2020

The Hongkong and Shanghai Banking Corporation Limited, Bangkok Branch

Pillar 3 Disclosures at 31 December 2020

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Cautionary statement regarding forward-looking statements

The *Pillar 3 Disclosures 2020* contains certain forward-looking statements with respect to the financial condition of The Hongkong and Shanghai Banking Corporation Limited, Bangkok Branch ('the Bank'), results of operations, capital position and business.

Statements that are not historical facts, including statements about the Bank's beliefs and expectations, are forward-looking statements. Words such as 'expects', 'anticipates', 'intends', 'plans', 'believes', 'seeks', 'estimates', 'potential' and 'reasonably possible', variations of these words and similar expressions are intended to identify forward-looking statements. These statements are based on current plans, estimates and projections, and therefore undue reliance should not be placed on them. Forward-looking statements speak only as of the date they are made. The Bank makes no commitment to revise or update any forward-looking statements to reflect events or circumstances occurring or existing after the date of any forward-looking statements.

Forward-looking statements involve inherent risks and uncertainties. Readers are cautioned that a number of factors could cause actual results to differ, in some instances materially, from those anticipated or implied in any forward-looking statement. These include, but are not limited to:

- changes in general economic conditions in the markets in which we operate,
- changes in government policy and regulation, including the monetary, interest rate and other policies of central banks and other regulatory authorities, and
- factors specific to the Bank, including our success in adequately identifying the risks we face, such as the incidence of loan losses or delinquency, and managing those risks (through account management, hedging and other techniques).

Introduction

Purpose

This document comprises the Bank's Pillar 3 disclosures on capital and risk management at 31 December 2020. It meets the regulatory disclosure requirements under the Bank of Thailand ('BoT') Notification dated 2 May 2013 and 7 May 2019, Re: The Public Disclosure of Capital Maintenance for Commercial Banks. It also serves to comply with the disclosures on Liquidity Coverage Ratio as required by the BoT's Notification dated 25 January 2018, Re: Liquidity Coverage Ratio Disclosure Standards.

References to 'HSBC', 'the Group' or 'the HSBC Group' within this document mean HSBC Holdings plc together with its subsidiaries.

These disclosures are governed by the Bank's disclosure policy, which has been approved by the Asset and Liability Management Committees ('ALCOs').

Additional relevant information may be found in the Bank's annual financial statements for the year ended 31 December 2020.

Key prudential metrics

Table 1 : Key prudential metrics

	31 December 2020	30 June 2020	31 December 2019
Available capital (THBm)			
Total capital	22,600	20,100	20,100
Fully loaded Expected Credit Losses total capital	22,600	20,100	20,100
Risk-weighted assets ('RWAs') (THBm)			
Total RWAs	111,966	123,258	114,999
Capital ratios (%)			
Capital ratio	20.2	16.3	17.5
Fully loaded Expected Credit Losses capital ratio	20.2	16.3	17.5
Additional capital buffer requirements as a percentage of RWA (%)			
Capital conservation buffer requirement	2.5	2.5	2.5
Countercyclical buffer requirement	-	-	-
Higher loss absorbency requirement	-	-	-
Total of capital specific buffer requirements	2.5	2.5	2.5
Capital ratio in excess of minimum requirements	9.2	5.3	6.5
Total capital ratio requirement (%)			
Total capital ratio including capital buffer	11.0	11.0	11.0
Minimum capital ratio requirements	8.5	8.5	8.5
Liquidity Coverage Ratio ('LCR')			
Total high-quality liquid assets (THBm)	90,453	98,596	63,323
Total net cash outflows (THBm)	50,904	56,737	36,325
LCR ratio (%)	178	174	174

In 2020, the BoT approved the increase in capital of the Bank amounting from Baht 20,100 million to Baht 22,600 million being effective on 15 October 2020. The Bank transferred the amount from retained earnings with the approval from head office.

With reference to the implementation of Thai Financial Reporting Standard ('TFRS') 9 'Financial Instruments' effective from 1 January 2020, the BoT set out transitory provisions by allowing the phase in of an impact from the first time adoption of TFRS provisioning to mitigate an impact on capital.

The increase in impairment provision can be adjusted to its retained earnings. If it is resulting in negative retained earnings, it has to recognise by deduct from capital. The BoT permit banks to add back to their capital base on straight-line approach over 6 accounting periods (6-month accounting period).

As of 1 January 2020, our existing provision is in excess the Expected Credit Losses ('ECL') by Baht 900 million. The excess amount from the transition is released over five years on straight-line basis starting on 1 January 2020 according to the BoT's notification dated 6 November 2019.

Regulatory framework

The Bank calculates capital for prudential regulatory reporting purposes using the announcement of the BoT regarding a capital adequacy framework based on the Basel III framework: 'A global regulatory framework for more resilient banks and banking systems' issued by the Basel Committee on Banking Supervision ('Basel Committee').

The Basel Committee's framework is structured around three 'pillars': Pillar 1 minimum capital requirements; Pillar 2, supervisory review process; and Pillar 3, market discipline. The aim of Pillar 3 is to produce disclosures that allow market participants to assess the scope of banks' application of the Basel Committee's framework. It also aims to assess their application of the rules in their jurisdiction, capital conditions, risk exposures and risk management processes, and hence their capital adequacy.

Pillar 3 requires all material risks to be disclosed to provide a comprehensive view of a bank's risk profile.

Pillar 3 disclosures

The Pillar 3 Disclosures 2020 comprises quantitative and qualitative information required under Pillar 3. They are made in accordance with Section 5.3.3 of the BoT's notification Re: Regulations on Capital Supervision for Commercial Banks. These disclosures are supplemented by additional requirements of the BoT regarding Liquidity Coverage Ratio ('LCR').

Frequency
We published comprehensive Pillar 3 Disclosures annually with an update of certain quantitative capital requirement disclosures, market risk information together with liquidity and funding risk, at the half year.

Media and location
The *Pillar 3 Disclosures 2020* on a standalone basis are available on our website: www.hsbc.co.th, whereas the Pillar 3 Disclosures 2020 of HSBC Holdings plc and its subsidiaries on a consolidated level and other information on HSBC are available on HSBC Group's website: www.hsbc.com.

Verification
Whilst the *Pillar 3 Disclosures 2020* are not required to be externally audited, the document has been appropriately verified internally in accordance with the Bank's policies on disclosure and its financial reporting and governance processes.

Scope of permissions

Credit risk

The Basel committee's framework applies three approaches of increasing sophistication to the calculation of Pillar 1 credit risk capital requirements. The most basic level, the standardised approach ('SA'), requires banks to use external credit ratings to determine the risk weightings applied to rated counterparties. Other counterparties are grouped into broad categories and standardised risk weightings are applied to these categories.

The next level, the foundation internal ratings based ('FIRB') approach, allows banks to calculate their credit risk capital requirements on the basis of their internal assessment of counterparty's probability of default ('PD'), but subjects their quantified estimates of exposure at default ('EAD') and loss given default ('LGD') to standard supervisory parameters. Finally, the advanced internal ratings based ('AIRB') approach allows banks to use their own internal assessment in determining PD and in quantifying EAD and LGD.

Counterparty credit risk ('CCR') in both the trading and non-trading books is the risk that the counterparty to a transaction may default before completing the satisfactory settlement of the transaction. Four approaches to calculating CCR and determining exposure values are defined by Basel Committee: mark-to-market, original exposure, standardised and Internal Model Method ('IMM'). These exposure values are used to determine capital requirements under one of the three approaches credit risk approaches; standardised, FIRB or AIRB.

For credit risk including CCR, with the BoT's approval, we have adopted the standardised approach. Internally, we use the mark-to-market and IMM approaches for managing and monitoring our CCR.

Market risk

Market risk capital requirements can be determined under either the standard rules or the Internal Models Approach ('IMA'). The latter involves the use of internal value at risk ('VaR') models to measure market risks and determine the appropriate capital requirement.

We have obtained approval from the BoT to apply a combined approach for market risk assessment to determine capital requirements. The standardised approach is used for Specific Interest Rate Risk and the Value at Risk model is used for general market, foreign exchange and interest rate risk.

Operational risk

Basel Committee allows firms to calculate their operational risk capital requirement under the basic indicator approach, the standardised approach or the advanced measurement approach.

We currently use the standardised approach in determining our operational risk capital requirement.

Capital

Approach and policy

Our approach to capital management is driven by our strategic and organisational requirements, taking into account the regulatory, economic and commercial environment in which we operate.

It is our objective to maintain a strong capital base to support the development of our business and to exceed regulatory capital requirements at all times. To achieve this, we manage our capital within the context of an annual capital plan that is approved by the local Asset and Liability Management Committee ('ALCO') and determines the optimal amount and mix of capital required to support planned business growth and meet local regulatory capital requirements within the context of the Group capital plan. Capital generated by us in excess of planned requirements is returned to our Head Office, normally by way of profit remittance, in accordance with the Bank's capital plan.

Capital conservation buffer

To align with the Basel III framework, the BoT contemplates a capital conservation buffer ('CCB'). The CCB was designed to ensure banks build up capital outside periods of stress that can be drawn down when losses are incurred and is set at 2.5%. This is result in minimum capital ratio of 11%.

Composition of regulatory capital

The BoT has issued the notification to revise the components of regulatory capital. Items that do not reflect true capital are added to the regulatory adjustments to be applied to the regulatory capital i.e. goodwill, intangible assets, gains on sale related to securitisation transactions and significant investments in common shares and warrants to be in line with the Basel III framework.

At 31 December 2020, we have an allocated and registered capital fund with the BoT of Baht 22,600 million *(30 June 2020 and 31 December 2019 : Baht* 20,100 *million and Baht* 20,100 *million, respectively)*. Intangible assets is the regulatory adjustment with immaterial to our regulatory capital. The detail can be summarised as follows:

Table 2 : Capital Structure

	31 December 2020 THBm	30 June 2020 THBm	31 December 2019 THBm
Assets maintained under Section 32	**23,340**	**20,916**	**21,944**
Sum of net capital for maintenance of assets under Section 32 and net balance of inter-office accounts			
Net funds brought in to maintenance assets under Section 32	22,600	20,100	20,100
Net balance of inter-office accounts where the branch is the debtor to the head office and other branches of the same juristic person, the parent company and subsidiaries of the head office	11,010	11,459	1,607
Total	**33,610**	**31,559**	**21,707**
Regulatory Capital	**22,600**	**20,100**	**20,100**
Regulatory Capital after deducting capital add-on from Single Lending Limit	**22,600**	**20,100**	**19,898**

Table 3 : Capital Adequacy

Minimum capital requirement for credit risk classified by type of assets under the Standardised Approach

	31 December 2020 THBm	30 June 2020 THBm	31 December 2019 THBm
Performing claims			
Claims on sovereigns and central banks, and multilateral development banks ('MDBs')	22	13	29
Claims on financial institutions, non-central government public sector entities ('PSEs') treated as claims on financial institutions, and securities firms	1,499	1,366	1,348
Claims on corporates, non-central government public sector entities ('PSEs') treated as claims on corporates	6,712	7,813	7,237
Claims on retail portfolios	11	12	13
Claims on housing loans	17	16	18
Other assets	17	19	19
Non-performing claims	1	9	4
Total minimum capital requirement for credit risk	**8,279**	**9,248**	**8,668**

Minimum capital requirement for market risk for positions in the trading book

	31 December 2020 THBm	30 June 2020 THBm	31 December 2019 THBm
Standardised approach - specific interest rate risk	4	4	6
Internal model approach	223	214	149
Total minimum capital requirement for market risk	**227**	**218**	**155**

Minimum capital requirement for operational risk

	31 December 2020 THBm	30 June 2020 THBm	31 December 2019 THBm
Standardised approach	997	997	942
Total minimum capital requirement for operational risk	**997**	**997**	**942**

Capital ratio

	31 December 2020 %	30 June 2020 %	31 December 2019 %
Total capital to risk-weighted assets	**20.2**	**16.3**	**17.5**
Total capital to risk-weighted assets after deducting capital add-on from Single Lending Limit	**20.2**	**16.3**	**17.5**
Minimum capital ratio including CCB according to the BoT	**11.0**	**11.0**	**11.0**

Risk exposure and assessment

Risk management framework and policies

Risk management framework
HSBC Group applies Risk Management Framework ('RMF') to effectively manage risk faced by the Group. The RMF is governed by the Risk Management Meeting ('RMM') of the Group Management Board and approved by the Group Chief Risk Officer and is applied throughout the Group.

The Group risk management approach follows five steps:

1) define and enable,
2) identify and assess,
3) manage,
4) aggregate and report and
5) govern

These are shown below.

Define & Enable
HSBC's culture recognizes the importance of being dependable, open, and connected. The Group also places emphasis on conduct in which impact can arise across all risk types.

In terms of roles and responsibilities, HSBC Group applies Three Line of Defence ('LOD') where First LOD (Risk Owner and Control Owner) has ultimate ownership for risk and controls and delivering fair conduct outcomes; Second LOD (Risk Steward) has responsibilities to review and challenge the First LOD's activities to ensure that risk management decisions and actions appropriate, within risk appetite and support the delivery of conduct outcome; and Third LOD (Internal Audit) provides independent assurance that risk management, governance and internal control processes are designed and operating effectively. Throughout the organisation, the principle of individual accountability is exercised and is fundamental for effective risk management within the Group.

In terms of risk categorization, HSBC Group uses a standardised set of risk types known as HSBC risk taxonomy which comprise mainly of

1) financial risks – the risk of financial loss as a result of business activities and
2) non-financial risks – the risk of loss resulting from people, inadequate or failed internal processes, data or system or external event arising during day-to-day operations.

HSBC Group defines Risk Appetite as the articulation of the level and types of risks that we are willing to take in order to achieve our strategic objective.

Identify & Assess
To identify and assess risks, HSBC takes into account internal and external environments along with potential changes. When assessing risk, HSBC assess impact and likelihood on factors including

1) financial impact,
2) customer impact,
3) regulatory impact,
4) reputational impact,
5) market conduct and competition impact.

Various process and tools are used for assessment of different risks. Stress test is also used to assess level of adequate capital and liquidity to withstand external shocks and identify risk mitigation actions.

Manage
Controls for specific risk types are designed to manage risks to an acceptable level across the Group. For financial risks, there are clearly-defined delegated authorities with the Second LOD for the approval and review of risk exposure and clearly defined limit framework. For non-financial risks, control libraries provide a common language, standard and methodologies across the Group. Continuous Monitoring activities are performed to ensure controls managing material risk are adequately.

Aggregate & Report
Three enterprise reports are used to support RMM globally. These are

1) Risk Appetite Profile,
2) Risk Map and
3) Top & Emerging Risk Report.

The enterprise risk reports are summarised through the Risk Profile Paper.

Govern

The Group's governance model includes non-executive and executive governance committees. Under HSBC Holdings Board of Director lies 4 non-executive governance committee structure namely

1) Global Risk committee,
2) Group Audit Committee,
3) Group Remuneration Committee, and
4) Nomination & Corporate Governance Committee.

For governance forum, RMM is accountable for enterprise risk oversight and resides with the Group Chief Risk Officer, while Financial Crime Risk Management Committee ('FCRMC') is accountable for financial crime risk oversight and resides with Group Chief Compliance Officer.

In Thailand, country Chief Risk Officer ('CRO') chairs RMM while country Chief Executive Officer ('CEO') chairs FCRMC. However, starting in May 2021, governance of Financial Crime Risk will be transferred to RMMs in order to support the strategic objectives of reducing bureaucracy and increasing efficiency.

Our material banking risks

The material risk types associated with our banking operations are described in the follows tables:

Risks	Arising from	Measurement, monitoring and management of risk
Credit risk		
Credit risk is the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract.	Credit risk arises principally from direct lending and trade finance but also from other products such as guarantees and derivatives.	Credit risk is: • **measured** as the amount that could be lost if a customer or counterparty fails to make repayments; • **monitored** using various internal risk management measures and within limits approved by individuals within a framework of delegated authorities; and • **managed** through a robust risk control framework, which outlines clear and consistent policies, principles and guidance for risk managers.
Capital and liquidity risk		
Capital and liquidity risk is the risk of having insufficient capital, liquidity or funding resources to meet financial obligations and satisfy regulatory requirements.	Capital and liquidity risk arises from changes to the respective resources and risk profiles driven by customer behaviour, management decisions or the external environment.	Capital and liquidity risk is: • **measured** through appetites set as target and minimum ratios; • **monitored** and projected against appetites and by using stress and scenario testing; and • **managed** through control of capital and liquidity resources in conjunction with risk profiles and cash flows.
Market risk		
Market risk is the risk that movements in market factors, such as foreign exchange rates, interest rates, credit spreads, equity prices and commodity prices, will reduce our income or the value of our portfolios.	Exposure to market risk is separated into two portfolios: • trading portfolios; and • non-trading portfolios.	Market risk is: • **measured** using sensitivities, value at risk and stress testing, giving a detailed picture of potential gains and losses for a range of market movements and scenarios, as well as tail risks over specified time horizons; • **monitored** using value at risk, stress testing and other measures, including the sensitivity of net interest income and the sensitivity of structural foreign exchange; and • **managed** using risk limits approved by the Regional Market Risk Manager, the risk management meeting in various global businesses.

Risks	Arising from	Measurement, monitoring and management of risk
Resilience risk		
Resilience risk is the risk that we are unable to provide critical services to our customers, affiliates and counterparties as a result of sustained and significant operational disruption.	Resilience risk arises from failures or inadequacies in processes, people, systems or external events.	Resilience risk is: • **measured** using a range of metrics with defined maximum acceptable impact tolerances, and against our agreed risk appetite; • **monitored** through oversight of enterprise processes, risks, controls and strategic change programmes; and • **managed** by continual monitoring and thematic reviews.
Regulatory compliance risk		
Regulatory Compliance risk is the risk that we fail to observe the letter and spirit of all relevant laws, codes, rules, regulations and standards of good market practice, which as a consequence incur fines and penalties and suffer damage to our business.	Regulatory compliance risk arises from the risk associated with breaching our duty to our customers and other counterparties, inappropriate market conduct and breaching other regulatory requirements.	Regulatory compliance risk is: • **measured** by reference to identified metrics, incident assessments, regulatory feedback and the judgement and assessment of our regulatory compliance team; • **monitored** against the first line of defence risk and control assessments, the results of the monitoring and control assurance activities of the second line of defence functions, and the results of internal and external audits and regulatory inspections; and • **managed** by establishing and communicating appropriate policies and procedures, training employees in them, and monitoring activity to help ensure their observance. Proactive risk control and/or remediation work is undertaken where required.
Financial crime and fraud risk		
Financial crime and fraud risk is the risk that we knowingly or unknowingly help parties to commit or to further potentially illegal activity, including both internal and external fraud.	Financial crime and fraud risk arises from day-to-day banking operations.	Financial crime and fraud risk is: • **measured** by reference to identified metrics, incident assessments, regulatory feedback and the judgement and assessment of our financial crime risk teams; • **monitored** against our financial crime risk appetite statements and metrics, the results of the monitoring and control activities of the second line of defence functions, and the results of internal and external audits and regulatory inspections; and • **managed** by establishing and communicating appropriate policies and procedures, training employees in them and monitoring activity to help ensure their observance. Proactive risk control and/or remediation work is undertaken where required.
Model risk		
Model risk is the potential for adverse consequences from business decisions informed by models, which can be exacerbated by errors in methodology, design or the way they are used.	Model risk arises in both financial and non-financial contexts whenever business decision making includes reliance on models.	Model risk is: • **measured** by reference to model performance tracking and the output of detailed technical reviews, with key metrics including model review statuses and findings; • **monitored** against model risk appetite statements, insight from the independent review function, feedback from internal and external audits, and regulatory reviews; and • **managed** by creating and communicating appropriate policies, procedures and guidance, training colleagues in their application, and supervising their adoption to ensure operational effectiveness.

Pillar 2 and ICAAP

Pillar 2

We conduct an Internal Capital Adequacy Assessment Process ('ICAAP') to determine a forward-looking assessment of our capital requirements given our business strategy, risk profile, risk appetite and capital plan. This process incorporates the Group's risk management processes and governance framework. Our base capital plan undergoes stress testing. This, coupled with our economic capital framework and other risk management practices, is used to assess our internal capital adequacy requirements and inform our view of our internal capital planning buffer. The ICAAP is formally approved by the local ALCO, which has the ultimate responsibility for the effective management of asset and liability allocation and capital plan to achieve the Bank's strategic objectives and risk appetite.

Internal capital adequacy assessment

Through the ICAAP, we examine our risk profile to ensure that capital resources:

- remain sufficient to support our risk profile and outstanding commitments;
- meet current regulatory requirements and that HSBC is well placed to meet those expected in the future;
- allow the Bank to remain adequately capitalised in the event of a severe economic downturn stress scenario; and
- remain consistent with our strategic and operational goals.

The ICAAP is examined by the BoT as part of its supervisory review and evaluation process. This examination informs the regulator's view of our Pillar 2 capital requirements.

Preserving our strong capital position remains a priority, and the level of integration of our risk and capital management helps to optimise our response to business demand for regulatory capital.

Credit risk

Overview and objective

Credit risk represents our largest regulatory capital requirement. This includes a capital requirement for counterparty credit risk in the banking and trading books. The principal objectives of our credit risk management function are:

- to maintain a strong culture of responsible lending and a robust credit risk policy and control framework;
- to both partner and challenge our businesses in defining, implementing and continually re-evaluating our credit risk appetite under actual and stress scenario conditions; and
- to ensure there is independent, expert scrutiny of credit risks, their costs and their mitigation.

Credit risk management

The Bank adopts Internal Ratings Based Approach ('IRB') in managing our portfolio.

To assess our wholesale customer's credit risk, HSBC uses a two-dimensional architecture that separately assesses the risk of customer default (Probability of Default or 'PD') and the likely loss in the event of default (Loss Given Default or 'LGD').

PD is defined as the probability that the obligor defaults in respect of the exposure over a one-year period, irrespective of the term of facilities, whereas LGD measures the average loss that would be sustained on each facility owed by a customer, in percentage terms compared to the expected exposure at the time of default (Exposure at Default or 'EAD'). PD, LGD and EAD are used to calculate both Expected Credit Loss ('ECL') the International Financial Reporting Standard ('IFRS') 9 Financial Instruments and Risk-Weighted Assets ('RWA') under IRB.

PD is derived from Customer Risk Rating ('CRR') which is assigned based on customer financial statements and market data analysis, as well as qualitative elements and a final subjective overlay to better reflect any idiosyncratic elements of the customer's risk profile. CRR scale comprises 10 risk bands that further branch out to 23 risk buckets for IRB portfolios.

In term of provision, HSBC adopted the IFRS 9 on 1 January 2018 while locally adopted the same on 1 January 2020.

Under IFRS 9, financial assets are allocated into appropriate stages before ECL calculations are performed.

<u>Stage Allocation</u>
Stage 1: These financial assets are unimpaired and without a significant increase in credit risk. A 12-month allowance for ECL is recognised.

Stage 2: A significant increase in credit risk has been experienced on these financial assets since initial recognition. A lifetime ECL is recognised.

Stage 3: There is objective evidence of impairment and the financial assets are therefore considered to be in default or otherwise credit impaired. A lifetime ECL is recognised.

<u>Measurement of ECL</u>

In general, HSBC calculates ECL using three main components, PD, LGD, and EAD, which incorporates forward looking information including probability weighted multiple economic scenarios. ECL include impairment allowances (or provision in the case of commitments and guarantees) for the 12-month ECL ('12-month ECL') and lifetime ECL, and on financial assets that are considered to be in default or otherwise credit impaired.

ECL resulting from default events that are possible within the next 12 months are recognised for financial instruments in stage 1.

An assessment of whether credit risk has increased significantly since initial recognition is performed at each reporting period by considering the change in the risk of default occurring over the remaining life of the financial instrument.

Unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when 30 days past due. ECL resulting from default events that are possible beyond 12 months ('Life time ECL') are recognised for financial instruments in stages 2 and 3.

Defaulted exposures refer to stage 3 credit impaired financial instruments. While non-defaulted exposures refer to financial instruments classified under stages 1 and 2. The specific provisions can be referred to ECL classified under stage 3. While the ECL under stages 1 and 2 together with the provision in excess of ECL during the transition period are classified as general provision.
Further information on accounting policies for impairment of financial assets is set out on page 18 of the Annual financial statements 2020.

While the Bank uses IRB in management our credit risk, we use the Standardised Approach to calculate capital requirement for credit risks for the BoT's regulatory reporting purposes.

The following tables set out credit risk exposure value according to regulatory requirement at 31 December 2020 and 2019

Credit risk

General information on credit risk exposure

Table 4 : Credit risk exposure of significant on-balance sheet and off-balance sheet exposures before recognised credit risk mitigation at 31 December 2020 and 2019

	31 December 2020		31 December 2019	
	Average exposure value THBm	Exposure value THBm	Average exposure value THBm	Exposure value THBm
On-balance sheet				
Loans and accrued interest receivables, net	106,044	109,595	85,622	94,336
Investments in debt securities, net	53,909	54,960	48,961	51,382
Deposits and accrued interest receivables, net	2,841	2,914	3,277	2,493
Derivative assets	46,003	45,858	32,385	35,362
Total	**208,797**	**213,327**	**170,245**	**183,573**
Off-balance sheet				
Aval, guarantees and letter of credit	36,524	35,657	35,730	39,354
OTC derivatives	2,072,507	1,873,478	2,196,846	2,033,819
Undrawn commitment	72,112	93,593	77,642	78,050
Total	**2,181,143**	**2,002,728**	**2,310,218**	**2,151,223**

Remark:
- *Loans represent loans to customers and interbank and money market placements including accrued interest receivables and net of deferred revenue and allowance for expected credit losses. While loans and accrued interest receivables at 31 December 2019 was net of deferred revenue and allowance for doubtful accounts which provision was in excess of allowance for expected credit losses by Baht 900 million.*
- *Investments in debt securities are measured at fair value through other comprehensive income excluding accrued interest receivables and net of allowance for expected credit losses.*
- *Deposit including accrued interest receivables and net of allowance for expected credit losses.*
- *Off-balance sheet represents the notional amounts before the application of a credit conversion factor.*

Table 5: Credit risk exposure of significant on-balance sheet and off-balance sheet exposures before recognised credit risk mitigation – analysis by country or geographical area at 31 December 2020 and 2019

Exposure values are allocated to region based on the country of incorporation where the exposure was originated.

31 December 2020

	On-balance sheet					Off-balance sheet			
Country or geographical area	Total THBm	Loans and accrued interest receivables, net THBm	Investments in debt securities, net THBm	Deposits and accrued interest receivables, net THBm	Derivative assets THBm	Total THBm	Aval, guarantees and letter of credit THBm	OTC derivatives THBm	Undrawn commitment THBm
Thailand	187,436	107,750	54,960	2,210	22,516	979,038	24,362	862,293	92,383
Asia Pacific (excluding Thailand)	15,215	160	-	9	15,046	731,188	4,347	725,686	1,155
North America and Latin America	5,636	2	-	8	5,626	203,197	5,398	197,771	28
Africa and Middle East	1,195	1,195	-	-	-	25	25	-	-
Europe	3,845	488	-	687	2,670	89,280	1,525	87,728	27
Total	**213,327**	**109,595**	**54,960**	**2,914**	**45,858**	**2,002,728**	**35,657**	**1,873,478**	**93,593**

31 December 2019

	On-balance sheet					Off-balance sheet			
Country or geographical area	Total THBm	Loans and accrued interest receivables, net THBm	Investments in debt securities THBm	Deposits and accrued interest receivables THBm	Derivative assets THBm	Total THBm	Aval, guarantees and letter of credit THBm	OTC derivatives THBm	Undrawn commitment THBm
Thailand	161,498	92,889	51,382	435	16,792	1,017,130	27,885	917,629	71,616
Asia Pacific (excluding Thailand)	11,299	6	-	9	11,284	765,910	4,089	760,021	1,800
North America and Latin America	4,424	-	-	27	4,397	245,793	5,799	235,438	4,556
Africa and Middle East	1,322	1,291	-	-	31	26	26	-	-
Europe	5,030	150	-	2,022	2,858	122,364	1,555	120,731	78
Total	**183,573**	**94,336**	**51,382**	**2,493**	**35,362**	**2,151,223**	**39,354**	**2,033,819**	**78,050**

Table 6 : Credit risk exposure of significant on-balance sheet and off-balance sheet exposures before recognised credit risk mitigation – analysis by residual maturity at 31 December 2020 and 2019

	31 December 2020			31 December 2019		
	Less than 1 year THBm	Over 1 year THBm	Total THBm	Less than 1 year THBm	Over 1 year THBm	Total THBm
On-balance sheet						
Loans and accrued interest receivables, net	86,686	22,909	109,595	74,479	19,857	94,336
Investments in debt securities, net	39,094	15,866	54,960	30,448	20,934	51,382
Deposits and accrued interest receivables, net	2,914	-	2,914	2,493	-	2,493
Derivative assets	7,254	38,604	45,858	5,672	29,690	35,362
Total	**135,948**	**77,379**	**213,327**	**113,092**	**70,481**	**183,573**
Off-balance sheet						
Aval, guarantees and letter of credit	32,270	3,387	35,657	34,732	4,622	39,354
OTC derivatives	560,092	1,313,386	1,873,478	756,980	1,276,839	2,033,819
Undrawn commitment	89,289	4,304	93,593	73,319	4,731	78,050
Total	**681,651**	**1,321,077**	**2,002,728**	**865,031**	**1,286,192**	**2,151,223**

Table 7 : Credit risk exposure of financial instruments before recognised credit risk mitigation and provisions at 31 December 2020

	Outstanding balance			Provisions		
	Defaulted exposures THBm	**Non-defaulted exposures THBm**	**Expected credit losses accounting provisions THBm**	**General provisions THBm**	**Specific provisions for credit loss on SA THBm**	**Net values THBm**
Loans and accrued interest receivables	48	109,615	68	740	48	108,875
Investments in debt securities, net	-	54,960	-	-	-	54,960
Deposits and accrued interest receivables	-	2,914	-	-	-	2,914
Commitment and financial guarantee	123	129,127	9	9	-	129,241
Total	**171**	**296,616**	**77**	**749**	**48**	**295,990**

Remark:

- *Outstanding balance of loans represent loans to customers and interbank and money market placements including accrued interest receivables and net of deferred revenue.*
- *Outstanding balance of investments in debt securities measured at fair value through other comprehensive income excluding accrued interest receivables and net of allowance for expected credit losses.*
- *Outstanding balance of commitment and financial guarantee represents the notional amounts before the application of a credit conversion factor.*
- *Defaulted exposures refer to Stage 3 credit impaired financial instruments. While non-defaulted exposures refer to Stage 1 and Stage 2 or financial instruments with an insignificant increase in credit risk and financial instruments with a significant increase in credit risk, respectively according to the BoT notification No. 23/2561 dated 31 October 2018 Re: Classification and Provision of the Financial Institutions.*
- *Expected credit losses accounting provisions classified under Stage 3 are treated as specific provisions for credit loss on standardised approach.*
- *Net values represented outstanding balance net of total provisions.*

Table 8: Outstanding loans and accrued interest receivables and investments in debt securities before recognised credit risk mitigation – analysis by country or geographical area and asset classification as prescribed by the Bank of Thailand at 31 December 2020 and 2019

	31 December 2020				
	Loans and accrued interest receivables				Investments in debt securities
Country or geographic area	Stage 1 THBm	Stage 2 THBm	Stage 3 THBm	Total THBm	Stage 1 THBm
Thailand	102,085	5,679	48	107,812	54,960
Asia Pacific (excluding Thailand)	161	-	-	161	-
North America and Latin America	2	-	-	2	-
Africa and Middle East	-	1,200	-	1,200	-
Europe	488	-	-	488	-
Total	**102,736**	**6,879**	**48**	**109,663**	**54,960**

Remark:

- *Loans represent loans to customers, interbank and money market placements, including accrued interest receivables and net of deferred revenue.*
- *The classification of assets for 2020 shown above is in accordance with BoT notification No. 23/2561 dated 31 October 2018 Re: Classification and Provision of the Financial Institutions.*

	31 December 2019				
	Loans including accrued interest receivables				Investments in debt securities classified as doubtful loss
Country or geographic area	Normal THBm	Special mention THBm	Doubtful loss THBm	Total THBm	THBm
Thailand	93,719	63	128	93,910	6
Asia Pacific (excluding Thailand)	6	-	-	6	-
North America and Latin America	-	-	-	-	-
Africa and Middle East	1,304	-	-	1,304	-
Europe	151	-	-	151	-
Total	**95,180**	**63**	**128**	**95,371**	**6**

Remark:

- *Loans represent loans to customers, interbank and money market placements, including accrued interest receivables and net of deferred revenue.*
- *Investments in debt securities for 2019 classified as doubtful loss represent unrealised losses on revaluation according to the definition of BoT notification No. 5/2559 dated 10 June 2016 Re: Classification and Provision of the Financial Institutions.*
- *The classification of assets for 2019 shown above is in accordance with BoT notification No. 5/2559 dated 10 June 2016 Re: Classification and Provision of the Financial Institutions.*

Table 9 : General provision, specific provision and bad debt written-off during the year against loans and accrued interest receivables and investments in debt securities – analysis by country or geographic area at 31 December 2020 and 2019

31 December 2020

Country or geographic area	Loans and accrued interest receivables			
	General provision THBm	**Specific provision THBm**	**Bad debt written-off during the year THBm**	**Provision for investments in debt securities THBm**
Thailand		48	69	7
Asia Pacific (excluding Thailand)		-	-	-
North America and Latin America		-	-	-
Africa and Middle East		-	-	-
Europe		-	-	-
Total	**740**	**48**	**69**	**7**

Remark:

- *General provision for loans and accrued interest receivables at 31 December 2020 was also included provision in excess of allowance for expected credit losses by Baht 720 million.*
- *Provisions for investments in debt securities represent allowance for expected credit losses.*

31 December 2019

Country or geographic area	Loans and accrued interest receivables			
	General provision THBm	**Specific provision THBm**	**Bad debt written-off during the year THBm**	**Provision for investments in debt securities THBm**
Thailand		90	52	6
Asia Pacific (excluding Thailand)		-	-	-
North America and Latin America		-	-	-
Africa and Middle East		-	-	-
Europe		-	-	-
Total	**945**	**90**	**52**	**6**

Remark:

- *Provisions for investments in debt securities represent unrealised losses on the revaluation of debt securities at the year end.*

Table 10 : Outstanding loans and accrued interest receivables before recognised credit risk mitigation – analysis by type of business and asset classification as prescribed by the Bank of Thailand at 31 December 2020 and 2019

	31 December 2020			
Type of business	**Stage 1 THBm**	**Stage 2 THBm**	**Stage 3 THBm**	**Total THBm**
Agriculture and mining	2,342	-	-	2,342
Financial sector	55,243	3,304	-	58,547
Manufacturing and commerce	32,760	2,410	48	35,218
Real estate business and construction	3,382	248	-	3,630
Public utilities and services	8,626	917	-	9,543
Housing loan	247	-	-	247
Others	136	-	-	136
Total	**102,736**	**6,879**	**48**	**109,663**

Remark: The classification of assets for 2020 shown above is in accordance with BoT notification No. 23/2561 dated 31 October 2018 Re: Classification and Provision of the Financial Institutions.

	31 December 2019			
Type of business	**Pass THBm**	**Special mention THBm**	**Doubtful loss THBm**	**Total THBm**
Agriculture and mining	1,454	-	-	1,454
Financial sector	46,827	-	-	46,827
Manufacturing and commerce	31,460	62	128	31,650
Real estate business and construction	5,018	-	-	5,018
Public utilities and services	10,006	-	-	10,006
Housing loan	267	-	-	267
Others	148	1	-	149
Total	**95,180**	**63**	**128**	**95,371**

Remark: The classification of assets for 2019 shown above is in accordance with BoT notification No. 5/2559 dated 10 June 2016 Re: Classification and Provision of the Financial Institutions.

Table 11 : General provision, specific provision and bad debt written-off during the year against loans and accrued interest receivables – analysis by type of business at 31 December 2020 and 2019

	31 December 2020		
Type of business	**General provision THBm**	**Specific provision THBm**	**Bad debt written-off during the year THBm**
Agriculture and mining		-	-
Financial sector		-	-
Manufacturing and commerce		48	69
Real estate business and construction		-	-
Public utilities and services		-	-
Housing loan		-	-
Others		-	-
Total	**740**	**48**	**69**

	31 December 2019		
Type of business	**General provision THBm**	**Specific provision THBm**	**Bad debt written-off during the year THBm**
Agriculture and mining		-	-
Financial sector		-	-
Manufacturing and commerce		90	52
Real estate business and construction		-	-
Public utilities and services		-	-
Housing loan		-	-
Others		-	-
Total	**945**	**90**	**52**

Table 12 : Reconciliation of the movement in the general provision and specific provision against loans and accrued interest receivables at 31 December 2020 and 2019

	31 December 2020		
	General provision THBm	**Specific provision THBm**	**Total THBm**
Provisions at the beginning of year	945	90	1,035
Bad debts written-off during the year	-	(69)	(69)
Provisions charge (reversal) during the year	(205)	27	(178)
Provisions at the end of year	**740**	**48**	**788**

	31 December 2019		
	General provision THBm	**Specific provision THBm**	**Total THBm**
Provisions at the beginning of year	925	178	1,103
Bad debts written-off during the year	-	(52)	(52)
Provisions charge (reversal) during the year	20	(36)	(16)
Provisions at the end of year	**945**	**90**	**1,035**

Remark: The above information also includes interbank and money market transactions.

Table 13 : Net exposure of on-balance sheet and credit equivalent amount of off-balance sheet before recognised credit risk mitigation classified by type of assets under the Standardised Approach at 31 December 2020 and 2019

	31 December 2020		
	On-balance sheet THBm	**Off-balance sheet THBm**	**Total THBm**
Performing claims			
Claims on sovereigns and central banks, and MDBs	54,671	841	55,512
Claims on financial institutions, PSEs treated as claims on financial institutions, and securities firms	6,323	87,202	93,525
Claims on corporate, PSEs treated as claims on corporate	63,056	24,044	87,100
Claims on retail portfolios	136	-	136
Claims on housing loans	247	-	247
Other assets	46,145	-	46145
Non-performing claims	-	62	62
Total	**170,578**	**112,149**	**282,727**

	31 December 2019		
	On-balance sheet THBm	**Off-balance sheet THBm**	**Total THBm**
Performing claims			
Claims on sovereigns and central banks, and MDBs	49,790	886	50,676
Claims on financial institutions, PSEs treated as claims on financial institutions, and securities firms	6,546	70,197	76,743
Claims on corporate, PSEs treated as claims on corporate	73,263	27,327	100,590
Claims on retail portfolios	149	-	149
Claims on housing loans	267	-	267
Other assets	35,670	-	35,670
Non-performing claims	38	57	95
Total	**165,723**	**98,467**	**264,190**

Remark:

- *The above information has been presented net of specific provision.*
- *Off-balance sheet amounts have been adjusted by the credit conversion factor and also included repo style transactions.*

Ratings from External Credit Assessment Institutions

For RWA calculation, credit risk under the Standardised Approach has been calculated based on the external credit ratings from External Credit Assessment Institutions (‘ECAI’). The Bank uses external credit ratings from the following ECAIs which are approved by the BoT.

- Standard & Poor’s Ratings Service;
- Moody’s Investors Services;
- Fitch Ratings;
- Fitch Ratings (Thailand);
- TRIS Rating

Data files of external ratings from the nominated ECAIs are matched with customer records in our centralised credit database.

When calculating the risk-weighted value of an exposure using ECAI risk assessments, risk systems identify the customer in question and look up the available ratings in the central database, according to the BoT’s rating selection rules as prescribed in the appendix 4 of the BoT’s guideline on Minimum Capital Requirement for Credit Risk under the Standardised Approach. The systems then apply the BoT’s prescribed credit quality step mapping to derive from the rating the relevant risk weight.

Exposures to, or guaranteed by, central governments and Banks of Thailand and denominated in local currency are eligible under Standardised Approach for a 0% risk weighting.

Table 14 : Net exposure of on-balance sheet and credit equivalent amount of off-balance sheet after recognised credit risk mitigation for each type of assets, classified by risk weight under the Standardised Approach at 31 December 2020 and 2019

	31 December 2020										
	Net exposures after recognised credit risk mitigation – Rated					**Net exposures after recognised credit risk mitigation – Unrated**					
Risk weight	**0%**	**20%**	**50%**	**100%**	**150%**	**0%**	**20%**	**50%**	**35%**	**75%**	**100%**
	THBm	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**
Performing claims											
Claims on sovereigns and central banks, and MDBs	104,313	-	507	-	-			-			-
Claims on financial institutions, PSEs treated as claims on financial institutions, and securities firms	-	29,905	4,637	9,276	39						-
Claims on corporate, PSEs treated as claims on corporate	-	3,412	4,746	9,231	-						66,685
Claims on retail portfolios										-	136
Claims on housing loans									79	-	168
Other assets						46,069	36				271
Risk weight			**50%**	**100%**	**150%**					**75%**	
Non-performing claims			-	-	2					-	

	31 December 2019										
	Net exposures after recognised credit risk mitigation – Rated					**Net exposures after recognised credit risk mitigation – Unrated**					
Risk weight	**0%**	**20%**	**50%**	**100%**	**150%**	**0%**	**20%**	**50%**	**35%**	**75%**	**100%**
	THBm	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**	**THBm**
Performing claims											
Claims on sovereigns and central banks, and MDBs	78,553	-	684	-	-			-			-
Claims on financial institutions, PSEs treated as claims on financial institutions, and securities firms	-	31,134	6,378	6,445	-						-
Claims on corporate, PSEs treated as claims on corporate	-	3,131	1,383	15,622	-						71,933
Claims on retail portfolios										-	149
Claims on housing loans									79	-	188
Other assets						45,842	144				188
Risk weight			**50%**	**100%**	**150%**					**75%**	
Non-performing claims			-	38	57					-	

Remark: Off-balance sheet represents the notional amounts after applied credit conversion factor.

Credit risk mitigation

Mitigation of credit risk is a key aspect of effective risk management. Specific, detailed policies cover the acceptability, structuring and terms of various types of business with regard to the availability of credit risk mitigation; for example in the form of collateral security. These policies, together with the setting of suitable valuation parameters, are subject to regular review to ensure that they are supported by empirical evidence and continue to fulfil their intended purpose.

Collateral
The most common method of mitigating credit risk is to take collateral. In the commercial and industrial sectors, charges are created over business assets such as premises, stock and debtors.

Financial collateral
In the institutional sector, trading facilities are supported by charges over financial instruments such as cash, debt securities and equities. Financial collateral in the form of marketable securities is used in much of the Bank's over-the-counter ('OTC') derivatives activities and in securities financing transactions ('SFT') such as repos and reverse repos. Netting is used extensively and is a prominent feature of market standard documentation.

In the non-trading book, we provide customers with working capital management products. Some of these products have loans and advances to customers and customer accounts where we have rights of offset, and comply with the regulatory requirements for on-balance sheet netting. Under on-balance sheet netting, the customer accounts are treated as cash collateral. For risk management purposes, the net exposures are subject to limits that are monitored, and the relevant customer agreements are subject to review and update, as necessary, to ensure the legal right of offset remains appropriate.

Other forms of Credit Risk Mitigation
Facilities are commonly granted against guarantees given by their owners and/or directors. Guarantees may be taken from third parties where the group extends facilities without the benefit of any alternative form of security, e.g. where it issues a bid or performance bond in favour of a non-customer at the request of another bank.

In our corporate lending, we also take guarantees from corporates which normally provide guarantees as part of a parent/ subsidiary or common parent relationship and span a number of credit grades.

Policy and procedures
Policies and procedures govern the protection of our position from the outset of a customer relationship, for instance, in requiring standard terms and conditions or specifically agreed documentation permitting the offset of credit balances against debt obligations, and through controls over the integrity, current valuation and, if necessary, realisation of collateral security.

Valuing collateral
Valuation strategies are established to monitor collateral mitigants to ensure that they continue to provide the anticipated secure secondary repayment source. Market trading activities, such as collateralised OTC derivatives and SFTs, typically include daily valuations in support of margining arrangements.

Recognition of risk mitigation
For banking book exposures, the simple approach is applied for financial collateral. Where credit risk mitigation is available in the form of eligible guarantees, non-financial collateral, or credit derivatives, the exposure is divided into covered and uncovered portions. The covered portion, which is determined after applying an appropriate 'haircut' for currency and maturity mismatches to the amount of the protection provided, attracts the risk weight of the protection provider. The uncovered portion attracts the risk weight of the obligor.

For trading book exposures fully or partially covered by eligible financial collateral, the value of the exposure is adjusted under the financial collateral comprehensive method using supervisory volatility adjustments, including those arising from currency mismatch, which are determined by the specific type of collateral (and, in the case of eligible debt securities, their credit quality) and its liquidation period. The adjusted exposure value is subject to the risk weight of the obligor.

Table 15 : Exposure value under the Standardised Approach covered by collateral classified by type of assets and collateral at 31 December 2020 and 2019

	31 December 2020		31 December 2019	
	Eligible financial collateral THBm	**Guarantee and credit derivatives THBm**	**Eligible financial collateral THBm**	**Guarantee and credit derivatives THBm**
Performing claims				
Claims on financial institutions, PSEs treated as claims on financial institutions, and securities firms	49,975	2,354	39,200	1,742
Claims on corporate, PSEs treated as claims on corporate	341	4,817	304	14,516
Non-performing claims	1	59	1	57
Total	**50,317**	**7,230**	**39,505**	**16,315**

Market risk

Overview and objective

Market risk is the risk of movements in market factors, such as foreign exchange rates, interest rates, credit spreads, equity prices and commodity prices, will reduce our income or the value of our portfolios.

Exposure to market risk is separated into two portfolios:

- Trading portfolios comprise positions arising from market-making.
- Non-trading portfolios comprise positions that primarily arise from the interest rate management of our commercial banking assets and liabilities, financial investments designated as held-to-collect and sale and held-to-maturity.

Where appropriate, we apply similar risk management policies and measurement techniques to both trading and non-trading portfolios. Our objective is to manage and control market risk exposures in order to optimise return on risk while maintaining a market profile consistent within our established risk appetite.

Market risk governance

The management of market risk is principally undertaken in Global Banking and Markets ('GB&M') using risk limits approved by the Regional Market Risk Manager, Regional RMM and Group Risk. Limits are set for portfolios, products and risk types, with market liquidity being a primary factor in determining the level of limits set.

Market risk measures

Our objective is to manage and control market risk exposures while maintaining a market profile consistent with our risk appetite.

We use a range of tools to monitor and limit market risk exposures including sensitivity analysis, VaR and stress testing.

Sensitivity analysis

Sensitivity analysis measures the impact of individual market factor movements on specific instruments or portfolios, including interest rates, foreign exchange rates and credit spreads, such as the effect of a one basis point change in yield. We use sensitivity measures to monitor the market risk positions within each risk type. Sensitivity limits are set for portfolios, products and risk types, with the depth of the market being one of the principal factors in determining the level of limits set.

Value at risk

VaR is a technique that estimates the potential losses in the trading portfolio from movements in market rates and prices over a specified time horizon at a particular level of confidence.

Our models are based on historical simulation that incorporate the following features:

- historical market rates and prices are calculated with reference to foreign exchange and interest rates, commodity prices, equity prices and the associated volatilities;
- potential market movements utilised for VaR are calculated with reference to data from the past two years (500 working days); and
- VaR measures are calculated at 99 percent confidence level and use a one-day holding period.

The models also incorporate the effect of option features on the underlying exposures. The nature of the VaR models means that an increase in observed market volatility will lead to an increase in VaR without any changes in the underlying positions.

VaR model limitations
Although a valuable guide to risk, VaR should always be viewed in the context of its limitations. For example:

- the use of historical data as a proxy for estimating future events may not encompass all potential events, particularly those which are extreme in nature;
- the use of a holding period assumes that all positions can be liquidated or the risks offset during that period. This may not fully reflect the market risk arising at times of severe illiquidity, when the holding period may be insufficient to liquidate or hedge all positions fully;
- the use of a 99 percent confidence level by definition does not take into account losses that might occur beyond this level of confidence; and
- VaR is calculated based on the outstanding exposures at close of business and therefore does not necessarily reflect intra-day exposures.

Global Market Middle Office is responsible for preparing the VaR report and submitting it to local senior management for their consideration on a daily basis. If there are exceptions, the exception report has to be sent to local senior management and the regional market risk unit.

Stress testing
Stress testing is an important procedure that is integrated into our market risk management framework to evaluate the potential impact on portfolio values in the case of extreme but plausible events or movements in a set of financial variables. In such scenarios, losses can be greater than those predicted by VaR model.

Stress testing is implemented at legal entity, regional and overall Group levels. A set of scenarios is used consistently across all regions within the Group. Scenarios are tailored to capture the relevant events or market movements at each level. The risk appetite around potential stress losses for the Group is set and monitored against referral limits.

In addition to Group's stress testing scenarios, we also perform stress testing using the scenarios as specified by the BoT, covering parallel and non-parallel shifts in interest rate yield curves and depreciation and appreciation in major currencies.

Back-testing
We routinely validate the accuracy of our VaR models by back-testing them against both actual and hypothetical profit and loss. Hypothetical profit and loss excludes non-modelled items such as fees, commissions and revenues of intra-day transactions.

The actual number of profits or losses in excess of VaR over this period can therefore be used to gauge how well the models are performing.

According to BoT notification No. 94/2551 dated 27 November 2008 Re: Guideline on Supervision of Market Risk and Capital Requirement for Market Risk of Financial Institutions, VaR back-testing exceptions, on Hypothetical loss, are counted towards the multiplier determined by the BoT for the purposes of the capital requirement calculation for market risk. The additional capital multiplier will be added if the exceptions are greater than 4 times over the past 250 business days.

Managed risk positions

Interest rate risk

Interest rate risk arises within the trading portfolios, principally from mismatches, as a result of interest rate changes, between the future yield on assets and their funding cost.

This is measured, where practical, on a daily basis. We use a range of tools to monitor and control interest rate risk exposures. These include the present value of a basis point movement in interest rates, VaR, stress testing and sensitivity analysis.

Through our management of market risk in non-trading portfolios, we mitigate the effect of prospective interest rate movements that could reduce future net interest income, while balancing the cost of such hedging activities on the current net revenue stream.

Foreign exchange risk

Foreign exchange risk arises from movements in the relative value of currencies. In addition to VaR and stress testing, we control the foreign exchange risk within the trading portfolio by limiting the open exposure to individual currencies, and on an aggregate basis.

Specific issuer risk

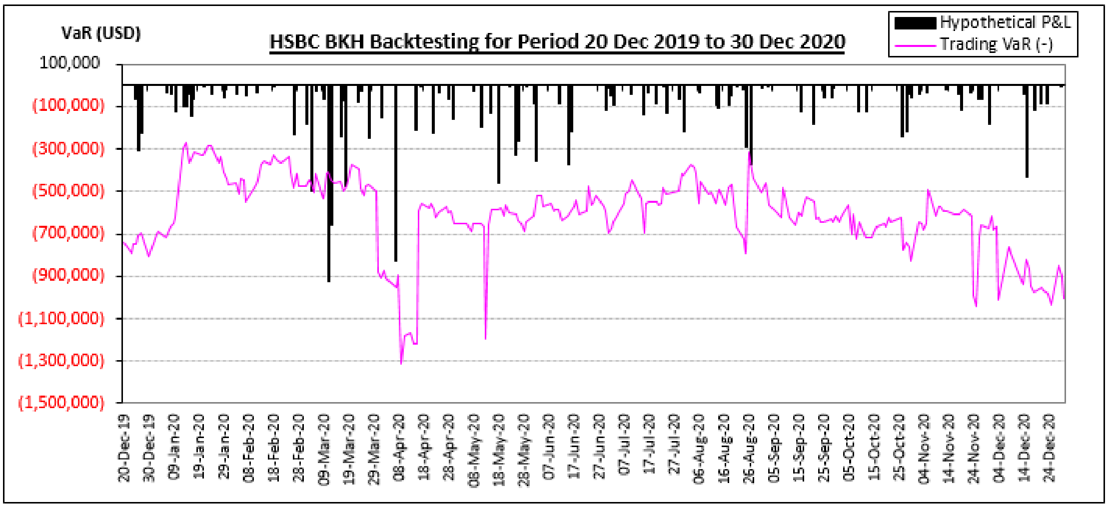
Specific issuer (credit spread) risk arises from a change in the value of debt instruments due to a perceived change in the credit quality of the issuer or underlying assets. As well as through VaR and stress testing, we manage the exposure to credit spread movements within the trading portfolios with limits referenced to the sensitivity of the present value of a basis point movement in credit spreads.

Table 16 : Market risk information by Internal Model Approach at 31 December 2020, 30 June 2020 and 31 December 2019

	31 December 2020 THBm	30 June 2020 THBm	31 December 2019 THBm
Interest Rate Risk			
Maximum VaR during the period	100	126	73
Average VaR during the period	70	68	46
Minimum VaR during the period	48	47	32
VaR at the end of the period	97	63	68
Foreign Exchange Rate Risk			
Maximum VaR during the period	14	22	20
Average VaR during the period	4	8	6
Minimum VaR during the period	1	1	1
VaR at the end of the period	2	7	20
Total Market Risk			
Maximum VaR during the period	99	128	77
Average VaR during the period	70	67	47
Minimum VaR during the period	47	47	33
VaR at the end of the period	96	58	77

Remark: The period for Maximum VaR, Minimum VaR and Average VaR is 60 days interval. All figures are based on 10 days VaR as used for market risk capital charge calculation.

Table 17 : Back-testing result (considering loss side of Hypothetical P&L vs. Value at Risk)



Remark: There were three exceptions from VaR backtesting, on Hypothetical loss for the period 20 December 2019 to 30 December 2020. The exceptions were occurred on VaR date 4 March 2020, 11 March 2020 and 12 March 2020.

Interest rate risk in the banking book

Overview

Interest rate risk in the banking book ('IRRBB') is the risk of an adverse impact to earnings or capital due to changes in market interest rates. It is generated by our non-traded assets and liabilities, specifically loans, deposits and financial instruments that are not held for trading intent or held in order to hedge positions held with trading intent. Interest rate risk in the banking book is transferred to and managed by Markets Treasury (previously known as Balance Sheet Management), under the supervision of the local ALCO.

Governance and structure

Asset, Liability and Capital Management ('ALCM') monitors and controls non-traded interest rate risk. This includes reviewing and challenging the business prior to the release of new products and in respect of proposed behavioural assumptions used for hedging activities. The ALCM function is responsible for maintaining and updating the transfer pricing framework, informing the ALCO of the Group's overall banking book interest rate risk exposure and managing the balance sheet in conjunction with Markets Treasury.

The banking book Interest rate risk that can be economically hedged can be transferred to the Markets Treasury business to manage within the Market Risk limits approved by RMM. Hedging is generally executed through interest rate derivatives or fixed-rate government bonds. Any interest rate risk that Markets Treasury cannot economically hedge is not transferred and will remain within the global business where the risks originate.

Measurement of interest rate risk in the banking book

The table below sets out the effect on future net income of an incremental 100 basis points parallel rise in yield curves during the 12 months.

Table 18 : The effect of changes in interest rates to net interest income in the banking book at 31 December 2020 and 2019

	Effect to net income	
	2020	**2019**
Currency	**THBm**	**THBm**
Baht	169	(21)
US Dollar	(123)	(43)
Others	(2)	-
Total effect of changes in interest rates to net interest income	**44**	**(64)**
Percentage of net effect to net future interest income	**2.4%**	**(3.5%)**

Equity exposures in the banking book

At 31 December 2020 and 2019, there is no equity investments.

Details of the Bank's accounting policy for investments may be found on pages 14, of the *Annual financial statements 2020*.

Operational risk

Overview and objective

Operational risk or now called non-financial risk. Non-financial risk is the risk to achieving our strategy or objectives as a result of inadequate or failed internal processes, people and systems or from external events. Sound non-financial risk management is central to achieving good outcomes for our customers.

Non-financial risk is relevant to every aspect of our business and is broadly managed through the Risk Management Framework ('RMF'). Non-financial risk covers a wide spectrum of issues, such as resilience risk, financial crime and fraud risk, regulatory compliance risk, financial reporting and tax risk, legal risk, model risk and people risk. Losses arising from breaches of regulation and law, unauthorised activities, error, omission, inefficiency, fraud, systems failure or external events all fall within the definition of non-financial risk.

The objective of our operational risk management is to manage and control operational risk in a cost-effective manner and within our risk appetite, as defined by Group Management Board ('GMB').

Organisation and responsibilities

Responsibility for managing non-financial risk lies with our people. We continued to strengthen our approach to managing non-financial risk as set out in the RMF. The framework sets out our approach to governance and risk appetite. It provides a single view of material non-financial risks and associated controls. The enhancement and embedding of the risk appetite framework for non-financial risk, and the improvement of the consistency of the adoption of the end-to-end risk and control assessment processes were a particular focus in 2020. While there remains more to do, we made progress in strengthening the control environment and the management of non-financial risk.

Activity to strengthen the three lines of defence model continued to be a key focus in 2020. The first line of defence has ultimate ownership for risk and controls and delivering fair conduct outcomes. The second line of defence reviews and challenges the first line's activities to help ensure that risk management decisions and actions are appropriate, within risk appetite and support the delivery of conduct outcomes. The second line also sets policies and control standards to manage risks, and provides advice and guidance to support these policies. The third line of defence is Internal Audit, which provides independent assurance to the management that our risk management, governance and internal control processes are designed and operating effectively.

Measurement and monitoring

We have codified our RMF in a high-level standard, supplemented by detailed policies. These policies explain our approach to identifying, assessing, monitoring and controlling non-financial risk and give guidance on mitigating actions to be taken when weaknesses are identified.

Monitoring non-financial risk exposure against risk appetite on a regular basis, and setting out our risk acceptance process, drives risk awareness in a more forward-looking manner. This assists management in determining whether further action is required.

Each business managers are responsible for maintaining an appropriate level of internal control, commensurate with the scale and nature of operations. They are responsible for identifying and assessing risks, designing controls and monitoring the effectiveness of these controls. The RMF helps managers to fulfil these responsibilities by defining a standard risk assessment methodology and providing a tool for the systematic reporting of operational loss data.

Risk and control assessment approach

Non-financial risk and control assessments are performed by individual business units and functions. The risk and control assessment process is designed to provide business areas and functions with a forward-looking view of non-financial risks, an assessment of the effectiveness of controls, and a tracking mechanism for action plans so that they can proactively manage non-financial risks within acceptable levels.

Appropriate means of mitigation and controls are considered. These include:

- making specific changes to strengthen the internal control environment; and
- investigating whether cost-effective insurance cover is available to mitigate the risk.

Recording

We use a Group-wide risk management system to record the results of our non-financial risk management process. Non-financial risk and control assessments are input and maintained by business units. Business manager monitors and follows up the progress of documented action plans. Operational risk losses are entered into the Group-wide risk management system and reported to risk governance on a monthly basis. Loss capture thresholds are in line with industry standards.

Liquidity and funding risk

Overview

Liquidity risk is the risk that the bank does not have sufficient financial resources to meet its obligations when they fall due, or will have to do so at excessive cost. Funding risk is the risk that funding considered to be sustainable, and therefore used to fund assets, is not sustainable over time. The liquidity risk arises from mismatches in the timing of cashflows. Funding risk arises when the necessary liquidity to fund illiquid asset positions cannot be obtained at the expected terms and when required.

Liquidity and funding risk management

HSBC has an internal liquidity and funding risk management framework ('LFRF') which aims to allow it to withstand very severe liquidity stresses. It is designed to be adaptable to changing business models, markets and regulations.

The management of liquidity and funding is primarily carried out locally in accordance with the Group's LFRF, and with practices and limits set by the local ALCO and regional Head Office. Our general policy is that each operating entity should be self-sufficient in funding its own activities.

Governance and structure

The elements of the LFRF are underpinned by a robust governance framework, the two major elements of which are:

- the Asset and Liability Management Committees ('ALCOs'); and
- the internal liquidity adequacy assessment process ('ILAAP') used to validate risk tolerance and set risk appetite

Asset, Liability and Capital Management ('ALCM') teams are responsible for the application of the LFRF at a local operating entity level and assists ALCO to review liquidity and funding risks to ensure their prudent management. ALCM manages the balance sheet with a view to achieve efficient allocation and utilization of all resources.

The Markets Treasury team (previously known as Balance Sheet Management), within Global Markets is responsible for managing cash, short-term liquidity and funding for the entity. This includes deployment of the commercial surplus as well as accessing wholesale senior funding markets if needed.

The liquidity risk steward role resides with Finance, Chief Financial Officer in 2020 and will transfer to Treasury Risk team in 2021.

Treasury Risk Management will carry out independent review, challenge and assurance of the appropriateness of the risk management activities undertaken by ALCM and Markets Treasury. They will provide oversight and stewardship of liquidity management including setting policy and control standards.

Global Internal Audit provide independent assurance that risk is managed effectively across the Group.

ILAAP and risk appetite

Under HSBC's LFRF, the operating entities are required to meet internal minimum requirements and any applicable regulatory requirements at all times. These requirements are assessed through the internal ILAAP, which is used to ensure that operating entities have robust strategies, policies, processes and systems for the identification, measurement, management and monitoring of liquidity risk over an appropriate set of time horizons, including intra-day, so as to ensure they maintain adequate levels of liquidity buffers. It informs the validation of risk tolerance and the setting of risk appetite. These metrics are set and managed locally but are subject to robust global and regional review and challenge to ensure consistency of approach and application of the LFRF across the Group.

The critical Board-level appetite measures are the liquidity coverage ratio ('LCR') and net stable funding ratio ('NSFR'). An appropriate funding and liquidity profile is managed through a wider set of measures:

- a minimum LCR requirement;
- a minimum NSFR requirement;
- a minimum LCR requirement by material currency;
- a depositor concentration limit;
- the three-month and twelve-month cumulative rolling term contractual maturity limits covering deposits from banks and non-bank financial institutions and securities issued;
- a management and monitoring of intraday liquidity;
- the application of liquidity funds transfer pricing; and
- forward-looking funding assessments.

The LCR and NSFR metrics are to be supplemented by an Internal Liquidity Metric ('ILM') in 2021.

Liquidity and funding risk metrics are monitored daily and/or monthly and reported to ALCO regularly.

Measurement and monitoring

BoT issued a Notification dated 27 May 2015 Re: Guidelines on Liquidity Coverage Ratio, where commercial banks are required to maintain high-quality liquid assets relative to net cash outflows within the 30-day time horizon under liquidity stress scenarios of at least 60% starting from 1 January 2016 and the ratio will be increased by 10% each year until it reaches 100% on 1 January 2020. The LCR aims to ensure that a bank has sufficient unencumbered High Quality Liquid Assets ('HQLA') to meet its liquidity needs in a 30-calendar day severe liquidity stress scenario. Commercial banks are required to maintain the LCR in accordance with the guidelines as specified by the BoT.

The Bank manages its LCR position daily within the internal appetite limit which includes a buffer in excess of the regulatory requirement. The Bank actively considers the impact of business decisions on the LCR.

In addition, the Bank maintains a diversified funding base with projections of balance sheet and NSFR discussed in monthly ALCO meetings to ensure the Bank remains well-funded to support the business strategy. The Bank regularly examines its liquidity gaps and introduced the internal metrics on funding concentration to monitor funding risks.

Also, the Bank maintain the contingency plans that can be enacted in the event of internal or external triggers, which threaten the liquidity or funding position. The contingency plans set out a range of appropriate management actions, which could feasibly be executed in a stressed environment to recover the position.

Liquidity coverage ratio disclosure

Table 19 and table 20 set out the disclosure items under the LCR disclosure standard template as specified by the BoT.

The average value of the LCR and related components is calculated by the simple average method, which is the average of three data points (month-end data) over a particular quarter.

Explanations of the LCR disclosure template can be found in the Glossary section.

Further details of the Group's liquidity and funding risk management and disclosures can be viewed in the Annual Report and Accounts 2020 and the Pillar 3 Disclosure at 31 December 2020, which is available on HSBC Group's website: www.hsbc.com, under Investors section.

Table 19 : Liquidity coverage ratio

	Average Balance	
	2020 Quarter 4 THBm	**2019 Quarter 4 THBm**
(1) Total high-quality liquid assets ('HQLA')	86,709	71,311
(2) Total net cash outflows within the 30-day time horizon	48,564	34,788
(3) Percentage of Liquidity Coverage Ratio (%LCR)	**179%**	**209%**
Minimum percentage of LCR as specified by the BoT	**100%**	**90%**

Table 20 : Comparative data of LCR

	2020 Average LCR %	**2019 Average LCR %**
Quarter 3	190	213
Quarter 4	179	209

The Bank maintains a healthy liquidity position with the average LCR for the 4th quarter of 2020 of 179%, which is 79% higher than the minimum LCR requirement as specified by the BoT. This LCR is the average of LCRs as at the end of October – 176%, November – 183% and December – 178%. The LCR consists of 2 main components;

1. HQLA include unencumbered high-quality assets with low risk and low volatility that can be easily liquidated through sale or repurchase transactions without any significant changes to their values, even in times of liquidity stress. The value of each type of HQLA is after the application of both haircuts and any applicable caps as specified by the BoT.

   The average HQLA of the Bank for the 4th quarter of 2020 is Baht 86,709 million, which is the average of HQLA as at the end of October – December. 97% of the average HQLA included in the LCR are Level 1 assets as specified by the BoT, which consist mainly of cash and Baht denominated government and central bank debt securities. The Bank maintains a well-diversification of HQLA to support the regulatory and internal requirements.

2. The amount of net cash outflows is equal to expected cash outflows within the 30-day time horizon minus expected cash inflows within the 30-day time horizon under liquidity stress scenarios; but the expected cash inflows must not exceed 75% of the expected cash outflows.

   The average net cash outflows of the Bank for the 4th quarter of 2020 is Baht 48,564 million, which is the average of net cash outflows within the 30-day time horizon as at the end of October – December.

   The expected cash outflows on which the Bank focuses under the severe liquidity stress scenarios are the run-off of unsecured wholesales deposits and borrowings, repayments of secured borrowings under repurchase agreements (repos), derivative cash outflows to which the specified BoT run-off rates applied. The cash outflows arising from contingent funding, obligations and collateral requirements such repo funding and derivatives are also captured with the run-off rate assigned by the BoT.

   The expected cash inflows are majority from performing customer's loan repayments, maturing deposits placement and derivative cash inflows, to which the specified BoT inflow rates applied.

Abbreviations

Abbreviation	Brief description
A	
ALCM	Asset, Liability and Capital Management
ALCO	Asset and Liability Management Committee
AIRB	Advanced Internal Ratings Based Approach
B	
Bank	The Hongkong and Shanghai Banking Corporation Limited, Bangkok Branch
Basel Committee	The Basel Committee on Banking Supervision
BoT	The Bank of Thailand
C	
CCB	Capital Conservation Buffer
CCR	Counterparty Credit Risk
CEO	Chief Executive Officer
CRO	Chief Risk Officer
CRR	Customer Risk Rating
E	
EAD	Exposure at Default
ECAI	External Credit Assessment Institutions
ECL	Expected Credit Loss
ERMF	Enterprise Risk Management Framework
F	
FCRMC	Financial Crime Risk Management Committee
FIRB	Foundation Internal Ratings Based Approach
G	
GB&M	Global Banking and Markets
GMB	Group Management Board
Group	HSBC Holdings together with its subsidiary undertakings
H	
HQLA	High-Quality Liquid Assets
HSBC	HSBC Holdings together with its subsidiary undertakings
I	
ICAAP	Internal Capital Adequacy Assessment Process
IFRS	International Financial Reporting Standard
ILAAP	Internal Liquidity Adequacy Assessment Process
ILM	Internal Liquidity Metric
IMA	Internal Models Approach
IMM	Internal Model Method
IRB	Internal Ratings Based Approach
IRRBB	Interest Rate Risk in the Banking Book
L	
LCR	Liquidity Coverage Ratio
LFRF	Liquidity and Funding Risk Management Framework
LGD	Loss Given Default
LOD	Line of Defence
M	
MDB	Multilateral Development Bank
N	
NSFR	Net Stable Funding Ratio

Abbreviation	Brief description
O	
OTC	Over-the-Counter
P	
PD	Probability of Default
PSE	Public Sector Entities
R	
RMF	Risk Management Framework
RMM	Risk Management Meeting
RWA	Risk-Weighted Asset
S	
SA	Standardised Approach
SFT	Securities Financing Transactions
T	
TFRS	Thai Financial Reporting Standard
V	
VaR	Value at Risk

Term	Definition
B	
Back-testing	A statistical technique used to monitor and assess the accuracy of a model, and how that model would have performed had it been applied in the past.
Basel II	The capital adequacy framework issued by the Basel Committee on Banking Supervision in June 2006 in the form of the 'International Convergence of Capital Measurement and Capital Standards', amended by subsequent changes to the capital requirements for market risk and re-securitisations, commonly known as Basel 2.5, which took effect from 31 December 2011.
Basel III	In December 2010, the Basel Committee issued 'Basel III rules: a global regulatory framework for more resilient banks and banking systems' and 'International framework for liquidity risk measurement, standards and monitoring'. Together, these documents present the Basel Committee's reforms to strengthen global capital and liquidity rules with the goal of promoting a more resilient banking sector.
Basis point ('bps')	One hundredth of a per cent (0.01%), so 100 basis points is 1%. For example, this is used in quoting movements in interest rates or yields on securities.
C	
Capital conservation buffer ('CCB')	A capital buffer prescribed by regulators under Basel III and designed to ensure banks build up capital buffers outside periods of stress that can be drawn down as losses are incurred. Should a bank's capital levels fall within the capital conservation buffer range, capital distributions will be constrained by the regulators.
Compliance risk	The risk that the Bank fails to observe the letter and spirit of all relevant laws, codes, rules, regulations and standards of good market practice, and incurs fines and penalties and suffers damage to its business as a consequence.
Counterparty credit risk	Counterparty credit risk is the risk that the counterparty to a transaction may default before completing the satisfactory settlement of the transaction.
Credit quality step	A step in the Bank of Thailand credit quality assessment scale which is based on the credit ratings of ECAIs. It is used to assign risk weights under the standardised approach.
Credit risk	The risk of financial loss if a customer or counterparty fails to meet an obligation under a contract. It arises principally from direct lending and trade finance business but also from other products such as guarantees, credit derivatives and from holding assets in the form of debt securities.
Credit risk mitigation	A technique to reduce the credit risk associated with an exposure by application of credit risk mitigants, such as collateral, guarantee and credit derivatives.

Term	Definition
D	
Debt securities	Financial assets on the Bank's balance sheet representing certificates of indebtedness of credit institutions, public bodies or other undertakings.
E	
Economic capital	The internally calculated capital requirement that is deemed necessary by HSBC to support the risks to which it is exposed.
Expected credit losses ('ECL')	In the income statement, ECL is recorded as a change in expected credit losses and other credit impairment charges. In the balance sheet, ECL is recorded as an allowance for financial instruments to which only the impairment requirements in IFRS 9 are applied.
12-month ECL	The ECL resulting from default events that are possible within the next 12 months.
Lifetime ECL	The expected credit losses that result from all possible default events over the expected life of a financial instrument.
Exposure	A claim, contingent claim or position which carries a risk of financial loss.
Exposure at default ('EAD')	The amount expected to be outstanding after any credit risk mitigation, if and when the counterparty defaults. EAD reflects drawn balances as well as allowance for undrawn amounts of commitments and contingent exposures.
G	
Guarantee	An undertaking by a party to pay a creditor should a debtor fail to do so.
H	
Haircut	A discount applied when determining the amount at which an asset can be realised. The discount takes into account the method of realisation, including the extent to which an active market for the asset exists. With respect to credit risk mitigation, a downward adjustment to collateral value to reflect any currency or maturity mismatches between the credit risk mitigant and the underlying exposure to which it is being applied. Also a valuation adjustment to reflect any fall in value between the date the collateral was called and the date of liquidation or enforcement.
High-quality liquid assets (HQLA)	Total high-quality liquid assets" (HQLA) is defined as the sum of liquid assets with the features as specified by the BoT as follows: I. Characteristics of liquid assets II. Guidelines on the calculation of liquid assets III. Operational requirements IV. Diversification of liquid assets The total HQLA is the value of total HQLA after the application of both haircuts and any applicable caps as specified by the BoT.

Term	Definition
I	
Internal Capital Adequacy Assessment Process ('ICAAP')	The Bank's own assessment of the levels of capital that it needs to hold through an examination of its risk profile from regulatory and economic capital viewpoints.
Internal Model Method ('IMM')	One of three approaches defined in the Basel framework to determine exposure values for counterparty credit risk.
Internal ratings-based ('IRB')	A method of calculating credit risk capital requirements using internal, rather than supervisory, estimates of risk parameters.
L	
Liquidity risk	The risk that we do not have sufficient financial resources to meet our obligations as they fall due. This risk arises from mismatches in the timing of cash flows.
M	
Market risk	The risk that movements in market risk factors, including foreign exchange rates and commodity prices, interest rates, credit spreads and equity prices will reduce income or portfolio values.
N	
Net interest income	The amount of interest received or receivable on assets net of interest paid or payable on liabilities.
Non-financial risk	The risk of loss resulting from people, inadequate or failed internal processes, data or systems or external events.
O	
Over-the-counter ('OTC')	A bilateral transaction (e.g. derivatives) that is not exchange traded and that is valued using valuation models.
P	
Percentage of Liquidity Coverage Ratio (%LCR)	LCR is the ratio of total HQLA to total net cash outflows within the 30-day time horizon.
Probability of default ('PD')	The probability that an obligor will default within one year.
R	
Regulatory capital	The capital which the Bank holds, determined in accordance with rules established by the BoT.
Repo/reverse repo (or sale and repurchase agreement)	A short-term funding agreement that allows a borrower to create a collateralised loan by selling a financial asset to a lender. As part of the agreement, the borrower commits to repurchase the security at a date in the future repaying the proceeds of the loan. For the party on the other end of the transaction (buying the security and agreeing to sell in the future), it is a reverse repurchase agreement or a reverse repo.
Risk appetite	The aggregate level and types of risk a firm is willing to assume within its risk capacity to achieve its strategic objectives and business plan.
Risk-weighted assets ('RWA's)	Calculated by assigning a degree of risk expressed as a percentage (risk weight) to an exposure value.

Term	Definition
S	
Securitisation	A transaction or scheme whereby the credit risk associated with an exposure, or pool of exposures, is tranched, and where payments to investors in the transaction or scheme are dependent upon the performance of the exposure or pool of exposures. A traditional securitisation involves the transfer of the exposures being securitised to a SPE that issues securities. In a synthetic securitisation, the tranching is achieved by the use of credit derivatives and the exposures are not removed from the balance sheet of the originator.
Special Purpose Entity ('SPE')	A corporation, trust or other non-bank entity established for a narrowly defined purpose, including for carrying on securitisation activities. The structure of the SPE and its activities are intended to isolate its obligations from those of the originator and the holders of the beneficial interests in the securitisation.
Stage 1	Financial assets where 12-month ECL are recognized.
Stage 2	Financial assets which are considered to have experienced a significant increase in credit risk resulting in the recognition of lifetime ECL.
Stage 3	Financial assets for which there is objective evidence of impairment so are considered to be in default or otherwise credit impaired.
Standardised approach ('SA')	In relation to credit risk, a method for calculating credit risk capital requirements using ratings agencies and supervisory risk weights. In relation to operational risk, a method of calculating the operational capital requirement by the application of a supervisory defined percentage charge to the gross income of eight specified business lines.
T	
Total net cash outflows within the 30-day time horizon	The term "total net cash outflows within the 30-day time horizon" is defined as the sum of all types of expected cash outflows within the 30-day time horizon multiplied by respective run-off rates minus the sum of all types of expected cash inflows within the 30-day time horizon multiplied by respective inflow rates, but no more than 75% of total expected cash outflows as specified by the BoT.

Total <u>net</u> cash outflows within the 30-day time horizon under liquidity stress scenarios	= Total expected cash <u>outflows</u> within the 30-day time horizon under liquidity stress scenarios	- Total expected cash <u>inflows</u> within the 30-day time horizon under liquidity stress scenarios

V	
Value at risk ('VaR')	A measure of the loss that could occur on risk positions as a result of adverse movements in market risk factors (e.g. rates, prices, volatilities) over a specified time horizon and to a given level of confidence.