Standard Chartered Bank (Thai) PCL

Pillar 3 Disclosures

31 December 2021

Registered Office: 100 North Sathorn Road, Silom Bangkok, 10500, Thailand

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1. Scope of Basel III Framework

Pillar 1: Minimum Capital Requirement

The BOT has approved Standard Chartered Bank (Thai) PCL ("the Bank") to adopt the AIRB approach which is more advanced under Enterprise Risk Management Framework for the measurement of credit risk capital. Under the notification, the Bank has been using AIRB approach for the credit risk capital calculation as regulatory capital since December 2009.

The first of the three pillars of the Basel framework provide the approach to calculation of the minimum capital requirements for credit, market and operational risk.

Pillar 2: Supervisory Review Process

Pillar 2 requires banks to undertake a comprehensive assessment of their risks and to determine the appropriate amounts of capital to be held against these risks where other suitable mitigants are not available. This risk and capital assessment is commonly referred to as an Internal Capital Adequacy Assessment Process ("ICAAP") which covers much broader risk types than Pillar 1, which covers only credit risk, market risk, and operational risk.

The Bank has developed an ICAAP policy and framework which closely integrates the risk and capital assessment processes and ensures that adequate levels of capital are maintained to support the Bank's current and projected demand for capital under expected and stressed conditions.

Under Pillar 2, the BOT would undertake a review of the Banks' ICAAP. This is referred to as the Supervisory Review and Evaluation Process ("SREP").

Pillar 3: Market Discipline

Pillar 3 aims to provide a consistent and comprehensive disclosure framework that enhances comparability between banks and further promotes improvements in risk management. Pillar 3 requires all material risks to be disclosed, enabling a comprehensive view of the bank's risk profile.

The Bank has implemented a Pillar 3 policy and procedure framework to address the requirements laid down for Pillar 3 disclosure. The information provided has been reviewed and validated by senior management and the Executive Risk Committee. In accordance with the Bank's policy, the

Pillar 3 disclosure will be published on the Standard Chartered Bank (Thai) PCL - website www.sc.com/th

The BOT has also set the frequency of disclosure on semi-annual and annual basis. Quantitative data of Capital Structure & Adequacy and Market risk will be disclosed on a semi-annual basis, where as, the full Pillar 3 disclosures will be made annually on both qualitative and quantitative data.

2. Scope of Application

In compliance with the requirement under Basel lII Pillar 3 and sets of the BOT's disclosure requirements, the Bank has developed a set of disclosures for its position as at 31 December 2021 covering the following areas:

- Qualitative and quantitative data for Capital and the minimum capital requirement for Credit risk, Market risk and Operational risk.
- Qualitative for Risk Exposure and Assessment
  - Credit Risk
  - Market Risk
  - Operational Risk
  - Equities Exposure in the Non-trading Book (Banking Book)
  - Interest Rate Risk in the Non-trading Book (Banking Book)
- Quantitative data for Credit Risk, Market risk, Equities Exposure in Non-Trading Book (Banking Book) and Interest Rate Risk in Non-trading Book (Banking Book)

3. Key Prudential Metrics

The table below provides the key prudential metrics related to regulatory capital and liquidity standards.

Table 1: Key Prudential Metrics	31-Dec-21	30-Jun-21
Capital (Unit: Million Baht)		
1 Common equity tier 1 (CET1) capital	24,644	25,308
1A Fully loaded ECL CET 1	24,644	25,308
2 Tier 1 capital	24,644	25,308
2A Fully loaded ECL Tier 1	24,644	25,308
3 Total capital	24,845	25,531
3A Fully loaded ECL total capital	24,845	25,531
Risk weighted assets (Unit: Million Baht)		
4 Total risk weighted assets	72,080	77,168
Capital adequacy ratio (Unit: Percentage)		
5 Common equity tier 1 (CET1) ratio	34.19	32.80
5A Fully loaded ECL CET1 ratio	34.19	32.80
6 Tier 1 ratios	34.19	32.80
6A Fully loaded ECL Tier 1 ratio	34.19	32.80
7 Total capital ratios	34.47	33.09
7A Fully loaded ECL total capital ratio	34.47	33.09
Additional capital adequacy ratio (Unit: Percentage)		
8 Capital Conservation buffer	2.50	2.50
9 Counter cyclical buffer	-	-
10 Higher loss absorbency	-	-
11 Total additional capital adequacy ratios (item 8+ 9 + 10)	2.50	2.50
12 CET1 after maintenance of minimum capital requirement	27.19	25.80
Liquidity coverage ratio (LCR)		
13 Total high-quality liquid asset (HQLA) (Unit: Million Baht)	78,711	74,884
14 Total net cash outflows (within a 30-day period) (Unit: Million Baht)	42,251	37,093
15 LCR (Unit: Percentage)	186	202

The Bank apply the fully loaded Expected Credit Loss since 1 January 2020 under TFRS 9. Under this approach, the capital adequacy ratios as of 31 December 2021 were higher than the BOT's minimum capital ratios included capital buffer requirement at 7.0% for CET1, 8.5% for Tier1 and 11.0% for Total Capital Ratio.

In Q4 2021, The average LCR of the Bank is 186%, which is 86% higher than the minimum LCR as specified by the Bank of Thailand. This LCR is the average of LCRs from October to December 21. The LCR consists of 2 main components, namely.

1. Total High-Quality Liquid Asset (HQLA) include unencumbered high-quality assets with low risk and low volatility that can be easily monetized 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 Q4 of 2021 is THB 78,711 million (78% is Level 1 assets, namely Government bonds and cash, 22% is level 2 assets, namely Foreign bonds and promissory Note issued by Ministry of Finance), which is the average of HQLA as at the end of October to December 21. On this, the Bank holds several types of high-quality liquid assets to ensure the diversification of the stock of HQLA.

2. The amount of net cash outflows (net COF) is representing expected cash outflows within the 30-day time horizon minus expected cash inflows within the 30-day time horizon under liquidity stress scenarios; however, the expected cash inflows must not exceed 75% of the expected cash outflows. The average net COF of the "Bank" for Q4 of 2021 is THB 42,251 million, which is the average of net cash outflows within the 30-day time horizon as at the end of October to December 21. The expected cash outflows on which the Bank focuses under the severe liquidity stress scenarios are the run-off of wholesales deposits and borrowings, repayments of secured borrowings under repurchase agreements (repos), to which the run-off rates as specified by the Bank of Thailand have been assigned. On the other hand, expected cash inflows are mostly from loan repayments from high-quality customers, and maturing debt securities, to which the inflow rates as specified by the Bank of Thailand have been assigned.

4. Capital Management

The Bank's capital management approach is driven by its desire to maintain a strong capital base to support the development of the Bank business activities, to meet regulatory minimum capital requirements at all times and to maintain appropriate credit ratings.

The Bank's capital planning is dynamic and regularly refreshed to reflect the business forecasts as they evolve during the course of each year. The strategy-setting and planning is presented to the Board on an annual basis with regular update on the financial outlook and performance as to the capital adequacy is aligned with the business plan. The capital plan takes the following into account:

- Current regulatory capital requirements and the Bank's assessment of on-going regulatory expectation.
- Demand for capital due to business growth forecasts, loan impairment outlook and market shocks or stresses.
- Available supply of capital and capital raising options.

The Asset and Liabilities Management Committee ("ALCO") as appointed by Executive Committee ("EXCO") is responsible for the oversight of liquidity and capital management. The primary aim is to provide liquidity to the Bank in order to ensure that the liquidity and capital position in both domestic and foreign currencies are sufficient for the Bank's normal operations as well as for any crisis that may arise, and that the Bank's liquidity and capital level is to exceed the minimum as required by Bank of Thailand (BoT) and comply with risk framework approved by the Risk Management Committee and the Board of Directors.

4.1 Capital Structure

The Bank maintains capital to meet the minimum regulatory capital requirements set by the BOT. In addition, the Bank assess its capital adequacy to support current and future business activities.

The following table is a breakdown of total regulatory capital of the Bank as at 31 December 2021, comparing with the position of the Bank as at 30 June 2021.

Table 2: Capital Structure

Unit: Million Baht

	31-Dec-21	30-Jun-21
Tier 1 Capital		
Issued and paid-up share capital	14,837	14,837
Premium on share capital	9,056	9,056
Statutory reserve	1,484	1,484
Retained earnings after appropriation	525	525
Other comprehensive income	(34)	(34)
Adjustment items from Common Equity Tier1 Capital	(39)	(20)
Deduction items from Common Equity Tier1 Capital*	(1,185)	(540)
Total Common Equity Tier 1 (CET1) Capital	**24,644**	**25,308**
Additional Tier 1 (AT1) Capital	-	-
Total Tier 1 Capital	**24,644**	**25,308**
Tier 2 Capital		
General Provision for performing loans under SA portfolio	38	38
Surplus of provision	163	185
Total Tier 2 Capital	**201**	**223**
Total Regulatory Capital	**24,845**	**25,531**

***** Consist of intangible assets, net losses

4.2 Capital Sources

The Bank's Tier 1 Capital consist of Common Equity Tier 1 which are issued and paid up share capital & premium, statutory reserve, net profit after appropriation and other comprehensive income & regulatory adjustment. There is no additional tier 1 capital.

The Bank's Tier 2 Capital comprise of the general provision for normal performing loans and surplus of provision.

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Table 3: Reconciliation of Regulatory Capital to Financial Statement

Unit: Million Baht

As of 31 December, 2021	Statements of Financial Position as in published financial statements	References
Assets		
Cash	61	
Interbank and money market items – net	39,741	
Financial assets measured at fair value through profit or loss	38,342	
Derivative assets	17,103	
Investments – net	23,666	
Loans to customers and accrued interest receivable - net	39,948	
Premises, equipment and right-of-use assets - net	198	
Intangible assets – net	569	E
Deferred tax assets	148	F
Collateral receivables under the Credit Support Annex agreements and receivable on the private sector repurchase transactions	6,317	
Others	1,958	
Total assets	**168,051**	
Liabilities		
Deposits	71,809	
Interbank and money market items	35,693	
Liabilities payable on demand	847	
Financial liabilities measured at fair value through profit or loss	3,001	
Derivative liabilities	17,774	
Provision liabilities	448	
Collateral payable under the Credit Support Annex agreements and payables on the private sector repurchase transactions	6,718	
Payables on purchase of investments	3,692	
Others	2,543	
Total liabilities	**142,525**	

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Unit: Million Baht

As of 31 December, 2021	Statements of Financial Position as in published financial statements	References
Shareholders' equity		
Share capital		
Registered share capital	14,843	
Issued and paid-up share capital	14,837	A
Premium on share capital	9,056	B
Other components of equity	(38)	D[1/]
Retained earnings		
Appropriated		
Statutory reserve	1,484	C
Unappropriated		
Unappropriated retained earnings	(294)	
Net profit after appropriation	481	
Total Unappropriated	187	
Total shareholders' equity	**25,526**	
Total liabilities and shareholders' equity	**168,051**	

Capital related items as of 31 December 2021	Component of regulatory capital	References base on Statement of Financial Position
Common Equity Tier 1 Capital (CET1)		
Issued and paid-up share capital	14,837	A
Premium on share capital	9,056	B
Statutory reserve	1,484	C
Retained earnings after appropriation	525	
Other comprehensive income		
Fair value change in investment in debt securities	(34)	D
Total CET1 capital before regulatory adjustments and deduction		
Adjustment items from Common Equity Tier1 Capital		
Debit Valuation Adjustment Fair Value Option adjustment as per TFRS9	(39)	
Deduction items from Common Equity Tier1 Capital		
Intangible assets	(569)	E
Deferred tax assets	(148)	F
Net losses	(468)	
Total Common Equity Tier 1 (CET1)	24,644	
Additional Tier 1 (AT1)	-	

Unit: Million Baht

As of 31 December, 2021	Statements of Financial Position as in published financial statements	References
Total Tier 1 capital	**24,644**	
Tier 2 Capital		
General Provision for performing loans under SA portfolio	38	
Surplus of provision	163	
Total Tier 2 capital	**201**	
Total Regulatory capital	**24,845**	

[1/] **Included Owned Credit Adjutment (OCA)**

4.3 Capital Adequacy

Under the BOT guidelines, the Bank is required to maintain a minimum ratio of total capital to risk weighted assets of 11.00%, with the minimum ratio of Common Equity Tier 1 and tier 1 capital to risk weighted assets at 7.00% and 8.50%, respectively.

Total Capital Adequacy Ratios of the Bank as at 31 December 2021 was 34.47%. CET1 Ratios was 34.19% and Tier 1 Capital Ratios was 34.19% which exceeded minimum requirements of the BOT.

Table 4: Capital Adequacy

Unit: Percent

Ratio	BOT Minimum Requirement	BOT Minimum Requirement and conservation buffer	31-Dec-21	30-Jun-21
Total capital funds to risk weighted assets	8.50	11.00	34.47	33.09
Tier 1 capital funds to risk weighted assets	6.00	8.50	34.19	32.80
Common Equity Tier 1 capital funds to risk weighted assets	4.50	7.00	34.19	32.80

4.4 Minimum Capital Requirement by Type of Risk

The Bank maintains minimum capital in line with the BOT's requirement. Table 5 shows the breakdown of minimum capital requirement for Credit Risk, Market Risk and Operational risk of the Bank as at 31 December 2021.

Table 5: Minimum Capital Requirement by Type of Risk

Unit: Million Baht

Minimum Capital	31-Dec-21	30-Jun-21
Credit Risk	3,712	3,561
Market Risk	1,707	2,245
Operational Risk	708	753
Total Minimum Capital Requirements	**6,127**	**6,559**

AIRB Adoption

The Bank uses AIRB approach to calculate credit risk for material portfolios whilst SA approach is applied to portfolios that are classified as permanently exempt from the AIRB approach as well as those portfolios that are currently under transition to the AIRB approach.

The following tables show Minimum Capital Requirement for Credit Risk Classified by Asset Classes under AIRB (table 6), Minimum Capital Requirement for Credit Risk Classified by Asset Classes under SA (table 7) and Minimum Capital Requirement for Equity Exposure under AIRB (table 8).

Table 6: Minimum Capital Requirement for Credit Risk Classified by Asset Classes under AIRB

Unit: Million Baht

Asset Class	31-Dec-21	30-Jun-21
Non-Default exposures		
Claims on sovereigns, financial institutions and Corporates	2,743	2,535
Claims on retail portfolios		
-Claims on residential mortgage	-	-
-Qualifying revolving retail exposures	-	-
-Other retail exposures	-	-
Equity exposures	1	1
Other assets	64	62
Default exposures	434	656
First-to-default credit derivatives and Securitisation	**-**	**-**
Total minimum capital requirement for credit risk – AIRB	**3,242**	**3,254**

Table 7: Minimum Capital Requirement for Credit Risk Classified by Asset Classes under SA

Unit: Million Baht

Asset Class	31-Dec-21	30-Jun-21
Non-Default exposures		
Claims on sovereigns and central banks, MDBs and PSEs treated as claims on sovereigns	-	-
Claims on financial institutions, PSEs treated as claims on financial institutions, and securities firms	-	-
Claims on corporates, PSEs treated as claims on corporate	406	456
Claims on retail portfolios	-	-
Other assets	-	-
Default exposures	63	-
First-to-default credit derivatives and Securitisation	**-**	-
Total minimum capital requirement for credit risk – SA	**469**	**456**

Note: PSE (non-central government public sector entities) is provincial administrations, government entities, and state enterprises

Table 8: Minimum Capital Requirement for Equity Exposure under AIRB

Unit: Million Baht

Item	31-Dec-21	30-Jun-21
Equity exposure exempted from credit risk calculation by IRB	1	1
Equity exposure subject to the IRB approach		
1. Equity holdings subject to the Market-based approach		
1.1 Simple Risk Weight Approach	-	-
1.2 Internal Model Approach (for equity exposure in non-trading book (banking book))	-	-
2. Equity holdings subject to a PD/LGD approach	-	-
Total minimum capital requirement for equity exposure – AIRB	**1**	**1**

5. Risk Management

The management of risk lies at the heart of the Bank's business. All risk types, both financial and non-financial are managed and reported in accordance with the Enterprise Risk Management Framework (ERMF), which sets out the principles and standards for risk management. Under ERMF, there are 9 principal risk types, Credit Risk, Traded Risk, Capital & Liquidity Risk, Operational & Technology Risk, , Reputational & Sustainability Risk, Compliance Risk, Information and Cyber Security Risk, Financial Crime Risk, and Model Risk.

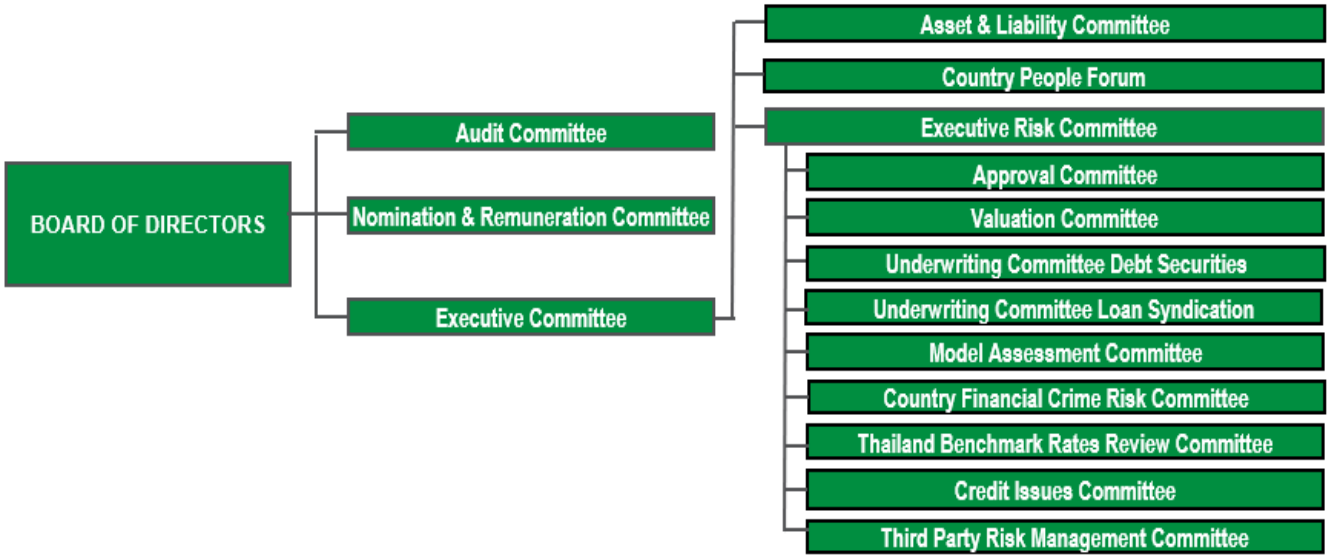
5.1 Enterprise Risk Management Framework ("ERMF")

Effective risk management is essential in delivering consistent and sustainable performance for all of stakeholders and is therefore a central part of the financial and operational management of the Bank. The bank adds value to its clients and the communities in which they operate, generating returns for shareholders.

Through our Enterprise Risk Management Framework, the Bank manages enterprise-wide risks, with the objective of maximising risk-adjusted returns while remaining in compliance with SCBT Risk Appetite Statement.

The Bank has obtained its Board approval to apply SCB Group Enterprise Risk Management Framework for local implementation.

The following diagram illustrates the high-level risk committee structure:



5.2 Risk Governance

Ultimate responsibility for setting the Bank's risk appetite statement and for the effective management of risk rests with the Board. The Board delegates the authority for the management of risks to several committees.

The **Executive Committee** ("EXCO") is responsible for driving business agenda bringing across alignment between function to achieve financial performance target and to ensure day-to-day management, operations and control of the Bank in conformity with policies and strategies approved by the Board of Directors. The Country Management Team is currently chaired by the CEO and comprises of senior executives from Corporate, Commercial & Institutional Banking (CCIB), Financial Markets, Transaction Banking, Risk Management, Technology & Innovation, Finance, Human Resources, Legal and Compliance.

The **Asset & Liability Committee** ("ALCO") ensures that the balance sheet of the Bank are managed in accordance with the policies of Standard Chartered Bank Group adopted by the Bank and any other applicable regulatory requirements relating to management of capital adequacy, liquidity, leverage, interest rate risk in the banking book, structural market risks and meets internal and external recovery planning requirements.

The **Executive Risk Committee** ("ERC")'s main responsibilities are to oversee the effective implementation of the Enterprise Risk Management Framework (ERMF) and Risk Type Framework (RTFs) including Credit Risk, Traded Risk, Capital & Liquidity Risk, Operational & Technology Risk, , Reputational & Sustainability Risk, Compliance Risk, Information and Cyber Security Risk, Financial Crime Risk, and Model Risk. The Committee also supervises and directs the management of all risks within the Bank to be in accordance with standards of the Standard Chartered Group and policies as approved by SCBT's Board of Directors.

Roles and responsibilities for risk management are defined under a Three Lines of Defence model. Each line of defence describes a specific set of responsibilities for risk management and control.

The **first line of defence** is defined as the businesses and functions engaged in or supporting revenue-generating activities that own and manage risks.

The **second line of defence** is defined as the control functions independent of the first line that provide oversight and challenge of risk management to provide confidence to the Country Chief Risk Officer, Senior Management and the Board.

The **third line of defence** is 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 lines.

5.3 The Risk Function

The Risk function is responsible for the sustainability of the Bank's business through good management of risk and ensuring that business is conducted in line with the regulatory expectations.

The Country Chief Risk Officer ("CCRO") directly manages a Risk function that is separated and independent from the origination, trading and sales functions of the businesses. The CCRO also chairs the ERC and is a member of EXCO.
The Risk function is responsible for:

- Maintaining the Bank's Enterprise Risk Management Framework, ensuring it remains appropriate to the Bank's activities, is effectively communicated and implemented across the Bank, and to administer related governance and reporting processes.

- Upholding the overall integrity of the Bank's risk and return decisions to ensure that risks are properly assessed that these decisions are made transparently on the basis of this proper assessment and that risks are controlled in accordance with the Bank's standard and risk appetite.

- Overseeing and challenging the management of Principal Risk Types under the Enterprise Risk Management Framework.

The independence of the Risk function is to ensure 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.

6. Credit Risk

Credit risk is the potential for loss due to the failure of a counterparty to meet its obligations to pay the Bank in accordance with agreed terms. The Bank manages its credit exposures following the principle of diversification across products, geographies, client segments and industry sectors.

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, to ensure that credit risks are properly assessed and are transparent, credit decisions are controlled in accordance with the Risk Appetite, credit policies and standards, which are approved by SCBT Board or delegated risk committees.

6.1 Credit Policies

The Credit Policy sets principles that must be followed for the end-to-end credit process including credit initiation, credit grading, credit assessment, structuring of product, credit risk mitigation, monitoring and control and documentation. In addition, there are other Group-wide policies as those relating to Risk Appetite, Model Risk, stress testing and impairment provisioning. Appropriate allocation and sound diversification of lending portfolios among suitable industries are also key objectives of the Bank.

6.2 Governance committee oversight

The Executive Risk Committee ("ERC") oversees and appointed sub-committees for the management of Credit Risk. There are 2 credit committees that are relevant to credit risk management, including the Approval Committee ("AC") and the Credit Issue Committee ("CIC"). These committees comprise senior management from the Risk and Business functions.

6.3 Decision-making authorities and delegation

Credit authority is delegated by the Executive Risk Committee to Senior Credit Officer who is empowered to further delegate credit authorities to individual credit officers by applying delegated credit authority metrices, which determine the maximum limits based on risk-adjusted scales by customer type or portfolio. The individual 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.

6.4 Credit Monitoring

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

AC is a sub-committee of ERC. AC meets regularly to assess the impact of external events and trends on the credit risk portfolio and to define and implement the response in terms of appropriate changes to portfolio shape, portfolio and underwriting standards, risk policy and procedures.

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 Issue Committees. 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 Stressed Assets Group ("SAG"), and Stressed Asset Risk ("SAR"), the Bank's specialist recovery unit.

6.5 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. 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 significantion in a client's credit quality leading to default.

Risk measurement plays a central role, along with judgment and experience, in informing risk

taking and portfolio management decisions. Since 1 January 2010, the Bank has used the Advanced Internal Ratings-based (AIRB) approach to calculate Credit Risk capital requirements.

A standard alphanumeric credit risk grade ("CG") system is used in CIB. The numeric grades run from 1 to 14 and some grades are further sub-classified A, B or C. 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. AIRB models cover a substantial majority of the Bank's exposures and are used in assessing risks at a customer and portfolio level, setting strategy and optimising the Bank's risk-return decisions.

Material IRB risk measurement models are approved by the Model Assessment Committee ("MAC") which obtained delegation from ERC. Prior to review and approval, all IRB models are validated in detail by a model validation team of Standard Chartered Bank Group which is separated from the teams that develop and maintain the models. Models undergo annual periodic review. 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.

6.6 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, tenor, credit grades and top clients. Single name credit concentration thresholds are set by client group. Credit concentrations are monitored by AC and reported to ERC every two months. Credit Risk Appetite threshold and escalation triggers are reviewed at least annually by ERC and SCBT Board.

6.7 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 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.

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.

For CIB, 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 (SAG/SAR). Where appropriate, non-material credit-impaired accounts are co-managed with the business under the supervision of SAG/SAR.

Table 9: Outstanding amounts of significant on-balance sheet assets and off-balance sheet items before credit risk mitigation

Unit: Million Baht

Item	31-Dec-21	31-Dec-20
1. On-Balance sheet assets	**152,494**	**156,418**
1.1 Loans and accrued interest receivable (net) [1/]	75,590	79,152
1.2 Net investments in debt securities [2/]	55,702	42,952
1.3 Deposits and accrued interest receivable (net) [3/]	4,099	14,225
1.4 Derivatives	17,103	20,089
2. Off-Balance sheet items[4/]	**1,110,043**	**964,811**
2.1 Aval of bills, loan guarantees, and letters of credit	3,802	1,914
2.2 Other guarantees	15,023	20,017
2.3 OTC derivatives [5/]	1,081,456	932,600
2.4 Undrawn committed line	7,940	9,977
2.5 Repo-style transaction	1,822	303

[1/] Including accrued interest income, net of deferred interest income, gains or losses due to changes in the conditions, and reserves for expected credit losses; including loans and accrued interest receivable of interbank and money market items.
[2/] Including investments in receivables but excluding accrued interest receivable and net of reserves for adjustments of security values and reserves for expected credit losses.
[3/] Including accrued interest income, net of reserves for expected credit losses
[4/] Before multiplying by credit conversion factors
[5/] Including equity-related derivatives

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Table 10: Outstanding balance of On-balance sheet and Off-balance sheet assets before Credit Risk Mitigation Classified by Country or Geographic Area of Debtor

Unit: Million Baht
31-Dec-21

Country or geographic area of debtor	On-balance sheet assets				
	Total	Loans and accrued interest receivable (net) 1/	Net Investment in debt securities 2/	Deposits and accrued interest receivable (net) 3/	Derivatives
1. Thailand	122,379	63,632	45,265	609	12,873
2. Asia Pacific (exclude Thailand)	27,170	11,254	10,437	1,698	3,781
3. North America and Latin America	1,099	44	-	1,053	2
4. Africa and Middle East	120	12	-	2	106
5. Europe	1,726	648	-	737	341
Total	**152,494**	**75,590**	**55,702**	**4,099**	**17,103**

Country or geographic area of debtor	Off-balance sheet items 4/					
	Total	Aval of bills, guarantees, and letter of credits	Other guarantees	OTC derivatives 5/	Undrawn committed lines	Repo-style transaction
1. Thailand	662,076	867	11,230	641,247	6,910	1,822
2. Asia Pacific (exclude Thailand)	312,039	2,885	1,463	307,681	10	-
3. North America and Latin America	2,483	9	1,174	900	400	-
4. Africa and Middle East	2,268	41	32	2,195	-	-
5. Europe	131,177	-	1,124	129,433	620	-
Total	**1,110,043**	**3,802**	**15,023**	**1,081,456**	**7,940**	**1,822**

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Unit: Million Baht
31-Dec-20

Country or geographic area of debtor	On-balance sheet assets				
	Total	Loans and accrued interest receivable (net) 1/	Net Investment in debt securities 2/	Deposits and accrued interest receivable (net) 3/	Derivatives
1. Thailand	122,494	69,921	42,567	563	9,443
2. Asia Pacific (exclude Thailand)	23,024	8,061	385	8,682	5,896
3. North America and Latin America	2,243	492	-	4	1,747
4. Africa and Middle East	2	-	-	2	-
5. Europe	8,655	678	-	4,974	3,003
Total	**156,418**	**79,152**	**42,952**	**14,225**	**20,089**

Country or geographic area of debtor	Off-balance sheet items4/					
	Total	Aval of bills, guarantees, and letter of credits	Other guarantees	OTC derivatives5/	Undrawn committed lines	Repo-style transaction
1. Thailand	635,805	1,177	10,490	615,791	8,044	303
2. Asia Pacific (exclude Thailand)	227,056	498	1,237	224,401	920	-
3. North America and Latin America	2,545	159	1,495	498	393	-
4. Africa and Middle East	176	30	146	-	-	-
5. Europe	99,229	50	6,649	91,910	620	-
Total	**964,811**	**1,914**	**20,017**	**932,600**	**9,977**	**303**

1/ Including accrued interest income, net of deferred interest income, gains or losses due to changes in the conditions, and reserves for expected credit losses; including loans and accrued interest receivable of interbank and money market items.
2/ Including investments in receivables but excluding accrued interest receivable and net of reserves for adjustments of security values and reserves for expected credit losses.
3/ Including accrued interest income, net of reserves for expected credit losses.
4/ Before multiplying by credit conversion factors
5/ Including equity-related derivatives

Table 11: Outstanding Balance of On-Balance Sheet and Off-Balance Sheet Items before Credit Risk Mitigation Classified by Residual Maturity

Unit: Million Baht

Item	31-Dec-21			31-Dec-20		
	Maturity ≤ 1 year	Maturity > 1 year	Total	Maturity ≤ 1 year	Maturity > 1 year	Total
1. On-Balance sheet assets	**93,168**	**59,326**	**152,494**	**98,832**	**57,586**	**156,418**
1.1 Loans and accrued interest receivable (net)[1/]	59,640	15,950	75,590	73,994	5,158	79,152
1.2 Net investments in debt securities[2/]	21,504	34,198	55,702	4,419	38,533	42,952
1.3 Deposits and accrued interest receivable (net)[3/]	4,099	-	4,099	14,225	-	14,225
1.4 Derivatives	7,925	9,178	17,103	6,194	13,895	20,089
2. Off-Balance sheet items[4/]	**685,210**	**424,833**	**1,110,043**	**494,486**	**470,325**	**964,811**
2.1 Aval of bills, guarantees, and letters of credit	3,379	423	3,802	332	1,582	1,914
2.2 Other guarantees	6,143	8,880	15,023	10,419	9,598	20,017
2.3 OTC derivatives[5/]	670,951	410,505	1,081,456	478,877	453,723	932,600
2.4 Undrawn committed lines	2,915	5,025	7,940	4,555	5,422	9,977
2.5 Repo-style transaction	1,822	-	1,822	303	-	303

[1/] Including accrued interest income, net of deferred interest income, gains or losses due to changes in the conditions, and reserves for expected credit losses; including loans and accrued interest receivable of interbank and money market items.
[2/] Including investments in receivables but excluding accrued interest receivable and net of reserves for adjustments of security values and reserves for expected credit losses.
[3/] Including accrued interest income, net of reserves for expected credit losses
[4/] Before multiplying by credit conversion factors
[5/] Including equity-related derivatives

Outstanding balance of On-Balance Sheet and Off-Balance Sheet Assets before Credit Risk Mitigation are classified by residual maturity. Approximately 62 and 53 percent of the Bank's total outstanding balance as of 31 Dec 2021 and 2020, respectively, having residual maturity of one year or less.

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Table 12: Outstanding amounts of financial instruments before credit risk mitigation and provisions (General provision and specific provisions)

Unit: Million Baht
31-Dec-21

Item	Outstanding amount		Amount of provisions [1/]	Provisions [1/] for exposures under the SA		Provisions [1/] for exposures under the IRB	Net amount [2/]
	Defaulted exposures	Non-defaulted exposures		General provisions	Specific provisions		
1. Loans and accrued interest receivable [3/]	1,632	75,522	1,564	300	899	365	75,590
2. Investments in debt securities [4/]	-	23,646	2	-	-	2	23,644
3. Deposits and accrued interest receivable [5/]	-	4,099	-	-	-	-	4,099
4. Committed lines and financial guarantees [6/]	2	26,763	125	-	-	125	26,640
Total	**1,634**	**130,030**	**1,691**	**300**	**899**	**492**	**129,973**

Unit: Million Baht
31-Dec-20

Item	Outstanding amount		Amount of provisions [1/]	Provisions [1/] for exposures under the SA		Provisions [1/] for exposures under the IRB	Net amount [2/]
	Defaulted exposures	Non-defaulted exposures		General provisions	Specific provisions		
1. Loans and accrued interest receivable [3/]	76	80,008	932	400	333	199	79,152
2. Investments in debt securities [4/]	-	12,446	3	-	-	3	12,443
3. Deposits and accrued interest receivable [5/]	-	14,226	1	-	-	1	14,225
4. Committed lines and financial guarantees [6/]	-	31,908	113	-	2	111	31,795
Total	**76**	**138,588**	**1,049**	**400**	**335**	**314**	**137,615**

[1/] means reserves for expected credit losses according to TFRS 9. For financial instruments designated at fair value through other comprehensive income, the amount of provisions may not be disclosed according to the Thai Financial Reporting Standard No.7 - Disclosure Requirements for Financial Instruments (TFRS 7). And, the outstanding amounts of those instruments will be the amounts net of provisions.

[2/] Net amount = Outstanding amount - Provisions

[3/] Including accrued interest income, net of deferred income and gains or losses due to changes in the conditions, and including loans and accrued interest receivable of interbank and money market items.

[4/] Excluding accrued interest receivable, net of reserves for adjustments of security values, and excluding investments in receivable, investments in debt securities measured at fair value through profit and loss.

[5/] Including accrued interest income

[6/] Before multiplying by credit conversion factors

Table 13: Outstanding amounts of loans including accrued interest receivable and investments in debt securities before credit risk mitigation classified by country or geographic area of debtors and asset classifications

Unit: Million Baht
31-Dec-21

Country or geographic area of debtors	Loans including accrued interest receivable [1/]				
	With an insignificant increase in credit risk	With a significant change in credit risk	Credit-impaired	Purchased and originated credit-impaired	Total
1. Thailand	61,892	1,658	1,632	-	65,182
2. Asia Pacific (exclude Thailand)	11,256	12	-	-	11,268
3. North America and Latin America	44	-	-	-	44
4. Africa and Middle East	12	-	-	-	12
5. Europe	648	-	-	-	648
Total	**73,852**	**1,670**	**1,632**	**-**	**77,154**

Country or geographic area of debtors	Investments in debt securities [2/]				
	With an insignificant increase in credit risk	With a significant change in credit risk	Credit-impaired	Purchased and originated credit-impaired	Total
1. Thailand	14,029	-	-	-	14,029
2. Asia Pacific (exclude Thailand)	9,617	-	-	-	9,617
3. North America and Latin America	-	-	-	-	-
4. Africa and Middle East	-	-	-	-	-
5. Europe	-	-	-	-	-
Total	**23,646**	**-**	**-**		**23,646**

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Unit: Million Baht
31-Dec-20

Country or geographic area of debtors	Loans including accrued interest receivable 1/				
	With an insignificant increase in credit risk	With a significant change in credit risk	Credit-impaired	Purchased and originated credit-impaired	Total
1. Thailand	66,656	4,103	76	-	70,835
2. Asia Pacific (exclude Thailand)	8,079	-	-	-	8,079
3. North America and Latin America	492	-	-	-	492
4. Africa and Middle East	-	-	-	-	-
5. Europe	678	-	-	-	678
Total	**75,905**	**4,103**	**76**	**-**	**80,084**

Country or geographic area of debtors	Investments in debt securities 2/				
	With an insignificant increase in credit risk	With a significant change in credit risk	Credit-impaired	Purchased and originated credit-impaired	Total
1. Thailand	12,446	-	-	-	12,446
2. Asia Pacific (exclude Thailand)	-	-	-	-	-
3. North America and Latin America	-	-	-	-	-
4. Africa and Middle East	-	-	-	-	-
5. Europe	-	-	-	-	-
Total	**12,446**	**-**	**-**	**-**	**12,446**

1/ Including accrued interest income, net of deferred income and gains or losses due to changes in the conditions, and including loans and accrued interest receivable of interbank and money market items
2/ Excluding accrued interest receivable, net of reserves for adjustments of security values, and excluding investments in receivables, investments in debt securities measured at fair value through profit and loss

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Table 13A: Provisions (General provision and Specific provision) and write-offs during the period for loans including accrued interest receivable and investments in debt securities classified by country or geographic area of debtors

Unit: Million Baht
31-Dec-21

Country or geographic area of debtor	Loans including accrued interest receivable 1/			
	Provisions 3/ for exposures under the SA			
	General provisions 4/	Specific provisions	Provisions 3/ for exposures under the IRB	Write-offs during the period
1. Thailand		899	351	-
2. Asia Pacific (exclude Thailand)		-	14	-
3. North America and Latin America		-	-	-
4. Africa and Middle East		-	-	-
5. Europe		-	-	-
Total	**300**	**899**	**365**	**-**

Country or geographic area of debtor	Investments in debt securities 2/			
	Provisions 3/ for exposures under the SA			
	General provisions 4/	Specific provisions	Provisions 3/ for exposures under the IRB	Write-offs during the period
1. Thailand		-	2	-
2. Asia Pacific (exclude Thailand)		-	-	-
3. North America and Latin America		-	-	-
4. Africa and Middle East		-	-	-
5. Europe		-	-	-
Total	**-**	**-**	**2**	**-**

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Unit: Million Baht
31-Dec-20

Country or geographic area of debtor	Loans including accrued interest receivable 1/			
	Provisions 3/ for exposures under the SA			
	General provisions 4/	Specific provisions	Provisions 3/ for exposures under the IRB	Write-offs during the period
1. Thailand		333	181	-
2. Asia Pacific (exclude Thailand)		-	18	-
3. North America and Latin America		-	-	-
4. Africa and Middle East		-	-	-
5. Europe		-	-	-
Total	**400**	**333**	**199**	**-**

Country or geographic area of debtor	Investments in debt securities 2/			
	Provisions 3/ for exposures under the SA			
	General provisions 4/	Specific provisions	Provisions 3/ for exposures under the IRB	Write-offs during the period
1. Thailand		-	3	-
2. Asia Pacific (exclude Thailand)		-	-	-
3. North America and Latin America		-	-	-
4. Africa and Middle East		-	-	-
5. Europe		-	-	-
Total	**-**	**-**	**3**	**-**

1/ Including the amounts of provisions and write-offs during the period for loans including accrued interest receivable of interbank and money market items
2/ Excluding investments in receivables
3/ Reserves for expected credit losses
4/ Total amount will be disclosed

Table 14: Outstanding amounts of loans including accrued interest receivable before credit risk mitigation classified by type of business and asset classifications

Unit: Million Baht

31-Dec-21

Type of business	With an insignificant increase in credit risk	With a significant change in credit risk	Credit-impaired	Purchased and originated credit-impaired	Total
1. Agriculture and mining	67	-	-	-	**67**
2. Manufacturing and Commerce	13,837	1,668	-	-	**15,505**
3. Real estate business and construction	1,289	2	-	-	**1,291**
4. Public utility and Service	5,122	-	1,632	-	**6,754**
5. Others	53,537	-	-	-	**53,537**
Total	**73,852**	**1,670**	**1,632**	**-**	**77,154**

Unit: Million Baht

31-Dec-20

Type of business	With an insignificant increase in credit risk	With a significant change in credit risk	Credit-impaired	Purchased and originated credit-impaired	Total
1. Agriculture and mining	51	-	-	-	**51**
2. Manufacturing and Commerce	11,509	1,655	76	-	**13,240**
3. Real estate business and construction	1,825	41	-	-	**1,866**
4. Public utility and Service	2,363	1,804	-	-	**4,167**
5. Others	60,157	603	-	-	**60,760**
Total	**75,905**	**4,103**	**76**	**-**	**80,084**

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Table 15: General provisions and specific provisions and write-offs during the period for loans and accrued interest receivable classified by business of debtors

Unit: Million Baht

31-Dec-21

Type of business	Provisions 1/ for exposures under the SA		Provisions 1/ for exposures under the IRB	Write-offs during the period
	General provisions 2/	Specific provisions		
1. Agriculture and mining		-	-	-
2. Manufacturing and commerce		3	345	-
3. Real estate business and construction		-	-	-
4. Public utility and Service		896	16	-
5. Others		-	4	-
Total	**300**	**899**	**365**	**-**

Unit: Million Baht

31-Dec-20

Type of business	Provisions 1/ for exposures under the SA		Provisions 1/ for exposures under the IRB	Write-offs during the period
	General provisions 2/	Specific provisions		
1. Agriculture and mining		-	-	-
2. Manufacturing and commerce		4	165	-
3. Real estate business and construction		-	-	-
4. Public utility and Service		329	25	-
5. Others		-	9	-
Total	**400**	**333**	**199**	**-**

1/ Reserves for expected credit losses
2/ Total amount of the provisions will be disclosed

Table 16: Reconciliation of changes in available provisions (General provisions and specific provisions) for loans including accrued interest receivable

Unit: Million Baht

31-Dec-21

Item	Provisions 1/ for exposures under the SA		Provisions 1/ for exposures under the IRB	Total
	General provisions	Specific provisions		
Provisions at the beginning of the period	400	333	199	932
Increases or decreases in provisions during the period 2/	(100)	566	166	632
Write-offs during the period	-	-	-	-
Provisions at the end of the period	**300**	**899**	**365**	**1,564**

Unit: Million Baht

31-Dec-120

Item	Provisions 1/ for exposures under the SA		Provisions 1/ for exposures under the IRB	Total
	General provisions	Specific provisions		
Provisions at the beginning of the period	515	11	5	531
Increases or decreases in provisions during the period 2/	(115)	322	194	401
Write-offs during the period	-	-	-	-
Provisions at the end of the period	**400**	**333**	**199**	**932**

1/ Reserves for expected credit losses
2/ Excluding expected credit losses of financial instruments designated at fair value through other comprehensive income

The Bank's provision as of 31 December 2021 is THB 1,564 million (2020: THB 932 million) increased by THB 632 million primarily represents the provision set up against stage 3 portfolio impacted by COVID19 pandemic

6.8 Internal Ratings Based Approach to Credit Risk

The Bank uses the AIRB approach to measure credit risk for majority of its portfolios. This allows the Bank to use its own internal estimates of Probability of Default ("PD"), Loss Given Default ("LGD") and Exposure at Default ("EAD") to determine an asset risk-weighting. As at end of 31 Dec 2021, the IRB models cover 87.36 percent of the Bank's credit risk RWA (2020: 90.72 percent).

PD is the likelihood that an obligor will default on an obligation within 12 months. The Bank utilsing the IRB approach must assign an internal PD to all borrowers. EAD is the expected amount of exposure to a particular facility at the point of default. It is modelled based on historical experience to determine the amount that is expected to be further drawn down from the undrawn portion in a committed facility. LGD is the percentage of EAD that a lender expects to lose in the event of

obligor default. EAD and LGD are measured based on expectation in economic downturn periods if these are more conservative than the long-run average.

All assets under the IRB approach have sophisticated PD, LGD and EAD models developed to support the credit decision making process. RWA under the AIRB approach is determined by regulatory specified formulae dependent on the Bank's estimates PD, LGD, EAD, and residual maturity. The development, usage and governance of models under the IRB approach is covered in more detail in section 6.11 Internal Ratings Based models.

Table 17: Outstanding amounts of on-balance sheet assets and credit equivalent amounts of off-balance sheet items (net of specific provisions) classified by type of assets under the IRB

Unit: Million Baht

Type of asset	31-Dec-21			31-Dec-20		
	On-balance sheet asset	Off-balance sheet items*	Total	On-balance sheet asset	Off-balance sheet items*	Total
1. Non-defaulted assets						
1.1 Claims on sovereigns, banks, and corporate	101,137	62,802	163,939	106,785	57,438	164,223
1.2 Claims on retail portfolios						
1.2.1 Residential mortgage exposures	-	-	-	-	-	-
1.2.2 Qualifying revolving retail exposures	-	-	-	-	-	-
1.2.3 Other claims on retail portfolios	-	-	-	-	-	-
1.3 Equity exposures	15	-	15	13	-	13
1.4 Other assets	19,894	-	19,894	21,674	-	21,674
2. Defaulted assets	817	227	1,044	1,070	246	1,316
3. First-to-default credit derivatives and Securitisation	-	-	-	-	-	-
Total	**121,863**	**63,029**	**184,892**	**129,542**	**57,684**	**187,226**

* Including Repo and Reverse Repo transactions

Table 18: Undrawn Lines after Multiplying by CCF and Exposure-weighted-average EAD for Credit Risk under the AIRB Approach Classified by Type of Asset

Unit: Million Baht

Type of asset	31-Dec-21		31-Dec-20	
	Undrawn lines multiplied by CCF	Exposure-weighted average EAD	Undrawn lines multiplied by CCF	Exposure-weighted average EAD
Sovereigns, bank and corporate exposures	614	19.86%	1,238	33.98%
Equity exposures under the PD/LGD method	-	-	-	-
Total	**614**	**19.86%**	**1,238**	**33.98%**

6.9 Standardised Approach to Credit Risk

The Standardised Approach is applied to portfolios that are exempted from the IRB approach, and those portfolios for which an IRB approach has yet to be developed, for instance due to insufficient data availability. The following major assets are applied for Standardised Approach:

1. Receivable Services
2. Income-Producing Real Estate (“IPRE”)

The Standardised Approach measures credit risk pursuant to fixed risk weights and is the least sophisticated of the capital requirement calculation methodologies under Basel lll. The risk weight applied under the Standardised Approach is given by the BOT and is based on the asset class to which the exposure is assigned.

Table 19: Outstanding amounts of on-balance sheet assets and credit equivalent amounts of off-balance sheet items (net of specific provisions) classified by type of assets under the SA

Unit: Million Baht

Type of asset	31-Dec-21			31-Dec-20		
	On-balance sheet asset	Off-balance sheet items*	Total	On-balance sheet asset	Off-balance sheet items*	Total
1. ***Performing claims***						
1.1 Claims on sovereigns and central banks [1/]	-	545	545	-	756	756
1.2 Claims on banks and securities companies [2/]	-	-	-	-	-	-
1.3 Claims on corporate [3/]	7,584	541	8,125	7,561	799	8,360
1.4 Claims on retail portfolios	-	-	-	-	-	-
1.5 Residential mortgage exposures	-	-	-	-	-	-
1.6 Other assets	-	-	-	-	-	-
2. ***Non-performing claims***[4/]	739	5	744	-	-	-
3. ***First-to-default credit derivatives and Securitisation***	-	-	-	-	-	-
Total	**8,323**	**1,091**	**9,414**	**7,561**	**1,555**	**9,116**

* Including Repo and Reverse Repo transactions

[1/] Including Claims on Multilateral development banks (MDBs), Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Sovereigns and Central Bank

[2/] Including Claims on Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Financial Institutions

[3/] Including Claims on Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Corporate

[4/] Risk-weight (%) for unsecured portion is based on its provision reserved.

6.10 Credit Risk Mitigation

The Bank also set out standards for the eligibility, enforceability and effectinveness of Credit Risk mitigation arrangements. Potential credit losses from a given account, client or portfolio are mitigated using a range of tools i.e. collateral, netting agreements, credit insurance, credit derivatives and guarantees. The reliance that can be placed on these mitiganys is carefully assessed in light of issues such as legal certainty and enforceability, market valuation, correlation and counterparty risk of the guarantor. The presence of credit risk mitigation is however not a substitute for the ability to pay, which is the primary consideration for any credit decisions.

Collateral is held to mitigate credit risk exposure and risk mitigation policies determine the eligibility of collateral types. Potential concentration risk from the use of financial collaterals, guarantee and

credit derivatives is managed through the credit monitoring process.

6.11 Internal Rating Based Models

Model Governance

The AIRB models used by the Bank calculate a conservative Probability of Default ("PD"), Loss Given Default ("LGD") and Exposure at Default ("EAD"), as borne out by the model performance data contained in this section. The product of this is a conservative view of Regulatory Expected Loss ("EL"), which is considered necessary for the prudent calculation of regulatory capital.

Models are centrally managed by Standard Chartered Bank Group. All IRB models are developed by Enterprise Risk Analytics (ERA). Both new and existing models, as well as changes to the existing models, are subject to independent validation by Group Model Validation (GMV) and are reviewed and approved by Group Credit Model Assessment Committee (CMAC) and Group Model Risk Committee (MRC) based on materiality. ERA and GMV are separate departments within Group Risk. The Model Risk Policy and Governance team (MRPG) was established to provide on going assessment and independent oversight of model risk management.

The Bank leverage models developed by Standard Chartered Bank Group by having the Model Assessment Committee ("MAC") as appointed by ERC to review and approve any risk models for use in-country to ensure full compliance with local regulatory requirements. The performance of existing IRB models, including actual against predicted metrics, which are monitored regularly by ERA, are reported to local MAC on a quarterly basis while the annual model validation reports conducted by GMV are reported to MAC on an annual basis. The ERC is updated on the status and performance of IRB models via MAC meeting minutes. An annual self-assessment of IRB models' regularotry compliance is carried out as part of the Senior Mangement Function attestation.

Probability of Default

PDs are estimated based on one of three industry standard approaches, namely the good-bad approach where a sufficient number of internal defaults is available; the shadow-bond approach where there are no sufficient internal defaults but there are external ratings for a large number of obligors; or the constrained expert judgement approach where neither internal defaults nor external ratings are available.

CCIB portfolio is rated based on the shadow bond approach (Sovereigns, Large Corporates) or the good-bad approach (Banks, Mid Corporates). Central governments and central banks are rated using the Sovereign model. Non-bank financial institutions are rated using one of six constrained expert judgement models depending on their line of business. Corporate clients are differentiated by their annual sales turnover and rated using one of the corporate models, unless they are commodity traders (for which a separate model has been developed) or are classified under specialised lending and supply chain finance.

Within CCIB, each client is assigned a credit grade, regardless whether the client is under standardized or IRB capital estimate method, and exposures to each client or client group are aggregated consistently with the regulatory Large Exposure requirements.

CCIB PD models are calibrated following a through-the-cycle rating phoilosophy based on historical data that includes a full economic cycle.

Corporate and Institutional Banking Internal Rating Based models were developed from a dataset that spans at least a full business cycle. The data has been used to calibrate estimates of PD to the SCB Group's long run experience. Actual ('point in time') default rates will typically differ from this 'through the cycle' experience as economies move above or below cyclical norms.

Estimated PD are computed as of 1 January 2021 and are compared with default observations through 31 December 2021.

The historical default experience for institutions, central government or central bank is minimal, so the predicted PD for these asset classes reflects a particularly low number of defaults (in table 26). For central government or central bank, institutions, there were no defaults during 2021. However, there were 2 defaults within the corporate asset class during 2021.

Loss Given Default

CCIB LGD model is a component-based model reflecting the bank's recovery and workout process, which takes into account risk drivers such as portfolio segment, jurisdiction, product, and collateral attached to the exposures. The model is calibrated based on downturn experience, if that is more conservative than the long run experience. Regulatory floors are applied to unsecured and fully secured facilities (except if secured by cash).

The calculation of realised versus predicted LGD is affected by the fact that it may takes a number of years for the workout process to complete. As such, an observed recovery value cannot be assigned to the majority of the 2021 defaults, making it not meaningful to compare realised versus predicted outcomes in a manner similar to that for PD and EAD.

For CCIB, SCBT has adopted an approach based on a four-year rolling period of predicted and realised LGD, which for the current reporting year includes 2018 to 2021 defaults that have completed their workout process as at the end of 2021. This approach compares the four-year rolling predicted LGD, providing the predicted outcome of these resolved defaults one year prior to default, against the realised LGD for the same set of defaults. These two figures are fully comparable, providing thereby a meaningful assessment of LGD model performance.

Under this approach, realised LGD values for corporates are lower than the predicted LGD. This is explained by the regulatory guidance to calibrate LGD models to downturn conditions. There were no defaults in the previous four years for central government and central Bank.

EAD model

EAD takes into consideration the potential drawdown of a commitment as an obligor moves towards default by estimating the Credit Conversion Factor (CCF) of undrawn commitments. EAD model for sovereign and CCIB is determined by product but on a global basis and has adopted the momentum approach to estimate the CCF, with the type of facility and the level of utilsation being key drivers of CCF. The model is calibrated on the Bank's internal downturn experience and CCF

is floored at 0 percent.

The comparison of realised versus predicted EAD is summarised in the ratio of EAD of assets that defaulted in 2021 to the outstanding amount at time of default in table 26.

6.12 Risk Grade Profile

Exposures by Internal Credit Grading

For CIB IRB portfolios, a standard alphanumeric credit risk-grading system is used. The grading is based on Standard Chartered Bank Group and the Bank's internal estimate of probability of default over a one-year horizon, with customers or portfolios assessed against a range of quantitative and qualitative factors from credit risk models.

The numeric grades run from 1 to 14 and some of the grades are further sub-classified. Numerically lower credit grades are indicative of a lower likelihood of default. Credit Grade 1 to 12 are assigned to performing customers and credit grades 13 and 14 are assigned to non-performing or defaulted customers. The internal credit grades are not intended to replicate external credit grades and ratings assigned by external credit assessment institutions (ECAI) are not used in determining internal credit grades. As an indicative guide for reference the mapping below presents Standard Chartered Bank Group and the Bank's credit grades in relation to that of Standard and Poor's credit ratings.

	Standard & Poors Mapping	
Credit Grade	Corp / Non BFIs	Banks
1A	AAA/AA+	AAA/AA+
1B	AA	AA
2A	AA-	AA-
2B	AA-/A+	A+
3A	A+	A
3B	A/A-	A-
4A	BBB+	BBB+
4B	BBB	BBB
5A	BBB-	BBB-
5B	BB+	BB+
6A	BB	BB
6B	BB/BB-	BB/BB-

7A	BB-	BB-
7B	BB-	BB-/B+
8A	BB-/B+	B+
8B	B+	B+/B
9A	B+/B	B
9B	B	B/B-
10A	B/B-	B-
10B	B-	B-/CCC
11A	B-	CCC/C
11B	B-	CCC/C
11C	B-/CCC	CCC/C
12A	CCC/C	CCC/C
12B	CCC/C	CCC/C
12C	CCC/C	CCC/C

AIRB models cover a substantial majority of the Bank's loans and are used extensively in assessing risks at customer and portfolio level, setting strategy and optimising the Bank's risk return decisions.

The Bank makes use of internal risk estimates of PD, LGD and EAD in the areas of:

- Credit Approval and Decision – The level of authority required for the sanctioning of credit requests and the decision made is based on a combination of PD, LGD and EAD of the obligor with reference to the nominal exposure;

- Pricing – In CCIB, a pre-deal pricing calculator is used which takes into consideration PD, LGD and EAD in the calculation of expected loss and risk-weighted assets and for the proposed transactions to ensure appropriate return;

- Limit Setting – In CCIB, single name concentration limits are determined by PD, LGD and EAD. The limits operate on a sliding scale to ensure that the Bank does not have over concentration of low credit quality assets;

The following table sets out analysis of EAD, PD and LGD within the AIRB portfolios by internal credit grading. EAD has been calculated after taking into account the impact of credit risk mitigation. Where exposure is guaranteed or covered by credit derivatives, exposure is shown against the asset class of the guarantor or derivative counterparty.

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Table 20: Credit Risk Assessment under the AIRB Approach for Sovereign, Bank and Corporate Exposures and Equity Exposures under the PD/LGD Approach Classified by Rating Grade*

Type of asset		31-Dec-21			31-Dec-20		
		Sovereign, bank and corporate exposures **	Equity exposures under PD/LGD approach	Total	Sovereign, bank and corporate exposures **	Equity exposures under PD/LGD approach	Total
Grade 1 - 4	EAD 1/ (Million Baht)	121,259	-	**121,259**	104,849	-	**104,849**
	⦸ PD 2/ (%)	0.07%	-	-	0.07%	-	-
	⦸ RW 3/ (%)	12.37%	-	-	15.67%	-	-
	⦸ LGD 4/ (%)	32.97%	-	-	36.01%	-	-
Grade 5 - 8	EAD 1/ (Million Baht)	43,952	-	**43,952**	59,736	-	**59,736**
	⦸ PD 2/ (%)	0.64%	-	-	0.53%	-	-
	⦸ RW 3/ (%)	34.50%	-	-	34.47%	-	-
	⦸ LGD 4/ (%)	26.98%	-	-	25.97%	-	-
Grade 9 -12	EAD 1/ (Million Baht)	2,141	-	**2,141**	3,362	-	**3,362**
	⦸ PD 2/ (%)	15.62%	-	-	10.18%	-	-
	⦸ RW 3/ (%)	98.23%	-	-	133.90%	-	-
	⦸ LGD 4/ (%)	27.64%	-	-	31.83%	-	-
Grade 13 - 14 (Default)	EAD 1/ (Million Baht)	1,481	-	**1,481**	1,521	-	**1,521**
	⦸ PD 2/ (%)	100.00%	-	-	100.00%	-	-
	⦸ RW 3/ (%)	345.02%	-	-	512.20%	-	-
	⦸ LGD 4/ (%)	53.79%	-	-	54.26%	-	-

* A number of grades is an example. FIs shall disclose the number of grades as appropriate in order for users to recognise the difference of credit risk levels.

** Including purchased receivables

1/ Outstanding of on-balance sheet assets and off-balance sheet items after multiplying by CCF and after CRM

2/ ⦸ PD is the EAD-weighted average PD for each rating grade (For purchased receivables, FIs shall report only PD of default risk)

3/ ⦸ RW is the EAD-weighted average risk weights for each rating grade

4/ ⦸ LGD is the EAD-weighted average LGD for each rating grade (only for FIs that use the AIRB approac

Table 21: Part of Outstanding that is Secured by Collateral under the AIRB Approach Classified by Type of Asset and Collateral**

Unit: Million Baht

Type of asset	31-Dec-21			31-Dec-20		
	Eligible financial collateral [1]	Other collateral [2]	Guarantee and credit derivatives	Eligible financial collateral [1]	Other collateral [2]	Guarantee and credit derivatives
1. ***Non-defaulted assets***						
1.1 Claims on sovereigns, banks, and corporate	21,525	260	6,261	20,621	680	7,372
1.2 Claims on retail portfolios						
1.2.1 Residential mortgage exposures	-	-	-	-	-	-
1.2.2 Qualifying revolving retail exposures	-	-	-	-	-	-
1.2.3 Other claims on retail portfolios	-	-	-	-	-	-
1.3 Equity exposures	-	-	-	-	-	-
1.4 Other assets	-	-	-	-	-	-
2. ***Defaulted assets***	-	-	-	-	16	-
Total	**21,525**	**260**	**6,261**	**20,621**	**696**	**7,372**

** Values after netting of on-balance sheets and off-balance sheets

[1] Eligible financial collateral that the Bank of Thailand allows to use for risk mitigation

[2] Other collaterals that the Bank of Thailand allows to use for risk mitigation

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Table 22: Outstanding of On-Balance Sheet Assets and Off-Balance Sheet Items* after Credit Risk Mitigation for each Type of Assets Classified by Risk Weight under the SA Approach

Unit: Million Baht

31-Dec-21

Type of Asset	Rated outstanding					Unrated outstanding									
Risk Weight (%)	0	20	50	100	150	0	20	35	50	75	100	150	625	937.5	100/8.5%
Non-Default exposures															
1. Claims on sovereigns and central bank [1/]	545	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Claims on financial institutions and securities companies [2/]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Claims on corporate [3/]	-	-	-	3,423	-	-	-	-	-	-	1,350	-	-	-	-
4. Claims on retail portfolios	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Claims on residential mortgage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Other assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Risk Weight (%)			50	100	150					75	100				
Default exposures [4/]	-	-	-	744	-	-	-	-	-	0*	-	-	-	-	-
Deducted Items									Nil						

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Unit: Million Baht

31-Dec-20

Type of Asset	Rated outstanding					Unrated outstanding									
Risk Weight (%)	0	20	50	100	150	0	20	35	50	75	100	150	625	937.5	100/8.5%
Non-Default exposures															
1. Claims on sovereigns and central bank [1/]	756	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Claims on financial institutions and securities companies [2/]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Claims on corporate [3/]	-	-	-	3,115	-	-	-	-	-	-	1,979	-	-	-	-
4. Claims on retail portfolios	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Claims on residential mortgage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Other assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Risk Weight (%)			50	100	150					75	100				
Default exposures [4/]	-	-	-	-	-	-	-	-	-	0*	-	-	-	-	-
Deducted Items									Nil						

* After applying credit conversion factor

[1/] Including Claims on Multilateral development banks (MDBs), Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Sovereigns and Central Bank

[2/] Including Claims on Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Financial Institutions

[3/] Including Claims on Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Corporate

[4/] RW(%) of part of Outstanding that is not secured by CRM

Table 23: Part of Outstanding that is Secured by Collateral* under the SA Approach Classified by Type of Asset and Collateral

Unit: Million Baht

Type of asset	31-Dec-21		31-Dec-20	
	Eligible financial collateral [1/]	Guarantee and credit derivatives	Eligible financial collateral [1/]	Guarantee and credit derivatives
1. ***Non-defaulted assets***				
1.1 Claims on sovereigns and central banks [2/]	-	-	-	-
1.2 Claims on banks and securities companies [3/]	-	-	-	-
1.3 Claims on corporate [4/]	-	3,351	-	3,265
1.4 Claims on retail portfolios	-	-	-	-
1.5 Residential mortgage exposures	-	-	-	-
1.6 Other assets	-	-	-	-
2. ***Defaulted assets***	-	-	-	-
Total	**-**	**3,351**	**-**	**3,265**

* Values after netting of on-balance sheets and off-balance sheets

[1/] Eligible financial collateral that the Bank of Thailand allows to use for risk mitigation

[2/] Including Claims on Multilateral development banks (MDBs), Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Sovereigns and Central Bank

[3/] Including Claims on Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Financial Institutions

[4/] Including Claims on Provincial administrations, government entities and state enterprises (PSEs) using the same risk weight as Claims on Corporate

Regulatory Expected Loss versus Individual Impairment Charges

The table 24 and 25 below show actual loss and regulatory expected loss as at 31 December 2021 for the AIRB exposure classes. Regulatory expected loss is based on a through-the-cycle methodology using risk parameters and observations over a period of time. It is a conservative and appropriately prudent calculation underpinning regulatory capital requirements, but:

- does not take account of any benefit from management actions to reduce exposures to riskier customers, clients or segments as conditions deteriorate;
- does not take account of any diversification benefit; and
- is calculated in accordance with rules which enforce a certain level of conservatism.

The net individual impairment charge is a point in time actual charge raised in accordance with accounting standards that require the Bank to either provide for or write-off debts. The actual loss is higher than the expected loss due to provision set up for non-performing loans customers in 2021. It should be noted that the Expected Loss shown in table 25 was computed as of 31 December 2020 as per regulatory requirement. The actual loss is the provision balances on the balance sheet that are recognized where there is objective evidence of a loss or per regulatory requirement.

Table 24: Actual Losses under the AIRB Approach Classified by Type of Assets

Unit: Million Baht

Type of asset	Actual losses		Change
	31-Dec-21	31-Dec-20	
Claim on sovereign, banks and corporate	492	314	178
Equity exposures	-	-	-
Retail exposures	-	-	-
Total	**492**	**314**	**178**

Table 25: Estimates of Losses Comparing to Actual Losses

Unit: Million Baht

Type of asset	31-Dec-20	31-Dec-21	31-Dec-19	31-Dec-20
	Expected loss	Actual loss	Expected loss	Actual loss
Claim on sovereign, banks and corporate	421	492	190	314
Equity exposures		-	-	-
Retail exposures		-	-	-
Total	**421**	**492**	**190**	**314**

The Actual Loss of corporate exposures as of December 2021THB 492 million was increased from December 2020 amount of THB 178 million primarily represents the provision set up against stage 3 portfolio impacted by COVID19 pandemic

Table 26: Estimates of PD, LGD and EAD compare with actual

31-Dec-21

Asset Class	Predicted PD% (EAD Weighted)	Actual PD% (EAD Weighted)	Predicted LGD% (EAD Weighted)	Actual LGD %	Predicted EAD (Million Baht)	Actual EAD (Million Baht)
Claim on sovereign, banks and corporate	0.75%	-	51.33%	9.86%	N/A**	N/A**
Equity exposures	-	-	-	-	-	-
Retail exposures	-	-	-	-	-	-
Total	**0.75%**	**-**	**51.33%**	**9.86%**	N/A**	N/A**

** There is no data for Predicted EAD and Actual EAD due to no new impairments loan from Jan-Dec 2021

						31-Dec-20
Asset Class	Predicted PD% (EAD Weighted)	Actual PD% (EAD Weighted)	Predicted LGD% (EAD Weighted)	Actual LGD %	Predicted EAD (Million Baht)	Actual EAD (Million Baht)
Claim on sovereign, banks and corporate	0.65%	1.47%	69.94%	43.03%	1,103	1,521
Equity exposures	-	-	-	-	-	-
Retail exposures	-	-	-	-	-	-
Total	**0.65%**	**1.47%**	**69.94%**	**43.03%**	**1,103**	**1,521**

7. Traded Risk

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

7.1 Market risk

Market risk is the potential for loss of earnings or economic value due to adverse changes in financial market prices or rates. The Bank's exposure to market risk arises predominantly from providing clients access to financial markets, facilitation of which entails the Bank's taking moderate market risk positions. Market risk also arises in the non-trading book ("banking book") from the requirement to hold a large liquidity assets buffer of higher quality liquid debt securities. The objective of the Bank's market risk policies and processes is to achieve the optimal balance of risk and return while meeting customers' requirements.

The Bank undertakes transactions in the money market, foreign exchange markets and capital markets giving rise to market risk exposures. Other financial instruments undertaken include debt and other securities and certain financial derivative instruments. Derivative instruments are contracts whose characteristics and value are derived from underlying financial instruments, interest rates, exchange rates, or indices. They include futures, forwards, swaps, and options transactions in the foreign exchange and interest rate markets. Derivative contracts entered into by the Bank are primarily over-the-counter derivatives.

The Bank has established market risk management framework that covers limit setting, monitoring and reporting and control procedures, which are reviewed regularly by the relevant committees, Executive Risk Commitees and the Board. Market risk limits are proposed by the business within the terms of agreed policy. Risk officers and relevant committees review and approve the limits within delegated authorities, and monitor exposures against these limits. Risks are monitored against limits on a daily basis.

The primary categories of market risk for the Bank are:

- Interest rate risk: arising from changes in yield curves, credit spreads and implied volatilities on interest rate options;

- Currency exchange rate risk: arising from changes in exchange rates and implied volatilities on foreign exchange options; and

- Commodity price risk: arising from changes in commodity prices and commodity option implied volatilities; covering energy, precious metals, base metals and agricultural. For this category of market risk, the Bank is fully hedged through a back-to-back position.

The BOT specifies minimum capital requirements against market risk in the trading book. Interest rate risk in the non-trading book ("banking book") is covered separately under the Pillar 2 framework. The minimum regulatory market risk capital requirements for the trading book are presented below.

Table 27: Minimum Capital Requirement for each Type of Market Risk under the SA Approach

Unit: Million Baht

Type of Risk	31-Dec-21	30-Jun-21
Interest Rate Risk	1,599	1,989
Equity Position Risk	-	-
Foreign Exchange Rate Risk	108	256
Commodity Risk	-	-
Total Minimum Capital Requirements	**1,707**	**2,245**

The Bank is required to have THB 1,707 million total capital against Market Risk. Comparing with June 2021, the decrease of THB 538 million is mainly due to reduced of Interest Rate Risk category.

7.2 Counterparty Credit Risk

Counterparty credit risk ("CCR") is the risk that the Bank's counterparty in a foreign exchange, interest rate, commodity, equity or credit derivative or repo contract defaults prior to maturity date of the contract and thatthe Bank at the time has a claim on the counterparty. CCR arises predominantly in the trading book, but also arises in the non-trading book due to hedging of external funding. CCR is managed within the overall credit risk appetite for CIB.

The Bank seeks to negotiate Credit Support Annexes ("CSA") with counterparties on a case by case basis, where collateral is deemed a necessary or desirable mitigant to the exposure. The credit terms of the CSA are specific to each legal document and determined by the credit risk approval unit responsible for the counterparty. The nature of the collateral is specified in the legal document and is typically be cash or highly liquid securities.

The Bank further reduces its credit exposures to counterparties by entering into contractual netting agreements which result in a single amount owed by or to the counterparty through netting the sum of the positive (amounts owed by the counterparty) and negative (amounts

owed by the Bank) mark-to-market ("MTM") values of these transactions.
A daily operational process takes place to calculate the MTM on all trades captured under the CSA. Additional collateral will be called from the counterparty if total uncollateralised MTM exposure exceeds the threshold and minimum transfer amount specified in the CSA. Additional collateral may be required from the counterparty to provide an extra buffer to the daily variation margin process.

Wrong way risk

Wrong way risk occurs when an exposure increase is coupled with a decrease in the credit quality of the obligor. Specifically, as the MTM on a derivative or repo contract increases in favour of the Bank, the driver of this MTM change also reduces the ability of the counterparty to meet its payment, margin call or collateral posting requirements. The Bank employs various policies and procedures to ensure that wrong way risk exposures are recognised upfront and monitored.

Exposure value calculation

Exposure values for regulatory capital requirement purposes on over the counter traded products are calculated according to the CCR current exposure method. This is calculated as the sum of the current replacement cost and the potential future credit exposure.

The current replacement cost is the USD equivalent amount owed by the counterparty to the Bank for various financial derivative transactions. The potential future credit exposure is an add-on based on a percentage of the notional principal of each transaction according to tenor and underlying assets class of each trade. In the past, the exposures values were based on peak 97.5th percentile of the exposure distribution (PFE@97.5%). From 18 Oct 2020, the measurement has changed to be based on PFE@75% which is described as the Derivatives Loan Equivalent measure ('DLE'). The majority of SCB's counterparty portfolio have a peak of 75th percentile of exposure distribution which is reasonably close to the loan equivalent exposures. This measure allows for easier comparison of the risk arising from loans and derivatives. It also enables for the aggregation of counterparty across the trading and banking book.

8. Operational and Technology Risk

The Bank 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 Bank aims to control operational risks to ensure that operational losses (financial or reputational)do not cause material damage to the Bank.

Roles and responsibilities

The management of operational and technology risk is a challenge due to its broad scope as

operational and technology risks arise from all activities carried out within the Bank. To address this challenge, we map risks across the Bank at a process level with controls installed to mitigate these risks.

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

Risk and Control Self-Assessment (RCSA)

Non-financial risks are managed through RCSA which are used to determine the design strength and reliability of the Bank's processes. The RCSA provides a complete, accurate and forward-looking profile of the material risks the Bank is exposed to. Risk identification and assessment are dynamic and continuous; based on appropriate internal and external data inputs which may include: external and internal events, risk appetite metrics and risk indicator data, outputs of control assessment, emerging risks and relevant regulations as well as the process universe.

Identified material risks have key controls to maintain these risks within acceptable levels. Design of key controls are reassessed especially where things have changed.

A regular and robust process is in place for monitoring the effectiveness of key controls (through Key Control Indicators and Control Sample Testing), and exposure to material risks.

The RCSA aids identification of Elevated Residual Risks, followed by remediation actions.

Governance committee oversight

The Board oversees the effective management of operational and technology risk. At the executive level, the Executive Risk Committee (ERC) monitors the Bank's operational and technology risk appetite and oversee the Bank's operational and technology risk profile. The ERC has the authority to challenge, constrain and, if required, stop business activities where risks are not aligned with the Bank's operational and technology risk appetite. Business and function risk forums also provide oversight of their respective processes and related operational and technology risks.

Monitoring

To deliver services to clients and to participate in the financial services sector, the Bank runs processes which are exposed to operational and technology risks. The Bank 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 Bank is exposed to. The residual risk assessments and reporting of events form the Bank's operational and technology risk profile. The completeness of the operational and technology risk profile ensures appropriate prioritisation and timeliness of risk decisions, including risk acceptances with treatment plans for risks that exceed acceptable thresholds.

The Board is informed on adherence to operational and technology risk appetite through metrics

reported. These metrics are monitored, and escalation thresholds are devised based on the materiality and significance of the risk. These operational and technology risk appetite metrics are consolidated on a regular basis and reported at the Executive Risk Committee. This provides senior management with the relevant information to inform their risk decisions.

Stress testing

As part of our operational and technology risk management approach, we conduct stress testing under the Internal Capital Adequcy Assessment Process (ICAAP). This exercise determines operational and tehcnolgoy risk loss under the stress scenario to ensure that the Bank has adequate operational risk capital under stress.

9. Equity Exposure in the Non-Trading Book (Banking Book)

The holdings of non-trading book (banking book) equities are considered immaterial. At 31 December 2021, the Banks equity exposure in non-trading book (banking book) are as below:

Table 28: Equity Exposure in Non-Trading Book (Banking Book)

Unit: Million Baht

Equity exposure	31-Dec-21	31-Dec-20
1. Equity exposures		
1.1 Equity securities listed and publicly traded on a stock exchange (domestic and foreign securities)		
1.2. Other equity securities (domestic and foreign securities)	15	13
2. Gains (losses) from sales of equity securities during the period	-	2
3. Revaluation surplus (deficit) of investments in equity securities designated at fair value through other comprehensive income	(6)	(8)
4. Minimum capital requirements for equity exposures classified by the calculation methods		
- SA	1	1
- IRB	-	-
5. Equity exposures for the IRB reporting bank permitted by the Bank of Thailand to use the SA	-	-

10. Interest Rate Risk in the Non-trading Book (Banking Book)

Interest rate risk from the non-trading book (banking book) portfolios is transferred to Treasury Markets ("TM") desk for central management under the supervision of Asset and Liability Committees ("ALCO"). TM will manage the interest rate risk arising from Banking Book within approved financial instruments in order to manage the net interest rate risk, subject to approved Market Risk and Liquidity Risk limits.

From Fund Transfer Pricing ("FTP") for IRRBB perspective, the following risks are transferred to TM:

- Behaviouralised interest rate re-pricing risk
- Practically hedgeable basis risk.

Basis risk describes the impact of relative changes in the interest rates for financial instruments that have similar tenors but are priced using different interest rate indiced.

Interest rate risk can arise from the investment of rate-sensitive assets, as well as some tenor mismatches or gap risk between assets and liabilities. This risk is measured as the impact on net interest income ("NII") of an unexpected and instantaneous adverse parallel shift in rates and is monitored over a rolling one year time horizon.

The impact of Interest Rate Change on Net Interest Income as at 31 December 2021 is shown in below table.

Table 29: Impact of Interest Rate Change on Net Interest Income

Unit: Million Baht

Currency	Impact of a 1% interest rate change on Net Interest Income	
	31 Dec 21	**31 Dec 20**
THB	27	195
USD	(280)	(289)
EURO	-	-
OTHER	89	109
Total Impact on Net Interest Income	**(164)**	**15**
% of anticipated net interest income for the next one year	**(11.39)**	**1.27**

Impact of Interest Rate Change of 1% on Net Interest Income has decreased compared to 2020 mainly driven by higher funding from corporate deposits (THB and USD) which have tenor less than 1 month, offsetting higher Inter-bank placement and reverse repo which have short tenor less than 1 month.

11. Acronyms

AC	Approval Committee
AIRB	Advanced Internal Ratings Based
ALCO	Asset and Liability Management Committee
BOT	The Bank of Thailand
CCF	Credit Conversion Factor
CCIB	Corporate, Commercial & Institutional Banking
CCR	Counterparty Credit Risk
CEO	Chief Executive Officer
CMAC	Credit Model Assessment Committee
CNFRC	Country Non-Financial Risk Committee
CG	Credit Risk Grade
CIB	Corporate and Institutional Banking
CIC	Credit Issue Committee
COF	Cash Outflows
CRM	Credit Risk Mitigation
CCRO	Country Chief Risk Officer
CSA	Credit Support Annex
DLE	Derivatives Loan Equivalent
EAD	Exposure at Default
ECAI	External Credit Assessment Institutions
ECL	Expected Credit Loss
EL	Expected Loss
ERA	Enterprise Risk Analytics
ERC	Executive Risk Committee
ERMF	Enterprise Risk Management Framework
EXCO	Executive Committee
FTP	Fund Transfer Pricing
GMV	Group Model Validation
HQLA	High-Quality Liquid Asset
ICAAP	Internal Capital Adequacy Assessment Process
IPRE	Income –Producing Real Estate
IRB	Internal Ratings Based
IRRBB	Interest Rate Risk in the Banking Book
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
MAC	Model Assessment Committee
MDBs	Multilateral Development Banks
MRC	Model Risk Committee
MRPG	Model Risk Policy and Governance
MTM	Mark to Market
NII	Net Interest Income
O&T RTF	Operational and Tehcnology Risk Type Framework
PD	Probability of Default
PFE	Potential Future Exposure
PRT	Principal Risk Types
PSEs	Non-central government Public Sector Entities
RCSA	Risk and Control Self-Assessment
RTF	Risk Type Framework
RW	Risk Weight
RWA	Risk Weighted Assets

SA	Standardised Approach
SAG	Stressed Assets Group
SAR	Stressed Asset Risk
SCB Group	Standard Chartered Bank Group
SCBT	Standard Chartered Bank (Thai) PCL
SREP	Supervisory Review and Evaluation Process
TFRS7	Thai Financial Reporting Standard no.7
TFRS9	Thai Financial Reporting Standard no.9
TM	Treasury Markets
TRM	Traded Risk Management
TRTF	Traded Risk Type Framework