite this, we have delivered resilient performance with risk fundamentals remaining solid in the face of unprecedented challenges. This has been helped by actions we have taken over the past five years to build a strong foundation and ensure our portfolios remain resilient.

The impact has varied dramatically across markets and sectors but by leveraging our stress testing capabilities and conducting portfolio reviews, we have identified and proactively managed a number of portfolios that were at risk as the crisis unfolded. Collateral remains strong in the Corporate & Institutional Banking and Commercial Banking books and we continue to support clients and offer alternative financing options where available.

In the second half of the year, we began to see signs of recovery in some markets as actions taken by governments helped to limit the economic effects of the pandemic. However, despite initial vaccine rollouts, cases increased as 2020 came to a close, and lockdowns have been reintroduced in a number of territories. We remain cognisant that the recovery will be uneven globally, and the threat of prolonged weak economic outlooks may lead to a sustained period of increased risk aversion and uncertainty.

In the first half of the year, we placed selected clients on our watchlist categories for close monitoring, and have conducted extensive portfolio and sector reviews, particularly for areas with higher vulnerability to COVID-19 and volatile crude oil markets, such as our Aviation, Hospitality and Oil & Gas exposures. This has led to a $5.4 billion increase in early alerts exposure (2020: $10.7 billion; 2019: $5.3 billion). This is a reduction of $3.7 billion compared with 30 June 2020, with just over half due to reductions in exposure and regularisations, and the remainder due to downgrades. As a result, Credit Grade 12 loans have increased to $2.2 billion (2019: $1.6 billion) as outflows to non-performing loans were offset by inflows from early alert categories.

The proportion of the Group's loans and advances to customers in stage 1 and 2 has remained broadly consistent with the end of 2019, at 89 per cent and 8 per cent respectively, as we continue to focus on high-quality origination. The percentage of investment grade corporate exposure has also increased slightly to 62 per cent compared with 61 per cent a year ago. Stage 3 loans to customers increased to $9.2 billion (2019: $7.4 billion), although they remained at 3 per cent of overall loans and advances.

There has been an increase in exposure to our Top 20 corporate clients as a percentage of Tier 1 Capital to 60 per cent (2019: 56 per cent); however this has reduced slightly since half year. This is primarily driven by an increase in exposure to a few investment grade clients. The Corporate & Institutional Banking and Commercial Banking portfolios remain predominantly short-tenor and continue to be diversified across industry sectors, products, and geographies.

Our Retail Banking portfolio remains stable and resilient, with stage 1 loans increasing by $9 billion in 2020 driven by growth in mortgage products. Stage 1 loans now represent 97 per cent of the Retail Banking portfolio (2019: 96 per cent). The majority of Retail products continue to be fully secured loans, which have increased slightly to 86 per cent of total loans (2019: 85 per cent). The overall average loan-to-value of the mortgage portfolio remains low at 45 per cent. The unsecured loan portfolio has remained flat compared with the previous year.

Average Group value at risk (VaR) in 2020 was $108 million, a significant increase compared with the previous year (2019: $30 million), driven by the extreme market volatility in interest rates and credit spreads following the outbreak of COVID-19 and the collapse in oil prices. The increase in VaR was predominantly observed in the non-trading book from credit bonds held in the Treasury Markets liquid assets buffer which are almost exclusively of investment grade. Trading activities remain primarily client driven.

Despite challenges brought by COVID-19, the Group has remained resilient and kept a strong liquidity and funding position. The Group Liquidity Coverage Ratio was broadly stable year-on-year, closing December 2020 at 143 per cent (2019: 144 per cent) as the liquidity buffer and net outflows both increased in line with overall balance sheet growth. Customer deposits increased by 9 per cent driven by growth in stable current and savings account balances, which was offset by a decrease in term deposits, as we sought to manage liquidity more efficiently. Customer loan growth was mainly driven by mortgages in Hong Kong and Korea. The increase in overall deposits drove a decrease in the Group's advances-to-deposits ratio which reduced to 61 per cent (2019: 64 per cent).

The Group's Common Equity Tier 1 ratio increased by 60 basis points (bps) to 14.4 per cent, which is above the top end of our target range of 13 to 14 per cent.

Key Indicators

	2020	2019	2018
Group total business[1]			
Stage 1 loans ($ billion)	256.4	246.1	237.1
Stage 2 loans ($ billion)	22.7	20.8	17.4
Stage 3 loans, credit-impaired ($ billion)[2]	9.2	7.4	8.5
Stage 3 cover ratio[2]	58%	68%	66%
Stage 3 cover ratio (including collateral)[2]	76%	85%	85%
Corporate & Institutional Banking and Commercial Banking			
Investment grade corporate net exposures as a percentage of total corporate net exposures	62%	61%	62%
Loans and advances maturing in one year or less as a percentage of total loans and advances to customers	61%	62%	61%
Early alert portfolio net exposures ($ billion)	10.7	5.3	4.8
Credit grade 12 loans ($ billion)	2.2	1.6	1.5
Aggregate top 20 corporate net exposures as a percentage of Tier 1 capital	60%	56%	55%
Collateralisation of sub-investment grade net exposures maturing in more than one year	46%	45%	51%
Retail Banking			
Loan-to-value ratio of retail mortgages	45%	45%	45%

1 These numbers represent total loans and advances to customers
2 Balances for 2019 and 2018 reflect interest due but unpaid together with equivalent credit impairment charges

COVID-19

There is a heightened level of risk in the environment and we have taken a number of steps to mitigate the effect on our portfolios and risk profile, informed by stress testing of various COVID-related scenarios and deep-dives on specific portfolios. A number of management actions have been taken since the start of the year, including enhancing our monitoring of facility drawdowns, improving the Group's position through reducing exposures where required.

The Group has continued to support clients we believe are experiencing temporary issues due to COVID-19 and we have enacted 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 Corporate & Institutional Banking and Commercial Banking, around 54 per cent of the amounts outstanding have a remaining tenor of 90 days or less, and approximately 19 per cent of the amounts outstanding are to clients in vulnerable sectors.

In Retail Banking, various short-term relief measures have been implemented and we have increased engagement with our customers to find alternative financing options where available. As of 31 December 2020, approximately 2 per cent of total Retail Banking exposure has relief measures approved, of which 81 per cent is fully secured with an average loan-to-value of less than 40 per cent. The portfolio under moratoria reduced from $8.9 billion at its peak in the first half of the year (a significant portion of which was applied to all eligible loans and generally mandated or supported by regulators) to $2.4 billion, mainly concentrated in Singapore and Hong Kong which are largely secured.

The macroeconomic environment remains challenging for the majority of the markets in our footprint and we are cognisant of the potential longer-term impact, especially once relief measures are eased. This will lead to an uneven recovery even as the global economy is expected to return to growth in 2021 and beyond.

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, and net exposure decreased by $6 billion in 2020. These sectors now represent 27 per cent (31 December 2019: 30 per cent) of the total net exposure in Corporate & Institutional Banking and Commercial Banking, with reductions largely due to increased levels of collateral and reduced undrawn commitments, particularly in the Commodity Traders, Metals and Mining, and Commercial Real Estate sectors.

* In addition to the Aviation sector loan exposures, the Group owns $3.9 billion of aircraft under operating leases. Refer to Operating lease assets

Stage 3 loans

Overall gross credit-impaired (stage 3) loans for the Group increased by 25 per cent in 2020, from $7.4 billion to $9.2 billion, driven by downgrades in Corporate & Institutional Banking.

Gross credit-impaired (stage 3) loans in Corporate & Institutional Banking increased by 32 per cent (2020: $5.5 billion; 2019: $4.2 billion) driven by significant client downgrades in ASEAN & South Asia and Africa & Middle East across unrelated sectors. Total stage 3 inflows across Corporate & Institutional Banking and Commercial Banking tripled to $3.6 billion in 2020, compared with $1.2 billion the previous year, driven by a few major downgrades. These stage 3 inflows were offset by $1.2 billion of write-offs and $1.0 billion of recoveries. Stage 3 loans in Commercial Banking increased marginally from $2.0 billion to $2.1 billion.

Private Banking stage 3 loans remained broadly stable at $0.4 billion.

Stage 3 loans in the Retail Banking portfolio increased by $0.3 billion driven by the impact of COVID-19 on the portfolio, but remains at 1 per cent of total Retail loans.

The stage 3 cover ratio in the total customer loan book decreased by 10 percentage points to 58 per cent (2019: 68 per cent) mainly in Corporate & Institutional Banking. This was driven by write-offs and new stage 3 loans with low levels of coverage, which benefit from credit insurance and guarantees, including from export credit agencies. The cover ratio including tangible collateral decreased to 76 per cent (2019: 85 per cent) with some of the 2020 downgrades being covered by guarantees and insurance which are not included as tangible collateral.

Credit impairment

At Group level, the total credit impairment charge including the restructuring portfolio is $2.3 billion (2019: $0.9 billion), representing a loan loss rate of 66 bps of average customer loans and advances (2019: 27 bps). Increases were seen across all three stages, with stage 3 impairment up $823 million, of which more than 60 per cent is from Corporate & Institutional Banking. Stage 1 and 2 impairment increased by $565 million, over half of which is due to management overlays of $353 million, with the remainder due to deteriorating macroeconomic forecasts and stage downgrades as a result of COVID-19 uncertainties.

Credit impairment for Corporate & Institutional Banking has increased significantly to $1,237 million, compared with $475 million last year. Stage 1 and 2 impairments increased by $226 million in part due to a judgemental overlay estimating the impact of further deterioration to the early alert portfolio, as well as deterioration of macroeconomic forecasts and stage downgrades from clients impacted by COVID-19 volatility. Stage 3 impairments also increased by $536 million driven by three significant but unrelated downgrades in the first quarter of 2020.

Commercial Banking credit impairment also increased by $194 million (2020: $316 million, 2019: $122 million). Stage 3 impairment increased by $111 million due to a few new client downgrades partly driven by the impact of the pandemic. Stage 1 and 2 impairments increased to $70 million in 2020 compared with a release of $13 million the previous year. There was also a judgemental overlay for expected future early alert deterioration.

Retail Banking credit impairment has more than doubled (2020: $715 million, 2019: $336 million). Stage 3 impairment was higher particularly in ASEAN & South Asia unsecured products, as volatility created by the pandemic resulted in a slowdown in field collections. Stage 1 and 2 impairment more than doubled compared with 2019 at $414 million. This was due to deteriorations in macroeconomic forecasts and higher flows to stage 2, as well as an overlay of $156 million to account for the expected increase in delinquencies once government relief measures in our key markets expire.

Private Banking impairment increased to $2 million as 2019 saw a material provision release in ASEAN & South Asia.

Central & Others saw impairment of $24 million (2019: $4 million), driven by stage 1 and 2 impairment from stage downgrades of sovereign clients in the Africa & Middle East region.

Credit impairment in the restructuring portfolio was a net $31 million from the Group's discontinued businesses.

	2020			2019		
	Stage 1 & 2 $million	Stage 3 $million	Total $million	Stage 1 & 2 $million	Stage 3 $million	Total $million
Ongoing business portfolio						
Corporate & Institutional Banking	321	916	1,237	95	380	475
Retail Banking	414	301	715	175	161	336
Commercial Banking	70	246	316	(13)	135	122
Private Banking	(2)	4	2	1	(32)	(31)
Central & Others	24	–	24	4	-	4
Credit impairment charge	827	1,467	2,294	262	644	906
Restructuring business portfolio						
Others	–	31	31	1	1	2
Credit impairment charge	–	31	31	1	1	2
Total credit impairment charge	827	1,498	2,325	263	645	908

Further details of the risk performance for 2020 is set out in the Risk profile section

Risk profile

Our risk profile in 2020

The 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. We maintain a dynamic risk-scanning process for risk identification and assessment, 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. We maintain an inventory of the Principal Risk Types and risk sub-types that are inherent to the strategy and business model; and emerging risks that include near-term as well as longer-term uncertainties.

The Group's portfolios continue to exhibit a resilient risk profile. Our corporate portfolios remain predominantly short-tenor and diversified across industry sectors, products and geographies. Work done in previous years to build a strong foundation, including reducing our concentration to single names and high-risk sectors and increasing the proportion of investment grade assets, and actions taken in response to the heightened level of risk in the environment brought on by the pandemic, have helped to mitigate deterioration in our portfolios and risk profile.

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

Our risk profile in 2020

Strong risk management underpinned by the ERMF

- As part of the Group's commitment to be a leader in sustainable and responsible banking, environmental, social and governance risks have been incorporated within the expanded Reputational and Sustainability Risk Type Framework
- Conduct Risk and Country Risk have been embedded as overarching components of the ERMF, rather than viewed as standalone risks
- Operational Risk has been expanded to include Technology Risk to meet the needs of the digital agenda of the Group
- We are making good progress on integrating Climate Risk into mainstream risk management
- Self-assessments performed in our footprint markets reflect the use of the ERMF and Principal Risk Types, with reinforced first line ownership
- Overall ERMF effectiveness has improved year-on-year, with a substantial focus on development of non-financial risk management

Further details on the ERMF can be found in the Annual Report.

Resilient performance despite a challenging macroeconomic environment

- Investment grade corporate net exposures have increased slightly to 62 per cent (2019: 61 per cent)
- The Group's proportions of stage 1 and stage 2 loans and advances to customers are broadly consistent at 89 per cent and 8 per cent respectively
- Stage 3 loans increased to $9.2 billion (up 25 per cent), although they remain at a consistent proportion of overall loans and advances. The overall stage 3 cover ratio has reduced to 58 per cent (2019: 68 per cent) mainly in Corporate & Institutional Banking, driven by write-offs and new stage 3 loans with low levels of coverage, which benefit from credit insurance and guarantees including from export credit agencies
- Early alerts increased by $5.4 billion to $10.7 billion on the back of proactive portfolio and sector reviews, particularly for vulnerable sectors
- Total credit impairment more than doubled to $2.3 billion, reflecting the impact of COVID-19, with stage 3 impairment up $0.8 billion
- 86 per cent of our Retail Banking portfolio is fully secured (2019: 85 per cent). The average loan-to-value ratio of retail mortgages remains low at 45 per cent
- Average Group value at risk (VaR) was $108 million (2019: $30 million), driven by the extreme market volatility due to COVID-19 and the collapse in oil prices

Our capital and liquidity positions remain robust

- We remain well capitalised and our balance sheet remains highly liquid
- Our liquidity buffer and cash outflows both grew in 2020 in line with overall balance sheet growth, and our Liquidity Coverage Ratio remains strong and broadly stable at 143 per cent
- Our advances-to-deposits ratio decreased by 3.1 per cent to 61.1 per cent, driven by an increase in overall deposits
- Our customer deposit base is diversified by type and maturity

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, per Note 16 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 obligations to pay the Group. Credit exposures arise from both the banking and trading books.

Impairment model

IFRS 9 requires an impairment model that recognises the 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 with what was expected at origination.

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

Stage 1

- 12-month ECL
- Performing

Stage 2

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

Stage 3

- Credit-impaired
- Non-performing

IFRS 9 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. While these models leveraged existing advanced Internal Ratings Based (IRB) models, for determining regulatory expected losses where these were available, there are significant differences between the two approaches.	Credit Risk 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 to Risk review 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.	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 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 & Institutional and Commercial Banking clients Retail 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. When financial assets are transferred from stage 3 to stage 2, any contractual interest earned while the asset was in stage 3 is recognised within the credit impairment line. The gross asset balances for stage 3 financial instruments includes contractual interest due but not paid with a corresponding increase in credit impairment provisions.	Retail Banking clients Corporate & Institutional Banking clients Commercial 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 probability of default (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 gross 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 to the remaining lifetime PD based on the original contractual terms.	COVID-19 relief measures Forbearance and other modified loans

Title	Description	Supplementary information
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

Composition of credit impairment provisions (audited)

The table below summarises the key components of the Group's credit impairment provision balances at 31 December 2020 and 31 December 2019.

Modelled ECL provisions, which include post-model adjustments, management overlays and the impact of multiple economic scenarios were 24 per cent of total credit impairment provisions at 31 December 2020, compared with 17 per cent at 31 December 2019. 11 per cent of the modelled ECL provisions at 31 December 2020 comprised post-model adjustments, management overlays and the impact of multiple economic scenarios compared with 1 per cent in 2019, primarily due to COVID-19 related volatilities in 2020.

Modelled ECL provisions increased by $623 million compared with 31 December 2019, just under half of which was due to an increased management overlay to capture risks arising from COVID-19 not identified by the credit impairment models. Excluding the effect of stage changes, the impact of deteriorating macroeconomic forecasts increased provisions by $81 million in 2020 (2019: increase of $96 million) with the remainder of the increase from portfolio movements and transfers into stage 2 during the year.

Stage 3 non-modelled provisions increased by 2 per cent compared with 2019.

		2020 $million	2019 $million
ECL provisions (base forecast)		1,380	1,079
Of which: Post-model adjustments		(158)	(13)
Impact of multiple economic scenarios and management overlays		351	29
Total modelled ECL provisions		1,731	1,108
Of which:	Stage 1	664	517
	Stage 2	885	458
	Stage 3	182	133
Stage 3 non-modelled provisions		5,414	5,283
Total credit impairment provisions		7,145	6,391

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 2020, 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 $66 billion to $760 billion (2019: $694 billion). Cash and balances at central banks increased by $14 billion, and loans and advances to customers grew by $13 billion, primarily in mortgages which saw growth of $7 billion. Investment securities increased by $9 billion, of which the majority was in government and sovereign securities. Fair value through profit or loss assets and derivative exposure also increased by $12 billion and $22 billion respectively.

Off-balance sheet instruments increased by $19 billion, of which undrawn commitments increased by $12 billion and financial guarantee, trade credit and irrevocable letters of credit increased by $7 billion.

	2020				2019			
		Credit risk management				Credit risk management		
	Maximum exposure $million	Collateral $million	Master netting agreements $million	Net exposure $million	Maximum exposure $million	Collateral $million	Master netting agreements $million	Net exposure $million
On-balance sheet								
Cash and balances at central banks	66,712			66,712	52,728			52,728
Loans and advances to banks[1,8]	44,347	1,247		43,100	53,549	1,341		52,208
of which – reverse repurchase agreements and other similar secured lending[7]	1,247	1,247		–	1,341	1,341		–
Loans and advances to customers[1,8]	281,699	130,200		151,499	268,523	122,115		146,408
of which – reverse repurchase agreements and other similar secured lending[7]	2,919	2,919		–	1,469	1,469		–
Investment securities – debt securities and other eligible bills[2]	152,861			152,861	143,440			143,440
Fair value through profit or loss[3,7]	102,259	63,405	–	38,854	90,349	57,604	–	32,745
Loans and advances to banks	3,877			3,877	3,528			3,528
Loans and advances to customers	9,377			9,377	6,896			6,896
Reverse repurchase agreements and other similar lending[7]	63,405	63,405		–	57,604	57,604		–
Investment securities – debt securities and other eligible bills[2]	25,600			25,600	22,321			22,321
Derivative financial instruments[4,7]	69,467	10,136	47,097	12,234	47,212	7,824	28,659	10,729
Accrued income	1,775			1,775	2,358			2,358
Assets held for sale	83			83	90			90
Other assets[5]	40,978			40,978	36,161			36,161
Total balance sheet	760,181	204,988	47,097	508,096	694,410	188,884	28,659	476,867
Off-balance sheet[6]								
Undrawn commitments	153,403			153,403	141,194			141,194
Financial guarantees, trade credits and irrevocable letters of credit	53,832			53,832	46,714			46,714
Total off-balance sheet	207,235	–	–	207,235	187,908	–	–	187,908
Total	967,416	204,988	47,097	715,331	882,318	188,884	28,659	664,775

1 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 $454 million (31 December 2019: $291 million). Further details are set out in Note 13 Financial instruments
3 Excludes equity and other investments of $4,528 million (31 December 2019: $2,469 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

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 remained stable at 94 per cent (2019: 94 per cent). Total stage 1 balances increased by $49 billion, of which around $14 billion in Cash and balances at central banks and $10 billion in loans and advances to customers primarily in mortgages, up $8 billion. Off-balance sheet exposures also increased, up $18 billion, mainly due to undrawn commitments.

Stage 2 financial instruments remained at 5 per cent (2019: 5 per cent). The proportion of loans and advances to customers classified in stage 2 remains stable at 8 per cent (2019: 8 per cent).

Stage 3 financial instruments were stable at 1 per cent of the Group total. Gross stage 3 loans and advances to customers increased by $1.8 billion primarily due to new but unrelated downgrades in Corporate & Institutional Banking.

	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 letter of credits[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

	2019											
	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	52,728	–	52,728	–	–	–	–	–	–	52,728	–	52,728
Loans and advances to banks (amortised cost)	52,634	(5)	52,629	924	(4)	920	–	–	–	53,558	(9)	53,549
Loans and advances to customers (amortised cost)	246,149	(402)	245,747	20,759	(377)	20,382	7,398	(5,004)	2,394	274,306	(5,783)	268,523
Debt securities and other eligible bills	138,782	(50)		4,644	(23)		75	(45)		143,501	(118)	
Amortised cost	13,678	(10)	13,668	277	(6)	271	75	(45)	30	14,030	(61)	13,969
FVOCI[2]	125,104	(40)		4,367	(17)		–	–		129,471	(57)	
Accrued income (amortised cost)[4]	2,358	–	2,358	–	–	–	–	–	–	2,358	–	2,358
Assets held for sale[4]	90	–	90	–	–	–	–	–	–	90	–	90
Other assets	36,161	(3)	36,158	–	–	–	164	(161)	3	36,325	(164)	36,161
Undrawn commitments[3]	132,242	(43)		8,951	(38)		1	–		141,194	(81)	
Financial guarantees, trade credits and irrevocable letter of credits[3]	42,597	(14)		3,509	(16)		608	(206)		46,714	(236)	
Total	703,741	(517)		38,787	(458)		8,246	(5,416)		750,774	(6,391)	

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

Credit quality analysis (audited)

Credit quality by client segment

For the Corporate & Institutional Banking and Commercial Banking portfolios, 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 at least annually 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 & Institutional Banking and Commercial Banking			Private Banking[1]	Retail 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	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

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 $10 billion, or 4 per cent compared with 31 December 2019 and represent 89 per cent of loans and advances to customers (2019: 90 per cent). The stage 1 coverage ratio remained at 0.2 per cent compared with 31 December 2019.

In Corporate & Institutional Banking and Commercial Banking the proportion of stage 1 loans has reduced to 80 per cent (2019: 83 per cent), although the percentage of stage 1 loans rated as strong is higher at 58 per cent (2019: 56 per cent) as the Group continues to focus on the origination of investment grade lending. Stage 1 loans reduced by $7 billion, primarily in the Energy, and Transport, Telecom and Utilities sector. The Central & Others segment increased by $9 billion due to an increase in exposure to Governments.

Commercial Banking stage 1 loans and advances decreased by $3.2 billion to $20.4 billion due to a number of corporate repayments mainly in the Greater China & North Asia region.

Retail Banking stage 1 loans increased by $9 billion primarily driven by new lending in mortgage products. The proportion rated as strong increased to 98 per cent (2019: 97 per cent). Stage 1 Private Banking assets reduced by $1 billion mainly in secured wealth products.

Stage 2

Stage 2 loans and advances to customers increased by $2 billion compared with 31 December 2019, with the proportion of stage 2 loans remaining stable at 8 per cent. This was largely due to a $3 billion increase in Corporate & Institutional Banking in the Transport, Telecoms and Utilities sector. Commercial Banking stage 2 balances decreased by $0.4 billion.

Retail Banking stage 2 loans saw a decrease of $0.6 billion primarily in mortgage products, mainly driven by repayments and a few downgrades to stage 3.

The overall stage 2 cover ratio almost doubled to 3.3 per cent primarily due to management overlays that were raised due to COVID-19 volatility and deterioration in macroeconomic forecasts during the year.

Stage 2 loans to customers classified as 'Higher risk' increased by $0.9 billion, with the majority of the rise in Corporate & Institutional Banking and Commercial Banking following downgrades from early alerts in Africa & Middle East and ASEAN & South Asia.

Stage 3

Stage 3 loans and advances to customers increased by 25 per cent to $9.2 billion (31 December 2019: $7.4 billion), with stage 3 provisions growing by $0.3 billion to $5.3 billion. As a result, the stage 3 cover ratio (excluding collateral) decreased by 10 percentage points to 58 per cent, largely driven by downgrades in Corporate & Institutional Banking and Commercial Banking with low levels of coverage and $1.2 billion of write-offs, most of which were heavily provisioned.

In Corporate & Institutional Banking and Commercial Banking, gross stage 3 loans increased by $1.5 billion compared with 31 December 2019, which included significant but unrelated downgrades in the ASEAN & South Asia and Africa & Middle East regions of $0.8 billion. Provisions rose by $0.1 billion from $4.5 billion to $4.6 billion as additional provisions of $1.4 billion were raised, but this was offset by a $1.2 billion reduction from exposures that were repaid or written off. The cover ratio dropped by 12 percentage points to 60 per cent, of which around 5 per cent of the decrease is due to write-offs and the remaining due to new downgrades with low level of coverage which are partially covered by credit insurance and guarantees, including export credit agencies.

Stage 3 loans in the Retail Banking portfolio increased by $0.3 billion driven by the impact of COVID-19 on the portfolio, but remains at 1 per cent of total Retail loans.

Private Banking stage 3 loans remained stable at $0.4 billion.

Loans and advances by client segment (audited)

Amortised cost	2020 Banks $million	Customers Corporate & Institutional Banking $million	Retail Banking $million	Commercial Banking $million	Private Banking $million	Central & other items $million	Customer Total $million	Undrawn commitments $million	Financial guarantees $million
Stage 1	44,015	90,559	113,162	20,434	13,132	19,150	256,437	143,703	49,489
– Strong	34,961	58,031	110,903	6,246	8,863	18,889	202,932	122,792	30,879
– Satisfactory	9,054	32,528	2,259	14,188	4,269	261	53,505	20,911	18,610
Stage 2	349	16,408	2,459	3,596	198	–	22,661	9,698	3,573
– Strong	95	2,538	1,328	218	194	–	4,278	3,537	386
– Satisfactory	233	12,326	661	2,779	4	–	15,770	5,522	2,399
– Higher risk	21	1,544	470	599	–	–	2,613	639	788
Of which (stage 2):									
– Less than 30 days past due	–	168	661	34	2	–	865	–	–
– More than 30 days past due	29	64	470	84	10	–	628	–	–
Stage 3, credit-impaired financial assets	–	5,506	1,173	2,146	389	–	9,214	2	770
Gross balance[1]	44,364	112,473	116,794	26,176	13,719	19,150	288,312	153,403	53,832
Stage 1	(14)	(67)	(429)	(28)	(9)	(1)	(534)	(39)	(20)
– Strong	(7)	(25)	(300)	(9)	(7)	–	(341)	(19)	(13)
– Satisfactory	(7)	(42)	(129)	(19)	(2)	(1)	(193)	(20)	(7)
Stage 2	(3)	(387)	(251)	(100)	–	–	(738)	(78)	(36)
– Strong	–	(41)	(100)	(1)	–	–	(142)	(3)	(3)
– Satisfactory	(3)	(223)	(85)	(68)	–	–	(376)	(44)	(19)
– Higher risk	–	(123)	(66)	(31)	–	–	(220)	(31)	(14)
Of which (stage 2):									
– Less than 30 days past due	–	(4)	(85)	(2)	–	–	(91)	–	–
– More than 30 days past due	–	(3)	(66)	(3)	–	–	(72)	–	–
Stage 3, credit-impaired financial assets	–	(3,065)	(569)	(1,545)	(162)	–	(5,341)	–	(194)
Total credit impairment	(17)	(3,519)	(1,249)	(1,673)	(171)	(1)	(6,613)	(117)	(250)
Net carrying value	44,347	108,954	115,545	24,503	13,548	19,149	281,699		
Stage 1	0.0%	0.1%	0.4%	0.1%	0.1%	0.0%	0.2%	0.0%	0.0%
– Strong	0.0%	0.0%	0.3%	0.1%	0.1%	0.0%	0.2%	0.0%	0.0%
– Satisfactory	0.1%	0.1%	5.7%	0.1%	0.0%	0.4%	0.4%	0.1%	0.0%
Stage 2	0.9%	2.4%	10.2%	2.8%	0.0%	0.0%	3.3%	0.8%	1.0%
– Strong	0.0%	1.6%	7.5%	0.5%	0.0%	0.0%	3.3%	0.1%	0.8%
– Satisfactory	1.3%	1.8%	12.9%	2.4%	0.0%	0.0%	2.4%	0.8%	0.8%
– Higher risk	0.0%	8.0%	14.0%	5.2%	0.0%	0.0%	8.4%	4.9%	1.8%
Of which (stage 2):									
– Less than 30 days past due	0.0%	2.4%	12.9%	5.9%	0.0%	0.0%	10.5%	0.0%	0.0%
– More than 30 days past due	0.0%	4.7%	14.0%	3.6%	0.0%	0.0%	11.5%	0.0%	0.0%
Stage 3, credit-impaired financial assets	0.0%	55.7%	48.5%	72.0%	41.6%	0.0%	58.0%	0.0%	25.2%
Cover ratio	0.0%	3.1%	1.1%	6.4%	1.2%	0.0%	2.3%	0.1%	0.5%
Fair value through profit or loss									
Performing	22,082	51,549	135	2,835	–	12	54,531	–	–
– Strong	18,100	27,323	133	2,204	–	8	29,668	–	–
– Satisfactory	3,982	24,144	2	631	–	4	24,781	–	–
– Higher risk	–	82	–	–	–	–	82	–	–
Defaulted (CG13-14)	–	37	–	9	–	–	46	–	–
Gross balance (FVTPL)[2]	22,082	51,586	135	2,844	–	12	54,577	–	–
Net carrying value (incl FVTPL)	66,429	160,540	115,680	27,347	13,548	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

Amortised cost	Banks $million	Corporate & Institutional Banking $million	Retail Banking $million	Commercial Banking $million	Private Banking $million	Central & other items $million	Customer Total $million	Undrawn commitments $million	Financial guarantees $million
	2019								
		Customers[3]							
Stage 1	52,634	94,226	103,899	23,683	14,249	10,092	246,149	132,242	42,597
– Strong	41,053	58,623	101,246	6,941	10,145	9,961	186,916	113,195	27,417
– Satisfactory	11,581	35,603	2,653	16,742	4,104	131	59,233	19,047	15,180
Stage 2	924	13,454	3,029	3,985	284	7	20,759	8,951	3,509
– Strong	225	2,711	2,231	208	280	–	5,430	3,988	1,049
– Satisfactory	476	9,652	462	3,493	4	–	13,611	4,601	2,248
– Higher risk	223	1,091	336	284	–	7	1,718	362	212
Of which (stage 2):									
– Less than 30 days past due	2	145	462	58	–	–	665	–	–
– More than 30 days past due	23	175	336	86	4	–	601	–	–
Stage 3, credit-impaired financial assets	–	4,173	846	2,013	366	–	7,398	1	608
Gross balance[1]	53,558	111,853	107,774	29,681	14,899	10,099	274,306	141,194	46,714
Stage 1	(5)	(78)	(289)	(24)	(10)	(1)	(402)	(43)	(14)
– Strong	–	(29)	(182)	(1)	(8)	–	(220)	(22)	(8)
– Satisfactory	(5)	(49)	(107)	(23)	(2)	(1)	(182)	(21)	(6)
Stage 2	(4)	(143)	(173)	(60)	(1)	–	(377)	(38)	(16)
– Strong	(2)	(33)	(88)	(5)	(1)	–	(127)	(7)	(3)
– Satisfactory	(2)	(51)	(45)	(40)	–	–	(136)	(14)	(8)
– Higher risk	–	(59)	(40)	(15)	–	–	(114)	(17)	(5)
Of which (stage 2):									
– Less than 30 days past due	–	(3)	(45)	(2)	–	–	(50)	–	–
– More than 30 days past due	–	(4)	(40)	(5)	–	–	(49)	–	–
Stage 3, credit-impaired financial assets	–	(2,980)	(374)	(1,503)	(147)	–	(5,004)	–	(206)
Total credit impairment	(9)	(3,201)	(836)	(1,587)	(158)	(1)	(5,783)	(81)	(236)
Net carrying value	53,549	108,652	106,938	28,094	14,741	10,098	268,523	–	–
Stage 1	0.0%	0.1%	0.3%	0.1%	0.1%	0.0%	0.2%	0.0%	0.0%
– Strong	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%
– Satisfactory	0.0%	0.1%	4.0%	0.1%	0.0%	0.8%	0.3%	0.1%	0.0%
Stage 2	0.4%	1.1%	5.7%	1.5%	0.4%	0.0%	1.8%	0.4%	0.5%
– Strong	0.9%	1.2%	3.9%	2.4%	0.4%	0.0%	2.3%	0.2%	0.3%
– Satisfactory	0.4%	0.5%	9.7%	1.1%	0.0%	0.0%	1.0%	0.3%	0.4%
– Higher risk	0.0%	5.4%	11.9%	5.3%	0.0%	0.0%	6.6%	4.8%	2.4%
Of which (stage 2):									
– Less than 30 days past due	0.0%	2.1%	9.7%	3.4%	0.0%	0.0%	7.5%	0.0%	0.0%
– More than 30 days past due	0.0%	2.3%	11.9%	5.8%	0.0%	0.0%	8.2%	0.0%	0.0%
Stage 3, credit-impaired financial assets	0.0%	71.4%	44.2%	74.7%	40.2%	0.0%	67.6%	0.0%	33.9%
Cover ratio	0.0%	2.9%	0.8%	5.3%	1.1%	0.0%	2.1%	0.1%	0.5%
Fair value through profit or loss									
Performing	21,797	45,104	238	845	–	2	46,189	–	–
– Strong	19,217	26,511	236	253	–	1	27,001	–	–
– Satisfactory	2,580	18,584	1	592	–	1	19,178	–	–
– Higher risk	–	9	1	–	–	–	10	–	–
Defaulted (CG13-14)	–	34	–	8	–	–	42	–	–
Gross balance (FVTPL)[2]	21,797	45,138	238	853	–	2	46,231	–	–
Net carrying value (incl FVTPL)	75,346	153,790	107,176	28,947	14,741	10,100	314,754		

1 Loans and advances includes reverse repurchase agreements and other similar secured lending of $1,469 million under Customers and of $1,341 million under Banks, held at amortised cost

2 Loans and advances includes reverse repurchase agreements and other similar secured lending of $39,335 million under Customers and of $18,269 million under Banks, held at fair value through profit or loss

3 Corporate & Institutional Banking, Commercial Banking and Retail Banking Gross and ECL numbers have been restated to reflect client transfers between the segments. The changes are in stage 1 and stage 2 only. In the Fair value through profit or loss section, the swap is between Corporate & Institutional Banking and Commercial Banking

Loans and advances by client segment credit quality analysis

Credit grade	Regulatory 1 year PD range (%)	S&P external ratings equivalent	Corporate & Institutional Banking 2020 Gross Stage 1	Gross Stage 2	Gross Stage 3	Gross Total	Credit impairment Stage 1	Credit impairment Stage 2	Credit impairment Stage 3	Credit impairment Total
Strong			58,031	2,538	–	60,569	(25)	(41)	–	(66)
1A-2B	0 – 0.045	AA- and above	9,748	295	–	10,043	–	(4)	–	(4)
3A-4A	0.046 – 0.110	A+ to A-	15,375	790	–	16,165	(2)	(11)	–	(13)
4B-5B	0.111 – 0.425	BBB+ to BBB-/BB+	32,908	1,453	–	34,361	(23)	(26)	–	(49)
Satisfactory			32,528	12,326	–	44,854	(42)	(223)	–	(265)
6A-7B	0.426 – 1.350	BB+/BB to BB-	22,747	4,919	–	27,666	(27)	(65)	–	(92)
8A-9B	1.351 – 4.000	BB-/B+ to B+/B	6,619	4,178	–	10,797	(11)	(88)	–	(99)
10A-11C	4.001 – 15.75	B to B-/CCC	3,162	3,229	–	6,391	(4)	(70)	–	(74)
Higher risk			–	1,544	–	1,544	–	(123)	–	(123)
12	15.751 – 99.999	CCC/C	–	1,544	–	1,544	–	(123)	–	(123)
Defaulted			–	–	5,506	5,506	–	–	(3,065)	(3,065)
13-14	100	Defaulted	–	–	5,506	5,506	–	–	(3,065)	(3,065)
Total			90,559	16,408	5,506	112,473	(67)	(387)	(3,065)	(3,519)

Credit grade	Regulatory 1 year PD range (%)	S&P external ratings equivalent	2019[1] Gross Stage 1	Gross Stage 2	Gross Stage 3	Gross Total	Credit impairment Stage 1	Credit impairment Stage 2	Credit impairment Stage 3	Credit impairment Total
Strong			58,623	2,711	–	61,334	(29)	(33)	–	(62)
1A-2B	0 – 0.045	AA- and above	6,638	80	–	6,718	(2)	–	–	(2)
3A-4A	0.046 – 0.110	A+ to A-	18,659	912	–	19,571	(4)	(7)	–	(11)
4B-5B	0.111 – 0.425	BBB+ to BBB-/BB+	33,326	1,719	–	35,045	(23)	(26)	–	(49)
Satisfactory			35,603	9,652	–	45,255	(49)	(51)	–	(100)
6A-7B	0.426 – 1.350	BB+/BB to BB-	24,000	5,955	–	29,955	(26)	(18)	–	(44)
8A-9B	1.351 – 4.000	BB-/B+ to B+/B	8,000	2,633	–	10,633	(15)	(21)	–	(36)
10A-11C	4.001 – 15.75	B to B-/CCC	3,603	1,064	–	4,667	(8)	(12)	–	(20)
Higher risk			–	1,091	–	1,091	–	(59)	–	(59)
12	15.751 – 99.999	CCC/C	–	1,091	–	1,091	–	(59)	–	(59)
Defaulted			–	–	4,173	4,173	–	–	(2,980)	(2,980)
13-14	100	Defaulted	–	–	4,173	4,173	–	–	(2,980)	(2,980)
Total			94,226	13,454	4,173	111,853	(78)	(143)	(2,980)	(3,201)

1 Stage 1 and stage 2 Gross and ECL numbers have been restated to reflect client transfers to and from Commercial Banking

Credit grade	Regulatory 1 year PD range (%)	S&P external ratings equivalent	Commercial Banking 2020 Gross Stage 1	Gross Stage 2	Gross Stage 3	Gross Total	Credit impairment Stage 1	Credit impairment Stage 2	Credit impairment Stage 3	Credit impairment Total
Strong			6,246	218	–	6,464	(9)	(1)	–	(10)
1A-2B	0 – 0.045	AA- and above	1,323	–	–	1,323	–	–	–	–
3A-4A	0.046 – 0.110	A+ to A-	1,378	25	–	1,403	–	–	–	–
4B-5B	0.111 – 0.425	BBB+ to BBB-/BB+	3,545	193	–	3,738	(9)	(1)	–	(10)
Satisfactory			14,188	2,779	–	16,967	(19)	(68)	–	(87)
6A-7B	0.426 – 1.350	BB+/BB to BB-	6,170	477	–	6,647	(4)	(9)	–	(13)
8A-9B	1.351 – 4.000	BB-/B+ to B+/B	5,657	1,057	–	6,714	(9)	(20)	–	(29)
10A-11C	4.001 – 15.75	B to B-/CCC	2,361	1,245	–	3,606	(6)	(39)	–	(45)
Higher risk			–	599	–	599	–	(31)	–	(31)
12	15.751 – 99.999	CCC/C	–	599	–	599	–	(31)	–	(31)
Defaulted			–	–	2,146	2,146	–	–	(1,545)	(1,545)
13-14	100	Defaulted	–	–	2,146	2,146	–	–	(1,545)	(1,545)
Total			20,434	3,596	2,146	26,176	(28)	(100)	(1,545)	(1,673)

			2019[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			6,941	208	–	7,149	(1)	(5)	–	(6)
1A-2B	0 – 0.045	AA- and above	285	–	–	285	–	–	–	–
3A-4A	0.046 – 0.110	A+ to A-	2,500	10	–	2,510	–	–	–	–
4B-5B	0.111 – 0.425	BBB+ to BBB-/BB+	4,156	198	–	4,354	(1)	(5)	–	(6)
Satisfactory			16,742	3,493	–	20,235	(23)	(40)	–	(63)
6A-7B	0.426 – 1.350	BB+/BB to BB-	7,030	840	–	7,870	(5)	(1)	–	(6)
8A-9B	1.351 – 4.000	BB-/B+ to B+/B	7,032	1,355	–	8,387	(11)	(13)	–	(24)
10A-11C	4.001 – 15.75	B to B-/CCC	2,680	1,298	–	3,978	(7)	(26)	–	(33)
Higher risk			–	284	–	284		(15)	–	(15)
12	15.751 – 99.999	CCC/C	–	284	–	284	–	(15)	–	(15)
Defaulted			–	–	2,013	2,013	–	–	(1,503)	(1,503)
13-14	100	Defaulted	–	–	2,013	2,013	–	–	(1,503)	(1,503)
Total			23,683	3,985	2,013	29,681	(24)	(60)	(1,503)	(1,587)

1 Stage 1 and stage 2 Gross and ECL numbers have been restated to reflect client transfers to and from Corporate & Institutional Banking and to Retail Banking

	Retail Banking							
	2020							
	Gross				Credit impairment			
Credit grade	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Strong	110,903	1,328	–	112,231	(300)	(100)	–	(400)
Secured	95,584	1,151	–	96,735	(51)	(30)	–	(81)
Unsecured	15,319	177	–	15,496	(249)	(70)	–	(319)
Satisfactory	2,259	661	–	2,920	(129)	(85)	–	(214)
Secured	754	216	–	970	(11)	(3)	–	(14)
Unsecured	1,505	445	–	1,950	(118)	(82)	–	(200)
Higher risk	–	470	–	470	–	(66)	–	(66)
Secured	–	316	–	316	–	(12)	–	(12)
Unsecured	–	154	–	154	–	(54)	–	(54)
Defaulted	–	–	1,173	1,173	–	–	(569)	(569)
Secured	–	–	672	672	–	–	(256)	(256)
Unsecured	–	–	501	501	–	–	(313)	(313)
Total	113,162	2,459	1,173	116,794	(429)	(251)	(569)	(1,249)

	2019							
	Gross				Credit impairment			
Credit grade	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
Strong	101,246	2,231	–	103,477	(182)	(88)	–	(270)
Secured	85,301	1,923	–	87,224	(11)	(12)	–	(23)
Unsecured	15,945	308	–	16,253	(171)	(76)	–	(247)
Satisfactory	2,653	462	–	3,115	(107)	(45)	–	(152)
Secured	1,691	358	–	2,049	(1)	(3)	–	(4)
Unsecured	962	104	–	1,066	(106)	(42)	–	(148)
Higher risk	–	336	–	336	–	(40)	–	(40)
Secured	–	193	–	193	–	(3)	–	(3)
Unsecured	–	143	–	143	–	(37)	–	(37)
Defaulted	–	–	846	846	–	–	(374)	(374)
Secured	–	–	413	413	–	–	(143)	(143)
Unsecured	–	–	433	433	–	–	(231)	(231)
Total	103,899	3,029	846	107,774	(289)	(173)	(374)	(836)

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

	2020				
Amortised cost	Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross (stage 1)	136,107	75,561	21,144	23,625	256,437
Provision (stage 1)	(201)	(222)	(96)	(15)	(534)
Gross (stage 2)	7,609	6,162	6,251	2,639	22,661
Provision (stage 2)	(120)	(298)	(255)	(65)	(738)
Gross (stage 3)[2]	1,016	3,774	3,473	951	9,214
Provision (stage 3)	(402)	(2,081)	(2,313)	(545)	(5,341)
Net loans[1]	144,009	82,896	28,204	26,590	281,699

	2019				
Amortised cost	Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross (stage 1)	126,438	71,045	23,906	24,760	246,149
Provision (stage 1)	(165)	(146)	(79)	(12)	(402)
Gross (stage 2)	7,547	6,461	5,541	1,210	20,759
Provision (stage 2)	(115)	(127)	(117)	(18)	(377)
Gross (stage 3)[2]	716	3,084	2,585	1,013	7,398
Provision (stage 3)	(360)	(2,087)	(1,899)	(658)	(5,004)
Net loans[1]	134,061	78,230	29,937	26,295	268,523

1 Includes reverse repurchase agreements and other similar secured lending
2 Amounts do not include those purchased or originated credit-impaired financial assets

Loans and advances to banks

	2020				
Amortised cost	Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross (stage 1)	17,981	13,467	5,539	7,028	44,015
Provision (stage 1)	(3)	(6)	(3)	(2)	(14)
Gross (stage 2)	33	74	207	35	349
Provision (stage 2)	–	(1)	(2)	–	(3)
Gross (stage 3)	–	–	–	–	–
Provision (stage 3)	–	–	–	–	–
Net loans[1]	18,011	13,534	5,741	7,061	44,347

	2019				
Amortised cost	Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross (stage 1)	19,181	15,458	5,039	12,956	52,634
Provision (stage 1)	(1)	(2)	(1)	(1)	(5)
Gross (stage 2)	136	300	312	176	924
Provision (stage 2)	(2)	(1)	(1)	–	(4)
Gross (stage 3)	–	–	–	–	–
Provision (stage 3)	–	–	–	–	–
Net loans[1]	19,314	15,755	5,349	13,131	53,549

1 Includes reverse repurchase agreements and other similar secured lending

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, the Corporate & Institutional Banking, Retail Banking and Commercial Banking segments.

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 & Institutional Banking and Commercial 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. 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 period

Stage 1 gross exposures increased by $31 billion to $643 billion when compared with 31 December 2019. This was largely due to an increase of $14.7 billion in Retail Banking, of which $10 billion related to new mortgage lending and $4.7 billion to credit cards and personal loans (CCPL) and other unsecured lending. Holdings of debt securities also increased, up by $11 billion primarily due to sovereign exposures. These increases were partly offset by a reduction in Commercial Banking balances, down $3.4 billion, from a number of corporate repayments mainly in the Greater China & North Asia region. The transfers in Corporate & Institutional Banking and Commercial Banking reflect net outflows to stage 2 as a result of the deteriorating economic conditions and an increase in customers placed on non-purely precautionary early alert and higher risk category.

Total stage 1 provisions increased by $149 million, primarily in Retail Banking, in part due to a management overlay on the unsecured portfolio for the impact of COVID-19 payment reliefs and lockdowns in the ASEAN & South Asia and Africa & Middle East regions and provision increases from an uptick in delinquencies across these markets.

Stage 2 gross exposures rose by $1 billion, primarily driven by net inflows into stage 2 in Corporate & Institutional Banking and Commercial Banking as clients were placed on non-purely precautionary early alert where they were impacted by COVID-19 and flows to higher risk accounts. In Corporate & Institutional Banking, stage 2 exposures increased by $4 billion. Commercial Banking was $0.8 billion lower as net inflows were offset by repayments. Retail Banking loans were $1 billion lower from repayments and stage transfers in the secured mortgage portfolio. Stage 2 debt securities also fell $1 billion as securities transferred back to stage 1 or were repaid.

Stage 2 provisions rose $423 million compared with 31 December 2019, $346 million of which was in Corporate & Institutional Banking and Commercial Banking as a result of net transfers into stage 2 as the macroeconomic environment deteriorated, increased non-purely precautionary balances and a net $188 million management overlay that was recognised in 'Changes in risk parameters' in respect of COVID-19 related uncertainties. Retail Banking increased by $78 million as a result of net transfers into stage 2 due to deteriorating macroeconomic conditions and a management overlay for the impact of COVID-19 payment-related reliefs in the ASEAN & South Asia and Africa & Middle East regions, particularly in the unsecured portfolios, which form 81 per cent of total Retail provisions.

Across all segments, the significant deterioration in macroeconomic forecasts across all markets increased provisions by $81 million.

There was a net $39 million release of provisions from model changes in the year to 31 December 2020, of which Corporate & Institutional Banking and Commercial Banking had a release of $48 million and Retail Banking had a charge of $9 million. Stage 3 exposures increased by $2 billion from $8.1 billion as at 31 December 2019 to $10.1 billion as at 31 December 2020. This was driven by an increase of $1.4 billion in Corporate & Institutional Banking clients from new downgrades during the year, which have low coverage as they are partially covered by credit insurance and guarantees, including export credit agencies. Stage 3 provisions at $5.6 billion increased by $338 million from 31 December 2019. Corporate & Institutional Banking and Commercial Banking provisions increased by $115 million. Retail Banking provisions increased by $195 million, mainly from the secured portfolio in the ASEAN & South Asia region. Across all segments, additional provisions of $1.7 billion were offset by $1.9 billion of write-offs.

All segments (audited)

Amortised cost and FVOCI	Stage 1			Stage 2			Stage 3			Total		
	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 $million
As at 1 January 2019	592,481	(531)	591,950	42,324	(500)	41,824	9,382	(6,214)	3,168	644,187	(7,245)	636,942
Transfers to stage 1	28,552	(582)	27,970	(28,552)	582	(27,970)	–	–	–	–	–	–
Transfers to stage 2	(67,790)	157	(67,633)	67,983	(171)	67,812	(193)	14	(179)	–	–	–
Transfers to stage 3	(121)	–	(121)	(2,179)	314	(1,865)	2,300	(314)	1,986	–	–	–
Net change in exposures	60,374	(256)	60,118	(40,499)	24	(40,475)	(1,434)	307	(1,127)	18,441	75	18,516
Net remeasurement from stage changes	–	196	196	–	(171)	(171)	–	(406)	(406)	–	(381)	(381)
Changes in risk parameters	–	434	434	–	(489)	(489)	–	(787)	(787)	–	(842)	(842)
Write-offs	–	–	–	–	–	–	(1,795)	1,795	–	(1,795)	1,795	–
Interest due but unpaid	–	–	–	–	–	–	(365)	365	–	(365)	365	–
Discount unwind	–	–	–	–	–	–	–	82	82	–	82	82
Exchange translation differences and other movements[1]	(1,092)	68	(1,024)	(290)	(47)	(337)	187	(97)	90	(1,195)	(76)	(1,271)
As at 31 December 2019[2]	612,404	(514)	611,890	38,787	(458)	38,329	8,082	(5,255)	2,827	659,273	(6,227)	653,046
Income statement ECL (charge)/release[3]		374			(636)			(886)			(1,148)	
Recoveries of amounts previously written off		–			–			248			248	
Total credit impairment (charge)/release		374			(636)			(638)			(900)	
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[4]		(14)			(813)			(1,500)			(2,327)	

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
3 Does not include $2 million release (31 December 2019: $8 million provision) relating to Other assets
4 Statutory basis
5 Stage 3 gross includes $38 million originated credit-impaired debt securities

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

Amortised cost and FVOCI	Stage 1 Gross balance $million	Stage 1 Total credit impair-ment $million	Stage 1 Net $million	Stage 2 Gross balance $million	Stage 2 Total credit impair-ment $million	Stage 2 Net $million	Stage 3 Gross balance $million	Stage 3 Total credit impair-ment $million	Stage 3 Net $million	Total Gross balance $million	Total Total credit impair-ment $million	Total Net $million
As at 1 January 2019	118,713	(27)	118,686	6,909	(31)	6,878	498	(472)	26	126,120	(530)	125,590
Transfers to stage 1	2,747	(38)	2,709	(2,747)	38	(2,709)	–	–	–	–	–	–
Transfers to stage 2	(2,359)	16	(2,343)	2,359	(16)	2,343	–	–	–	–	–	–
Transfers to stage 3	–	–	–	(1)	–	(1)	1	–	1	–	–	–
Net change in exposures	19,314	(52)	19,262	(1,237)	(9)	(1,246)	–	–	–	18,077	(61)	18,016
Net remeasurement from stage changes	–	27	27	–	(4)	(4)	–	–	–	–	23	23
Changes in risk parameters	–	27	27	–	(5)	(5)	–	7	7	–	29	29
Write-offs	–	–	–	–	–	–	(170)	170	–	(170)	170	–
Interest due but unpaid	–	–	–	–	–	–	(247)	247	–	(247)	247	–
Exchange translation differences and other movements[1]	367	(3)	364	(639)	4	(635)	(7)	3	(4)	(279)	4	(275)
As at 31 December 2019	138,782	(50)	138,732	4,644	(23)	4,621	75	(45)	30	143,501	(118)	143,383
Income statement ECL (charge)/release		2			(18)			7			(9)	
Recoveries of amounts previously written off		–			–			–			–	
Total credit impairment (charge)/release		2			(18)			7			(9)	
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)	

1 Includes fair value adjustments and amortisation on debt securities

2 Stage 3 gross includes $38 million originated credit-impaired debt securities

Corporate & Institutional Banking (audited)

Amortised cost and FVOCI	Stage 1 Gross balance $million	Stage 1 Total credit impair-ment $million	Stage 1 Net $million	Stage 2 Gross balance $million	Stage 2 Total credit impair-ment $million	Stage 2 Net $million	Stage 3 Gross balance $million	Stage 3 Total credit impair-ment $million	Stage 3 Net $million	Total Gross balance $million	Total Total credit impair-ment $million	Total Net $million
As at 1 January 2019[1]	269,648	(141)	269,507	18,431	(226)	18,205	5,385	(3,378)	2,007	293,464	(3,745)	289,719
Transfers to stage 1	16,555	(145)	16,410	(16,555)	145	(16,410)	–	–	–	–	–	–
Transfers to stage 2	(43,141)	39	(43,102)	43,326	(51)	43,275	(185)	12	(173)	–	–	–
Transfers to stage 3	–	–	–	(1,095)	122	(973)	1,095	(122)	973	–	–	–
Net change in exposures	18,368	(124)	18,244	(22,387)	25	(22,362)	(840)	205	(635)	(4,859)	106	(4,753)
Net remeasurement from stage changes	–	41	41	–	(70)	(70)	–	(219)	(219)	–	(248)	(248)
Changes in risk parameters	–	187	187	–	(145)	(145)	–	(368)	(368)	–	(326)	(326)
Write-offs	–	–	–	–	–	–	(658)	658	–	(658)	658	–
Interest due but unpaid	–	–	–	–	–	–	(48)	48	–	(48)	48	–
Discount unwind	–	–	–	–	–	–	–	38	38	–	38	38
Exchange translation differences and other movements[1]	115	23	138	764	14	778	(16)	(45)	(61)	863	(8)	855
As at 31 December 2019	261,545	(120)	261,425	22,484	(186)	22,298	4,733	(3,171)	1,562	288,762	(3,477)	285,285
Income statement ECL (charge)/release[2]		104			(190)			(382)			(468)	
Recoveries of amounts previously written off		–			–			–			–	
Total credit impairment (charge)/release		104			(190)			(382)			(468)	
As at 1 January 2020	261,545	(120)	261,425	22,484	(186)	22,298	4,733	(3,171)	1,562	288,762	(3,477)	285,285
Transfers to stage 1	29,811	(236)	29,575	(29,811)	236	(29,575)	–	–	–	–	–	–
Transfers to stage 2	(64,059)	161	(63,898)	64,091	(162)	63,929	(32)	1	(31)	–	–	–
Transfers to stage 3	(330)	–	(330)	(2,987)	59	(2,928)	3,317	(59)	3,258	–	–	–
Net change in exposures	31,954	(31)	31,923	(27,936)	33	(27,903)	(925)	172	(753)	3,093	174	3,267
Net remeasurement from stage changes	–	13	13	–	(146)	(146)	–	(559)	(559)	–	(692)	(692)
Changes in risk parameters	–	44	44	–	(234)	(234)	–	(540)	(540)	–	(730)	(730)
Write-offs	–	–	–	–	–	–	(907)	907	–	(907)	907	–
Interest due but unpaid	–	–	–	–	–	–	32	(32)	–	32	(32)	–
Discount unwind	–	–	–	–	–	–	–	40	40	–	40	40
Exchange translation differences and other movements	3,114	53	3,167	653	(82)	571	(52)	2	(50)	3,715	(27)	3,689
As at 31 December 2020	262,035	(116)	261,919	26,494	(482)	26,012	6,166	(3,239)	2,927	294,695	(3,837)	290,858
Income statement ECL (charge)/release[2]		26			(347)			(927)			(1,248)	
Recoveries of amounts previously written off		–			–			18			18	
Total credit impairment (charge)/release		26			(347)			(909)			(1,230)	

1 Stage 1 and stage 2 Gross and ECL numbers have been restated to reflect client transfers to and from Commercial Banking

2 Does not include $2 million release (31 December 2019: $8 million provision) relating to Other assets

Retail Banking (audited)

Amortised cost and FVOCI	Stage 1 Gross balance $million	Stage 1 Total credit impair-ment $million	Stage 1 Net $million	Stage 2 Gross balance $million	Stage 2 Total credit impair-ment $million	Stage 2 Net $million	Stage 3 Gross balance $million	Stage 3 Total credit impair-ment $million	Stage 3 Net $million	Total Gross balance $million	Total Total credit impair-ment $million	Total Net $million
As at 1 January 2019[1]	134,154	(313)	133,841	8,963	(132)	8,831	832	(394)	438	143,949	(839)	143,110
Transfers to stage 1	5,301	(355)	4,946	(5,301)	355	(4,946)	–	–	–	–	–	–
Transfers to stage 2	(8,279)	82	(8,197)	8,279	(82)	8,197	–	–	–	–	–	–
Transfers to stage 3	(117)	1	(116)	(517)	165	(352)	634	(166)	468	–	–	–
Net change in exposures	9,303	(15)	9,288	(6,020)	49	(5,971)	(290)	–	(290)	2,993	34	3,027
Net remeasurement from stage changes	–	122	122	–	(86)	(86)	–	(81)	(81)	–	(45)	(45)
Changes in risk parameters	–	153	153	–	(398)	(398)	–	(327)	(327)	–	(572)	(572)
Write-offs	–	–	–	–	–	–	(586)	586	–	(586)	586	–
Interest due but unpaid	–	–	–	–	–	–	–	–	–	–	–	–
Discount unwind	–	–	–	–	–	–	–	28	28	–	28	28
Exchange translation differences and other movements[1]	(566)	26	(540)	(79)	(50)	(129)	256	(20)	236	(389)	(44)	(433)
As at 31 December 2019	139,796	(299)	139,497	5,325	(179)	5,146	846	(374)	472	145,967	(852)	145,115
Income statement ECL (charge)/release		260			(435)			(408)			(583)	
Recoveries of amounts previously written off		–			–			247			247	
Total credit impairment (charge)/release		260			(435)			(161)			(336)	
As at 1 January 2020	139,796	(299)	139,497	5,325	(179)	5,146	846	(374)	472	145,967	(852)	145,115
Transfers to stage 1	7,421	(372)	7,049	(7,377)	372	(7,005)	(44)	–	(44)	–	–	–
Transfers to stage 2	(8,866)	206	(8,660)	8,940	(206)	8,734	(74)	–	(74)	–	–	–
Transfers to stage 3	(113)	1	(112)	(908)	184	(724)	1,021	(185)	836	–	–	–
Net change in exposures	12,409	(35)	12,374	(1,738)	71	(1,667)	(277)	–	(277)	10,394	36	10,430
Net remeasurement from stage changes	–	57	57	–	(194)	(194)	–	(89)	(89)	–	(226)	(226)
Changes in risk parameters	–	(67)	(67)	–	(246)	(246)	–	(432)	(432)	–	(745)	(745)
Write-offs	–	–	–	–	–	–	(696)	696	–	(696)	696	–
Interest due but unpaid	–	–	–	–	–	–	98	(98)	–	98	(98)	–
Discount unwind	–	–	–	–	–	–	–	25	25	–	25	25
Exchange translation differences and other movements	3,821	73	3,894	95	(59)	36	299	(112)	187	4,215	(98)	4,117
As at 31 December 2020	154,468	(436)	154,032	4,337	(257)	4,080	1,173	(569)	604	159,978	(1,262)	158,716
Income statement ECL (charge)/release		(45)			(369)			(521)			(935)	
Recoveries of amounts previously written off		–			–			220			220	
Total credit impairment (charge)/release		(45)			(369)			(301)			(715)	

1 Stage 1 and stage 2 Gross and ECL numbers have been restated to reflect client transfers from Commercial Banking

Retail Banking – Secured (audited)

Amortised cost and FVOCI	Stage 1 Gross balance $million	Stage 1 Total credit impair-ment $million	Stage 1 Net $million	Stage 2 Gross balance $million	Stage 2 Total credit impair-ment $million	Stage 2 Net $million	Stage 3 Gross balance $million	Stage 3 Total credit impair-ment $million	Stage 3 Net $million	Total Gross balance $million	Total Total credit impair-ment $million	Total Net $million
As at 1 January 2020	89,861	(15)	89,846	4,242	(18)	4,224	413	(143)	270	94,516	(176)	94,340
Transfers to stage 1	5,462	(24)	5,438	(5,429)	24	(5,405)	(33)	–	(33)	–	–	–
Transfers to stage 2	(5,632)	10	(5,622)	5,695	(10)	5,685	(63)	–	(63)	–	–	–
Transfers to stage 3	(55)	–	(55)	(396)	6	(390)	451	(6)	445	–	–	–
Net change in exposures	7,993	(6)	7,987	(1,005)	1	(1,004)	(87)	-	(87)	6,901	(5)	6,896
Net remeasurement from stage changes	–	1	1	–	(7)	(7)	–	(11)	(11)	–	(17)	(17)
Changes in risk parameters	–	(1)	(1)	–	(54)	(54)	–	(97)	(97)	–	(152)	(152)
Write-offs	–	–	–	–	–	–	(104)	104	–	(104)	104	–
Interest due but unpaid	–	–	–	–	–	–	82	(82)	–	82	(82)	–
Discount unwind	–	–	–	–	–	–	–	4	4	–	4	4
Exchange translation differences and other movements	2,243	(28)	2,215	59	8	67	11	(26)	(15)	2,313	(46)	2,267
As at 31 December 2020	99,872	(63)	99,809	3,166	(50)	3,116	670	(257)	413	103,708	(370)	103,338
Income statement ECL (charge)/release		(6)			(60)			(108)			(174)	
Recoveries of amounts previously written off		–			–			50			50	
Total credit impairment (charge)/release		(6)			(60)			(58)			(124)	

Retail Banking – Unsecured (audited)

Amortised cost and FVOCI	Stage 1 Gross balance $million	Stage 1 Total credit impair-ment $million	Stage 1 Net $million	Stage 2 Gross balance $million	Stage 2 Total credit impair-ment $million	Stage 2 Net $million	Stage 3 Gross balance $million	Stage 3 Total credit impair-ment $million	Stage 3 Net $million	Total Gross balance $million	Total Total credit impair-ment $million	Total 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)	–	(192)	(192)	–	(335)	(335)	–	(593)	(593)
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	(67)	(31)	288	(86)	202	1,092	(52)	1,850
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)			(309)			(413)			(761)	
Recoveries of amounts previously written off		–			–			170			170	
Total credit impairment (charge)/release		(39)			(309)			(243)			(591)	

Commercial Banking (audited)

Amortised cost and FVOCI	Stage 1 Gross balance $million	Stage 1 Total credit impair-ment $million	Stage 1 Net $million	Stage 2 Gross balance $million	Stage 2 Total credit impair-ment $million	Stage 2 Net $million	Stage 3 Gross balance $million	Stage 3 Total credit impair-ment $million	Stage 3 Net $million	Total Gross balance $million	Total Total credit impair-ment $million	Total Net $million
As at 1 January 2019[1]	34,338	(39)	34,299	7,255	(109)	7,146	2,368	(1,803)	565	43,961	(1,951)	42,010
Transfers to stage 1	3,082	(42)	3,040	(3,082)	42	(3,040)	–	–	–	–	–	–
Transfers to stage 2	(11,878)	20	(11,858)	11,886	(22)	11,864	(8)	2	(6)	–	–	–
Transfers to stage 3	(4)	–	(4)	(465)	26	(439)	469	(26)	443	–	–	–
Net change in exposures	9,186	(70)	9,116	(8,864)	(38)	(8,902)	(263)	96	(167)	59	(12)	47
Net remeasurement from stage changes	–	5	5	–	(11)	(11)	–	(107)	(107)	–	(113)	(113)
Changes in risk parameters	–	69	69	–	58	58	–	(124)	(124)	–	3	3
Write-offs	–	–	–	–	–	–	(380)	380	–	(380)	380	–
Interest due but unpaid	–	–	–	–	–	–	(87)	87	–	(87)	87	–
Discount unwind	–	–	–	–	–	–	–	13	13	–	13	13
Exchange translation differences and other movements[1]	(886)	19	(867)	(689)	(13)	(702)	(37)	(35)	(72)	(1,612)	(29)	(1,641)
As at 31 December 2019	33,838	(38)	33,800	6,041	(67)	5,974	2,062	(1,517)	545	41,941	(1,622)	40,319
Income statement ECL (charge)/release		4			9			(135)			(122)	
Recoveries of amounts previously written off		–			–			1			1	
Total credit impairment (charge)/release		4			9			(134)			(121)	
As at 1 January 2020	33,838	(38)	33,800	6,041	(67)	5,974	2,062	(1,517)	545	41,941	(1,622)	40,319
Transfers to stage 1	7,369	(74)	7,295	(7,369)	74	(7,295)	–	–	–	–	–	–
Transfers to stage 2	(15,823)	43	(15,780)	15,826	(43)	15,783	(3)	–	(3)	–	–	–
Transfers to stage 3	(7)	–	(7)	(678)	23	(655)	685	(23)	662	–	–	–
Net change in exposures	4,651	(20)	4,631	(8,427)	26	(8,401)	(276)	59	(217)	(4,052)	65	(3,987)
Net remeasurement from stage changes	–	2	2	–	(42)	(42)	–	(141)	(141)	–	(181)	(181)
Changes in risk parameters	–	25	25	–	(61)	(61)	–	(202)	(202)	–	(238)	(238)
Write-offs	–	–	–	–	–	–	(309)	309	–	(309)	309	–
Interest due but unpaid	–	–	–	–	–	–	83	(83)	–	83	(83)	–
Discount unwind	–	–	–	–	–	–	–	14	14	–	14	14
Exchange translation differences and other movements	390	24	414	(145)	(27)	(172)	14	20	34	259	17	276
As at 31 December 2020	30,418	(38)	30,380	5,248	(117)	5,131	2,256	(1,564)	692	37,922	(1,719)	36,203
Income statement ECL (charge)/release		7			(77)			(284)			(354)	
Recoveries of amounts previously written off		–			–			4			4	
Total credit impairment (charge)/release		7			(77)			(280)			(350)	

1 Stage 1 and stage 2 Gross and ECL numbers have been restated to reflect client transfers to and from Corporate & Institutional Banking and to Retail Banking

Analysis of stage 2 balances

The table below analyses 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 2020. 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'.

	2020											
	Corporate & Institutional Banking		Retail Banking		Commercial Banking		Private Banking		Central & Other		Total	
	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %
Increase in PD	62%	84%	87%	84%	61%	71%	–	–	85%	47%	64%	80%
Non-purely precautionary early alert	21%	6%	–	–	26%	9%	–	–	–	–	18%	5%
Higher risk (CG12)	2%	7%	–	–	5%	19%	–	–	9%	44%	3%	8%
Sub-investment grade	1%	1%	–	–	1%	0%	–	–	–	–	1%	0%
30 days past due	–	–	8%	15%	–	–	1%	4%	–	–	1%	5%
Others	14%	2%	5%	1%	7%	1%	99%	96%	6%	9%	13%	2%
Total stage 2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

	2019											
	Corporate & Institutional Banking		Retail Banking		Commercial Banking		Private Banking		Central & Other		Total	
	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %	Gross %	ECL %
Increase in PD	49%	52%	94%	76%	67%	57%	–	–	43%	31%	60%	62%
Non-purely precautionary early alert	22%	12%	–	–	9%	8%	–	–	–	–	14%	6%
Higher risk (CG12)	6%	28%	–	–	5%	26%	–	–	–	–	3%	15%
Sub-investment grade	1%	3%	–	–	4%	2%	–	–	53%	63%	5%	4%
30 days past due	–	–	4%	22%	–	–	–	–	–	–	1%	9%
Others	22%	5%	2%	2%	15%	7%	100%	100%	4%	6%	17%	4%
Total stage 2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

Although the amount of exposures placed on non-purely precautionary early alert during the year increased in Corporate & Institutional Banking and Commercial Banking, a number of those exposures in Corporate & Institutional Banking had breached the SICR PD thresholds by the end of 2020 and have been classified into that category.

15 per cent of the provisions held against stage 2 Retail Banking exposures arise from the application of the 30 days past due backstop, although this represents only 8 per cent of exposures. The proportion of PD driven gross inflows into stage 2 has reduced compared with 2019, reflecting the impact of COVID-19 relief measures, which were in place for much of 2020.

Debt securities are largely held in the Group's Treasury business in Central & Others. Debt securities originated prior to 1 January 2018 that had a sub-investment grade rating were allocated into stage 2. For debt securities originated after 1 January 2018, SICR is assessed based on the relative and absolute increases in PD. Central & Others has seen a significant increase in the CG 12 category in 2020 primarily due to newly downgraded sovereign counterparties in the Africa & Middle East region.

'Others' primarily incorporates exposures where origination data is incomplete and the exposures are allocated into stage 2. Significant increase in credit risk for Private Banking clients is assessed by referencing the nature and level of collateral against which credit is extended.

Credit impairment charge (audited)

The underlying credit impairment charge is $2.3 billion, up $1.4 billion compared with 2019. Stage 3 is $823 million higher at $1.5 billion, of which more than 60 per cent is from Corporate & Institutional Banking.

Stage 1 and stage 2 impairments have also increased by $565 million to $827 million (2019: $262 million), of which more than half of the increase is due to management overlays of $353 million, with the remainder due to deteriorating macroeconomic forecasts and stage downgrades as a result of COVID-19 related uncertainties.

Corporate & Institutional Banking stage 3 impairments were $0.9 billion (2019: $0.4 billion), mainly from three significant but unrelated downgrades in the first quarter of 2020. Commercial Banking stage 3 impairment was slightly higher at $0.2 billion (2019: $ 0.1 billion) due to a few new client downgrades, reflecting in part the impact of the pandemic.

Stage 1 and stage 2 Corporate & Institutional Banking and Commercial Banking segments were $321 million and $70 million respectively (2019: Corporate & Institutional Banking $95 million and Commercial Banking $13 million release), with increases due to the deterioration in macroeconomic forecasts and second order impact of stage downgrades. A judgemental overlay of $197 million has also been taken, representing an estimate of the impact of further deterioration to the non-purely precautionary early alert portfolio.

Retail stage 3 impairments are higher, particularly in the ASEAN & South Asia region in unsecured products as volatility created by the pandemic resulted in a slowdown in field collections in key markets. Stage 1 and 2 impairment of $414 million was driven by higher flows into stage 2 and deterioration in macroeconomic forecasts, as well as a judgemental overlay of $156 million to account for the expected increase in delinquencies following the expiry of government relief measures.

Private Banking stage 3 impairment charge is $4 million, compared with a release in 2019 driven by an ASEAN & South Asia client. Stage 1 and 2 impairment saw a release of $2 million (2019: $1 million charge).

The Central & Others segment saw stage 1 and 2 impairment of $24 million (2019: $4 million) primarily due to stage downgrades of sovereign counterparties in the Africa & Middle East region.

	2020			2019		
	Stage 1 & 2 $million	Stage 3 $million	Total $million	Stage 1 & 2 $million	Stage 3 $million	Total $million
Ongoing business portfolio						
Corporate & Institutional Banking	321	916	1,237	95	380	475
Retail Banking	414	301	715	175	161	336
Commercial Banking	70	246	316	(13)	135	122
Private Banking	(2)	4	2	1	(32)	(31)
Central & Others	24	–	24	4	–	4
Credit impairment charge	827	1,467	2,294	262	644	906
Restructuring business portfolio						
Others[1]	–	31	31	1	1	2
Credit impairment charge	–	31	31	1	1	2
Total credit impairment charge	827	1,498	2,325	263	645	908

1 There was a net $31 million impairment (31 December 2019: $2 million) from the Group's discontinued businesses

COVID-19 relief measures

COVID-19 payment-related relief measures are in place across most of our markets, particularly focused on Retail and Business Banking customers. 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 ASEAN & South Asia and Africa & 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 Retail Banking markets, the period of relief provided is between 6 and 12 months. In some smaller markets, reliefs are in place for 3 months.

COVID-19 related tenor extensions have also been made available to Corporate & Institutional Banking and Commercial 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 the initial payment relief period, 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

$3.6 billion of outstanding loan balances are subject to payment relief measures at 31 December 2020. This represents 1 per cent of the Group's gross loans and advances to banks and customers.

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 2020.

The total exposure of the Retail Banking portfolio under moratoria is $2.4 billion, of which $1.8 billion (74 per cent) is from residential mortgages, which is secured against properties with an average loan-to-value of less than 40 per cent. A large part of moratoria has ended and thus the portfolio under moratoria reduced from $8.9 billion at its peak in the first half of the year (a significant portion of which was applied to all eligible loans and generally mandated or supported by regulators) to $2.4 billion mainly concentrated in Singapore and Hong Kong, which are largely secured. 16 per cent of the total amounts approved are to Business Banking customers, concentrated in industries that have been materially disrupted, of which over 45 per cent is collateralised by commercial immovable property.

In Corporate & Institutional Banking and Commercial Banking, around 54 per cent of the amounts outstanding have a remaining tenor of 90 days or less, and around 19 per cent of the amounts outstanding are to clients in vulnerable sectors.

COVID-19 relief measures

Segment	Outstanding $million	% of portfolio[1]	Greater China & North Asia Outstanding $million	% of portfolio[1]	ASEAN & South Asia Outstanding $million	% of portfolio[1]	Africa & Middle East Outstanding $million	% of portfolio[1]	Europe & Americas Outstanding $million	% of portfolio[1]
Credit card & Personal loans	241	2%	23	0%	90	0%	128	7%		
Residential mortgages	1,758	2%	526	1%	1,202	7%	30	1%		
Business banking	373	3%	103	2%	262	4%	8	1%		
Total Retail Banking	2,372	2%	652	1%	1,554	5%	166	3%		
Corporate & Institutional Banking	727		51		320		336		20	
Commercial Banking	468		262		113		93		–	
Total at 31 December 2020	3,567	1%	965		1,987		595		20	

1 Percentage of portfolio represents the outstanding amount at 31 December 2020 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 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 increased by $876 million compared with 2019, primarily in Corporate & Institutional Banking and Private Banking within the Africa & Middle East and Europe & Americas regions. $573 million of the increase relates to performing forborne loans and is primarily due to COVID-19 related modifications for a small percentage of clients.

The table below presents loans with forbearance measures by segment.

	2020				
Amortised cost	Corporate & Institutional Banking $million	Retail Banking $million	Commercial Banking $million	Private Banking $million	Total $million
All loans with forbearance measures	2,138	376	752	327	3,593
Credit impairment (stage 1 and 2)	(2)	–	(1)	(1)	(4)
Credit impairment (stage 3)	(829)	(179)	(551)	(2)	(1,561)
Net carrying value	1,307	197	200	324	2,028
Included within the above table					
Gross performing forborne loans	650	41	48	310	1,049
Modification of terms and conditions[1]	650	41	46	310	1,047
Refinancing[2]	–	–	2	–	2
Impairment provisions	(2)	–	(1)	(1)	(4)
Modification of terms and conditions[1]	(2)	–	(1)	(1)	(4)
Refinancing[2]	–	–	–	–	–
Net performing forborne loans	648	41	47	309	1,045
Collateral	307	23	22	–	352
Gross non-performing forborne loans	1,488	335	704	17	2,544
Modification of terms and conditions[1]	1,373	335	649	17	2,374
Refinancing[2]	115	–	55	–	170
Impairment provisions	(829)	(179)	(551)	(2)	(1,561)
Modification of terms and conditions[1]	(750)	(179)	(498)	(2)	(1,429)
Refinancing[2]	(79)	–	(53)	–	(132)
Net non-performing forborne loans	659	156	153	15	983
Collateral	223	38	66	9	336

Amortised cost	2019 Corporate & Institutional Banking $million	Retail Banking $million	Commercial Banking $million	Private Banking $million	Total $million
All loans with forbearance measures	1,533	344	767	–	2,644
Credit impairment (stage 1 and 2)	(13)	–	(4)	–	(17)
Credit impairment (stage 3)	(748)	(169)	(558)	–	(1,475)
Net carrying value	772	175	205	–	1,152
Included within the above table					
Gross performing forborne loans	421	19	49	–	489
Modification of terms and conditions[1]	421	19	44	–	484
Refinancing[2]	–	–	5	–	5
Impairment provisions	(13)	–	(4)	–	(17)
Modification of terms and conditions[1]	(13)	–	(4)	–	(17)
Refinancing[2]	–	–	–	–	–
Net performing forborne loans	408	19	45	–	472
Collateral	62	19	22	–	103
Gross non-performing forborne loans	1,112	325	718	–	2,155
Modification of terms and conditions[1]	1,071	325	696	–	2,092
Refinancing[2]	41	–	22	–	63
Impairment provisions	(748)	(169)	(558)	–	(1,475)
Modification of terms and conditions[1]	(717)	(169)	(544)	–	(1,430)
Refinancing[2]	(31)	–	(14)	–	(45)
Net non-performing forborne loans	364	156	160	–	680
Collateral	190	156	99	–	445

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

Forborne and other modified loans by region

Amortised cost	2020 Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Performing forborne loans	38	97	585	325	1,045
Stage 3 forborne loans	238	401	164	180	983
Net forborne loans	276	498	749	505	2,028

Amortised cost	2019 Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Performing forborne loans	100	251	110	11	472
Stage 3 forborne loans	177	173	148	182	680
Net forborne loans	277	424	258	193	1,152

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

Gross stage 3 loans for the Group have increased to $9.2 billion (2019: $7.4 billion), driven by inflows of $3.6 billion from new downgrades particularly in the Corporate & Institutional Banking and Commercial Banking segments which were offset by repayments and write-offs during the year. Inflows in 2020 were mainly in the ASEAN & South Asia and Africa & Middle East regions, driven by significant clients across unrelated sectors downgraded in Corporate & Institutional Banking.

Stage 3 loans in the Retail Banking portfolio increased by $0.3 billion driven by the impact of COVID-19 on the portfolio, but remains at 1 per cent of total Retail loans.

Gross stage 3 loans in Private Banking remained stable at $0.4 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 & Institutional Banking cover ratio decreased by 15 percentage points to 56 per cent as a result of write-offs, debt sales and new downgrades that have low levels of coverage as they benefit from collateral. The tangible collateral cover ratio is 14 per cent lower than 2019 at 69 per cent, as new downgrades are partially covered by credit insurance and guarantees, including export credit agencies which are not included in collateral cover.

The Commercial Banking cover ratio reduced to 72 per cent from 75 per cent mainly due to write-offs of heavily impaired exposures.

The Retail Banking cover ratio increased to 49 per cent from 44 per cent.

The Private Banking cover ratio increased to 42 per cent. Private Banking clients remain highly collateralised and the cover ratio after collateral remained broadly stable at 99 per cent.

	2020				
Amortised cost	Corporate & Institutional Banking $million	Retail Banking $million	Commercial Banking $million	Private Banking $million	Total $million
Gross credit-impaired	5,506	1,173	2,146	389	9,214
Credit impairment provisions	(3,065)	(569)	(1,545)	(162)	(5,341)
Net credit-impaired	2,441	604	601	227	3,873
Cover ratio	56%	49%	72%	42%	58%
Collateral ($ million)	737	419	326	224	1,706
Cover ratio (after collateral)	69%	84%	87%	99%	76%

	2019				
Amortised cost	Corporate & Institutional Banking $million	Retail Banking $million	Commercial Banking $million	Private Banking $million	Total $million
Gross credit-impaired	4,173	846	2,013	366	7,398
Credit impairment provisions	(2,980)	(374)	(1,503)	(147)	(5,004)
Net credit-impaired	1,193	472	510	219	2,394
Cover ratio	71%	44%	75%	40%	68%
Collateral ($ million)	497	286	263	211	1,257
Cover ratio (after collateral)	83%	78%	88%	98%	85%

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

Stage 3 gross loans increased by $1.8 billion or 25 per cent compared with 31 December 2019. The increase was primarily driven by a few clients in ASEAN & South Asia and Africa & Middle East.

	2020				
Amortised cost	Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Gross credit-impaired	1,016	3,774	3,473	951	9,214
Credit impairment provisions	(402)	(2,081)	(2,313)	(545)	(5,341)
Net credit-impaired	614	1,693	1,160	406	3,873
Cover ratio	40%	55%	67%	57%	58%

Amortised cost	2019 Greater China & North Asia $million	 ASEAN & South Asia $million	 Africa & Middle East $million	 Europe & Americas $million	 Total $million
Gross credit-impaired	716	3,084	2,585	1,013	7,398
Credit impairment provisions	(360)	(2,087)	(1,899)	(658)	(5,004)
Net credit-impaired	356	997	686	355	2,394
Cover ratio	50%	68%	73%	65%	68%

Movement of credit-impaired (stage 3) loans and advances provisions by client segment (audited)

Credit impairment provisions as at 31 December 2020 was $5.3 billion, compared with $5.0 billion as at 31 December 2019, with more than half of the increase from Retail Banking due to the impact of COVID-19 and in Corporate & Institutional Banking due to new inflows offset by write-offs.

The following table shows the movement of credit-impaired (stage 3) provisions for each client segment.

Amortised cost	2020 Corporate & Institutional Banking $million	 Retail Banking $million	 Commercial Banking $million	 Private Banking $million	 Total[2] $million
Gross credit-impaired loans at 31 December	5,506	1,173	2,146	389	9,214
Credit impairment allowances at 1 January	2,980	374	1,503	147	5,004
Net transfers into and out of stage 3	58	185	23	–	266
New provisions charge/(release)[1]	548	89	140	1	778
Changes due to risk parameters[1]	480	433	196	5	1,114
Net change in exposures[1]	(119)		(56)	(2)	(177)
Amounts written off[3]	(884)	(696)	(309)	(1)	(1,890)
Interest due but unpaid	32	98	83	17	230
Discount unwind	(40)	(25)	(14)	(7)	(86)
Exchange translation difference	10	111	(21)	2	102
Credit impairment allowances at 31 December	3,065	569	1,545	162	5,341
Net credit impairment	2,441	604	601	227	3,873
Income statement charge/(release)[1]	909	522	280	4	1,715
Recoveries of amounts previously written off	(18)	(221)	(5)	–	(244)
Total income statement charge	891	301	275	4	1,471

Amortised cost	2019 Corporate & Institutional Banking $million	 Retail Banking $million	 Commercial Banking $million	 Private Banking $million	 Total[2] $million
Gross credit-impaired loans at 31 December	4,173	846	2,013	366	7,398
Credit impairment allowances at 1 January	3,238	396	1,789	163	5,586
Net transfers into and out of stage 3	111	166	24	–	301
New provisions charge/(release)[1]	177	81	107	–	365
Changes due to risk parameters[1]	335	327	122	(26)	758
Net change in exposures[1]	(170)		(96)	(6)	(272)
Amounts written off[3]	(658)	(585)	(380)	(2)	(1,625)
Interest due but unpaid	(48)		(87)	17	(118)
Discount unwind	(38)	(28)	(13)	(4)	(83)
Exchange translation difference	33	17	37	5	92
Credit impairment allowances at 31 December	2,980	374	1,503	147	5,004
Net credit impairment	1,193	472	510	219	2,394
Income statement charge/(release)[1]	342	408	133	(32)	851
Recoveries of amounts previously written off	–	(247)	(1)	–	(248)
Total income statement charge	342	161	132	(32)	603

1 Components of the income statement charge/(release)
2 Excludes credit impairment relating to loan commitments and financial guarantees
3 In Retail Banking $589 million (2019: $492 million) of the amounts written off remains subject to enforcement activity

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 & Institutional Banking and Commercial Banking, without adjusting for over-collateralisation, was $313 billion in 2020 (2019: $280 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 over-collateralisation 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 Retail Banking and Private Banking segments, 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 Retail Banking has increased by $9 billion to $91 billion due to an increase in mortgages.

Private Banking collateral is $9 billion, a slight decrease driven by reductions in the secured wealth portfolio.

Total collateral for Central & other items increased by $1.3 billion compared with 2019 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.

	2020								
	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 & Institutional Banking[1]	153,301	16,367	2,441	22,847	6,058	737	130,454	10,309	1,704
Retail Banking	115,545	2,208	604	91,158	1,556	419	24,387	652	185
Commercial Banking	24,503	3,496	601	6,155	1,315	326	18,348	2,181	275
Private Banking	13,548	198	227	9,234	121	224	4,314	77	3
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

	2019[3]								
	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 & Institutional Banking[1]	162,201	14,231	1,193	23,652	2,724	497	138,549	11,507	696
Retail Banking	106,938	2,856	472	81,700	2,355	286	25,238	501	186
Commercial Banking	28,094	3,925	510	6,996	1,801	263	21,098	2,124	247
Private Banking	14,741	283	219	10,306	188	211	4,435	95	8
Central & other items	10,098	7	–	802		–	9,296	7	–
Total	322,072	21,302	2,394	123,456	7,068	1,257	198,616	14,234	1,137

1 Includes loans and advances to banks
2 Adjusted for over-collateralisation based on the drawn and undrawn components of exposures
3 Corporate & Institutional Banking, Retail Banking and Commercial Banking net amount outstanding, collateral and net exposure numbers have been restated to reflect client transfers between the three segments

Collateral – Corporate & Institutional Banking and Commercial Banking (audited)

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

Collateral taken for longer-term and sub-investment grade corporate loans remains high at 46 per cent. Our underwriting standards encourage taking specific charges on assets and we consistently seek high-quality, investment grade collateral.

82 per cent of tangible collateral held comprises physical assets or is property based, with the remainder largely in cash and investment securities.

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.

The following table provides an analysis of the types of collateral held against Corporate & Institutional Banking and Commercial Banking loan exposures.

Corporate & Institutional Banking

Amortised cost	2020 $million	2019[2] $million
Maximum exposure	153,301	162,201
Property	8,871	7,218
Plant, machinery and other stock	655	947
Cash	1,480	2,931
Reverse repos	2,165	2,000
A- to AA+	438	756
BBB- to BBB+	740	439
Unrated	987	805
Financial guarantees and insurance	5,042	7,374
Commodities	222	141
Ships and aircraft	4,412	3,041
Total value of collateral[1]	22,847	23,652
Net exposure	130,454	138,549

Commercial Banking

Amortised cost	2020 $million	2019[2] $million
Maximum exposure	24,503	28,094
Property	4,001	4,225
Plant, machinery and other stock	930	1,281
Cash	586	654
Reverse repos	7	8
A- to AA+	–	–
BBB- to BBB+	2	1
Unrated	5	7
Financial guarantees and insurance	428	573
Commodities	–	21
Ships and aircraft	203	234
Total value of collateral[1]	6,155	6,996
Net exposure	18,348	21,098

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

2 Maximum exposure, collateral and net exposure balances have been restated to reflect client transfers between Corporate & Institutional Banking and Commercial Banking

Collateral – Retail Banking and Private Banking (audited)

In Retail Banking and Private Banking, 86 per cent of the portfolio is fully secured as compared with 85 per cent in 2019, due to new mortgage lending during the year. The proportion of unsecured loans decreased to 13 per cent (2019: 14 per cent) and the remaining 1 per cent is partially secured.

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

	2020				2019[3]			
Amortised cost	Fully secured $million	Partially secured $million	Unsecured $million	Total $million	Fully secured $million	Partially secured $million	Unsecured $million	Total $million
Maximum exposure	111,112	760	17,221	129,093	103,182	1,257	17,240	121,679
Loans to individuals								
Mortgages	85,597	–	–	85,597	78,560	109	5	78,674
CCPL	171	–	16,921	17,092	123	8	17,092	17,223
Auto	536	–	–	536	562	–	10	572
Secured wealth products	19,886	–	–	19,886	20,275	127	–	20,402
Other	4,922	760	300	5,982	3,662	1,013	133	4,808
Total collateral[1]				100,392				92,006
Net exposure[2]				28,701				29,673
Percentage of total loans	86%	1%	13%		85%	1%	14%	

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

3 Maximum exposure, collateral and net exposure balances have been restated to reflect client transfers from Commercial Banking to Retail Banking

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 the value of mortgage loans. The average LTV of the overall mortgage portfolio is low at 45 per cent. Hong Kong, which represents 33 per cent of the Retail Banking mortgage portfolio has an average LTV of 43.9 per cent. All of our other key markets continue to have low portfolio LTVs, (Korea, Singapore and Taiwan at 39.5 per cent, 54.5 per cent and 51.0 per cent respectively).

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

	2020				
Amortised cost	Greater China & North Asia % Gross	ASEAN & South Asia % Gross	Africa & Middle East % Gross	Europe & Americas % Gross	Total % Gross
Less than 50 per cent	67.8	41.5	22.1	16.4	59.7
50 per cent to 59 per cent	14.1	18.1	15.0	28.0	15.4
60 per cent to 69 per cent	7.8	21.0	19.6	29.0	11.5
70 per cent to 79 per cent	6.6	16.3	20.7	21.7	9.4
80 per cent to 89 per cent	2.7	2.2	7.4	3.7	2.7
90 per cent to 99 per cent	1.0	0.5	6.0	0.6	1.0
100 per cent and greater	–	0.4	9.2	0.6	0.3
Average portfolio loan-to-value	42.0	52.2	64.7	60.4	44.7
Loans to individuals – mortgages ($million)	62,683	18,887	1,871	2,156	85,597

Amortised cost	2019 Greater China & North Asia % Gross	ASEAN & South Asia % Gross	Africa & Middle East % Gross	Europe & Americas % Gross	Total % Gross
Less than 50 per cent	67.8	43.4	21.6	10.8	59.3
50 per cent to 59 per cent	14.4	19.4	14.2	26.3	15.9
60 per cent to 69 per cent	9.2	22.5	21.0	29.4	13.2
70 per cent to 79 per cent	6.7	12.5	19.1	28.0	9.0
80 per cent to 89 per cent	1.6	1.7	11.5	4.5	2.0
90 per cent to 99 per cent	0.2	0.3	6.5	0.4	0.4
100 per cent and greater	0.1	0.2	6.2	0.6	0.3
Average portfolio loan-to-value	42.1	50.7	66.6	62.2	44.9
Loans to individuals – mortgages ($million)[1]	56,067	18,301	2,047	2,259	78,674

1 Greater China & North Asia number has been restated to reflect client transfers from Commercial Banking to Retail Banking

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 as at 31 December 2020 is $23.2 million (2019: $37.0 million).

	2020 $million	2019 $million
Property, plant and equipment	18.2	29.0
Guarantees	4.8	5.2
Cash	–	2.7
Other	0.2	0.1
Total	23.2	37.0

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 $10.5 billion (2019: $14.5 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 and Foreign Exchange 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 $8.0 billion (2019: $4.5 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 exposures, 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 business segment, 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 & Institutional Banking and Commercial Banking segments remain predominantly short-term, with 61 per cent (2019: 62 per cent) maturing in less than one year. 94 per cent (2019: 97 per cent) of loans to banks mature in less than one year, a decrease compared with 2019 as net exposures reduced by $9 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 Private Banking loan book is mostly short-term with around 93 per cent of lending maturing in one year or less, which is typical for loans that are secured on wealth management assets.

The Retail Banking loan book continues to be longer-term in nature with 69 per cent (2019: 69 per cent) of the loans maturing over five years, as mortgages constitute the majority of this portfolio.

	2020			
Amortised cost	One year or less $million	One to five years $million	Over five years $million	Total $million
Corporate & Institutional Banking	65,075	35,833	11,565	112,473
Retail Banking	20,265	15,580	80,949	116,794
Commercial Banking	19,479	5,300	1,397	26,176
Private Banking	12,772	422	525	13,719
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

	2019			
Amortised cost	One year or less $million	One to five years $million	Over five years $million	Total $million
Corporate & Institutional Banking[1]	64,439	36,400	11,014	111,853
Retail Banking[1]	18,196	15,419	74,159	107,774
Commercial Banking[1]	22,846	5,439	1,396	29,681
Private Banking	13,893	507	499	14,899
Central & other items	10,098	–	1	10,099
Gross loans and advances to customers	129,472	57,765	87,069	274,306
Impairment provisions	(4,887)	(439)	(457)	(5,783)
Net loans and advances to customers	124,585	57,326	86,612	268,523
Net loans and advances to banks	51,871	1,678	–	53,549

1 Gross numbers have been restated to reflect client transfers between Corporate & Institutional Banking, Commercial Banking and to Retail Banking

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, loans and advances increased by $14 billion compared with 31 December 2019, of which $6 billion is in Corporates and the Central & Others segment, and $8 billion in Retail and Private Banking lending.

The increase in the corporate book is largely a $9 billion increase in lending to Governments, mostly in the ASEAN & South Asia and Greater China & North Asia regions, offset by a $2.8 billion decrease in the Energy sector. In Retail Banking, the increase is primarily from stage 1 mortgage originations in the Greater China & North Asia region.

Total wholesale stage 2 loans increased by $2 billion largely due to an increase in loans placed on non-purely precautionary early alert, which particularly impacted the Transport, Telecom and Utilities sector. This was partly offset by reductions of $0.7 billion in Retail Banking mainly due to repayments and few transfers to stage 3 in mortgages.

	2020											
	Stage 1			Stage 2			Stage 3			Total		
Amortised cost	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 & 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

	2019[2]											
	Stage 1			Stage 2			Stage 3			Total		
Amortised cost	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	13,223	(17)	13,206	1,562	(22)	1,540	894	(758)	136	15,679	(797)	14,882
Manufacturing	20,070	(15)	20,055	3,498	(29)	3,469	970	(695)	275	24,538	(739)	23,799
Financing, insurance and non-banking	20,972	(8)	20,964	1,193	(17)	1,176	292	(183)	109	22,457	(208)	22,249
Transport, telecom and utilities	14,874	(10)	14,864	1,873	(35)	1,838	841	(599)	242	17,588	(644)	16,944
Food and household products	8,321	(8)	8,313	1,551	(18)	1,533	585	(429)	156	10,457	(455)	10,002
Commercial real estate	14,244	(18)	14,226	2,092	(33)	2,059	293	(102)	191	16,629	(153)	16,476
Mining and quarrying	6,134	(8)	6,126	1,067	(12)	1,055	320	(232)	88	7,521	(252)	7,269
Consumer durables	6,366	(5)	6,361	1,094	(15)	1,079	651	(443)	208	8,111	(463)	7,648
Construction	3,082	(5)	3,077	332	(8)	324	774	(607)	167	4,188	(620)	3,568
Trading companies & distributors	1,202	(1)	1,201	1,928	(1)	1,927	307	(218)	89	3,437	(220)	3,217
Government	14,698	(1)	14,697	702	(3)	699	–	–		15,400	(4)	15,396
Other	4,815	(8)	4,807	554	(10)	544	261	(218)	43	5,630	(236)	5,394
Retail Products:												
Mortgage	76,123	(10)	76,113	2,290	(12)	2,278	406	(123)	283	78,819	(145)	78,674
CCPL and other unsecured lending	16,834	(268)	16,566	620	(158)	462	404	(209)	195	17,858	(635)	17,223
Auto	570	(1)	569	2	–	2	1	–	1	573	(1)	572
Secured wealth products	19,895	(19)	19,876	336	(3)	333	354	(161)	193	20,585	(183)	20,402
Other	4,726		4,726	65	(1)	64	45	(27)	18	4,836	(28)	4,808
Total value (customers)[1]	246,149	(402)	245,747	20,759	(377)	20,382	7,398	(5,004)	2,394	274,306	(5,783)	268,523

1 Includes reverse repurchase agreements and other similar secured lending held at amortised cost of $1,469 million

2 Stage 1 and stage 2 Gross and ECL balances have been restated to reflect client transfers from Commercial Banking to Retail Banking

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 & Institutional Banking and Commercial Banking segments, our largest industry exposures are to Financing, insurance and non-banking, Government, and Manufacturing, with each constituting at least 15 per cent of Corporate & Institutional Banking and Commercial 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 4,100 clients.

Loans and advances to the energy sector reduced to 8 per cent (2019: 10 per cent) of total loans and advances to Corporate & Institutional Banking and Commercial Banking. The Energy sector lending is spread across five sub-sectors and over 230 clients.

The Group provides loans to commercial real estate counterparties of $19 billion, which represent 7 per cent of total customer loans and advances. In total, $8.8 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 increased to 51 per cent, compared with 46 per cent in 2019. The proportion of loans with an LTV greater than 80 per cent has increased to 4 per cent in 2020, compared with 1 per cent in 2019.

The mortgages portfolio continues to be the largest portion of the Retail Products portfolio, at 66 per cent (2019: 65 per cent). CCPL and other unsecured lending has reduced to 13 per cent of total Retail Products loans and advances (2019: 14 per cent).

	2020				
Amortised cost	Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Industry:					
Energy	946	3,933	2,717	4,487	12,083
Manufacturing	12,526	5,373	2,202	3,260	23,361
Financing, insurance and non-banking	11,072	4,206	1,018	8,040	24,336
Transport, telecom and utilities	6,442	3,935	5,218	1,679	17,274
Food and household products	2,726	3,196	2,418	1,189	9,529
Commercial real estate	11,374	4,571	1,755	1,390	19,090
Mining and quarrying	2,228	1,852	717	892	5,689
Consumer durables	3,452	1,797	335	221	5,805
Construction	1,320	1,288	940	381	3,929
Trading companies & distributors	578	330	192	130	1,230
Government	2,791	16,625	4,880	72	24,368
Other	2,021	1,749	928	1,214	5,912
Retail Products:					
Mortgages	62,683	18,887	1,871	2,156	85,597
CCPL and other unsecured lending	11,184	3,793	2,019	96	17,092
Auto	–	481	55	–	536
Secured wealth products	7,336	10,784	383	1,383	19,886
Other	5,330	96	556	–	5,982
Net loans and advances to customers	144,009	82,896	28,204	26,590	281,699
Net loans and advances to banks	18,011	13,534	5,741	7,061	44,347

	2019				
Amortised cost	Greater China & North Asia[1] $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Industry:					
Energy	2,573	3,770	2,943	5,596	14,882
Manufacturing	11,320	6,127	3,211	3,141	23,799
Financing, insurance and non-banking	9,365	4,314	988	7,582	22,249
Transport, telecom and utilities	6,268	4,014	5,349	1,313	16,944
Food and household products	2,777	3,651	2,478	1,096	10,002
Commercial real estate	9,377	4,954	1,783	362	16,476
Mining and quarrying	2,142	2,469	965	1,693	7,269
Consumer durables	4,497	2,019	699	433	7,648
Construction	1,088	1,220	1,126	134	3,568
Trading companies & distributors	2,602	296	198	121	3,217
Government	1,490	9,907	3,926	73	15,396
Other	1,722	1,870	836	966	5,394
Retail Products:					
Mortgages	56,067	18,301	2,047	2,259	78,674
CCPL and other unsecured lending	10,633	4,239	2,258	93	17,223
Auto	–	485	87	–	572
Secured wealth products	8,159	10,473	338	1,432	20,402
Other	3,981	121	705	1	4,808
Net loans and advances to customers	134,061	78,230	29,937	26,295	268,523
Net loans and advances to banks	19,313	15,756	5,350	13,130	53,549

1 Greater China and North Asia numbers have been restated to reflect client transfers from Commercial Banking to Retail Banking

Vulnerable sector tables

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

Total net exposure to vulnerable sectors reduced by $6 billion compared with 31 December 2019 and represents 27 per cent (2019: 30 per cent) of the total net exposure in Corporate & Institutional Banking and Commercial Banking. The reductions were largely due to increased levels of collateral and reduced undrawn commitments, particularly in the Commodity traders, Metals & mining, and Commercial real estate sectors.

Stage 2 loans increased to 18 per cent (2019: 13 per cent) of loans to vulnerable sectors. This was primarily driven by an increase in loans placed on non-purely precautionary early alert in the Aviation and Commercial real estate sectors, offset by Commodity traders sector clients, some of which were transferred to stage 3.

Stage 3 loans increased by $0.6 billion compared with 31 December 2019 primarily due to downgrades from stage 2 exposures in the Commodity traders and Aviation sectors due to COVID-19 related volatility.

Maximum exposure

	2020						
Amortised cost	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]	3,839	2,106	1,733	1,321	531	1,852	3,585
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	45,231	13,083	32,148	21,160	11,886	33,046	65,194
Total Corporate & Institutional Banking and Commercial Banking	133,457	27,561	105,896	92,001	46,725	138,726	244,622
Total Retail Banking, Private Banking and other segments	192,589	103,886	88,703	61,285	6,857	68,142	156,845
Total Group	326,046	131,447	194,599	153,286	53,582	206,868	401,467

	2019						
Amortised cost	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]	3,659	1,186	2,473	1,131	556	1,687	4,160
Commodity traders	10,386	326	10,060	2,736	4,075	6,811	16,871
Metals & mining	5,436	381	5,055	2,774	602	3,376	8,431
Commercial real estate	16,476	5,892	10,584	6,771	390	7,161	17,745
Hotels & tourism	2,397	800	1,597	1,634	146	1,780	3,377
Oil & gas	8,041	1,241	6,800	8,118	5,943	14,061	20,861
Total	46,395	9,826	36,569	23,164	11,712	34,876	71,445
Total Corporate & Institutional Banking and Commercial Banking	136,746	27,065	109,681	86,058	40,873	126,931	236,612
Total Retail Banking, Private Banking and other segments	185,326	96,391	88,935	55,055	5,605	60,660	149,595
Total Group	322,072	123,456	198,616	141,113	46,478	187,591	386,207

1 In addition to the aviation sector loan exposures, the Group owns $3.9 billion (31 December 2019: $3.4 billion) of aircraft under operating leases. Refer to Operating lease assets

Loans and advances by stage

	2020											
	Stage 1			Stage 2			Stage 3			Total		
Amortised cost	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	2,073	(1)	2,072	1,613	(26)	1,587	258	(78)	180	3,944	(105)	3,839
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	36,083	(29)	36,054	8,547	(177)	8,370	2,089	(1,282)	807	46,719	(1,488)	45,231
Total Corporate & Institutional Banking and Commercial Banking	110,993	(95)	110,898	20,004	(487)	19,517	7,652	(4,610)	3,042	138,649	(5,192)	133,457
Total Retail Banking, Private Banking and other segments	189,459	(453)	189,006	3,006	(254)	2,752	1,562	(731)	831	194,027	(1,438)	192,589
Total Group	300,452	(548)	299,904	23,010	(741)	22,269	9,214	(5,341)	3,873	332,676	(6,630)	326,046

	2019											
	Stage 1			Stage 2			Stage 3			Total		
Amortised cost	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	3,426	(1)	3,425	236	(8)	228	6	–	6	3,668	(9)	3,659
Commodity traders	8,693	(10)	8,683	1,663	(6)	1,657	401	(355)	46	10,757	(371)	10,386
Metals & mining	4,422	(5)	4,417	875	(10)	865	292	(138)	154	5,589	(153)	5,436
Commercial real estate	14,244	(18)	14,226	2,092	(33)	2,059	293	(102)	191	16,629	(153)	16,476
Hotels & tourism	2,012	(4)	2,008	384	(2)	382	35	(28)	7	2,431	(34)	2,397
Oil & gas	6,854	(10)	6,844	1,031	(15)	1,016	441	(260)	181	8,326	(285)	8,041
Total	39,651	(48)	39,603	6,281	(74)	6,207	1,468	(883)	585	47,400	(1,005)	46,395
Total Corporate & Institutional Banking and Commercial Banking	117,909	(102)	117,807	17,439	(203)	17,236	6,186	(4,483)	1,703	141,534	(4,788)	136,746
Total Retail Banking, Private Banking and other segments	180,874	(305)	180,569	4,244	(178)	4,066	1,212	(521)	691	186,330	(1,004)	185,326
Total Group	298,783	(407)	298,376	21,683	(381)	21,302	7,398	(5,004)	2,394	327,864	(5,792)	322,072

Loans and advances by region (net of credit impairment)

Amortised cost	2020 Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Industry:					
Aviation	1,447	348	1,492	552	3,839
Commodity traders	1,870	2,747	780	3,267	8,664
Metals & mining	1,427	1,398	597	460	3,882
Commercial real estate	11,374	4,571	1,755	1,390	19,090
Hotel & tourism	640	1,052	512	353	2,557
Oil & gas	713	2,621	2,036	1,829	7,199
Total	17,471	12,737	7,172	7,851	45,231

Amortised cost	2019 Greater China & North Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Industry:					
Aviation	1,392	224	1,373	670	3,659
Commodity traders	2,082	3,513	1,276	3,515	10,386
Metals & mining	1,366	1,950	837	1,283	5,436
Commercial real estate	9,377	4,954	1,783	362	16,476
Hotel & tourism	543	1,092	547	215	2,397
Oil & gas	1,123	2,130	2,022	2,766	8,041
Total	15,883	13,863	7,838	8,811	46,395

Credit quality – loans and advances

Amortised cost Credit Grade	2020 Aviation $million	Commodity traders $million	Metals & mining $million	Commercial real estate $eillion	Hotel & tourism $million	Oil & gas $million	Total $million
Strong	1,406	4,968	1,055	7,795	696	3,177	19,097
Satisfactory	2,124	3,554	2,423	11,110	1,672	3,745	24,628
Higher risk	156	18	327	10	118	276	905
Defaulted	258	799	210	408	138	276	2,089
Total gross balance	3,944	9,339	4,015	19,323	2,624	7,474	46,719
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	2.7%	7.2%	3.3%	1.2%	2.6%	3.7%	3.2%

Amortised cost	2019						
Credit Grade	Aviation $million	Commodity traders $million	Metals & mining $million	Commercial real estate $million	Hotel & tourism $million	Oil & gas $million	Total $million
Strong	2,635	5,104	1,270	8,338	983	3,706	22,036
Satisfactory	967	5,217	3,853	7,929	1,411	4,040	23,417
Higher risk	60	35	174	121	2	139	531
Defaulted	6	401	292	241	35	441	1,416
Total gross balance	3,668	10,757	5,589	16,629	2,431	8,326	47,400
Strong	–	(6)		(47)	(1)	(2)	(56)
Satisfactory	(3)	(10)	(8)	(23)	(5)	(22)	(71)
Higher risk	(6)	–	(7)	(16)	–	(1)	(30)
Defaulted	–	(355)	(138)	(67)	(28)	(260)	(848)
Total credit impairment	(9)	(371)	(153)	(153)	(34)	(285)	(1,005)
Strong	0.0%	0.1%	0.0%	0.6%	0.1%	0.1%	0.3%
Satisfactory	0.3%	0.2%	0.2%	0.3%	0.4%	0.5%	0.3%
Higher risk	10.0%	0.0%	4.0%	13.2%	0.0%	0.7%	5.6%
Defaulted	0.0%	88.5%	47.3%	27.8%	80.0%	59.0%	59.9%
Cover ratio	0.2%	3.4%	2.7%	0.9%	1.4%	3.4%	2.1%

Debt securities and other eligible bills (audited)

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

Amortised cost and FVOCI	2020 Debt securities and other eligible bills $million	2019 Debt securities and other eligible bills $million
12-month expected credit losses (stage 1)	149,316	138,782
AAA	64,209	63,799
AA- to AA+	40,377	36,840
A- to A+	26,551	19,625
BBB- to BBB+	12,588	9,466
Lower than BBB-	398	973
Unrated	5,193	8,079
Lifetime expected credit losses (stage 2)	3,506	4,644
AAA	24	248
AA- to AA+	–	41
A- to A+	50	–
BBB- to BBB+	2,693	3,909
Lower than BBB-	415	241
Unrated	324	205
Credit-impaired financial assets (stage 3)[1]	114	75
Lower than BBB-	–	–
Unrated	114	75
Gross balance	152,936	143,501

1 Stage 3 includes $38 million originated credit-impaired debt securities

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 debt securities and other eligible bills increased by $9.4 billion as part of the Group's liquidity management to meet regulatory requirement and to support the Group's strategy to provide more credit solutions to customers.

As the total balance sheet increased, excess funding from customers was deployed in highly rated securities to boost holdings of high-quality liquid assets. This can be observed in the increase of stage 1 securities rated A- and above of $10.9 billion. Investment in stage 1 unrated securities decreased by $2.9 billion as matured securities were not rolled over and funding channelled to investment in rated securities. Stage 2 securities decreased by $1.1 billion mainly due to balances transferred to stage 1 as a result of improved credit quality.

IFRS 9 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 interest rates, 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, amortisation and prepayments.

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 & Institutional Banking and Commercial 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 Banking expected credit loss models are country and product specific given the local nature of the Retail Banking business.

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

- For medium-sized Retail Banking 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 Banking 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 these 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 Validation (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 Banking credit cards and Corporate & Institutional Banking 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 Banking credit cards is between 3 and 6 years across our footprint markets.

In 2020, the behavioural life for corporate overdraft facilities was re-estimated using recent data, and a lifetime of 24 months is now being applied (2019: 32 months). The change in approach does not have a material impact on the income statement.

Post model adjustments

Where a model's performance breaches the monitoring thresholds or validation standards, an assessment is completed to determine whether an ECL Post Model Adjustment (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 seen over 2020 has meant that a number of the Group's IFRS 9 ECL models are now 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 lock down, followed by a recovery of 10 to 20 per cent the following quarter when the lock down is assumed to end. This can lead to the models in some instances either seeing a very large economic deterioration or a very optimistic GDP increase (i.e. if the model only uses the period in the scenario with the recovery). In these cases, this causes a sudden PD increase or decrease, which will then return to more normal levels once the volatility in the quarterly forecasts returns to historical norms. As a result, at 31 December 2020 the Group has made adjustments to the modelled output to remove this volatility to ensure that the resulting ECL remains unbiased and appropriately reflects the Group's credit risks in the current environment. The adjustments are based on a combination of portfolio-level Credit Risk analysis (retail) and an evaluation of ECL coverage at an exposure level (wholesale). These adjustments will be removed once the quarterly macroeconomic forecasts and associated model estimates become less volatile in line with historical norms.

As at 31 December 2020, PMAs have been applied for 13 models out of the total of 186. In aggregate, the PMAs decrease the Group's impairment provisions by $158 million (9 per cent of modelled provisions) compared with a $13 million decrease at 31 December 2019. As set out on below, a separate management overlay that covers risk not captured by the models has been applied after taking into account these PMAs.

	2020 $m	2019 $m
Volatility-related PMAs		
Corporate & Institutional Banking, Commercial Banking and Central & Others	(49)	–
Retail Banking	(12)	–
	(61)	–
Model performance PMAs		
Corporate & Institutional Banking and Commercial Banking	(73)	–
Retail Banking	(24)	(13)
	(97)	(13)
Total PMAs	(158)	(13)

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 on 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 review 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

The Base Forecast – management's view of the most likely outcome – is that the prospects for a path out of the COVID-19 crisis have improved with progress on vaccines and virus treatments. Early into the new year, this has raised confidence over the economic outlook and is expected to support the recovery of economic activity over the next two years. Global GDP is expected to grow by around 5 per cent in 2021, well above the average of 3.7 per cent for the ten years between 2010 to 2019. However, this follows a contraction of almost 4 per cent in 2020, the worst performance since the Great Depression of 1929-31.

Key to the outlook is the assumption that vaccines will be rolled out early in 2021 in major markets, and reach the majority of the population by the third quarter of the year. In addition, renewed virus outbreaks in many countries are expected to be contained. The global economic recovery will strengthen in the second half of 2021 as investment picks up around the world.

With the global recovery under way, many countries are expected to be close to their forward-looking long-term –or future potential – growth levels by the end of the next two years. However, the outlook remains highly uncertain. A faster distribution of vaccines will likely support stronger growth, while delays and disruptions will hold it back. The current (and any future) resurgence of the virus in many countries could also force governments to tighten restrictions on economic activity for longer than anticipated.

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 over 1Q'90 to 3Q'20 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 below illustrate the shape of the Base Forecast in relation to prior periods' actuals and the long-term growth rates.

The global economic recovery in the near term is expected to be uneven. While the US and Europe are likely to recover this year, Asia – particularly China and India – is expected to lead the global economic rebound. China is likely to continue its strong recovery and is expected to grow by 8 per cent in 2021, having already exceeded end-2019 GDP levels in 2020. Among Asian economies, India has faced the sharpest negative shock, with an expected GDP contraction of around 8 per cent in FY21 (year ending in March 2021). The expected pick-up in FY22 is around 10 per cent. Open economies that are reliant on trade such as Singapore will be lifted by the global economic recovery. Its GDP is expected to grow by around 5 per cent after a 6 per cent contraction in 2020. Similarly, Hong Kong's economy is expected to expand by 4 per cent this year from a 6 per cent contraction previously. Korea was one of the first countries to be affected by the pandemic, but the effective strategies employed by the government helped contain the spread of the virus and limited the economic fallout compared with other advanced economies. Korea's GDP is expected to grow by 3.3 per cent in 2021 after contracting by less than 1 per cent in 2020.

Gains in commodity prices are also likely to be uneven. Metal prices such as copper are expected to benefit from the improved outlook for Asia, particularly China. However, global oil demand is not expected to recover all of its 2020 losses this year and this will limit any price gains. Oil prices are expected to average $44 in 2021, showing only a marginal gain from the $41 average in 2020. However, there are upside risks to oil prices should the economic recovery be stronger than expected.

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

	China			Hong Kong			Korea			Singapore			India[1]		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
GDP growth (YoY%)	2.1	8.0	5.6	–5.8	4.0	2.5	–0.8	3.3	2.4	–6.0	5.0	2.6	–8.0	10.0	4.5
Unemployment (%)	3.8	3.5	3.4	5.4	5.9	4.3	3.8	3.7	3.5	4.1	4.0	3.6	N/A	N/A	N/A
3-month interest rates (%)	2.0	2.2	2.3	1.0	0.8	0.7	0.8	0.5	0.8	0.6	0.5	0.6	3.3	3.4	3.7
House prices (YoY%)	5.3	4.8	5.8	–2.2	1.1	6.2	3.1	1.6	1.4	1.1	2.7	4.2	4.5	5.8	6.8

1 India GDP follows the fiscal year beginning in Q2. All other variables are on a calendar year basis

2020[5]

	China				Hong Kong				Korea				Singapore				India			
	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]
GDP growth (YoY%)	6.0	19.4/3.2	1.9	20.4	2.8	5.5/2.5	(1.9)	7.3	2.8	5.3/1.4	(1.4)	7.9	2.8	13.7/(2.3)	(5.4)	17.5	6.4	32.6/ 0.0	(2.1)	34.9
Unemployment (%)	3.4	3.7/3.4	3.3	3.7	3.9	6.3/3.1	2.3	7.2	3.3	3.7/3.0	2.6	4.5	3.5	4.3/3.1	2.0	5.5	N/A[1]	N/A	N/A	N/A
3-month interest rates (%)	2.3	2.4/2.2	0.9	4.5	0.9	1.3/0.7	(0.3)	3.2	1.2	2.3/0.5	(0.1)	3.5	0.7	1.2/0.5	0.0	2.2	4.3	5.4/3.3	2.0	6.9
House prices (YoY%)	5.8	6.2/4.7	1.2	8.7	3.7	7.5/(4.3)	(12.8)	23.0	2.3	3.2/0.4	(2.3)	7.6	4.0	4.3/1.5	(4.4)	16.9	6.7	7.2/4.8	(4.1)	21.8

2019

	China				Hong Kong				Korea				Singapore				India			
	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/ trough	Low[2]	High[3]
GDP growth (YoY%)	5.8	6.3/5.5	4.4	7.4	1.6	2.5/(4.8)	(2.7)[4]	4.4	2.6	2.9/2.1	0.6	4.8	2.1	2.5/0.9	(1.4)	5.9	6.9	7.2/6.1	5.0	9.0
Unemployment (%)	3.6	3.6/3.6	3.6	3.7	3.5	3.6/3.1	2.7	4.3	3.6	4.0/3.2	3.0	4.2	3.0	3.2/3.0	2.3	3.8	N/A[1]	N/A	N/A	N/A
3-month interest rates (%)	2.6	2.8/2.3	1.8	3.6	2.4	3.5/1.2	0.9	4.3	1.7	2.5/1.2	0.8	2.9	2.0	2.9/1.3	1.1	3.1	5.2	5.6/4.8	4.3	6.1
House prices (YoY%)	6.3	7.6/4.2	4.2	8.3	3.6	5.7/(5.1)	(6.5)	14.6	2.6	2.8/0.7	0.5	4.8	3.4	4.4/0.4	(2.7)	9.7	7.8	8.1/6.9	2.4	13.2

	2020[5]				2019			
	5-year average base forecast	Base forecast peak/trough	Low[2]	High[3]	5-year average base forecast	Base forecast peak/trough	Low[2]	High[3]
Crude price Brent, $ pb	54	61/39	22	116	71	76/66	42	102

1 N/A – Not available

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 This value is higher than the trough in the base case forecast because it is measured over the 5-year range; if the 10th percentile had been read off the first half of 2020, it would have been -5.7

5 Base forecasts are evaluated from 1Q'21 to 4Q'25. The forward-looking simulation starts from 1Q'21

The final probability-weighted ECL reported by the Group is a simple average of the ECL for each of the 50 scenarios, together with the ECL from the base forecast. The impact of these scenarios and the management overlay (together referred to as non-linearity) is set out in the table below.

	Including non-linearity $million	Base forecast $million	Difference %
Total expected credit loss at 31 December 2020[1]	1,731	1,380	25.4
Total expected credit loss at 31 December 2019[1]	1,108	1,079	2.7

1 Total modelled ECL comprises stage 1 and stage 2 balances of $1,549 million (31 December 2019: $975 million) and $182 million (31 December 2019: $133 million) of modelled ECL on stage 3 loans

The average expected credit loss under multiple scenarios (which incorporates the management overlay below) is 25.4 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 Retail Banking mortgage portfolios.

Management overlay – COVID-19

As at 31 December 2020, the Group held a $359 million management overlay relating to uncertainties as a result of the COVID-19 pandemic that are not captured by the models, $197 million of which relates to Corporate & Institutional Banking and Commercial Banking and $162 million to Retail Banking. The overlay has been determined after taking account of the PMAs and is re-assessed quarterly. It is reviewed and approved by the IFRS9 Impairment Committee.

Corporate & Institutional Banking and Commercial Banking The amount of loans placed on non-purely precautionary early alert increased significantly over 2020 as the impact of COVID-19 was evaluated on the Group's portfolio. However, the impact of the rapid deterioration in the economic environment in 2020 has not yet been fully observed in customers' financial performance. In part this has been due to ongoing government support measures across the Group's markets and we have not yet seen a significant increase in the level of stage 3 loans relating to COVID-19 as at 31 December 2020. 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. The overlay increased to $227 million at 30 September 2020 compared with $198 million at 30 June 2020, and reduced to $197 million at 31 December 2020 as the level of non-purely precautionary early alerts reduced relative to previous quarters.

Retail Banking A number of components contribute to the judgemental overlay for Retail 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 in ASEAN & South Asia where compulsory 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, such as airlines, and the impact on mortgages in Africa & Middle East which generally have high LTVs. $78 million of the overlay is held in stage 1, $78 million in stage 2 and $6 million in stage 3. The basis of determining the overlay remained unchanged during 2020. The overlay increased to $166 million at 30 September compared with $118m at 30 June 2020 and reduced to $162 million at 31 December 2020, as general moratoria schemes ended in a number of markets and the increased delinquency flows were captured by the ECL models.

Stage 3

Credit-impaired assets managed by Group Special Assets Management (GSAM) 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 that might have the greatest impact on 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 and 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 effect of COVID-19 on 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, with both assuming a second wave of COVID-19 early in 2021 across all Standard Chartered markets. The shock is assumed to be 50 per cent as severe as the first wave as governments have learnt lessons on how to tackle the spread of the virus from the prior years' experience. In the moderate scenario, a reasonable recovery takes hold in the second half of 2021. In the severe scenario measures to contain the spread of COVID-19 and stimulate activity prove insufficient and the economies are stuck in a prolonged slowdown with a recovery not materialising until 2022.

	Baseline		Moderate scenario		Severe scenario	
	5-year average	Peak/Trough	5-year average	Peak/Trough	5-year average	Peak/Trough
China GDP	6.0	19.4/3.2	5.3	13.0/(1.3)	4.7	13.0/(4.0)
China unemployment	3.4	3.7/3.4	3.7	5.1/3.4	4.2	5.8/3.4
China property prices	5.8	6.2/4.7	5.0	6.0/(0.9)	4.2	6.2/(4.2)
Hong Kong GDP	2.8	5.5/2.5	2.1	3.4/(0.8)	1.7	2.5/(2.8)
Hong Kong unemployment	3.9	6.3/3.1	5.2	7.5/3.1	5.8	8.1/3.1
Hong Kong property prices	3.7	7.5/(4.3)	2.2	5.6/(6.6)	(0.6)	4.8/(13.2)
US GDP	2.1	8.1/(4.7)	0.8	6.2/(9.2)	(0.3)	2.5/(11.5)
Singapore GDP	2.8	13.7/(2.3)	2.3	10.0/(3.1)	0.7	4.3/(7.0)
India GDP	6.4	32.6/0.0	5.2	17.0/(0.6)	3.8	17.0/(11.8)
World GDP	3.8	9.1/3.3	2.9	7.7/(2.1)	1.7	3.7/(6.5)
Crude Oil	53.8	60.9/39.0	48.6	60.9/19.3	44.4	60.9/19.3

The modelled ECL provisions would be approximately $242 million higher under the moderate scenario and $1.3 billion higher under the severe 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 5.7 per cent to 13.5 per cent under the severe downside scenario. This includes the impact of exposures transferring to stage 2 from stage 1 but does not consider an increase in stage 3 defaults. There was no material change in modelled stage 3 provisions as these primarily relate to unsecured Retail Banking exposures, for which the LGD is not sensitive to changes in the macroeconomic forecasts. Under the severe scenario, the majority of the increase was in Corporate & Institutional Banking and Commercial Banking with the main corporate portfolios in the UK, Singapore and UAE impacted. Around 13 per cent of the increase was in Retail Banking, with the main portfolios impacted being the Group's credit card portfolios in Hong Kong, Malaysia and Singapore. Note that these scenarios are not incorporated into the Group's determination of ECL provisions and the actual outcome of any scenario may be materially different due to, amongst other factors, the effect of management actions to mitigate potential increases in risk and changes in the underlying portfolio.

Modelled provisions

	Moderate downside increase $m	Severe downside increase $m
Corporate & Institutional Banking	75	890
Retail Banking	79	175
Commercial Banking	50	237
Private Banking	1	1
Central & other items	37	45
Total	242	1,348

Proportion of assets in stage 2[1]

	Base Forecast scenario %	Moderate downside scenario %	Severe downside scenario %
Corporate & Institutional Banking	10.9%	11.6%	25.9%
Retail Banking	2.1%	2.5%	2.9%
Commercial Banking	17.2%	23.4%	45.5%
Private Banking	7.2%	7.2%	7.2%
Central & other items	0.6%	0.9%	2.7%
Total	5.7%	6.5%	13.5%

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 PD 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 & Institutional Banking and Commercial 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 Retail 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 & Institutional Banking and Commercial Banking clients.

Qualitative criteria

Qualitative factors that indicate 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 & Institutional Banking and Commercial 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 & Institutional Banking and Commercial Banking clients are placed on CG12 when they are 30 DPD unless they are granted a waiver through a strict governance process.

Retail 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 above. 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 & Institutional Banking and Commercial Banking client segments, including being placed on early alert or being classified as CG12.

Assessment of credit-impaired financial assets

Retail 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 & Institutional Banking, Commercial 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 cashflows, 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 IFRS 9 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.

Country Risk

The Group monitors Gross Country Risk (GCR), which is an aggregate of two distinct risk types:

- Transfer and Convertibility Risk (TCR), which is the potential for losses on cross-border or foreign currency obligations arising from the possibility that a government is unable or unwilling to make foreign currency available for remittance out of the country; and
- Local Currency Risk (LCR), which is the potential for losses on local currency obligations arising from operating in a volatile domestic, economic and political environment.

The profile of the Group's largest Gross Country Risk exposures as at 31 December 2020 is consistent with its strategic focus on core franchise countries. Changes in the pace of economic activity and portfolio management activity had an impact on the growth of Country Risk exposure for certain markets.

There has been an increase in exposure to the United States, driven by increased nostros balances kept with the Federal Reserve and growth in domestic short-term lending, particularly to non-financial corporations.

There has been a slight increase in exposure to Hong Kong, primarily due to increased nostros balances kept with the Hong Kong Monetary Authority. This was partially offset by reduced domestic treasury market activities.

Exposure to South Korea increased due to growth in the retail portfolio combined with increased domestic treasury market activity.

Exposure to China increased due to growth in cross-border treasury market volumes and higher nostros balances. This was partially offset by a reduction in cross-border trade finance activity.

The increase in exposure to Singapore is due to higher nostros balances kept with the Monetary Authority of Singapore and increased cross-border lending to financial institutions.

United Kingdom exposure increased due to higher nostros balances kept with the Bank of England. This was partially offset by reduced cross-border trade finance activity.

Exposure to India increased slightly, with increased domestic treasury market activities offsetting the reductions in the retail and private banking portfolios.

The increase in exposure to Taiwan is driven by higher nostros balances and increased cross-border lending, particularly to non-financial corporations.

Exposure to Germany increased due to increased term loans and higher nostros balances. This was partially offset by a reduction in government bond holdings.

Exposure to the UAE decreased due to lower domestic treasury market activity and a reduction in the retail portfolio.

The table below, which is based on the Group's internal Country Risk reporting requirements shows the 10 largest country/market exposures across the Group.

	2020			2019		
Country/Market	TCR $million	LCR $million	GCR $million	TCR $million	LCR $million	GCR $million
United States	32,677	63,355	96,032	25,966	58,930	84,896
Hong Kong	19,113	67,655	86,768	21,361	63,214	84,575
South Korea	15,526	59,089	74,615	17,809	49,351	67,160
China	42,661	21,838	64,499	36,469	20,977	57,446
Singapore	20,113	39,145	59,258	18,304	34,046	52,350
United Kingdom	20,887	26,207	47,094	27,563	16,782	44,345
India	13,713	21,388	35,101	14,008	20,305	34,313
Taiwan	6,732	17,292	24,024	2,733	14,827	17,560
Germany	14,323	7,910	22,233	11,890	4,546	16,436
United Arab Emirates	15,807	5,714	21,521	16,461	6,145	22,606

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, Issuer Risk, XVA, Algorithmic Trading and Pension Risk. 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, credit spreads 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
- Equity Risk: arising from changes in the prices of equities, equity indices, equity baskets and implied volatilities on related options

Market Risk changes (audited)

The average level of total trading and non-trading value at risk (VaR) in 2020 was $108.0 million, 258 per cent higher than in 2019 ($30.2 million). The actual level of total trading and non-trading VaR as at the end of 2020 was $137.6 million, 300 per cent higher than in 2019 ($34.4 million). The increase in total average VaR was driven by the extreme market volatility in interest rates and credit spreads following the outbreak of COVID-19 and the collapse in oil prices, with the largest increase observed in the non-trading book from high-quality marketable securities held in the Treasury Markets liquid assets buffer. The credit bonds that are included in the buffer are almost exclusively of investment grade. The historical scenarios driving the total VaR are all from March 2020, hence VaR is expected to remain elevated until at least March 2021.

For the trading book, the average level of VaR in 2020 was $17.0 million, 55 per cent higher than in 2019 ($11.0 million). Trading activities have remained relatively unchanged and client-driven.

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

	2020				2019			
Trading and non-trading	Average $million	High[1] $million	Low[1] $million	Actual[2] $million	Average $million	High[1] $million	Low[1] $million	Actual[2] $million
Interest Rate Risk[3]	93.9	121.6	29.0	115.7	28.9	35.2	24.1	34.2
Foreign Exchange Risk	6.4	15.1	3.0	15.1	4.3	8.5	2.3	5.1
Commodity Risk	2.5	5.5	0.7	4.9	1.3	2.2	0.8	1.4
Equity Risk	2.6	5.4	1.5	1.5	3.5	4.6	2.5	2.5
Total[4]	108.0	158.0	28.8	137.6	30.2	37.1	24.1	34.4

	2020				2019			
Trading[5]	Average $million	High[1] $million	Low[1] $million	Actual[2] $million	Average $million	High[1] $million	Low[1] $million	Actual[2] $million
Interest Rate Risk[3]	10.6	15.4	6.5	9.9	8.0	11.8	6.3	7.0
Foreign Exchange Risk	6.4	15.1	3.0	15.1	4.3	8.5	2.3	5.1
Commodity Risk	2.5	5.5	0.7	4.9	1.3	2.2	0.8	1.4
Equity Risk	0.0	0.0	0.0	0.0	–	0.1	–	–
Total[4]	17.0	26.3	8.3	24.6	11.0	14.0	8.8	10.0

	2020				2019			
Non-trading	Average $million	High[1] $million	Low[1] $million	Actual[2] $million	Average $million	High[1] $million	Low[1] $million	Actual[2] $million
Interest Rate Risk[3]	83.0	110.2	27.3	103.5	26.2	33.3	21.2	33.3
Equity Risk[6]	2.6	5.4	1.4	1.5	3.5	4.6	2.5	2.5
Total[4]	84.8	113.7	27.7	104.7	26.7	33.4	20.6	32.0

1 Highest and lowest VaR for each risk factor are independent and usually occur on different days
2 Actual one-day VaR at year-end date
3 Interest Rate Risk VaR includes Credit Spread Risk arising from securities accounted for as fair value through profit or loss (FVTPL) or fair value through other comprehensive income (FVOCI)
4 The total VaR shown in the tables above is not equal to the sum of the component risks due to offsets between them
5 Trading book for Market Risk is defined in accordance with the EU Capital Requirements Regulation (CRD/CRR) Part 3 Title I Chapter 3, which restricts the positions permitted in the trading book
6 Non-trading Equity Risk VaR includes only listed equities

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

	2020				2019			
	Average $million	High[1] $million	Low[1] $million	Actual[2] $million	Average $million	High[1] $million	Low[1] $million	Actual[2] $million
Trading and non-trading	108.0	158.0	28.8	137.6	30.2	37.1	24.1	34.4
Trading[4]								
Rates	7.6	11.1	4.5	8.5	5.4	7.6	4.0	5.1
Global Foreign Exchange	6.4	15.1	3.0	15.1	4.3	8.5	2.3	5.1
Credit Trading & Capital Markets	7.8	14.6	3.3	8.4	4.2	7.9	1.9	4.6
Commodities	2.5	5.5	0.7	4.9	1.3	2.2	0.8	1.4
Equities	–	–	–	–	–	0.1	–	–
XVA	9.0	13.7	2.7	11.2	4.0	6.8	1.8	2.8
Total[3]	17.0	26.3	8.3	24.6	11.0	14.0	8.8	10.0
Non-trading								
Treasury Markets	83.0	110.2	27.3	103.5	26.2	33.3	21.2	33.3
Listed private equity	2.6	5.4	1.4	1.5	3.5	4.6	2.5	2.5
Total[3]	84.8	113.7	27.7	104.7	26.7	33.4	20.6	32.0

1 Highest and lowest VaR for each risk factor are independent and usually occur on different days
2 Actual one-day VaR at year end date
3 The total VaR shown in the tables above is not a sum of the component risks due to offsets between them
4 Trading book for Market Risk is defined in accordance with the EU Capital Requirements Regulation (CRD/CRR) Part 3 Title I Chapter 3, which restricts the positions permitted in the trading book

Risks not in VaR

In 2020, the main Market Risk not reflected in VaR was the potential depeg risk from currencies currently pegged or managed. The historical one-year VaR observation period does not reflect the future possibility of a change in the currency regime such as sudden depegging. The other material Market Risk not reflected in VaR was associated with basis risks where historical market price data for VaR is sometimes more limited and therefore proxied, generating a potential basis risk. 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 2020.

Backtesting

In 2020, there were three regulatory backtesting negative exceptions at Group level (in 2019, there were five regulatory backtesting negative exceptions at Group level). These exceptions occurred on:

- 10 March: When markets rallied following the announcement of measures to stimulate the US economy
- 13 March: When markets rallied as the Federal Reserve provided details of US Treasury purchases, and cut interest rates
- 24 March: When markets rallied as US Congress finalised a $2 trillion package to stimulate the economy, also impacting gold prices

In total, there have been three Group exceptions in the previous 250 business days which is within the 'amber 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.

Financial Markets loss days

	2020	2019
Number of loss days reported for Financial Markets trading book total product income[1]	15	1

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

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

The average level of total trading daily income in 2020 was $11.1 million, 28 per cent higher than in 2019 ($8.7 million), driven by extreme market volatility following the outbreak of COVID-19 and the resulting increase in trading activity and wider spreads.

Trading	2020 $million	2019 $million
Interest Rate Risk	5.1	3.6
Foreign Exchange Risk	5.1	4.5
Commodity Risk	0.9	0.6
Equity Risk	–	–
Total	11.1	8.7
Non-trading		
Interest Rate Risk	1.7	1.7
Equity Risk	–	0.3
Total	1.7	2.0

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. XVA income is included under Interest Rate Risk

Structural foreign exchange exposures

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

	2020 $million	2019 $million
Hong Kong dollar	8,739	8,432
Indian rupee	4,222	3,930
Renminbi	4,071	3,344
Singapore dollar	2,543	2,531
Korean won	2,856	2,393
Taiwanese dollar	1,556	1,418
UAE dirham	1,863	1,994
Malaysian ringgit	1,575	1,557
Thai baht	892	929
Indonesian rupiah	332	1,139
Pakistani rupee	471	441
Other	4,422	4,558
	33,542	32,666

As at 31 December 2020, the Group had taken net investment hedges using derivative financial investments of $1,984 million (31 December 2019: $1,997 million) to partly cover its exposure to the Korean won, $834 million (31 December 2019: $789 million) to partly cover its exposure to the Taiwanese dollar, $1,527 million (31 December 2019: $1,565 million) to partly cover its exposure to the renminbi and $652 million (31 December 2019: $713 million) to partly cover its exposure to the Indian rupee. 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 $381 million (31 December 2019: $358 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 $47,097 million (2019: $28,659 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.

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.

A substantial portion of our assets are funded by customer deposits aligned with our policy to fund customer assets predominantly using customer deposits. Wholesale funding is diversified by type and maturity and represents a stable source of funds for the Group.

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 2020, the Group issued approximately $6.8 billion of senior debt securities, $2.4 billion of subordinated debt securities and $1 billion of Additional Tier 1 securities from its holding company (HoldCo) Standard Chartered PLC. (2019: $6.1 billion of term senior debt, $1 billion of subordinated securities and $0.5 billion of Additional Tier 1).

Debt refinancing levels are low. In the next 12 months approximately $6.1 billion of the Group's senior debt and subordinated debt securities in total are falling due for repayment either contractually or callable by the Group.

Liquidity and Funding Risk metrics

We monitor key liquidity metrics regularly, both on a country basis and in aggregate across the Group.

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.

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 position under European Commission Delegated Regulation 2015/61 and has maintained its liquidity position above the prudential requirement. The Group maintained strong liquidity ratios despite the impacts of the COVID-19 stress. For further detail see the Liquidity section in the Standard Chartered PLC Pillar 3 Disclosures for FY 2020.

At the reporting date, the Group LCR was 143 per cent (2019: 144 per cent) with a prudent surplus to both Board-approved Risk Appetite and regulatory requirements. Both the liquidity buffer and cash outflows grew during the year in line with the overall balance sheet growth.

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

	2020 $million	2019 $million
Liquidity buffer	175,948	158,415
Total net cash outflows	122,664	110,269
Liquidity coverage ratio	143%	144%

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 – This scenario 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 – This scenario captures the liquidity impact from a market-wide crisis affecting all participants in a country, region or globally.
- Combined – This scenario 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 2020, i.e. respective countries are able to survive for a period of time as defined under each scenario. The combined scenario at 31 December 2020 showed the Group maintained liquidity resources to survive greater than 60 days, as per our Board Risk Appetite. The results take into account currency convertibility and portability constraints across all major presence countries.

Standard Chartered Bank's credit ratings as at 31 December 2020 were A+ with negative outlook (Fitch), A with stable outlook (S&P) and A1 with stable outlook (Moody's). A downgrade in the Group's long-term credit ratings would increase derivative collateral requirements and outflows due to rating-linked liabilities. At 31 December 2020, the estimated contractual outflow of a three -notch long-term ratings downgrade is $1.4 billion.

External wholesale borrowing

The Board sets a risk limit to prevent excessive reliance on wholesale borrowing. External Wholesale Borrowing includes Certificates of Deposit, Commercial Paper, Deposits from Banks and Medium Term Notes. 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 advances-to-deposits ratio has declined by 3.1 per cent to 61.1 per cent as customer deposit growth of 9 per cent outpaced customer loan growth of 3 per cent. Strong customer deposit growth was driven by TB CASA and Retail CASA partly offset by a reduction in Corporate and Retail term deposits, resulting in an overall improvement in the quality of the Group's customer deposit base. Customer loan growth was mainly in Retail mortgages in Hong Kong and Korea partly offset by lower volumes in corporate lending and transaction banking due to lower activity levels and demand, in part due to the impacts of COVID-19.

	2020 $million	2019 $million
Total loans and advances to customers[1,2]	273,861	264,841
Total customer accounts[3]	448,236	412,303
Advances-to-deposits ratio	61.1%	64.2%

1 Excludes reverse repurchase agreement and other similar secured lending of $2,919 million and includes loans and advances to customers held at fair value through profit and loss of $9,377 million
2 Loans and advances to customers for the purpose of the advances-to-deposits ratio excludes $14,296 million of approved balances held with central banks, confirmed as repayable at the point of stress (31 December 2019: $9,109 million)
3 Includes customer accounts held at fair value through profit or loss of $8,897 million (31 December 2019: $6,947 million)

Net stable funding ratio (NSFR)

On 23 November 2016, the European Commission, as part of a package of risk-reducing measures, proposed a regulatory requirement for stable funding (net stable funding ratio (NSFR)) at European Union level. The proposal aims to implement the European Banking Authority's interpretation of the Basel standard on NSFR (BCBS295). The NSFR is due to become a regulatory requirement in January 2022 with a minimum of 100 per cent. Pending implementation of the final rules, the Group continues to monitor NSFR in line with the BCBS' final recommendation (BCBS295).

The NSFR is a balance sheet metric which requires institutions to maintain a stable funding profile in relation to the characteristics 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. 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 $176 billion. The figures in the below table account for haircuts, currency convertibility and portability constraints, and therefore are not directly comparable with the consolidated balance sheet. The pool is held to offset stress outflows as defined in European Commission Delegated Regulation 2015/61.

	2020				
	Greater China & North East Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Level 1 securities					
Cash and balances at central banks	10,104	16,622	1,421	42,502	70,649
Central banks, governments /public sector entities	32,580	8,434	1,569	33,652	76,235
Multilateral development banks and international organisations	4,919	453	236	6,818	12,426
Other	–	–	14	1,645	1,659
Total Level 1 securities	47,603	25,509	3,240	84,617	160,969
Level 2A securities	9,637	1,878	79	2,891	14,485
Level 2B securities	–	207	–	287	494
Total LCR eligible assets	57,240	27,594	3,319	87,795	175,948

	2019				
	Greater China & North East Asia $million	ASEAN & South Asia $million	Africa & Middle East $million	Europe & Americas $million	Total $million
Level 1 securities					
Cash and balances at central banks	15,109	11,535	1,265	24,326	52,235
Central banks, governments /public sector entities	31,735	7,952	2,201	39,136	81,024
Multilateral development banks and international organisations	2,761	1,183	160	7,448	11,552
Other	–	–	14	1,104	1,118
Total Level 1 securities	49,605	20,670	3,640	72,014	145,929
Level 2A securities	4,824	1,928	63	3,217	10,032
Level 2B securities	–	343	–	2,111	2,454
Total LCR eligible assets	54,429	22,941	3,703	77,342	158,415

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.

	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

	2019									
		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	52,728	–	–	–	9,843	42,885	–	–	–	52,728
Derivative financial instruments	47,212	–	–	–	–	–	–	47,212	–	47,212
Loans and advances to banks[1]	75,346	326	73	399	–	40,600	13,341	19,610	1,396	74,947
Loans and advances to customers[1]	314,754	298	1,082	1,380	–	–	259,061	40,804	13,509	313,374
Investment securities[2]	168,521	–	7,919	7,919	1,284	108,209	47,399	–	3,710	160,602
Other assets	42,022	–	16,080	16,080	–	–	14,516	–	11,426	25,942
Current tax assets	539	–	–	–	–	–	–	–	539	539
Prepayments and accrued income	2,700	–	–	–	–	–	1,530	–	1,170	2,700
Interests in associates and joint ventures	1,908	–	–	–	–	–	–	–	1,908	1,908
Goodwill and intangible assets	5,290	–	–	–	–	–	–	–	5,290	5,290
Property, plant and equipment	6,220	–	–	–	–	–	444	–	5,776	6,220
Deferred tax assets	1,105	–	–	–	–	–	–	–	1,105	1,105
Assets classified as held for sale	2,053	–	–	–	–	–	–	–	2,053	2,053
Total	720,398	624	25,154	25,778	11,127	191,694	336,291	107,626	47,882	694,620

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 $99,238 million (31 December 2019: $85,415 million) as collateral under reverse repurchase agreements that was eligible for repledging; of this the Group sold or repledged $46,209 million (31 December 2019: $44,530 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 gap 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.

	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	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

	2019								
	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	42,885	–	–	–	–	–	–	9,843	52,728
Derivative financial instruments	6,643	5,751	3,835	2,714	1,860	3,955	9,439	13,015	47,212
Loans and advances to banks[1,2]	33,133	19,030	11,069	5,150	3,464	1,701	1,366	433	75,346
Loans and advances to customers[1,2]	86,927	37,322	20,849	10,088	12,640	21,517	38,624	86,787	314,754
Investment securities	11,968	11,837	17,180	11,789	7,070	34,859	44,488	29,330	168,521
Other assets	20,689	18,223	1,433	105	75	264	133	20,915	61,837
Total assets	202,245	92,163	54,366	29,846	25,109	62,296	94,050	160,323	720,398
Liabilities									
Deposits by banks[1,3]	31,873	2,931	1,079	361	528	174	486	–	37,432
Customer accounts[1,4]	349,992	50,546	25,552	10,270	9,545	2,622	1,553	2,653	452,733
Derivative financial instruments	7,086	5,922	4,249	2,990	2,031	5,007	10,069	11,130	48,484
Senior debt	325	1,373	2,870	607	495	3,083	11,248	11,318	31,319
Other debt securities in issue[1]	5,612	12,234	8,766	895	1,449	280	56	924	30,216
Other liabilities	17,701	17,206	3,039	600	908	1,866	835	11,191	53,346
Subordinated liabilities and other borrowed funds	–	17	754	–	–	–	5,523	9,913	16,207
Total liabilities	412,589	90,229	46,309	15,723	14,956	13,032	29,770	47,129	669,737
Net liquidity gap	(210,344)	1,934	8,057	14,123	10,153	49,264	64,280	113,194	50,661

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 $60.4 billion
3 Deposits by banks include repurchase agreements and other similar secured borrowing of $7.8 billion
4 Customer accounts include repurchase agreements and other similar secured borrowing of $40.4 billion

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

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 to 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.

	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

	2019								
	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	33,034	2,977	1,112	381	588	189	502	–	38,783
Customer accounts	350,679	50,908	26,552	10,415	9,839	2,694	1,625	3,127	455,839
Derivative financial instruments[1]	47,000	5	18	170	314	355	512	110	48,484
Debt securities in issue	5,951	13,615	11,886	1,559	2,210	3,882	12,431	13,557	65,091
Subordinated liabilities and other borrowed funds	–	–	1,009	26	395	641	7,140	15,124	24,335
Other liabilities	15,341	16,870	3,046	601	865	1,876	885	12,376	51,860
Total liabilities	452,005	84,375	43,623	13,152	14,211	9,637	23,095	44,294	684,392

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 a one-year horizon, including the time taken to implement changes to pricing before becoming effective. The assessment assumes that non-interest rate sensitive aspects of 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. Furthermore, revenue associated with trading book income positions is recognised in trading book income and is therefore excluded from the reported sensitivities. 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:	2020 USD bloc $million	 HKD, SGD & KRW bloc $million	 Other currency bloc $million	 Total $million
+ 50 basis points	60	170	70	300
- 50 basis points	(140)	(150)	(90)	(380)
+ 100 basis points	120	220	140	480

Estimated one-year impact to earnings from a parallel shift in yield curves at the beginning of the period of:	2019 USD bloc $million	 HKD, SGD & KRW bloc $million	 Other currency bloc $million	 Total $million
+ 50 basis points	(10)	60	90	140
- 50 basis points	10	(40)	(90)	(120)
+ 100 basis points	(20)	120	170	270

As at 31 December 2020, 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 $300 million. The equivalent impact from a parallel decrease of 50 basis points would result in a reduction in projected NII of $380 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 $480 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. Overall NII sensitivity in all scenarios has increased versus 31 December 2019, driven by Treasury Markets risk management activity as rates fell during March 2020, and changes in the composition of the balance sheet and modelling assumptions.

The asymmetry between the up and down 50 basis point shock has widened primarily due to the low level of interest rates, which may constrain the Group's ability to reprice liabilities should rates fall by a further 50 basis points, as well as differing behavioural assumptions, which are scenario specific. The decision to pass on changes in interest rates is highly speculative and depends on a range of factors including market environment and competitor behaviour.

The US dollar sensitivity is dampened further by the exclusion of trading book revenue. The reported sensitivities include the cost of banking book liabilities used to fund the trading book, however the income associated with the corresponding trading book assets is excluded and recognised in trading book income. Further information on the impact of changes in interest rates on trading book is set out in the Market Risk section.

Operational Risk

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

Operational Risk profile

In 2020, the Group has implemented a refreshed Framework to continue to enhance the management of Operational Risk, ensuring 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, the following risk areas are heightened – 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 2020, recorded operational losses for 2020 are lower than 2019 (excluding monetary penalties to the US authorities and the Financial Conduct Authority (FCA) for legacy conduct and control issues). The largest loss recorded for 2020 relates to Execution Delivery and Process Management for $25 million under the Corporate Items Basel business line; while the largest loss recorded for 2019 as at 31 December 2020 relates to Execution Delivery and Process Management for $31 million under Corporate Items.

The Group's profile of operational loss events in 2020 and 2019 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	2020	2019[1]
Agency Services	1.4%	0.2%
Asset Management	–	–
Commercial Banking	21.6%	6.6%
Corporate Finance	–	21.6%
Corporate Items	27.5%	35.8%
Payment and Settlements	2.4%	2.6%
Retail Banking	33.2%	27.7%
Retail Brokerage	0.3%	0.1%
Trading and Sales	13.6%	5.6%

1 Losses in 2019 include incremental events that were recognised in 2020 and exclude monetary penalties to the US authorities and the FCA

The Group's profile of operational loss events in 2020 and 2019 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	2020	2019[1]
Business disruption and system failures	3.3%	1.0%
Clients products and business practices	5.0%	3.2%
Damage to physical assets	0.1%	0.0%
Employment practices and workplace safety	0.6%	0.1%
Execution delivery and process management	66.0%	56.5%
External fraud	23.2%	38.7%
Internal fraud	1.8%	0.4%

1 Losses in 2019 include incremental events that were recognised in 2020 and exclude monetary penalties to the US authorities and the FCA

Other principal risks

Losses arising from operational failures for other principal risks (for example: Compliance, Conduct, Reputational, Information and Cyber Security, Financial Crime, and Model Risk) 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 of 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.

In 2020, we completed a comprehensive review of the ERMF, and the following changes were approved by the Board:

- Given its overarching nature, Conduct Risk management has been incorporated as an integral component of the overall ERMF rather than viewed as a standalone risk. This change allows the Group to view Conduct Risk through the lens of delivering positive outcomes for our clients, markets, and internal and external stakeholders
- Given the Group's diverse footprint, Country Risk management has also been incorporated as an integral component of the overall ERMF, as part of Group strategy and strategic risk management
- Reputational Risk has been expanded to include Sustainability Risk. There is increasing focus on issues relating to environment, social and governance risk, from both regulators and investors, and the Group's commitments to be a leader in sustainable and responsible banking make this is a core tenet of our franchise
- Technology Risk has been made more prominent within the Operational Risk Principal Risk Type, in order to meet the needs of the digital agenda of the Group and further strengthen Technology Risk management capabilities

The revised ERMF was approved on 10 December 2020 and became effective on 1 January 2021.

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 considered decisions

We acknowledge that banking inherently involves risk-taking, and undesired outcomes will occur from time to time; however, we will take the opportunity to learn from our experience and formalise improvements. 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

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 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.

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 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, Corporate Affairs, Brand & Marketing and 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 the 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 a material cross-cutting risk that can manifest through other risk types. 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 the Risk Appetite Statement and monitor the Group's compliance with it.

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 an overall 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 an inventory of the Principal Risk Types and risk sub-types that are inherent to the strategy and business model; and emerging risks that include 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.

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 include 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. Bespoke scenarios are applied to our traded and liquidity positions as described in the sections on Traded Risk, and Capital and Liquidity Risk. In addition to these, our stress tests also focus on the potential impact of macroeconomic, geopolitical and physical events on relevant regions, client segments and risk types.

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 as a material cross-cutting risk. Climate Risk is defined as the potential for financial loss and non-financial detriments arising from climate change and society's response to it.

In future reviews, we will continue to consider if existing Principal Risk Types or incremental risks should be treated as cross-cutting risks. 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
Capital and Liquidity Risk	• Capital: potential for insufficient level, composition or distribution of capital to support our normal activities • Liquidity: risk that we may not have sufficient stable or diverse sources of funding to meet our obligations as they fall due
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.

The annual ERMF effectiveness review, first introduced in 2018, was conducted in 2019 and 2020, and enables measurement of progress against the 2018 baseline. The 2020 effectiveness review has shown that:

- Since the launch of the ERMF in 2018, the focus in 2020 has been on effective embedding of the framework across the organisation and we continue to make progress on overall effectiveness
- In 2020, effectiveness has improved year-on-year, with a substantial focus on development of non-financial risk management practices. Financial risks continue to be managed more effectively on a relative basis as compared with the non-financial risks. This reflects the maturity of these Risk Type Frameworks and the underlying risk management practices.
- Self-assessments performed in our footprint markets reflect the use of the ERMF and PRTs, with reinforced first-line ownership of risks. Country and regional risk committees continue to play an active role in managing and overseeing material issues arising in countries. Automation opportunities for manual risk oversight processes and effective change management will continue to be explored in 2021. Ongoing structured ERMF effectiveness reviews enable us to identify improvement opportunities and proactively build plans to address them. Over the course of 2021, the Group aims to further strengthen its risk management practices and target improvements in the management of non-financial risk types.

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 Brand Values and Conduct Committee oversees the brand, valued behaviours, reputation and conduct of the Group, and manages Reputational Risk in line with the Reputational and Sustainability Risk Type Framework.

Board and executive level risk committee governance structure

The Committee governance structure below presents the view as of 2020. Our business and regional committees have been amended to reflect the new organisational structure, with changes effective 1 January 2021. Two new risk committees have been appointed by the Group Risk Committee. The Asia Risk Committee oversees the effective management of risk across the ASEAN & South Asia (ASA) and Greater China & North Asia (GCNA) regions, and replaces the ASA risk committee and GCNA risk committee. The Consumer, Private and Business Banking (CPBB) risk committee ensures the effective management of risk throughout CPBB, in support of the Group's strategy. The revised structure will be provided in the 2021 Annual Report.

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, chaired by the Global Head of Risk, Functions and Operational Risk, 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, Information and Cyber Security Risk, Fraud and Reputational Risk that is consequential in nature arising from potential failures of Principal Risk Types. The Committee also reviews the adequacy of the internal control systems across all Principal Risk Types.

The Group Financial Crime Risk Committee, chaired by the Group Head, Corporate Affairs, Brand & Marketing and CFCC, as the Compliance and Money Laundering Reporting Officer, governs the Financial Crime Risk Type Framework 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, Corporate Affairs, Brand & Marketing and CFCC, ensures the effective management of Reputational 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 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 Risk Committee, chaired by the Chief Risk Officer, Business, ensures the effective management of risk throughout Corporate & Institutional Banking and Commercial Banking, in support of the Group's strategy. The Committee also provides governance oversight over key matters in Europe & Americas.

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 for Transportation Assets, chaired by the Chief Risk Officer, Business, 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 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 Group Chief Risk Officer, Global Head, Enterprise Risk Management and Chief Risk Officer, Business).

The Standard Chartered Ventures (SCV) Committee, chaired by the Chief Risk Officer, SCV, receives authority directly from the Group Chief Risk Officer 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.

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 Retail Credit Risk Management Policy sets the principles for the management of retail and business banking lending, account and portfolio monitoring, collections management and forbearance programmes. In addition, there are other Group-wide policies integral to Credit Risk management such as those relating to Risk Appetite, Model Risk, stress testing, and impairment provisioning.

The Group also set 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 the 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), the Private Banking Process Governance and Risk Committee, and the regional risk committees for ASEAN & South Asia, and Africa & Middle East. The GRC also receives reports from other key Group Committees such as the Greater China & North Asia Executive Risk Committee and SC Bank 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 by applying delegated credit authority matrices, which determine the maximum limits 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 and Private Banking, 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 Retail Banking, credit decision systems and tools (e.g. application scorecards) are used for credit decisioning. Where manual 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 and Private Banking that operates independently from our main business.

For Retail Banking exposures, portfolio delinquency trends are monitored on an ongoing basis. Account monitoring is based on behavioural scores and bureau performance (where available). 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.

In addition, an independent Credit Risk Review team as part of Enterprise Risk Management, performs judgment-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 Retail 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.

Retail 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 Retail Banking credit grades.

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 the 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 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 annual report.

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 last 12 months.

In Corporate, Commercial and Institutional Banking Client Coverage and Private Banking, 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 Retail 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 there is no realistic prospect of recovery and the amount of loss has been determined. For Retail Banking assets, a financial asset is 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 annual report.

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, Issuer Risk, XVA, Algorithmic Trading and Pension Risk. 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 the 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 2020 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 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, predominantly simulation-based, as well as by way of add-ons.

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.

Capital and Liquidity Risk

The Group defines Capital Risk as the potential for insufficient level, composition or distribution of capital to support our normal activities, and Liquidity Risk as the risk that we may not have sufficient stable or diverse sources of funding to meet our obligations as they fall due

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 Treasurer is responsible for the Risk Type Framework for Capital and Liquidity Risk and for complying with regulatory requirements at a Group level. The Treasury and Finance functions, as the second line of defence, provide independent challenge and oversight of the first-line risk management activities relating to Capital and Liquidity Risk. In country, the Treasurer is supported by Treasury and Finance in implementing the Capital and Liquidity Risk Type Framework.

Mitigation

The Group develops policies to address material Capital and Liquidity 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. 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.

Capital planning takes the following into account:

- Current regulatory capital requirements and our assessment of future standards and how these might change
- Demand for capital due to the business and loan impairment outlook and potential market shocks or stresses
- Available supply of capital and capital raising options, including ongoing capital accretion from the business

Additionally, 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 the Korean won, Chinese renminbi, Taiwanese dollar and Indian rupee to mitigate the FX impact of such positions on its capital ratios.

Liquidity 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

The Group defines Interest Rate Risk in the Banking Book (IRRBB) as the potential for a reduction in future earnings or economic value due to changes in interest rates. 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 a Board-approved 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 following three outcomes, as per the BoE's approach to assessing resolvability, published in 2019:

- Adequate financial resources in the context of resolution
- Being able to continue to do business through resolution and restructuring
- Being able to coordinate and communicate effectively within the Group and with authorities and markets so that resolution and subsequent restructuring are orderly

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 Capital and Liquidity 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 capital and liquidity requirements.

The Group Asset and Liability Committee delegates part of this responsibility to the Operational Balance Sheet Committee to ensure alignment with business objectives.

Regional and country oversight under the capital and liquidity framework resides with regional and country Asset and Liability Committees. Regions and countries must ensure that they remain in compliance with Group capital and liquidity 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 Capital and Liquidity Risk to the Treasurer. The Treasurer delegates second-line oversight and challenge responsibilities to relevant and suitably qualified Treasury and Finance individuals.

Monitoring

On a day-to-day basis, the management of Capital and Liquidity Risk at the country level is performed by the Country Chief Executive Officer and Treasury Markets respectively. The Group regularly reports and monitors Capital and Liquidity Risk inherent in its business activities and those that arise from internal and external events. The management of capital and liquidity is monitored by Treasury and Finance with appropriate escalation processes in place.

Internal risk management reports covering the balance sheet and the capital and liquidity position of the Group are presented to the Operational Balance Sheet Committee and the Group 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 Group's balance sheet. Oversight at regional and country level is provided by the regional and country Asset and Liability Committee, with a focus on the local capital and liquidity risks, local prudential requirements and risks that arise from local internal and external events.

In addition, an independent Liquidity Risk Review team as part of Enterprise Risk Management reviews the prudency and effectiveness of Liquidity and Interest Rate Risk management. The team focuses on balance sheet structure and strategy, policy development and implementation, risk identification, monitoring and control.

Stress testing

Stress testing and scenario analysis are an integral part of the capital and liquidity 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.

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 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 Risk Type Framework (ORTF) 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 ORTF. These risk sub-types relate to execution capability, governance, reporting and obligations, legal enforceability, and operational resilience (including client service, third party vendor services, change management, people management, safety and security, and system availability).

The ORTF 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 ORTF sets out the Group's overall approach to the management of Operational Risk in line with the Group's Operational 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 Risk Appetite require treatment plans to address underlying causes.

Governance committee oversight

At the 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 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 ORTF is the formal mechanism through which the delegation of Operational Risk authorities is made. The GHRFOR delegates second-line authorities to designated subject matter experts (SMEs) responsible for the risk sub-types through this framework. The SMEs 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 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 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, sanctions, as well as information and cyber security.

Information and Cyber Security 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 avoid risk and uncertainty for our 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 2020, to ensure ICS Risk management principles prioritise the adverse impact of cyber threat and vulnerability information on confidentiality, integrity and availability of information assets and systems across the Group, the ICS RTF was uplifted to include a threat led risk assessment methodology.

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 weaknesses are reviewed and approved by Group CISRO prior to the execution of mitigating actions.

The Group CISO function performs ICS Risk assessment to determine the ICS Risk posture across the Group with reporting to key Group governance committees. Key ICS risks, breaches or weaknesses identified are documented, reviewed and approved by Group CISRO with mitigation activities monitored for completion with statuses reported to the relevant Group governance committees.

Governance committee oversight

ICS Risk within the Group is governed via the Board Risk Committee (BRC) which has responsibility for approving the definition of ICS Risk and the Group Risk Appetite. In addition, 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 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 is the formal mechanism through which the delegation of ICS Risk authorities is made. The Group Chief Risk Officer (GCRO) has delegated the ICS Risk Framework Owner authority to the Group CISRO. The Group CISRO has, where appropriate, delegated second-line authority to Information Security Risk Officers (ISRO) to assume the responsibilities for approval for business, functions, and countries.

Group CISO, supported by the Heads of ICS, presents the proposed ICS Risk ratings to Group CISRO for review and sign-off.

Information Asset Owners, Information System Owners and process owners are responsible for the identification, creation and implementation of processes as required to comply with the ICS RTF.

Approval of ICS Risk ratings follows an approval matrix defined by the ICS RTF where the GCRO and Group CISRO sign off very high and high risks respectively.

Monitoring

The ICS Risk assessment is in transition in 2020 to a threat-focused risk assessment. 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

Group CISRO determines ICS Risk controls to be subjected to scenario-based stress testing (i.e. cyber resilience red team testing) and sensitivity analysis, which is aimed to either ensure robustness of control and the ability to respond should a control fail. The Group's cyber resilience testing approach entails:

- Group CISRO oversees all ICS Risk-related stress testing the Group carries out to meet regulatory requirements, including covert testing
- Incident scenarios affecting information assets and systems are periodically tested to assess the incident management capability in the Group
- Purple team, penetration testing and vulnerability scanning are performed by Group CISO against the Group's internet-facing services and critical information assets/systems

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 in which we operate 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; recognising that regulatory non-compliance cannot be entirely avoided, the Group strives to reduce this to an absolute minimum

Roles and responsibilities

The Group Head, Corporate Affairs, Brand & Marketing and Conduct, Financial Crime and Compliance (Group Head, CABM & 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 enhanced in 2020 via Risk Appetite metrics that enable greater oversight of implementation of country-level regulatory requirements, and by bringing together all data management risks, including transition of Data Quality from the Operational Risk Type Framework.

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 risk assessment, control standard setting, 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 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 2020. These include further expansion of digital chatbots and a tool to track non-financial regulatory reporting.

Governance committee oversight

Compliance Risk and the risk of non-compliance with laws and regulations resulting from failed processes and controls are overseen by Business, Product and Function Non-Financial Risk Committees.

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. The Conduct, Financial Crime and Compliance Non-Financial Risk Committee has a consolidated view of these risks and helps to ensure that appropriate governance is in place for these. In addition, the Committee helps to ensure that elevated levels of Compliance Risk are reported to the Group Non-Financial Risk Committee, Group Risk Committee and Audit Committee. Within each country, oversight of Compliance Risk is delegated through the Country Non-Financial Risk Committee.

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, CABM & 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 are governed in line with the Operational Risk Type Framework. The Group has a monitoring and reporting process in place for Compliance Risk, which includes escalation and reporting to Conduct and Compliance Non-Financial Risk Committee, Group 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 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, CABM & 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, CABM & 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, 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 ORTF, 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; and the Group Non-Financial Risk Committee for Fraud Risk which is appointed by and reports into the Group Risk Committee.

Both committees are responsible for ensuring the effective management of Operational Risk relating to Financial Crime Risk and Fraud Risk compliance throughout the Group. 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, CABM & CFCC is the Risk Framework Owner for Financial Crime Risk under the Group's Enterprise Risk Management Framework and has delegated authorities to effectively implement the Financial Crime Risk Type Framework, to the Co-Heads, Financial Crime Compliance. Certain aspects of Financial Crime Compliance, second-line oversight and challenge, are further delegated within the CFCC function. Approval frameworks are in place to allow for risk-based decisions on client on-boarding, potential breaches of sanctions regulation or policy, and 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 as part of the overall scenario analysis portfolio managed under the Operational 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 the three lines of defence. 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 represent model users and are responsible for end-to-end model development, ensuring model performance through regular model monitoring and communicating model limitations, 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 is comprised of Group Model Validation and Model Risk Policy and Governance.

Group Model Validation independently review and grade models, in line with design objectives, business uses and compliance requirements, and highlight identified model risks. Model Risk Policy and Governance team provide oversight of Model Risk, 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 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 Risk Type Framework, with remediation plans implemented where necessary.

Governance committee oversight

At the 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 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 and Model Risk Committee.

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 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 validated to ensure that they are fit-for-purpose 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 and 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

Over the past 20 years, sustainability has grown in importance from a corporate social responsibility to become embedded within the Group's business model and as such, the sustainability-related risks of environmental, social and governance (ESG) have been elevated within the Group's Reputational and Sustainability Risk Type Framework. We recognise that there are many facets to Sustainability Risk; however, the primary focus of the Group's approach will be on environmental and social 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.

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 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

The Brand, Values and Conduct Committee retains Board-level oversight responsibility for Reputational Risk. Oversight from an operational perspective falls under the remit of the Group Risk Committee (GRC) and the Board Risk Committee. The Group Responsibility and Reputational Risk Committee (GRRRC), appointed by the GRC ensures the effective management of Reputational and Sustainability Risk across the Group.

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:

- The endorsement of the Group's Green and Sustainable Product Framework and control framework for the review and approval of products and transactions which carry the sustainable 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 Risk leads as required. Risk authorities will be enhanced through 2021 as Sustainability Risk is embedded throughout the Group.

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.

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.

Climate Risk – Material cross-cutting risk

The Group currently recognises Climate Risk as a material cross-cutting risk. 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 a material cross-cutting risk in 2019. We are in the process of integrating Climate Risk into mainstream risk management in alignment with the Bank of England's Supervisory Statement 3/19 requirements. We have a Climate Risk workplan with defined milestones for 2021 and are making good progress. 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 between the Risk Framework Owner (at Group, regional and country level) and the central Climate Risk team will be shared.

Mitigation

As a material cross-cutting risk manifests through other PRTs, risk mitigation activities are specific to individual PRTs. Centrally, a cross-cutting standard is being put in place to capture practices across various PRTs. Within each individual PRT, relevant framework, policy and standards are being updated as per the Climate Risk workplan. As an example, for Operational Risk in our own operations, the checklist for new property acquisition has been updated to include a physical risk rating.

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.

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 leverage expertise from various areas, we have invested in a number of tools and partnerships:

1. Munich Re – we are using Munich Re's physical risk assessment tool, which is built on extensive re-insurance experience
2. Baringa Partners – we are using Baringa's flagship climate models to understand climate scenarios, compute transition risk and temperature alignment

3. Standard and Poor – we are leveraging S&P and Trucost's wealth of climate data covering asset locations, energy mixes and emissions
4. 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, Risk Governance and Enterprise Risks and the Head of Climate Risk are 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. In 2020, we began initial management reporting on prioritised Climate Risk metrics and this will be further strengthened over 2021 with the development of risk categories and an authority matrix. Strategic Risk Appetite reporting will begin in 2022.

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 in 2020 physical and transition risks were included in the Group Internal Capital Adequacy Assessment Process (ICAAP). In 2021, we will undertake a number of Climate Risk stress tests, including by the Bank of England and the Hong Kong Monetary Authority. This will help us develop our understanding and management of Climate Risk.

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 which may have 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 2020, we undertook a thorough review of our emerging risks, using the approach described in the Enterprise Risk Management Framework (ERMF) section. The key results of the review are detailed below.

Key changes to our emerging risks:

The following items have been removed as emerging risks:

- 'Hong Kong Social Unrest' – This has been incorporated into 'US-China trade tensions driven by geopolitics and trade imbalance' 'China slowdown and impact on regional economies with close ties to China' - This has been removed as China is on target to be the first large market to rebound from the COVID-19 slowdown and is on track for recovery
- 'Climate related transition and physical risks' – This has been removed as it is now formally classified in the ERMF as a material cross-cutting risk. The emerging risks section of the Half Year report 2020 stated that, in addition to principal risks, the Group also recognises Climate Risk as a cross-cutting risk that manifests through other principal risks
- 'Negotiating the future EU-UK relationship' – This has been removed as it has been resolved with the signing of an agreement. The outcome and impact of the future relationship will need to be monitored and assessed
- 'Regulatory changes and regulatory reviews and investigations, legal proceedings' – These have been removed as they are considered intrinsic risks for being in the financial services industry. Any Group-specific risks would be disclosed as appropriate
- 'Japan Korea diplomatic dispute' – This has been removed due to the manageable immediate impact to the Group's portfolio

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

- 'Rise of populism and nationalism driven by unemployment and a shift in global supply chains' – Populism is on the rise globally. Policies such as income redistribution, public spending increases, a rise in trade barriers and tariffs, tax cuts, restrictions on immigration, and pro-nationalist or anti-global rhetoric pose a risk to long-term economic progression
- 'Social unrest driven by economic downturns, water crises, medical provision and food security' – 2019 and 2020 saw a surge in protests globally and the risk is these will increase with greater severity and frequency as economic growth is challenging, while health systems and food shortages are becoming more significant factors. Energy, food transportation and nature all depend on a limited reserve of clean, flowing water, the availability of which is becoming an increasing concern
- 'Rising sovereign default risk and private sector creditor participation in the Common Framework Agreement (CFA), – The combination of economic downturns, capital flight, commodity price collapses, political instability resulting from the social consequences of COVID-19, and increased debt obligations for extending financial support may make it difficult for some countries to refinance their debts. The CFA for the world's poorest nations could impact market access and medium-term lending to some sovereigns.
- 'Unintended consequences of accommodative monetary policy and the risk of asset bubbles and inflation' – Developed market central banks have seen record balance sheet expansion in response to the economic downturn and there is a risk this may result in asset bubbles and/or inflation in the longer term. Refinance risk may become an increasing concern
- 'Third party dependency' – The global pandemic, it's economic fallout and 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 upon.

- ‘Increase in long-term remote working providing new challenges’ – This risk has increased as malicious actors are increasing their capability and maturity by adapting to varying trends and new technologies to personalise attacks on organisations e.g. ransomware. This risk is exacerbated by remote working with reduced monitoring capabilities

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 be successful in completely eliminating them, but rather shows the Group’s attempt to reduce or manage the risk. As certain risks develop and materialise over time, management will take appropriate incremental steps based on the materiality of the impact of the risk to the operations of the Group.

Geopolitical considerations (Risk ranked according to severity)

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
US-China trade tensions driven by geopolitics and trade imbalance Potential impact: High Likelihood: High Velocity of change: Fast	↑	• Since the beginning of 2020, US-China tensions have evolved into broad-based differences between China, US and its allies as well as some other Asian countries. Areas of tensions include: – Vietnam, the Philippines, Brunei, Malaysia, Taiwan, Australia and the US rejection of China’s maritime claims in the South China Sea. Taiwan’s status continues to remain a point of contention. Increasingly frequent military exercises in the disputed waters have resulted in escalating tensions – China’s military border clash with India resulted in the rise of nationalism in India. The Government of India has banned Chinese apps in India including TikTok and WeChat – After the implementation of the National Security Law in Hong Kong, the US revoked Hong Kong’s Special Status in US laws and imposed sanctions on individual officials. The UK and Australia relaxed immigration rules for Hong Kong residents while the US and Canada started granting refugee status to eligible Hong Kong residents – The US is increasing restrictions on Chinese technology companies with various US sanctions lists and Executive Orders restricting US entities’ dealing with specific Chinese entities. China’s retaliatory measure of its own “unreliable entity list” raises uncertainty for foreign businesses • China is a key network income generator for the Group. Opportunities from China’s opening-up remain pivotal to the Group strategy	• A sharp slowdown in US-China and, more broadly, world trade and global growth is a feature of the 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 and action is taken where necessary • We monitor and assess geopolitical events and act as appropriate to ensure that we minimise the impact to the Group and our clients. Scenario planning is conducted regularly to assess the possible impact of developments and enable management to prepare contingency plans where appropriate • There is continuous monitoring at a country, regional and Group level to identify emerging risks and evaluate their management • Increased scrutiny is applied when onboarding clients in sensitive industries and in ensuring compliance with sanctions requirements

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
Middle East geopolitical tensions Potential impact: High Likelihood: Medium Velocity of change: Moderate	←→	• The emergence of COVID-19 in 2020 may have contributed to reduced security incidents in the Middle East relative to 2019 as governments focused on safeguarding their populations and mitigating the impact of COVID-19 on their economies • Nevertheless, the underlying destabilising factors remain. The Middle East and North Africa (MENA) region faces multiple challenges including : – Young populations with high unemployment and widespread religious and sectarian tension – Low oil prices. The collapse of oil prices in March 2020 hit the MENA region hard with a significant negative impact to fiscal and current account balances. The various currency pegs to the US dollar do not appear under threat as yet but this risk could rise if low oil prices persist and the economic downturn becomes protracted • The US remains an important factor in MENA as evidenced by the recently announced normalisation of relations between Israel, UAE and Bahrain. US foreign policy changes following the November 2020 elections could impact the balance of power in the region. Potentially, the US's approach to issues such as the Joint Comprehensive Plan of Action in relation to Iran could change significantly. In addition, the growing economic linkages between MENA and China could impact the nature of the US support to the region in light of the current trade disputes between the US and China • Fundamental tensions remain between Iran and Saudi Arabia/UAE with little prospect for short to medium-term resolution • The tensions related to the boycott of Qatar by the Arab quartet (Saudi Arabia, UAE, Bahrain and Egypt) have dissipated to some extent but are still to be completely resolved and represent an ongoing hindrance to the unity of the Gulf Cooperation Counci.l The Group has a material presence across the region	• The Group monitors developments at regional and country level to detect adverse horizon risks • The direct impact on our MENA portfolio to date has been limited but the unstable backdrop and uncertain outlook inevitably impact confidence and economic prospects for the region • The Group's Risk Appetite and Underwriting Standards across the region have been amended considering the economic downturn
Rise of populism and nationalism driven by unemployment and a shift in global supply chains Potential impact: Low Likelihood: Low Velocity of change: Steady	↑	• The rising gap between winners and losers of globalisation is the main driver for the rise of populism and nationalism, especially apparent in the aftermath of the global financial crisis • COVID-19 provides an opportunity for populist leaders to utilise extended state powers in ways that may undermine the rule of law and democracy and result in more autocratic behaviour • Populist and nationalist parties have created conflict and instability, leading to increases in ethnic, ideological, religious and increasingly military conflict • There is no clear trend that would suggest a rise of populism and nationalism on a global scale, but instead pockets in certain countries and regions. For example, Jair Bolsonaro has been in office since January 2019 and Benjamin Netanyahu was re-elected in Israel in 2019. In defeat, Donald Trump received the second-highest number of votes in US history during the November 2020 presidential elections • The approach taken by the new administration in the US to addressing unemployment and socio-economic challenges will be a significant factor	• We monitor and assess geopolitical events and act as appropriate to ensure that we minimise the impact to the Group and our clients • There is continuous monitoring of emerging risks at a country, regional and Group level

Macroeconomic considerations (Risk ranked according to severity)

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
The COVID-19 outbreak and the emergence of new diseases Potential impact: High Likelihood: High Velocity of change: Moderate	↑	• Governments around the world have taken financial measures to offset the damaging economic impacts of the virus and physical measures to contain its spread, including $11 trillion in fiscal support and international and domestic travel restrictions. Nonetheless, the impact of the pandemic has been severe, leading to increased volatility in financial markets and commodity prices and major economic downturns in many countries. The financial market volatility and economic downturn is greater than that experienced in the global financial crisis • With multiple waves of COVID-19 undermining efforts to return to normal, business, consumer and investor confidence has been affected and most countries' gross domestic product is well below pre-pandemic levels. At the same time, the International Monetary Fund has estimated that global public debt will reach a record high of approximately 100 per cent of Gross Domestic Product before the end of 2020, as the global economy struggles to bounce back from the COVID-19 crisis, leaving little scope for additional monetary policy stimulus • Although global output is expected to recover to pre-COVID-19 levels by the end of 2021, the previous growth path will not be achieved for many years and there is a risk of further disruption, economic downturn and financial market volatility in the interim • COVID-19 has resulted in more than a health crisis. It has become a human, economic and social crisis, which may result in increased uncertainty and new risks • There has been significant recent progress with regard to treatment and potential vaccinations for COVID-19. A number of pharmaceutical companies have announced the delivery of various vaccines candidates with more expected. The uneven vaccine rollout could cause recoveries in emerging markets to lag • Greater China, North Asia and South East Asian economies remain key strategic regions for the Group and Hong Kong remains the largest profit contributor • There is a risk other diseases may emerge	• The Group's priority remains the health and safety of our clients and employees and the continuation of normal operations by leveraging our robust Business Continuity Plans which include enabling the vast majority of our staff to work remotely where possible • To support our clients the Group has enacted 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 • The Group made $1 billion of financing available for companies to provide ventilators, face masks and other goods and services to help fight the pandemic. The Group also launched a $50 million global fund to provide assistance to aid those affected • As part of our stress tests, a severe stress in the global economy associated with a sharp slowdown was assessed in addition to the Internal Capital Adequacy Assessment Process stress tests • Exposures that could result in material credit impairment charges and risk-weighted assets inflation under stress tests are regularly reviewed and actively managed
Unintended consequences of accommodative monetary policy and the risk of asset bubbles and inflation Potential impact: Medium Likelihood: High Velocity of change: Steady	↑	• In response to the economic outcome of the COVID-19 outbreak, central banks have significantly expanded their balance sheets to record levels • There is a risk that long-term low or negative interest rates may drive searches for improved yield which could result in a rapid escalation in asset values not aligned to fundamentals • Another key concern is that accommodative policies may result in persistent inflation risks. In the short term, this risk is mitigated by weak demand and high unemployment. The current challenge and focus for most fiscal and monetary authorities are to restore demand • Beyond the near term, there are concerns about the permanent loss of spare capacity, especially in more developed markets. This could mean that potential output in many economies is lower, and competition is weaker. A small amount of recovery in demand would mean that inflation is a more material risk. It is not clear that central banks will have the tools to remove policy accommodation without causing other risks	• There is regular and continuous portfolio monitoring at a country, regional and Group level to identify and assess emerging risks • Client exposures and risk-weighted assets identified as being at risk of impairment are monitored and reviewed on a regular basis and actively managed

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
Rising sovereign default risk and private sector creditor participation in the Common Framework Agreement (CFA) Potential impact: High Likelihood: Medium Velocity of change: Moderate	↑	• COVID-19 has exacerbated already deteriorating market conditions causing liquidity and potentially solvency issues for a number of the world's poorest countries. This may make it difficult for some countries to service their debts in the coming 12 to 18 months, including increased debt that has been taken on to limit the economic damage from the global pandemic • There have been six sovereign defaults in 2020 including two countries in which the Group operates • The original Debt Service Suspension Initiative (DSSI) called upon private sector creditors to participate and this has been re-emphasised in the CFA beyond the DSSI. The G20 agreed to allow 73 of the world's poorest countries to postpone this year's official bilateral debt repayments until June 2021 with subsequent payments spread over 6 years. In 2020, 46 countries have applied for debt suspensions through the initiative, to delay about $5 billion of payments this year – less than half of the $11.5 billion available, according to the World Bank. The suspensions apply only to bilateral lending arrangements; none of the countries has requested comparable relief from bondholders out of concern that such a move would have an impact on their ability to access international capital markets in the future • Ghana has criticised western nations for neglecting the mounting crisis in Africa while finding trillions of dollars to stimulate their own economies and the UN is co-ordinating an appeal by African finance ministers for $100 billion a year for the next three years to support COVID-afflicted economies on the continent • Unless progress is made, many developing economies will struggle to service or refinance their existing debt in the coming 12 to 18 months	• 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 the CFA and the associated exposure

Environmental and social considerations

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
Social unrest driven by economic downturns, water crises, medical provision and food security Potential impact: High Likelihood: Medium Velocity of change: Moderate	↑	• 2019 and 2020 saw a surge in protests globally and the risk is that these will increase in 2021, with greater severity and frequency, as economic performance, constrained health systems and food shortages become more significant factors • Societies and economies are deeply dependent on water. Energy, food, transportation and nature all rely on a limited supply of clean water. Climate change, unsustainable agricultural practices, poorly planned infrastructure and pollution all threaten the availability of this resource which is increasing the risk of social unrest as a result • Global food prices jumped in 2008 and again in 2011–2012 leading to street and food riots in more than 50 countries, contributing to the overthrow of governments in Haiti and Madagascar, for example, and igniting the Arab spring • Recurring COVID-19 outbreaks are disrupting economies, food systems and supply chains, including medical and goods supply globally. New normal measures have imposed a change in consumption habits	• There is continuous monitoring at a country, regional and Group level to identify emerging and horizon risks and evaluate their management • Detailed reviews are conducted on an ongoing basis of exposures that may result in significant credit impairment

Legal considerations

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
Interbank Offered Rate (IBOR) discontinuation and transition Potential impact: High Likelihood: High Velocity of change: Moderate	↔	• In 2017, the UK Financial Conduct Authority announced that it had reached an agreement with LIBOR panel banks to contribute to LIBOR until the end of 2021, after which there would be a transition from IBORs to risk free rates (RFRs) • Transition from LIBOR to RFRs presents several risks: (i) there are fundamental differences between LIBOR and RFRs and value transfer may arise in transitioning contracts from one to the other; (ii) the market will transition at different paces in different regions and across different products, presenting various sources of basis risk and posing major challenges to hedging strategies; (iii) clients may not be treated fairly throughout the transition, or may not be aware of the options available to them and the implications of decisions taken, which may result in unfair financial detriment; (iv) Legal Risk in relation to the fall-back risks associated with the transition; (v) changes in processes, systems and vendor arrangements associated with the transition may not be within appropriate tolerance levels; and (vi) Accounting and Financial Reporting Risk in that the changes in underlying rates, such as on cashflows and valuations, may not be incorporated correctly • The lack of liquidity in some of the RFR markets, particularly the Secured Overnight Financing Rate, may present challenges to the transition until resolved, as will the different transition timelines for the five LIBOR currencies • Complexity in managing the IBOR transition is also increasing as a result of growing interest from a number of local regulators, and the work required where there are local IBORs requiring transition as well • While the Group does not submit to LIBOR, LIBOR is heavily relied upon by the Group as a reference rate for many financial instruments	• 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 • A significant amount of work has been undertaken in raising awareness and understanding of the transition, both internally and with clients, with around 6,500 staff and over 1,900 clients trained globally • From an industry and regulatory perspective, the Group is actively participating in and contributing to different RFR Working Groups, industry associations and business forums focusing on different aspects of the LIBOR (and other IBORs, as applicable) to RFR transition • The Group monitors the developments at these IBOR-related forums and reflects and aligns significant industry decisions into the Group's transition plans, as required

Technological considerations (Risk ranked according to severity)

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
Third party dependency Potential impact: High Likelihood: High Velocity of change: Moderate	↑	• COVID-19 has impacted businesses globally, and placed significant pressure on the financial health of our suppliers, vendors and other third parties. While current operational performance remains at expected levels with no significant impact, the Group needs to continue focusing on and monitoring critical suppliers, in particular as the risk of impact in the near term remains heightened • This is particularly relevant from a cyber-security perspective where the effect of a cyber event can quickly multiply and extend to other intersecting areas • There is increasing usage of partnerships and alliances by banks to respond to a rapidly changing banking landscape and disruption, particularly in new technologies, from existing players and new entrants. This is making partnerships and alliances an integral part of banks' emerging business model and value proposition to the clients	• An assessment of Third Party Risk was undertaken in 4Q'20. We continue to enhance our overall Third-Party Risk management in response to a changing environment • The 2021 Risk Appetite metrics for Vendor Service Risk focus on heightened monitoring of high-risk arrangements and contingency plans • Third Party Risk management policies, procedures and governance are being reviewed to ensure adequate coverage of all third-party types in addition to inclusion and consideration across all Group activities

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
New technologies and digitisation (including business disruption risk, responsible use of Artificial Intelligence) Potential impact: High Likelihood: High Velocity of change: Fast	↔	• Innovation in the financial services industry is happening at a relentless pace, for example artificial intelligence (AI) and blockchain have continued to gather speed with a growing number of use cases that address evolving customer expectations. The Group must adapt its operating model or risk competitive disadvantage • In Retail Banking, we continue to observe significant shifts in customer value propositions as markets deepen. Fintechs are delivering digital only banking offerings with differentiated user experience, value propositions and product pricing. There is growing usage of AI and machine learning (ML) to deliver highly personalised services such as virtual chatbots to provide digital financial advice and predictive analytics to cross-sell products • In Corporate & Institutional Banking, we continue to observe an increasing focus on digitalisation to streamline processes and provide scalable and personalised solutions for corporate clients. There are growing use cases for blockchain technologies, e.g. streamline cross-border payments and automate key documentation. AI and ML are also increasingly used in predictive risk modelling • Rapid adoption of new technologies requires that we also determine how the Group's security standards, capabilities and processes need to be applied and, in some cases, how we need to adapt in light of new technology • As these 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. For example, the growing usage of big data and cloud computing solutions has heightened cyber security risks in banks • Regulators are increasing emphasis on the importance of resilient technology infrastructure in terms of elimination of cyber risk and improving reliability • Crypto-assets are diversifying rapidly, in line with the ongoing structural transformation in technology, preferences and usages amongst investors and consumers. They may increasingly pose a risk to monetary policy and the smooth functioning of market infrastructures and payments	• The Group continues to undertake a rigorous approach in monitoring emerging trends and new developments, opportunities and risks in the technology space, which may have implications on the banking sector • In 2017, the Group set up the SC Ventures unit to spearhead Group-wide digital advancement. The unit continues to promote innovation, invest in disruptive technologies and deliver client digital solutions. SC Ventures' eXellerator innovation labs in China, Singapore, Hong Kong, London, San Francisco and Kenya are designed to drive innovation, invest in promising fintech and implement new business models in banking. Several ventures going live in 2021 are driving the Group into new services and technologies, including those associated with crypto currencies. • The Group is developing an AI modelling framework which includes the validation of AI models • The Group has an integrated strategy to leverage technology to manage cyber risk and combat cyber-enabled financial crime. Rapid adoption of new technologies requires that we also determine how the Group's security standards, capabilities and processes need to be applied and, in some cases, how we need to adapt security aspects • The Group continues to apply our existing governance and control frameworks for the deployment of new technology services. We maintain our vigilant watch on legal and regulatory trends in relation to the usage of new technologies and related data risks. We are also developing a crypto risk framework to better manage these risks.
Increased data privacy and security risks from strategic and wider use of data Potential impact: High Likelihood: High Velocity of change: Moderate	↑	• As digital technologies grow in sophistication and become further embedded across the banking and financial services industry, the potential impact profile with regards to data risk is changing. The growing use of big data for analysis purposes and cloud computing solutions are examples of this • In addition, these risks represent an emerging and topical theme both from regulatory and compliance perspectives	• The Group has existing governance and control frameworks for the deployment of new technologies, products and services • The Group is enhancing the existing risk framework around data management to streamline and strengthen our oversight of these risks across the data lifecycle • To manage the risks posed by rapidly evolving cyber security threats and technology adoption, the Group has designed and is implementing a programme focused on delivering an improved security framework • The Group maintains a vigilant watch on legal and regulatory developments in relation to data privacy and security risks to identify any potential impact to the business and implement appropriate mechanisms to control these related risks

Emerging Risk	Risk trend since 2019	Context	How these are mitigated/next steps
Increase in long-term remote working providing new challenges Potential impact: High Likelihood: High Velocity of change: Moderate	↑	• With the outbreak of COVID-19 across the world, many governments have imposed a full or partial lockdown in countries where the Group operates. These actions have restricted the movement of staff and meant that a large percentage are required to work remotely for a prolonged period • There is an increase in information and cyber security (ICS) and privacy risks given the increase in the number of staff in certain roles who have access to confidential customer and client information working outside the secure office or branch environment • Traditional threat vectors (i.e. phishing and malware) combined with new threats due to digitisation and technology advancements at the endpoints (i.e. mobile devices and websites) adds another layer of potential cyber risk that could lead to disrupted services • Malicious actors are increasing their capability and maturity by adapting to varying trends and new technologies to personalise attacks on organisations (i.e. ransomware) • There is increased risk that staff become detached. While some people have work-conducive environments at home, many do not. The impact of this takes many forms and may result in feelings of isolation, increased stress and challenges around work-life balance • Without the supervision that being in an office allows, there is a risk that issues such as those relating to wellbeing, performance and misconduct go unseen. Staff skills and capabilities may also be affected by extended remote working	• The Group recognises the importance of ensuring that its ICS focus does not shift as it manages the financial and operational challenges posed by COVID-19 • The Group has sought to raise ICS awareness among customers and clients through messages posted on websites, applications and through fraud alerts on the online banking landing pages. Internally, the Group has increased ICS awareness amongst staff to remind them to stay vigilant to the new types of, and increased frequency of, cyber threats • The Group employs a range of technical measures across its laptops, IT systems and network to minimise the risk of data leakage. The Group's Cyber Defence Centre and Cyber Threat Intelligence teams have improved proactive security monitoring of COVID-19 themed phishing campaigns, malicious activities and threats • The Group has moved to large-scale adoption of technology to master a variety of critical aspects of the COVID-19 crisis and sustain productivity levels, such as implementing required infrastructure and security controls to enable work from home arrangements, use of collaboration tools (including Skype, BlueJeans, and MURAL), accelerated cloud-based service offerings and many others • The Group has also assessed the risk, impact and robustness of continuity plans for pandemic critical vendor services supporting critical banking operations • The Group has prioritised supporting people in working virtually through the pandemic. This has included a learning pathway to help colleagues and people leaders continue developing skills and work virtually, providing information and resources, including toolkits and webinars covering working from home related topics such as safety and wellbeing and productivity

↑ Risk heightened in 2020 ↓ Risk reduced in 2020 ←→ Risk remained consistent with 2019 levels

Potential impact	Likelihood	Velocity of change
Refers to the extent to which a risk event might affect the Group	Refers to the possibility that a given event will occur	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 and leverage position is managed within the Board-approved risk appetite. The Group is well capitalised with low leverage and high levels of loss-absorbing capacity.

	2020	2019
CET1 capital	14.4%	13.8%
Tier 1 capital	16.5%	16.5%
Total capital	21.2%	21.2%
UK leverage	5.2%	5.2%
MREL	30.9%	28.6%
Risk-weighted assets (RWA) $million	268,834	264,090

The Group's CET1 capital and Tier 1 leverage position are well above current requirements. For further detail see the Capital section in the Standard Chartered PLC Pillar 3 Disclosures for FY 2020.

The Group's CET1 ratio increased 60 basis points to 14.4 per cent as profits, the sale of its interest in Permata, favourable regulatory changes and other movements more than offset higher RWA (mainly due to COVID -19 related credit migration) and the impact of the part completed share buy-back.

In the period, the PRA set the Group's current Pillar 2A requirement as a nominal value instead of a percentage of RWA. At the full year this equated to 3.2 per cent of RWA, of which at least 1.8 per cent must be held in CET1. This requirement will vary over time with movements in RWA and as Pillar 2A remains subject to regular PRA review. The Group's countercyclical buffer reduced by 21 basis points to 14 basis points mainly due to reductions in countercyclical buffer rates in Hong Kong and the UK in response to the COVID-19 pandemic. As a result of these changes to Pillar 2A and countercyclical buffer rates the Group's minimum CET1 requirement reduced by 28bps to 10.0 per cent.

On 30 June, the PRA published a statement on various amendments to the Capital Requirements Regulation (CRR) including revisions to certain IFRS 9 transitional arrangements and the treatment of software assets in CET1 with the intention of part offsetting COVID impacts on CET1 ratios (CRR Quick Fix). As at 31 December 2020 the CRR Quick Fix changes provided a CET1 benefit of around 29 basis points of which the change in treatment of software assets contributed 22 basis points. However, the PRA is consulting on maintaining the earlier position whereby all software assets are fully deducted from CET1.

The Group's fully phased minimum requirement for own funds and eligible liabilities (MREL) will be 22.5 per cent of RWA from 1 January 2022 based on RWA and leverage exposure at FY'20[1]. The Group's combined buffer (comprising the capital conservation buffer, the GSII buffer and the countercyclical buffer) is additive to the minimum MREL, resulting in a total MREL of 26.1 per cent of FY'20 RWA from 1 January 2022. The Group's MREL position was 30.9 per cent of RWA and 9.9 per cent of leverage exposure at 31 December 2020.

Despite challenging market conditions, the Group successfully raised around $10.1 billion of MREL eligible debt from its holding company in the period. Issuance was across the capital structure including $1.0 billion of Additional Tier 1, $2.4 billion of Tier 2 and around $6.8 billion of callable senior debt.

In response to a request from the PRA and as a consequence of the unprecedented challenges from the COVID-19 pandemic, the Board decided to cancel the 2019 final dividend of 20 cents per ordinary share and to suspend the $0.5 billion share buy-back programme announced in February 2020. Additionally, no interim dividend on ordinary shares was accrued, recommended or paid in 2020. Following recent PRA guidance, the Board has recommended a final dividend for 2020 of $284 million or 9 cents a share and, in addition, has decided to carry out a share buy-back for up to a maximum consideration of $254 million. The impact of this buy-back will be reflected in the Group's CET1 position in the first quarter of 2021.

The Group is a G-SII, with a 1.0 per cent G-SII CET1 buffer. The Standard Chartered PLC G-SII disclosure is published at: sc.com/fullyearresults

1 Potential future offset to Pillar 2A requirements from changes to the countercyclical buffer in PS 15/20 are not considered here. MREL end state requirements are based on FY'20 RWA, leverage exposure and Pillar 2A requirements.

Capital ratios

	2020	2019
CET1	14.4%	13.8%
Tier 1 capital	16.5%	16.5%
Total capital	21.2%	21.2%

CRD Capital base[1] (audited)

	2020 $million	2019 $million
CET1 instruments and reserves		
Capital instruments and the related share premium accounts	5,564	5,584
Of which: share premium accounts	3,989	3,989
Retained earnings[2]	25,723	24,044
Accumulated other comprehensive income (and other reserves)	12,688	11,685
Non-controlling interests (amount allowed in consolidated CET1)	180	723
Independently reviewed interim and year-end profits	718	2,301
Foreseeable dividends	(481)	(871)
CET1 capital before regulatory adjustments	44,392	43,466
CET1 regulatory adjustments		
Additional value adjustments (prudential valuation adjustments)	(490)	(615)
Intangible assets (net of related tax liability)[3]	(4,274)	(5,318)
Deferred tax assets that rely on future profitability (excludes those arising from temporary differences)	(138)	(129)
Fair value reserves related to net losses on cash flow hedges	52	59
Deduction of amounts resulting from the calculation of excess expected loss	(701)	(822)
Net gains on liabilities at fair value resulting from changes in own credit risk	52	(2)
Defined-benefit pension fund assets	(40)	(26)
Fair value gains arising from the institution's own credit risk related to derivative liabilities	(48)	(38)
Exposure amounts which could qualify for risk weighting of 1250%	(26)	(62)
Total regulatory adjustments to CET1	(5,613)	(6,953)
CET1 capital	38,779	36,513
Additional Tier 1 capital (AT1) instruments	5,632	7,184
AT1 regulatory adjustments	(20)	(20)
Tier 1 capital	44,391	43,677
Tier 2 capital instruments	12,687	12,318
Tier 2 regulatory adjustments	(30)	(30)
Tier 2 capital	12,657	12,288
Total capital	57,048	55,965
Total risk-weighted assets (unaudited)	268,834	264,090

1 CRD capital is prepared on the regulatory scope of consolidation
2 Retained earnings includes IFRS9 capital relief (transitional) of $394 million, including dynamic relief of $97 million
3 Deduction for intangible assets includes software deduction relief of $677 million as the CRR 'Quick Fix' measures

Movement in total capital (audited)

	2020 $million	2019 $million
CET1 at 1 January	36,513	36,717
Ordinary shares issued in the period and share premium	–	25
Share buy-back	(242)	(1,006)
Profit for the period	718	2,301
Foreseeable dividends deducted from CET1	(481)	(871)
Difference between dividends paid and foreseeable dividends	476	(641)
Movement in goodwill and other intangible assets	1,044	(172)
Foreign currency translation differences	700	(180)
Non-controlling interests	(543)	37
Movement in eligible other comprehensive income	324	284
Deferred tax assets that rely on future profitability	(9)	(14)
Decrease/(increase) in excess expected loss	121	53
Additional value adjustments (prudential valuation adjustment)	125	(51)
IFRS 9 transitional impact on regulatory reserves including day one	35	(43)
Exposure amounts which could qualify for risk weighting	36	61
Fair value gains arising from the institution's own Credit Risk related to derivative liabilities	(10)	–
Other	(28)	13
CET1 at 31 December	38,779	36,513
AT1 at 1 January	7,164	6,684
Net issuances (redemptions)	(995)	552
Foreign currency translation difference	8	9
Excess on AT1 grandfathered limit (ineligible)	(565)	(81)
AT1 at 31 December	5,612	7,164
Tier 2 capital at 1 January	12,288	12,295
Regulatory amortisation	(463)	(1,111)
Net issuances (redemptions)	(69)	1,000
Foreign currency translation difference	257	(12)
Tier 2 ineligible minority interest	82	31
Recognition of ineligible AT1	565	81
Other	(3)	4
Tier 2 capital at 31 December	12,657	12,288
Total capital at 31 December	57,048	55,965

The main movements in capital in the period were:

- CET1 increased by $2.3 billion as retained profits of $0.7 billion, a $0.7 billion lower deduction for software resulting from adoption of CRR II Quick fix measures, favourable foreign currency translation impacts of $0.7 billion and other comprehensive income movements of $0.3 billion were only part offset by the part completed share buy-back of $0.2 billion and the $0.5 billion decrease in non-controlling interests mainly due to the sale of Permata.
- AT1 decreased to $5.6 billion as the call of $2 billion of existing 6.5 per cent AT1 securities and the ongoing de-recognition of legacy Tier 1 was partly offset by the issuance of $1 billion of new 6.0 per cent AT1 securities, increasing the efficiency of the Group's AT1 stock.
- Tier 2 capital increased by $0.4 billion as issuances of $2.4 billion of new Tier 2 instruments and the recognition of ineligible AT1 were partly offset by regulatory amortisation and the redemption of $2.7 billion of Tier 2 during the year.

Risk-weighted assets by business

	2020			
	Credit risk $million	Operational risk $million	Market risk $million	Total risk $million
Corporate & Institutional Banking	102,004	13,153	21,465	136,622
Retail Banking	39,595	7,575	–	47,170
Commercial Banking	25,659	2,810	–	28,469
Private Banking	5,160	763	–	5,923
Central & other items	48,023	2,499	128	50,650
Total risk-weighted assets	220,441	26,800	21,593	268,834

	2019			
	Credit risk $million	Operational risk $million	Market risk $million	Total risk $million
Corporate & Institutional Banking	95,261	13,261	20,562	129,084
Retail Banking	37,194	7,314	–	44,508
Commercial Banking	28,350	2,626	–	30,976
Private Banking	5,681	728	–	6,409
Central & other items	49,178	3,691	244	53,113
Total risk-weighted assets	215,664	27,620	20,806	264,090

Risk-weighted assets by geographic region

	2020 $million	2019 $million
Greater China & North Asia	92,860	85,695
ASEAN & South Asia	81,423	88,942
Africa & Middle East	51,149	49,244
Europe & Americas	45,758	43,945
Central & other items	(2,356)	(3,736)
Total risk-weighted assets	268,834	264,090

Movement in risk-weighted assets

	Credit risk								
	Corporate & Institutional Banking $million	Retail Banking $million	Commercial Banking $million	Private Banking $million	Central & other items $million	Total $million	Operational risk $million	Market risk $million	Total risk $million
At 1 January 2019	96,954	35,545	27,711	5,103	45,825	211,138	28,050	19,109	258,297
Assets growth mix	1,303	1,020	(557)	528	4,093	6,387	–	–	6,387
Asset quality	2,565	832	(642)	8	607	3,370	–	–	3,370
Risk-weighted assets efficiencies	(1,112)	(33)	(403)	–	(2,404)	(3,952)	–	–	(3,952)
Model, methodology and policy changes	(904)	(7)	–	–	1,400	489	–	500	989
Disposals	(397)	–	(441)	–	–	(838)	–	–	(838)
Foreign currency translation	(182)	(219)	(228)	42	(343)	(930)	–	–	(930)
Other non-credit risk movements	–	–	–	–	–	–	(430)	1,197	767
At 31 December 2019	98,227	37,138	25,440	5,681	49,178	215,664	27,620	20,806	264,090
At 1 January 2020[1]	95,261	37,194	28,350	5,681	49,178	215,664	27,620	20,806	264,090
Assets growth mix	(6,684)	1,122	(3,059)	(602)	3,711	(5,512)	–	–	(5,512)
Asset quality	11,685	325	505	(2)	2,409	14,922	–	–	14,922
Risk-weighted assets efficiencies	(150)	–	79	–	–	(71)	–	–	(71)
Model, methodology and policy changes	586	134	(339)	–	661	1,042	–	(1,500)	(458)
Disposals	–	–	–	–	(7,859)	(7,859)	(1,003)	(159)	(9,021)
Foreign currency translation	1,306	820	123	83	(77)	2,255	–	–	2,255
Other non-credit risk movements	–	–	–	–	–	–	183	2,446	2,629
At 31 December 2020	102,004	39,595	25,659	5,160	48,023	220,441	26,800	21,593	268,834

1 Following a reorganisation of certain clients, there has been a reclassification of balances across client segments. 1 January 2020 balances have been restated

Movements in risk-weighted assets

RWA increased by $4.7 billion, or 1.8 per cent from 31 December 2019 to $268.8 billion. This was mainly due to increases in Credit Risk RWA of $4.8 billion, Market Risk RWA $0.8 billion, partly offset by a decrease of $0.8 billion in Operational Risk RWA.

Corporate & Institutional Banking

Credit risk RWA increased by $6.7 billion to $102.0 billion mainly due to:

- $11.7 billion increase due to deterioration in asset quality from client downgrades across all regions and several industries following the onset of the COVID-19 pandemic
- $1.3 billion increase from foreign currency translation mainly due to appreciation of currencies in China, Europe, and the UK against the US dollar
- $0.6 billion increase due to model, methodology and policy changes mainly from Revised Securitisation Framework
- $6.7 billion decrease due to asset balance decline in Corporate Finance and Transaction Banking across all regions, offset by asset growth in Financial Markets primarily from Europe & Americas
- $0.2 billion decrease due to business initiatives in certain Transaction Banking and Lending facilities.

Retail Banking

Credit risk RWA increased by $2.4 billion to $39.6 billion mainly due to:

- $1.1 billion asset balance growth in Greater China & North Asia and ASEAN & South Asia, partly offset by asset decline in Africa & Middle East
- $0.8 billion increase from foreign currency translation mainly due to appreciation of currencies in Korea, Taiwan & China against the US dollar.
- $0.3 billion increase due to deterioration in asset quality across retail portfolios primarily in ASEAN & South Asia
- $0.1 billion increase due to model, methodology and policy changes across retail portfolios primarily in ASEAN & South Asia

Commercial Banking

Credit Risk RWA decreased by $2.7 billion to $25.7 billion mainly due to:

- $3.1 billion decrease due to asset balance decline in Transaction Banking and Lending primarily in Africa & Middle East, ASEAN & South Asia and Greater China & North Asia
- $0.3 billion decrease primarily due to methodology change relating to CRR II treatment for SME exposures
- $0.5 billion increase due to deterioration in asset quality across several industry sectors primarily in Africa & Middle East and ASEAN & South Asia
- $0.1 billion increase from foreign currency translation mainly due to appreciation of currencies in China and Korea against the US dollar
- $0.1 billion increase due to business initiatives in certain Transaction Banking facilities.

Private Banking

Credit risk RWA decreased by $0.5 billion to $5.2 billion principally due to asset balance decline in Wealth Management and Retail products primarily in ASEAN & South Asia.

Central & other items

Central and other items RWA mainly relate to the Treasury Markets liquidity portfolio, equity investments and deferred/current tax assets.

Credit risk RWA decreased by $1.2 billion to $48.0 billion mainly due to:

- $7.9 billion decrease principally due to the sale of the Group's principal joint venture investment, PT Bank Permata Tbk
- $0.1 billion decrease from foreign currency translation mainly due to depreciation of currencies in Nigeria and Zimbabwe against the US dollar

- $3.7 billion increase from asset balance growth primarily in Africa & Middle East.
- $2.4 billion increase due to deterioration in asset quality primarily due to sovereign downgrades in Africa & Middle East
- $0.7 billion increase due to methodology change relating to intangibles with a corresponding lower deduction to CET1.

Market risk

Total market risk RWA increased by $0.8 billion, or 4 per cent from 31 December 2019 to $21.6 billion. The increase was in the internal models approach (IMA) RWA due to increased market volatility and increased charges for IMA Risks not in VaR. The increase was partially offset by a decrease in the IMA RWA multiplier as back-testing exceptions rolled out of the 250-day window and reduced positions in both the IMA and standardised approach.

Operational risk

Operational risk RWA reduced by $0.8 billion, or 3 per cent from 31 December 2019 to $26.8 billion. This was mainly due to the sale of our shareholding in the Group's principal joint venture investment, PT Bank Permata Tbk.

UK leverage ratio

The Group's UK leverage ratio, which excludes qualifying claims on central banks in accordance with a PRA waiver, was 5.2 per cent, which is above the current minimum requirement of 3.6 per cent. The UK leverage ratio was flat in the period following a $1.3 billion increase in end point Tier 1 mainly due to higher CET1 of $2.3 billion, the issue of $1 billion of new 6.0 per cent AT1 securities partly offset by the call of $2 billion of 6.5 per cent AT1 securities. The exposure measure increased by $34 billion due to growth in on-balance sheet assets, particularly investment in debt-securities, loans and advances to customers, derivatives and SFTs, part offset by a higher benefit from regulatory consolidation adjustments mainly due to the increased balances with central banks eligible for netting and the Permata disposal.

UK leverage ratio

	2020 $million	2019 $million
Tier 1 capital (transitional)	44,391	43,677
Additional Tier 1 capital subject to phase out	(1,114)	(1,671)
Tier 1 capital (end point)[1]	43,277	42,006
Derivative financial instruments	69,467	47,212
Derivative cash collateral	11,759	9,169
Securities financing transactions (SFTs)	67,570	60,414
Loans and advances and other assets	640,254	603,603
Total on-balance sheet assets	789,050	720,398
Regulatory consolidation adjustments[2]	(60,059)	(31,485)
Derivatives adjustments		
Derivatives netting	(44,257)	(32,852)
Adjustments to cash collateral	(21,278)	(11,853)
Net written credit protection	1,284	1,650
Potential future exposure on derivatives	42,410	32,961
Total derivatives adjustments	(21,841)	(10,094)
Counterparty risk leverage exposure measure for SFTs	4,969	7,005
Off-balance sheet items	128,167	122,341
Regulatory deductions from Tier 1 capital	(5,521)	(6,913)
UK leverage exposure (end point)	834,765	801,252
UK leverage ratio (end point)	5.2%	5.2%
UK leverage exposure quarterly average	837,147	816,244
UK leverage ratio quarterly average	5.2%	5.1%
Countercyclical leverage ratio buffer	0.0%	0.1%
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 international accounting standards in conformity with the requirements of the Companies Act 2006 and with International Financial Reporting Standards adopted pursuant to Regulation (EC) No 1606/2002 as it applies in the European Union (EU IFRS) and applicable law, and the Company financial statements in accordance with international accounting standards in conformity 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 international accounting standards in conformity with the requirements of the Companies Act 2006 and with 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 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.

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, 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

25 February 2021

Shareholder information

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, such 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, market and regulatory forces or conditions, future exchange and interest rates, 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.

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.

Further information can be obtained from the Company's registrars or from ShareGift on 020 7930 3737 or from sharegift.org

Details of voting at the Company's AGM and of proxy votes cast can be found on the Company's website at sc.com/agm

Please register online at investorcentre.co.uk or contact our registrar for a mandate form.

This information will be available on the Group's website at sc.com

You can check your shareholding at computershare.com/hk/investors

If you would like to receive more information, please visit our website at sc.com/shareholders or contact the shareholder helpline on 0370 702 0138.

By Order of the Board
Amanda Mellor
Group Company Secretary

Hong Kong, 25 February 2021

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, OBE; Naguib Kheraj (Deputy Chairman); Ngozi Okonjo-Iweala; Maria da Conceicao das Neves Calha Ramos; Philip George Rivett; David Tang; Carlson Tong and Jasmine Mary Whitbread