Bangkok Bank Public Company Limited

Basel III - Pillar 3 Disclosures

As at December 31, 2019

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Bangkok Bank

Introduction

Bangkok Bank ("the Bank") recognizes that effective risk management and good corporate governance are essential to the stability and sustainable credibility of the Bank and its subsidiaries in the Group ("the Group"). The Bank therefore places great emphasis on continually improving risk management processes and on having a sufficient level of capital to support business operations, at both the Bank level and the Group level.

The use of market discipline is deemed to be an important driver in the enhancement of the risk management system. Therefore disclosures of information regarding capital, risk exposures, risk assessment processes, and capital adequacy are provided at both the Bank level (Solo Basis) and the Group level (Full Consolidation Basis). The disclosures are in accordance with the disclosure requirements of the Bank of Thailand ("BOT").

The complete disclosure report of information regarding capital management in accordance with Basel III - Pillar 3 is provided, of which the quantitative information regarding capital structure, capital adequacy, market risk assessment and Liquidity Coverage Ratio (LCR) is disclosed semi-annually. As for the disclosure of qualitative information, it is updated annually or when there is a material change in the risk management policy. Disclosures will be made for information that the Bank considers to be of material nature. The Pillar 3 disclosure reports will be made available on the Bank's website under the section "Investor Relations" within four months after the end of relevant period.

Scope of Application

The disclosure report covers information at both the Bank level (Solo Basis) and the Group level (Full Consolidation Basis). There are 10 companies in the Group consisting of;

- Bangkok Bank Public Company Limited engaged in commercial banking (as the parent company)
- Bangkok Bank Berhad engaged in commercial banking
- Bangkok Bank (China) Company Limited engaged in commercial banking
- BBL Asset Management Company Limited engaged in fund management
- Bangkok Capital Asset Management Company Limited engaged in fund management
- Bualuang Securities Public Company Limited engaged in securities business
- Sinsuptawee Asset Management Company Limited engaged in asset management
- BBL Nominees (Tempatan) Sdn. Bhd engaged in supporting business
- BBL (Cayman) Limited engaged in finance business
- Bualuang Ventures Limited engaged in venture capital

The scope of consolidation for accounting and regulatory purposes has no difference (See Table 6).

1. Capital Structure and Capital Adequacy

1.1 Capital Structure

The Bank's capital structure according to the regulations on capital requirements under the principles of BOT's Basel III, is revised into Common Equity Tier 1 capital, Additional Tier 1 capital and Tier 2 capital.

- Common Equity Tier 1 capital comprises
  1) Paid-up share capital
  2) Premium (discount) on common share
  3) Legal reserves
  4) Reserves appropriated from net profit
  5) Retained earnings after appropriations
  6) Non-controlling interest classified as Common Equity Tier 1
  7) Other reserves
  8) Deductions such as intangible assets
- Additional Tier 1 capital consists of non-controlling interest classified as Tier 1 Capital.
- Tier 2 capital consists of
  1) Long-term subordinated debt instrument subordinated to depositors and general creditors
  2) General provisions for normal assets not exceeding 1.25 percent of credit risk- weighted assets
  3) Non-controlling interest classified as Tier 2

In adopting Basel III, BOT relaxes for subordinated debt instruments classified as Tier 2 of which the criteria do not meet qualifications under Basel III regarding capability for loss absorbency of the Bank at the point of non-viability i.e. no conversion feature to common shares or written off upon the authority's decision to make financial support to the Bank, BOT requires phasing out capital at 10 percent p.a. starting from 2013 to 2022.

Table 1: Capital Structure

Unit : Million Baht

Capital	The Group		The Bank	
	31 December 2019	**30 June 2019**	**31 December 2019**	**30 June 2019**
Common Equity Tier 1 Capital	**406,463**	**399,202**	**399,842**	**391,162**
Tier 1 Capital	**406,529**	**399,263**	**399,842**	**391,162**
Total Capital	**478,740**	**434,708**	**471,262**	**426,095**

1.2 Capital Adequacy

The objective of the Bank's and the Group's capital management policy is to maintain an adequate level of capital to support growth strategies within an acceptable risk framework, as well as to meet regulatory requirements and market expectations.

In compliance with the BOT's supervisory review process guidelines, the Bank's capital management process assesses the overall risk and capital adequacy under the Internal Capital Adequacy Assessment Process (ICAAP). The process covers projected assessments of all substantial risks to the Bank's operations, so that the Bank can effectively manage its risks and have a sound capital base for business operations under normal and stress scenarios. Therefore, the capital management process covers the Group level.

The Standardised Approach (SA) is used to measure credit risk, market risk, and operational risk for computing regulatory capital requirements under BOT's Basel III at both the Bank level and the Group level.

Under the principles of Basel III, the BOT requires that commercial banks registered in Thailand and their groups must maintain three minimum capital adequacy ratios: a Common Equity Tier 1 capital adequacy ratio of no less than 4.50 percent, a Tier 1 capital adequacy ratio of no less than 6.00 percent, and a total capital adequacy ratio of no less than 8.50 percent. The aforementioned minimum ratios have yet to include the Capital Conservation Buffer of more than 2.50 percent which came into effect on January 1, 2019. Moreover, the BOT requires the Bank, which is classified as a domestic systemically important bank (D-SIB), to have additional capital to meet the Higher Loss Absorbency (HLA) requirement by 1.00 percent, beginning with a 0.50 percent increase from January 1, 2019 followed by a 1.00 percent increase from January 1, 2020 onwards. Consequently, a Common Equity Tier 1 capital adequacy ratio of more than 7.50 percent, a Tier 1 capital adequacy ratio of more than 9.00 percent, and a total capital adequacy ratio of more than 11.50 percent are required to be maintained from January 1, 2019. And from January 1, 2020, Common Equity Tier 1 ratio, Tier 1 ratio and total capital ratio must be more than 8.00, 9.50 and 12.00 percent, respectively, of the total risk-weighted assets.

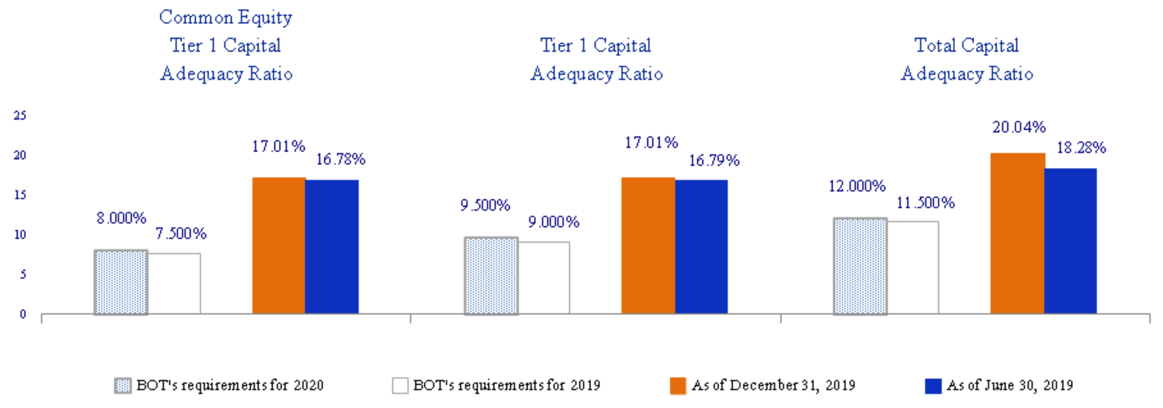
Moreover, BOT may require banks to maintain additional capital for Countercyclical Buffer at maximum 2.50 percent. As at December 31, 2019, the Bank and the Group has adequate capital for such buffers.

Table 2: Capital Adequacy

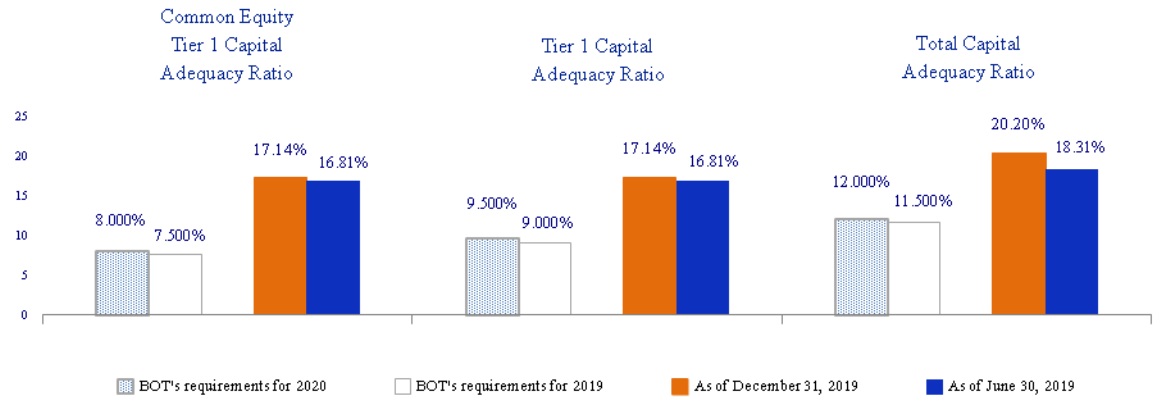
Capital	The Group		The Bank	
	31 December 2019	**30 June 2019**	**31 December 2019**	**30 June 2019**
Common Equity Tier 1 Capital	**17.01%**	**16.78%**	**17.14%**	**16.81%**
Tier 1 Capital	**17.01%**	**16.79%**	**17.14%**	**16.81%**
Total Capital	**20.04%**	**18.28%**	**20.20%**	**18.31%**

Capital Adequacy Ratio

Group Level (Full Consolidation Basis)



Bank Level (Solo Basis)



Remark: The BOT requires commercial banks to maintain an additional Capital Conservation Buffer more than 2.5 percent in January 1, 2019. And the BOT also requires commercial banks to have additional capital requirement for Higher Loss Absorbency (HLA) requirement by increasing the Common Equity Tier 1 ratio at 1 percent, beginning at 0.50 percent from January 1, 2019 and increasing to be 1.00 percent from January 1, 2020 onwards.

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Table 3: Component of Capital

Unit : Million Baht

Component of Capital	The Group		The Bank	
	31 December 2019	30 June 2019	31 December 2019	30 June 2019
Tier 1 Capital	**406,529**	**399,263**	**399,842**	**391,162**
Common Equity Tier 1 Capital	**406,463**	**399,202**	**399,842**	**391,162**
Paid-up share capital	19,088	19,088	19,088	19,088
Premiums on share capital	56,346	56,346	56,346	56,346
Legal reserves	24,000	23,500	24,000	23,500
Reserves appropriated from net profit	106,500	101,500	106,500	101,500
Net profit after appropriations	170,789	161,167	157,182	147,000
Other comprehensive income	33,678	41,917	39,600	46,956
Deductions from Common Equity Tier 1 Capital	(3,938)	(4,316)	(2,874)	(3,228)
Additional Tier 1 Capital	**66**	**61**	**-**	**-**
Non-controlling interest	66	61	-	-
Tier 2 Capital	**72,211**	**35,445**	**71,420**	**34,933**
[1]Subordinated debenture*	45,546	8,860	45,546	8,860
General provision	26,648	26,569	25,874	26,073
Non-controlling interest	17	16	-	-
Total Capital	**478,740**	**434,708**	**471,262**	**426,095**

***Component of capital subject to phasing in (out)**

Unit : Million Baht

As at December 31, 2019	The Group		The Bank	
	Classified As Capital	Outstanding Balance for Phasing In (Out)	Classified As Capital	Outstanding Balance for Phasing In (Out)
Phasing in (out) at 10 percent p.a. beginning 2013 - 2022				
[1]Subordinated debenture	45,546	(8,860)	45,546	(8,860)

***Component of capital subject to phasing in (out)**

Unit : Million Baht

As at 30 June 2019	The Group		The Bank	
	Classified As Capital	Outstanding Balance for Phasing In (Out)	Classified As Capital	Outstanding Balance for Phasing In (Out)
Phasing in (out) at 10 percent p.a. beginning 2013 - 2022				
[1]Subordinated debenture	8,860	(8,860)	8,860	(8,860)

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Table 4: Minimum Capital Requirements for Each Type of Risks

Unit : Million Baht

Type of Risks	The Group		The Bank	
	31 December 2019	30 June 2019	31 December 2019	30 June 2019
Minimum capital requirements for credit risk	**181,211**	**180,673**	**177,762**	**177,302**
Performing	178,917	178,140	175,481	174,785
- Sovereigns and central banks, Multilateral development banks (MDBs[1]), and Provincial organizations/ Government entities/ State enterprises (PSEs[2]) which have the same risk weight as Sovereigns	3,268	3,068	3,266	3,061
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	10,611	9,422	9,947	8,843
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	130,842	130,780	125,651	125,543
- Retail	11,868	12,049	11,795	11,964
- Residential mortgage loans	8,526	8,011	8,525	8,010
- Other assets	13,802	14,810	16,297	17,364
Non-Performing	2,294	2,533	2,281	2,517
Minimum capital requirements for market risk	**5,306**	**5,205**	**4,569**	**4,729**
- Interest Rate Risk	3,421	3,578	3,417	3,566
- Equity Price Risk	754	484	-	-
- Foreign Exchange Risk	1,131	1,143	1,152	1,163
- Commodity Price Risk	-	-	-	-
Minimum capital requirements for operational risk	**16,579**	**16,292**	**15,947**	**15,722**
Total minimum capital requirements	**203,096**	**202,170**	**198,278**	**197,753**

Remark

[1] Multilateral Development Banks

[2] Non-central Government Public Sector Entities

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Table 5: Main Features of Regulatory Capital Instruments

	Ordinary share	Subordinated debt 1	Subordinated debt 2
Issuer	Bangkok Bank Public Company Limited	Bangkok Bank Public Company Limited Hong Kong Branch	Bangkok Bank Public Company Limited Hong Kong Branch
ISIN Code	TH0001010006	USY0606WBQ25 (Reg S) US059895AH54 (144A)	USY0606WCA63 (Reg S) US059895AT92 (Rule 144A)
Regulatory treatment			
Instrument type	Common Equity Tier 1	Tier 2 capital	Tier 2 capital
Qualified Basel III	Qualified	Non-qualified	Qualified
Non-qualified Basel III features	N/A	No loss absorption features	N/A
Phased-out or full-amount	Full-amount	Phased-out at 10% p.a.	Full-amount (Phrased-out 20% p.a. after year 10)
Eligible at solo/group level	Group & solo	Group & solo	Group & solo
Amount recognized in regulatory capital (Net of phasing out) (Unit: THB Million)	19,088	9,535	36,686
Par value	10 Baht	1,000 U.S. Dollar	1,000 U.S. Dollar
Accounting classification	Shareholder's equity	Amortized-cost debt	Amortized-cost debt
Original date of issuance	Multiple	January 28, 1999	September 25, 2019
Perpetual or dated	Perpetual	Dated	Dated
Original maturity date	No maturity	March 15, 2029	September 25, 2034
Issuer's authority to call subject to prior supervisory approval	No	Issuer call subject to prior supervisory approval	Issuer call subject to prior supervisory approval
Optional call date, contingent call date and redemption amount	N/A	The Bank has the option to redeem the subordinated notes if there are changes in or amendments to the tax laws or regulations of Thailand and/or Hong Kong resulted that the Bank has additional amount to pay in respect to the withholding tax. The redemption amount of the notes shall be equal to total outstanding principal plus accrued interest.	The Bank has the option to redeem the subordinated notes at year 10, or upon certain Tax or Regulatory Events, subject to approval from the Bank of Thailand. The redemption amount of the notes shall be equal to total outstanding principal plus accrued interest subject to adjustment following the occurrence of a Non-Viability Event.
Subsequent call dates, if applicable	N/A	Any date after original date of issuance	N/A

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Table 5: Main Features of Regulatory Capital Instruments (Continued)

	Ordinary share	Subordinated debt 1	Subordinated debt 2
Coupons / dividends			
Fixed or floating dividend/coupon	Discretionary dividend amount	Fixed rate	Fixed rate
Coupon rate and any related index	Distributable profit that has been declared as dividend	9.025 % p.a.	3.733 % p.a.
Existence of a dividend stopper	No	No	No
Fully discretionary, partially discretionary or mandatory	Fully discretionary	Mandatory by BOT	Mandatory by BOT
Existence of step up or other incentive to redeem	No	No	No
Non-cumulative or cumulative	Non-cumulative	Non-cumulative	Non-cumulative
Convertible or non-convertible	Non-convertible	Non-convertible	Non-convertible
Write-down feature	No	No	Yes
Position in subordination hierarchy in liquidation	The ordinary shareholders shall of the return of capital in a winding-up at the last position.	The subordinated noteholders shall of the return of capital in a winding-up after preferred shareholders, depositors and general creditors.	The Subordinated Noteholders' rights to receive their debt payments in a winding-up rank behind depositors and all creditors in respect of debts/ liabilities which by their terms rank senior to the Subordinated Notes.

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Table 6: Reconciliation of Regulatory Capital and Financial Statement under Consolidated Supervision

The Group Capital

Unit : Million Baht

Item	31 December 2019 Amount	30 June 2019 Amount	References Based on Balance Sheet under the Consolidated Supervision
Tier 1 Capital			
Common Equity Tier 1 Capital			
Paid-up Common Shares after Deducting Treasury Shares	19,088	19,088	A
Premiums on Share Capital	56,346	56,346	B
Legal Reserves	24,000	23,500	C
Reserves Appropriated from Net Profit	106,500	101,500	D
Net Profit after Appropriation	170,789	161,167	E
Other Comprehensive Income			
Revaluation Surplus on Land Building and Condominium Appraisal	21,631	22,105	F
Revaluation Surplus (Deficit) of Available for Sale Equity and Debt Securities	28,135	34,253	G
Foreign Currency Translation Differences	(16,090)	(14,442)	H
Other Owner Changes Items	2	1	I
Total CET1 Capital before Regulatory Adjustments and Deduction	**410,401**	**403,518**	
Regulatory Adjustments on CET1	-	-	
Regulatory Deduction on CET1			
Intangible Assets (Software Computer License)	(1,760)	(1,880)	J
Deferred Tax Assets	(2,178)	(2,436)	K
Total Regulatory Deduction on CET1	**(3,938)**	**(4,316)**	
Total CET1	**406,463**	**399,202**	
Additional Tier 1 Capital			
Non-controlling Interest	66	61	L
Total Tier 1 Capital	**406,529**	**399,263**	
Tier 2 Capital			
Proceeds from Issuing Subordinated Debt Securities	45,546	8,860	M
General Provision	26,648	26,569	N
Non-controlling Interest	17	16	O
Total Tier 2 Capital	**72,211**	**35,445**	
Total Regulatory Capital	**478,740**	**434,708**	

Table 6: Reconciliation of Regulatory Capital and Financial Statement under Consolidated Supervision (Continued)

Balance Sheet under the Consolidated Supervision [1]

Unit : Million Baht

Items	31 December 2019 Amount	30 June 2019 Amount	References for the Group Capital Items
Assets			
Cash	58,090	55,151	
Interbank and Money Market Items, net	472,349	505,175	
Derivative Assets	49,807	48,046	
Investments, net	647,697	584,481	
Investments in Subsidiaries and Associates, net	1,737	1,727	
Loans to Customers and Accrued Interest Receivables, net			
Loans to Customers	2,061,835	2,017,901	
Accrued Interest Receivables	4,013	5,265	
Total Loans to Customers and Accrued Interest Receivables	**2,065,848**	**2,023,166**	
Less Deferred Revenue	(526)	(587)	
Less Allowance for Doubtful Accounts	(167,766)	(145,889)	
Qualified as Capital	(26,648)	(26,569)	N
Less Revaluation Allowance for Debt Restructuring	(6,510)	(6,733)	
Total Loans to Customers and Accrued Interest Receivables, net	**1,891,046**	**1,869,957**	
Customers' Liabilities under Acceptances	1,627	1,398	
Properties for Sale, net	9,363	10,341	
Premises and Equipment, net	40,754	41,810	
Other Intangible Assets, net	1,760	1,880	
Deduction from Capital	(1,760)	(1,880)	J
Deferred Tax Assets	4,542	4,244	
Deduction from Capital	(2,178)	(2,436)	K
Collateral Placed with Financial Counterparties	17,507	5,413	
Other Assets, net	20,464	16,486	
Total Assets	**3,216,743**	**3,146,109**	
Liabilities			
Deposits	2,370,792	2,352,679	
Interbank and Money Market Items	134,346	119,904	
Liabilities Payable on Demand	5,523	7,726	
Derivative Liabilities	37,837	32,655	
Debt Issued and Borrowings	144,681	111,103	
Debt Instruments that are Qualified as Capital	45,546	8,860	M
Bank's Liabilities under Acceptances	1,627	1,398	
Provisions	18,702	16,805	
Deferred Tax Liabilities	2,364	1,808	
Other Liabilities	72,755	78,531	
Total Liabilities	**2,788,627**	**2,722,609**	

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Table 6: Reconciliation of Regulatory Capital and Financial Statement under Consolidated Supervision (Continued)

Balance Sheet under the Consolidated Supervision[1]

Unit : Million Baht

Items	31 December 2019 Amount	30 June 2019 Amount	References for the Group Capital Items
Owner' Equity			
Share Capital			
Authorized Share Capital			
Preferred Shares	17	17	
Common Shares	39,983	39,983	
Issued and Paid-up Share Capital			
Common Shares	19,088	19,088	A
Premium on Common Shares	56,346	56,346	B
Other Comprehensive Income	34,472	42,716	
Qualified as Capital	33,678	41,917	F, G, H, I
Retained Earnings			
Appropriated			
Legal Reserve	24,000	23,500	C
Others	106,500	101,500	D
Unappropriated	187,345	180,011	
Qualified as Capital	170,789	161,167	E
Total Shareholders' Equity	427,751	423,161	
Non-controlling Interest	365	339	
Qualified as Tier 1 Capital	66	61	L
Qualified as Tier 2 Capital	17	16	O
Total Owner's Equity	**428,116**	**423,500**	
Total Liabilities and Owner's Equity	**3,216,743**	**3,146,109**	

Remark

[1] The scope of consolidation for accounting and regulatory purposes has no difference.

2. Information Related to the Risks

The effective risk management is fundamental to good banking practice of the Bank and the Group. Accordingly, the Bank has established guidelines for managing risk in each area of the business of the Bank and the Group to ensure that proper risk management mechanisms are in place. Over the past few years, the Bank proactively identified, monitored and analyzed major risk factors which could affect the financial operations of the Bank and the Group and, where necessary, has adjusted their organizational structure and risk management processes. This is to ensure that their risk management systems are effective and in line with international standards and are in accordance with the BOT guidelines.

The Risk Oversight Committee, the Board of Executive Directors and the senior management all play significant roles in prescribing and reviewing the sufficiency of the risk management policy and system. They also define the risk management strategy, and monitor and control the risk of the Bank and the Group to be at an appropriate level, in compliance with the risk management policy approved by the Board of Directors.

The risk management process of the Bank and the subsidiaries in the Group comprises the identification of significant risks which may potentially impact business operations, the assessment of each type of risk, the monitoring and control of risks to an appropriate level, and the reporting of the status for each type of risk to relevant parties so as to enable them to manage and/or handle the risks in a timely manner.

The key principle of risk management is based on each business unit being responsible for continuously managing its relevant risk exposures and ensuring each risk remains within the approved limits and is in compliance with the overall risk management policy approved by the Board of Directors, while the Risk Management Division is responsible for monitoring and controlling the overall risks on a regular basis. The Risk Management Division and all risk-generating units are audited by the Audit and Control Division to assess the effectiveness, adequacy and appropriateness of the internal control systems.

The approach used by the Bank and the subsidiaries in the Group for the management of credit risk, market risk and operational risk are as follows:

2.1 Credit Risk

Credit Risk is the risk that arises from the inability of borrowers or counterparties to perform their obligations under contractual agreements in relation to lending, investment and other contractual activities, for example the borrowers' failure to repay principal and/or interest as agreed in the contract.

2.1.1 Credit Risk Management

The Bank has established credit underwriting processes which include the formulation of the credit policy, credit risk ratings for customers, and the establishment of different levels of delegation of authority for credit approval, depending upon the type of business and/or the size of the credit line. In considering, the approval of loans in general, the Bank considers the purpose of the loan and assesses the repayment ability of the applicant, taking into account the applicant's operating cash flows, business feasibility, management capability, and collateral coverage. The Bank performs credit reviews which include reviewing credit risk rating on a regular basis. In order to effectively monitor and manage its credit risks, the Bank has, therefore, set up the following divisions.

- Risk Management Division is responsible for analyzing and reporting to management on the status of various risks of the Bank, as well as proposing recommendations for the review of the overall risk policy of the Bank in anticipation of, and in compliance with, new rules, regulations and international standards. The division is also responsible for overseeing the management of each type of risk to comply with the Bank's risk management policy.

- Credit Management Division is responsible for managing risks related to credit extension by supervising and monitoring credit extensions in accordance with the Bank's credit policies. The Credit Management Division comprises the Credit Policy unit, the Credit Acceptance unit, the Portfolio Management unit, the Risk Asset Review unit, the Special Asset Management unit, the Loan Recovery and Legal unit, and the Bank Property unit. The functions of each unit are summarized below
  - Credit Policy unit oversees the credit policy framework and coordinates the improvement and adjustment of the credit policy. It is also responsible for disseminating the credit policy, credit standards and credit processes; for monitoring and overseeing exceptional cases which are inconsistent with the credit policy; and for gathering various inputs which may be used for improving the credit policy.
  - Credit Acceptance oversees the quality of credit extensions to ensure they are in line with the credit policy and credit underwriting standards, reviews the appropriateness of loan structures as well as the results of customers' credit risk ratings, promotes the development of a good credit culture, and maintains a systematic and reliable credit extension process.
  - Portfolio Management unit is responsible for analyzing and making recommendations for adjustments to the portfolio structure, recommending the appropriate portfolio composition and the provision of reserves for loan losses at the portfolio level, developing and overseeing credit risk management tools and methodologies, constructing credit databases, and overseeing related management standards.
  - Risk Asset Review unit is charged with reviewing credit quality and credit management processes, assessing the adequacy of loan loss reserves, and evaluating compliance with credit policy, regulations and credit underwriting standards.
  - Special Asset Management unit is responsible for managing non-performing loans, and for determining and executing strategies for the resolution and restructuring of troubled loans.
  - Loan Recovery and Legal unit is responsible for taking legal actions, negotiating loan settlements, and seizing collateral for sale by public auction.
  - Bank Property unit is responsible for managing and selling foreclosed assets obtained from loan recovery processes and from legal actions.

For the credit process, credit applications are first considered by the business units and then submitted to the Credit Acceptance unit. The unit conducts additional analysis to help mitigate credit risk by ensuring that the proposals comply with the Bank's credit policies in areas such as credit underwriting standards, credit risk rating, and collateral appraisal. In handling non-performing loans, there is a specific unit to manage and resolve such loans. The Bank also has an independent unit to review credit quality and credit management processes; assess the adequacy of loan loss reserves for non-performing loans; evaluate the effectiveness in complying with credit policy, regulations and credit underwriting standards; and assess the appropriateness of portfolio composition, the adequacy of capital and the effectiveness of stress testing as specified by the Bank and the BOT. All the above units report on a regular basis to the senior management, the Board of Executive Directors and the Risk Oversight Committee.

The Bank has established different measures to control credit risk. For example, the Bank has instituted limits on the amount of total credit extended, contingent liabilities, and investment in a group of borrowers, an industry and a country. All of this will limit the loss of capital due to an economic downturn. Moreover, the Bank monitors and reports on these aspects to the senior management, the Board of Executive Directors and the Risk Oversight Committee to ensure that there will be adequate capital to safeguard the continuity of business operations in difficult times.

For the subsidiaries in the Group, credit risk management processes similar to that of the Bank have been established, but the organizational structure of the units that are responsible for the supervision and management of credit risk may vary according to the structure of each company.

2.1.2 Classification and Impairment of Assets

The Bank and each subsidiary in the Group follow the guidelines of the BOT and/or the relevant local regulators regarding the classification of assets and relevant provisions. Assets are classified as normal, special mention, substandard, doubtful, doubtful of loss and loss by taking into consideration the length of time in default of payment whether of principal or interest, and also qualitative measures.

Under the Standardised Approach (SA) for measuring capital adequacy, the Bank and the subsidiaries in the Group's provisions are differentiated into Specific Provision and General Provision as follows:

- Specific Provisions include provisions that have been set aside for non-performing loans based on the difference between the book value of such loans and the present value of estimated future cash flows to be received, either from the debtors or from disposal of collateral; and provisions that have been set aside for performing loans in accordance with the minimum guidelines specified by the BOT and/or the relevant regulators. For loans with similar credit risk characteristics, the Collective Approach may be adopted using historical loss information and current observable data to determine the provisioning level. Furthermore, specific provisions include provisions for any off-balance sheet items where a loss may be realized upon settlement of obligations on behalf of such debtors; provisions for other on-balance sheet assets where objective evidence of impairment exists and the impairment loss can be estimated; and unrealized loss on revaluation of securities categorized as trading and available-for-sale. Specific provisions do not include provisions for assets classified as normal which have already been included in Tier 2 capital.
- General Provisions include provisions that have been set aside in excess of the minimum regulatory requirements for potential loss due to changes in economic and legal environment and other factors as outlined above which are not earmarked specifically for any particular debtor; and provisions that have been set aside for assets classified as normal that are included in Tier 2 capital.

The following tables present the quantitative information related to credit risk at the Bank and the Group level as at December 31, 2019 and 2018.

Table 7: Significant on-statement of financial position assets and off-statement of financial position items before credit risk mitigation classified by remaining maturity

Unit: Million Baht

Remaining maturity	The Group 31 December 2019								
	On-statement of financial position assets					Off-statement of financial position items before multiplying by credit conversion factors			
	Net loans and accrued interest receivables*	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Up to 1 year	1,004,659	191,545	201,826	11,845	1,409,875	37,724	814,774	12,877	865,375
Over 1 year	1,185,249	354,953	-	37,962	1,578,164	19,503	1,319,021	81,187	1,419,711
Total	**2,189,908**	**546,498**	**201,826**	**49,807**	**2,988,039**	**57,227**	**2,133,795**	**94,064**	**2,285,086**

* Including interbank and money market items but excluding general provisions

Unit: Million Baht

Remaining maturity	The Group 31 December 2018								
	On-statement of financial position assets					Off-statement of financial position items before multiplying by credit conversion factors			
	Net loans and accrued interest receivables*	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Up to 1 year	1,048,272	142,750	191,265	10,381	1,392,668	50,957	1,179,865	12,811	1,243,633
Over 1 year	1,175,150	303,467	-	18,269	1,496,886	22,901	1,174,283	60,524	1,257,708
Total	**2,223,422**	**446,217**	**191,265**	**28,650**	**2,889,554**	**73,858**	**2,354,148**	**73,335**	**2,501,341**

* Including interbank and money market items but excluding general provisions

Unit: Million Baht

Remaining maturity	The Bank								
	31 December 2019								
	On-statement of financial position assets					Off-statement of financial position items before multiplying by credit conversion factors			
	Net loans and accrued interest receivables*	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Up to 1 year	966,932	169,760	173,844	11,725	1,322,261	33,069	791,304	15,892	840,265
Over 1 year	1,164,423	347,479	-	37,962	1,549,864	14,625	1,319,020	81,187	1,414,832
Total	**2,131,355**	**517,239**	**173,844**	**49,687**	**2,872,125**	**47,694**	**2,110,324**	**97,079**	**2,255,097**

* Including interbank and money market items but excluding general provisions

Unit: Million Baht

Remaining maturity	The Bank								
	31 December 2018								
	On-statement of financial position assets					Off-statement of financial position items before multiplying by credit conversion factors			
	Net loans and accrued interest receivables*	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Up to 1 year	1,001,114	123,957	154,339	10,066	1,289,476	44,978	1,149,969	16,056	1,211,003
Over 1 year	1,155,504	297,874	649	18,268	1,472,295	15,833	1,174,283	60,524	1,250,640
Total	**2,156,618**	**421,831**	**154,988**	**28,334**	**2,761,771**	**60,811**	**2,324,252**	**76,580**	**2,461,643**

* Including interbank and money market items but excluding general provisions

Table 8: Significant on-statement of financial position assets and off-statement of financial position items before credit risk mitigation classified by customer's country of residence

Unit: Million Baht

Customer's country of residence [1]	The Group 31 December 2019 On-statement of financial position assets					Off-statement of financial position items before multiplying by credit conversion factors			
	Net loans and accrued interest receivables[2]	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Thailand	1,718,399	421,257	37,131	42,237	2,219,024	33,712	1,583,498	53,872	1,671,082
Asia	420,852	118,549	137,113	6,172	682,686	23,253	382,236	29,721	435,210
Europe	22,084	933	5,825	1,345	30,187	105	155,548	129	155,782
America	13,114	1,283	20,753	37	35,187	157	9,897	9,657	19,711
Others	15,459	4,476	1,004	16	20,955	-	2,616	685	3,301
Total	**2,189,908**	**546,498**	**201,826**	**49,807**	**2,988,039**	**57,227**	**2,133,795**	**94,064**	**2,285,086**

[1] Based on customer's country of residence

[2] Including interbank and money market items but excluding general provisions

Unit: Million Baht

Customer's country of residence [1]	The Group 31 December 2018 On-statement of financial position assets					Off-statement of financial position items before multiplying by credit conversion factors			
	Net loans and accrued interest receivables[2]	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Thailand	1,726,134	352,341	26,535	23,036	2,128,046	43,625	1,826,770	47,954	1,918,349
Asia	444,898	89,084	132,120	2,073	668,175	29,936	215,600	14,501	260,037
Europe	23,899	390	11,265	3,331	38,885	151	289,347	91	289,589
America	14,928	3,673	21,263	130	39,994	146	10,570	9,621	20,337
Others	13,563	729	82	80	14,454	-	11,861	1,168	13,029
Total	**2,223,422**	**446,217**	**191,265**	**28,650**	**2,889,554**	**73,858**	**2,354,148**	**73,335**	**2,501,341**

[1] Based on customer's country of residence

[2] Including interbank and money market items but excluding general provisions

Bangkok Bank

Unit: Million Baht

Customer's country of residence[1]	The Bank 31 December 2019 On-statement of financial position assets: Net loans and accrued interest receivables[2]	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Off-statement of financial position items before multiplying by credit conversion factors: Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Thailand	1,714,871	408,410	30,117	42,230	2,195,628	33,712	1,573,555	53,872	1,661,139
Asia	365,827	102,137	116,292	6,059	590,315	13,720	368,821	32,736	415,277
Europe	22,084	933	5,819	1,345	30,181	105	155,548	129	155,782
America	13,114	1,283	20,621	37	35,055	157	9,897	9,657	19,711
Others	15,459	4,476	995	16	20,946	-	2,503	685	3,188
Total	**2,131,355**	**517,239**	**173,844**	**49,687**	**2,872,125**	**47,694**	**2,110,324**	**97,079**	**2,255,097**

[1] Based on customer's country of residence

[2] Including interbank and money market items but excluding general provisions

Unit: Million Baht

Customer's country of residence[1]	The Bank 31 December 2018 On-statement of financial position assets: Net loans and accrued interest receivables[2]	Net investment in debt securities	Deposits (including accrued interest receivables)	Derivatives assets	Total	Off-statement of financial position items before multiplying by credit conversion factors: Avals, loan guarantees, letters of credit	OTC derivatives	Undrawn committed lines	Total
Thailand	1,726,708	338,090	19,508	27,533	2,111,839	43,625	1,816,354	47,954	1,907,933
Asia	377,519	78,950	103,021	509	559,999	16,890	196,118	17,746	230,754
Europe	23,899	390	11,250	243	35,782	150	289,348	91	289,589
America	14,928	3,673	21,138	50	39,789	146	10,571	9,621	20,338
Others	13,564	728	71	(1)	14,362	-	11,861	1,168	13,029
Total	**2,156,618**	**421,831**	**154,988**	**28,334**	**2,761,771**	**60,811**	**2,324,252**	**76,580**	**2,461,643**

[1] Based on customer's country of residence

[2] Including interbank and money market items but excluding general provisions

Table 9: Loans and accrued interest receivables (including interbank and money market items) and investment in debt securities before credit risk mitigation classified by customer's country of residence and by asset classification guidelines specified by regulators

Unit: Million Baht

	The Group						
	31 December 2019						
Customer's country of residence*	Loans and accrued interest receivables						Investment in debt securities: Doubtful of Loss
	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total	
Thailand	1,718,902	51,307	8,162	12,853	48,631	1,839,855	32
Asia	421,843	15,285	64	1,050	6,228	444,470	48
Europe	21,637	1,146	-	4	23	22,810	-
America	11,978	12	1,554	612	5	14,161	60
Others	15,790	2	3	3	14	15,812	26
Total	**2,190,150**	**67,752**	**9,783**	**14,522**	**54,901**	**2,337,108**	**166**

* Based on customer's country of residence

Unit: Million Baht

	The Group						
	31 December 2018						
Customer's country of residence*	Loans and accrued interest receivables						Investment in debt securities: Doubtful of Loss
	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total	
Thailand	1,723,671	41,891	5,436	17,262	49,787	1,838,047	1,085
Asia	446,578	4,767	16	3,620	3,822	458,803	198
Europe	24,182	4	4	-	53	24,243	-
America	15,103	13	-	-	167	15,283	180
Others	13,895	-	4	2	8	13,909	3
Total	**2,223,429**	**46,675**	**5,460**	**20,884**	**53,837**	**2,350,285**	**1,466**

* Based on customer's country of residence

Unit: Million Baht

Customer's country of residence*	The Bank						
	31 December 2019						
	Loans and accrued interest receivables						Investment in debt securities: Doubtful of Loss
	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total	
Thailand	1,715,373	51,307	8,162	12,759	48,631	1,836,232	32
Asia	366,578	14,845	64	582	5,734	387,803	48
Europe	21,637	1,146	-	4	23	22,810	-
America	11,978	12	1,554	612	5	14,161	60
Others	15,790	2	3	3	14	15,812	26
Total	**2,131,356**	**67,312**	**9,783**	**13,960**	**54,407**	**2,276,818**	**166**

* Based on customer's country of residence

Unit: Million Baht

Customer's country of residence*	The Bank						
	31 December 2018						
	Loans and accrued interest receivables						Investment in debt securities: Doubtful of Loss
	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total	
Thailand	1,724,278	41,891	5,436	17,167	49,787	1,838,559	1,085
Asia	378,721	4,561	8	3,593	3,093	389,976	193
Europe	24,182	4	5	-	53	24,244	-
America	15,103	13	-	-	167	15,283	180
Others	13,895	1	4	2	8	13,910	3
Total	**2,156,179**	**46,470**	**5,453**	**20,762**	**53,108**	**2,281,972**	**1,461**

* Based on customer's country of residence

Table 10 : General and specific provisions and bad debt written off for loans and accrued interest receivables (including interbank and money market items) and investment in debt securities classified by customer's country of residence

Unit: Million Baht

	The Group			
	31 December 2019			
Customer's country of residence*	Loans and accrued interest receivables			Investment in debt securities: Specific provision
	General provision	Specific provision	Bad debt written off	
Thailand		121,456	10,730	3,076
Asia		23,618	388	48
Europe		726	-	-
America		1,047	14	96
Others		353	-	26
Total	**28,339**	**147,200**	**11,132**	**3,246**

* Based on customer's country of residence

Unit: Million Baht

	The Group			
	31 December 2018			
Customer's country of residence*	Loans and accrued interest receivables			Investment in debt securities: Specific provision
	General provision	Specific provision	Bad debt written off	
Thailand		111,913	7,197	3,111
Asia		13,905	561	202
Europe		344	-	-
America		355	-	218
Others		346	-	3
Total	**28,206**	**126,863**	**7,758**	**3,534**

* Based on customer's country of residence

Unit: Million Baht

Customer's country of residence*	The Bank 31 December 2019 Loans and accrued interest receivables General provision	Specific provision	Bad debt written off	Investment in debt securities: Specific provision
Thailand		121,361	10,730	3,076
Asia		21,976	315	48
Europe		726	-	-
America		1,047	14	96
Others		353	-	26
Total	**25,893**	**145,463**	**11,059**	**3,246**

* Based on customer's country of residence

Unit: Million Baht

Customer's country of residence*	The Bank 31 December 2018 Loans and accrued interest receivables General provision	Specific provision	Bad debt written off	Investment in debt securities: Specific provision
Thailand		111,851	7,197	3,111
Asia		12,457	64	195
Europe		345	-	-
America		355	-	218
Others		346	-	3
Total	**25,833**	**125,354**	**7,261**	**3,527**

* Based on customer's country of residence

Table 11: Loans and accrued interest receivables (including interbank and money market items) before credit risk mitigation, classified by business type and by asset classification guidelines specified by regulators

Unit: Million Baht

	The Group					
	31 December 2019					
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	58,885	2,054	208	93	395	61,635
Manufacturing and commercial	677,955	30,799	2,494	8,372	37,571	757,191
Real estate and construction	187,172	7,128	2,089	1,257	3,662	201,308
Utilities and services	442,355	20,821	2,818	625	4,336	470,955
Housing loans	238,302	2,630	1,890	3,039	5,755	251,616
Others	585,481	4,320	284	1,136	3,182	594,403
Total	**2,190,150**	**67,752**	**9,783**	**14,522**	**54,901**	**2,337,108**

Unit: Million Baht

	The Group					
	31 December 2018					
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	50,176	714	288	178	266	51,622
Manufacturing and commercial	745,114	21,406	1,943	12,626	40,232	821,321
Real estate and construction	189,597	6,498	1,034	1,422	4,872	203,423
Utilities and services	439,372	12,597	184	1,301	3,688	457,142
Housing loans	230,448	2,416	1,825	1,703	4,266	240,658
Others	568,722	3,044	186	3,654	513	576,119
Total	**2,223,429**	**46,675**	**5,460**	**20,884**	**53,837**	**2,350,285**

Unit: Million Baht

	The Bank					
	31 December 2019					
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	56,785	2,001	208	93	395	59,482
Manufacturing and commercial	652,254	30,587	2,494	7,904	37,099	730,338
Real estate and construction	179,082	7,107	2,089	1,257	3,652	193,187
Utilities and services	432,890	20,822	2,818	625	4,336	461,491
Housing loans	238,296	2,629	1,890	3,039	5,744	251,598
Others	572,049	4,166	284	1,042	3,181	580,722
Total	**2,131,356**	**67,312**	**9,783**	**13,960**	**54,407**	**2,276,818**

Unit: Million Baht

	The Bank					
	31 December 2018					
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	47,918	714	288	178	266	49,364
Manufacturing and commercial	713,900	21,406	1,938	12,600	39,524	789,368
Real estate and construction	181,613	6,499	1,034	1,422	4,861	195,429
Utilities and services	430,363	12,595	184	1,301	3,688	448,131
Housing loans	230,440	2,415	1,823	1,702	4,257	240,637
Others	551,945	2,841	186	3,559	512	559,043
Total	**2,156,179**	**46,470**	**5,453**	**20,762**	**53,108**	**2,281,972**

Table 12: General and specific provisions and bad debt written off for loans and accrued interest receivables (including interbank and money market items) classified by business type

Unit: Million Baht

	The Group					
	31 December 2019			31 December 2018		
Type of Business	General provision	Specific provision	Bad debt written off	General provision	Specific provision	Bad debt written off
Agriculture and mining		3,085	122		2,182	45
Manufacturing and commercial		80,792	7,374		75,354	6,370
Real estate and construction		14,312	1,549		10,419	504
Utilities and services		30,563	700		19,809	260
Housing loans		6,854	795		8,221	25
Others		11,594	592		10,878	554
Total	**28,339**	**147,200**	**11,132**	**28,206**	**126,863**	**7,758**

Unit: Million Baht

	The Bank					
	31 December 2019			31 December 2018		
Type of Business	General provision	Specific provision	Bad debt written off	General provision	Specific provision	Bad debt written off
Agriculture and mining		3,041	122		2,144	45
Manufacturing and commercial		79,607	7,301		74,433	5,874
Real estate and construction		14,192	1,549		10,307	503
Utilities and services		30,446	700		19,699	260
Housing loans		6,848	795		8,215	25
Others		11,329	592		10,556	554
Total	**25,893**	**145,463**	**11,059**	**25,833**	**125,354**	**7,261**

Bangkok Bank

Table 13: Reconciliation of general and specific provisions for loans and accrued interest receivables (including interbank and money market items)

Unit: Million Baht

Item	The Group					
	31 December 2019			31 December 2018		
	General provision	Specific provision	Total	General provision	Specific provision	Total
Beginning balance	28,206	126,863	155,069	27,436	113,453	140,889
Bad debt written off	-	(11,132)	(11,132)	-	(7,758)	(7,758)
Doubtful accounts	133	33,667	33,800	770	21,771	22,541
Others	-	(2,198)	(2,198)	-	(603)	(603)
Ending balance	**28,339**	**147,200**	**175,539**	**28,206**	**126,863**	**155,069**

Unit: Million Baht

Item	The Bank					
	31 December 2019			31 December 2018		
	General provision	Specific provision	Total	General provision	Specific provision	Total
Beginning balance	25,833	125,354	151,187	25,631	111,539	137,170
Bad debt written off	-	(11,059)	(11,059)	-	(7,261)	(7,261)
Doubtful accounts	60	33,085	33,145	202	21,542	21,744
Others	-	(1,917)	(1,917)	-	(466)	(466)
Ending balance	**25,893**	**145,463**	**171,356**	**25,833**	**125,354**	**151,187**

Bangkok Bank

Table 14: On-statement of financial position assets and credit equivalent amount of off-statement of financial position items, net of specific provisions, classified by asset type under SA approach

Unit: Million Baht

Type of Asset	The Group					
	31 December 2019			31 December 2018		
	On-statement of financial position assets	Off-statement of financial position items*	Total	On-statement of financial position assets	Off-statement of financial position items*	Total
Performing						
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	676,660	54,033	730,693	575,725	93,083	668,808
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	242,515	57,686	300,201	187,179	49,042	236,221
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	1,502,623	255,909	1,758,532	1,529,584	261,022	1,790,606
- Retail	214,060	10,044	224,104	230,925	10,311	241,236
- Residential mortgage loans	236,784	-	236,784	225,892	-	225,892
- Other assets	278,413	-	278,413	273,756	-	273,756
Non-performing	28,423	352	28,775	26,448	394	26,842
Total	**3,179,478**	**378,024**	**3,557,502**	**3,049,509**	**413,852**	**3,463,361**

* Including repo-style transactions

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Unit: Million Baht

Type of Asset	The Bank					
	31 December 2019			31 December 2018		
	On-statement of financial position assets	Off-statement of financial position items *	Total	On-statement of financial position assets	Off-statement of financial position items*	Total
Performing						
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	642,010	54,033	696,043	543,688	93,083	636,771
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	220,648	58,173	278,821	162,760	49,341	212,101
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	1,446,413	243,680	1,690,093	1,461,991	245,351	1,707,342
- Retail	210,300	9,958	220,258	227,402	10,241	237,643
- Residential mortgage loans	236,775	-	236,775	225,881	-	225,881
- Other assets	304,095	-	304,095	293,444	-	293,444
Non-performing	28,258	352	28,610	26,208	394	26,602
Total	**3,088,499**	**366,196**	**3,454,695**	**2,941,374**	**398,410**	**3,339,784**

* Including repo-style transactions

2.1.3 Credit Rating

In assigning risk weights for the calculation of risk weighted assets (RWA) using the Standardised Approach (SA) under Basel III, the Bank and the subsidiaries in the Group use credit ratings from the external credit assessment institutions (ECAIs) who meet the qualifications specified by the BOT. The credit rating from Standard & Poor's is applied for sovereign and financial institutions, while the credit ratings from Fitch Ratings (Thailand) and TRIS Rating are applied for corporate. The process of mapping the ECAI's ratings with the borrower risk weights is prescribed by the BOT.

Table 15: On-statement of financial position assets and credit equivalent amount of off-statement of financial position items, net of specific provisions, after credit risk mitigation for each asset type classified by risk weights under SA approach

Unit: Million Baht

Type of Asset	The Group														
	31 December 2019														
	Rating					No rating									
Risk weight (%)	0	20	50	100	150	0	20	35	50	75	100	250	625	937.5	100/8.5%
Performing															
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	730,946	78	32,940	4,573	11,591										
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	-	91,906	136,051	36,209	378						1,651				
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	-	118,937	70,972	45,678	39,187	98			9,283		1,370,949				
- Retail										179,761	4,803				
- Residential mortgage loans								194,444		40,359	1,977				
- Other assets						115,710	1,140				160,080	820			1

Risk weight (%)	0	20	50	75	100	150
Non-performing	613	-	5,101	626	19,167	3,205

Items deducted from capital	3,938

Unit: Million Baht

Type of Asset	The Group														
	31 December 2018														
	Rating					No rating									
Risk weight (%)	0	20	50	100	150	0	20	35	50	75	100	250	625	937.5	100/8.5%
Performing															
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	638,826	397	21,862	3,299	12,284										
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	-	100,751	87,733	24,489	252						2,066				
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	-	125,222	71,344	40,218	37,861	121			5,306		1,402,205				
- Retail										192,604	8,621				
- Residential mortgage loans								192,491		31,020	2,369				
- Other assets						97,885	1,898				171,236	749			1

Risk weight (%)	0	20	50	75	100	150
Non-performing	614	-	3,524	419	19,504	2,751

Items deducted from capital	3,772

Unit: Million Baht

Type of Asset	The Bank – 31 December 2019														
	Rating					No rating									
Risk weight (%)	0	20	50	100	150	0	20	35	50	75	100	250	625	937.5	100/8.5%
Performing															
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	696,379	-	32,940	4,573	11,591										
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	-	82,295	124,282	36,209	378						1,651				
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	-	118,937	70,972	45,678	39,187				9,283		1,309,871				
- Retail										179,220	4,344				
- Residential mortgage loans								194,444		40,351	1,977				
- Other assets						111,798	1,107				190,988	201			1

Risk weight (%)	0	20	50	75	100	150
Non-performing	613	-	5,101	621	19,007	3,205

Items deducted from capital	2,875

Unit: Million Baht

Type of Asset	The Bank 31 December 2018														
	Rating					No rating									
Risk weight (%)	**0**	**20**	**50**	**100**	**150**	**0**	**20**	**35**	**50**	**75**	**100**	**250**	**625**	**937.5**	**100/8.5%**
Performing															
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	607,190	-	21,862	3,299	12,284										
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	-	83,220	81,028	24,489	252						2,066				
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	-	125,222	71,344	40,218	37,861				5,306		1,328,094				
- Retail										191,934	7,987				
- Residential mortgage loans								192,491		31,010	2,369				
- Other assets						93,285	1,858				198,100	201			1

Risk weight (%)	**0**	**20**	**50**	**75**	**100**	**150**
Non-performing	614	-	3,524	413	19,269	2,751
Items deducted from capital	2,751					

2.1.4 Credit Risk Mitigation

It is a policy of the Bank and the subsidiaries in the Group to mitigate credit risk through the use of collateral to reduce the potential loss which may arise when borrowers are unable or unwilling to repay loans. Documentation relating to collateral must be in order and verified for validity prior to loan drawdown and ongoing compliance with the conditions of the collateral agreement shall be monitored. Processes, procedures and regulations for collateral valuation have been defined, consistent with the BOT's guidelines on collateral valuation and foreclosed assets obtained from debt repayment of financial institutions.

Credit risk mitigations used in the Bank's and the Group's capital adequacy calculation under Basel III - SA approach are as follows:

1. For financial collaterals such as cash, deposits, debt securities and equity securities, the Comprehensive Approach is currently adopted for credit risk mitigation and the Standard Supervisory Haircut specified by the BOT is used.
2. On-balance sheet netting is used for repo-style transactions where the counterparties enter into a Global Master Repurchase Agreement that complies with the BOT guidelines.
3. Guarantees that may be used as credit risk mitigants must be issued by qualified guarantors from either of the following 2 groups:
    - Guarantors which are sovereigns, central banks, provincial organizations, government entities, state enterprises, financial institutions and securities companies, provided that the guarantors must have risk weights lower than the borrower.
    - Corporate guarantors must have risk weights lower than the borrower.

Credit risk mitigation is applied in accordance with the BOT guidelines.

Table 16: Secured portion of credit exposures after on- and off-balance sheet netting for each asset type under SA approach classified by credit risk mitigation types

Unit: Million Baht

	The Group			
	31 December 2019		31 December 2018	
Type of Asset	**Financial collateral**	**Guarantees and credit derivatives**	**Financial collateral**	**Guarantees and credit derivatives**
Performing				
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	18,545	2,910	45,006	-
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial institutions	4,731	47,720	4,709	32,661
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	83,123	35,679	89,460	43,032
- Retail	21,140	18,400	22,235	17,776
- Residential mortgage loans	4	-	12	-
- Other assets	662	-	1,987	-
Non-performing	63	619	30	622
Total	**128,268**	**105,328**	**163,439**	**94,091**

Unit: Million Baht

Type of Asset	The Bank			
	31 December 2019		31 December 2018	
	Financial collateral	Guarantees and credit derivatives	Financial collateral	Guarantees and credit derivatives
Performing				
- Sovereigns and central banks, Multilateral development banks (MDBs), and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Sovereigns	18,545	2,910	45,006	-
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial institutions	4,731	47,720	4,708	32,661
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	75,855	35,684	80,539	42,921
- Retail	18,293	18,400	19,946	17,776
- Residential mortgage loans	4	-	12	-
- Other assets	-	-	-	-
Non-performing	63	619	30	622
Total	**117,491**	**105,333**	**150,241**	**93,980**

2.2 Market Risk

Market risk is the risk of loss in on- and off-balance sheet positions of the Bank and the Group arising from movements in market prices such as interest rates, equity prices, foreign exchange rates, and commodity prices.

2.2.1 Market Risk Management

The Bank's market risk arises from financial services activities provided to customers and/or financial institutions. These involve buying and selling foreign exchange and debt securities, as well as financial derivative transactions, such as foreign exchange forward contracts, cross currency swap, interest rate swap and foreign exchange options. The Bank manages market risk arising from the position from customer-driven transactions to be at acceptable levels by hedging or reducing the risk exposure. Market risk exposures also arise from the Bank's mismatched own asset and liability positions.

The primary objective of market risk management is to manage the risks resulting from changes in market factors to be at acceptable levels and in line with the overall risk management policy. The Bank and the subsidiaries in the Group have therefore established market risk management policies and specified market risk measurement metrics and limits taking into consideration the nature and complexities of the respective financial activities.

The committee and functional units that are mainly responsible for managing, monitoring and controlling the market risk are:

- The Asset-Liability Management Committee is responsible for establishing and reviewing policies and guidelines for asset and liability management and market risk management as well as monitoring and controlling these risks to be at acceptable levels and in compliance with the risk management policy set by the Risk Oversight Committee and the Board of Directors.
- The Treasury Division is responsible for executing the trading strategy for the Bank through buying and selling financial products such as foreign exchange, bonds, and derivatives instruments, as well as managing the Bank's foreign exchange risk, interest rate risk and liquidity risk to be within the limits according to ALCO's guidelines and the Bank's acceptable risk level.
- Market Risk unit, which is part of the Risk Management Division, is accountable for assessing, monitoring, reporting and controlling market risk positions against specified limits. The Market Risk unit reports to ALCO and senior management on a regular basis and is responsible for proposing the enhancement of the market risk policies, measurement metrics and limits in response to change in operating environment, the Bank's business plans, and the complexities of financial activities. Moreover, the Market Risk unit coordinates with the subsidiaries of the Group to ensure that their risk management policies and processes are in line with the Bank's practices.

The market risk management practices of the subsidiaries in the Group are similar to the Bank's practices, although the relevant units responsible for overseeing, monitoring and managing the risks may differ depending on each company's organizational structure.

2.2.2 Traded Market Risk

The main traded market risks for the Bank and the Group are interest rate risk and foreign exchange risk.

Risk Assessment and Monitoring for Traded Market Risk

Various tools and measurement techniques are used to assess market risk exposures in the trading book, including:

1. Value-at-Risk (VaR)

VaR is a statistical technique that estimates the maximum potential losses on risk exposures as a result of movements in market rates and prices over a specified time horizon and at a given level of confidence. The Bank uses a historical simulation approach at a 99% confidence level over a one-day holding period to measure interest rate risk (only for general market risk) and foreign exchange risk. Historical Simulation VaR estimates the maximum potential losses assuming plausible future scenarios from the observed historical market movements. To validate the accuracy of the VaR model, the Bank conducts back testing against hypothetical profit and loss of the trading book positions and analyses whether the number of exceptions, i.e. the incidents where hypothetical profit and loss exceed the calculated VaR, are within an acceptable range. Hypothetical profit and loss is calculated by assuming that the previous day's exposures remain unchanged.

2. Other measurements

Apart from the statistical measurement technique, the Bank also uses non-statistical measurements, such as Present Value of a Basis Point (PV01), portfolio size, and mark-to-market profit and loss, to regularly assess major market risk exposures in the trading book as deemed appropriate for each transaction type. The PV01 measures the sensitivity of the value of securities to one basis point change in interest rate.

3. Stress Testing

The Bank performs market risk stress testing on its trading book position at least on a quarterly basis to determine if the impact of potential losses from extreme market movements or crisis situations on the Bank's capital are within the risk tolerance limits. Stress testing also enhances the Bank's understanding of its risk exposures and vulnerability as well as facilitates proactive risk management.

Risk Control for Traded Market Risk

Traded market risk is controlled primarily through a series of limits, such as VaR Limit, PV01 Limit, and Maximum Loss Limit, etc. These limits are specified by ALCO, and approved by the Risk Oversight Committee, the Board of Executive Directors and the Board of Directors. They are reviewed and updated at least once a year or more frequently when warranted by a material change in circumstances.

By using the historical simulation approach, in 2019 the minimum, maximum and average VaR of the Bank's trading book for a one-day holding period, with a 99 percent confidence level, was Baht 87 million, Baht 144 million and Baht 109 million, respectively.

The subsidiaries in the Group also use, to varying degrees based on the size and complexity of transactions, similar measurement tools and techniques to assess their market risk exposures in the trading book and have specified limits to control these exposures.

Capital Treatment for Traded Market Risk

The Bank currently adopts the Standardised Approach (SA) for the calculation of minimum capital requirement for market risk at both the Bank level and the Group level. In addition, the Bank and the subsidiaries in the Group use VaR models internally to measure, monitor and control traded market risks, as mentioned above in the risk assessment and monitoring section.

Minimum capital requirement for market risk at the Bank and the Group level as at December 31, 2019 and June 30, 2019 are as follows:

Table 17: Minimum capital requirements for market risk based on Standardised Approach (SA)

Unit: Million Baht

	The Group		The Bank	
Capital requirements for market risk	**31 December 2019**	**30 June 2019**	**31 December 2019**	**30 June 2019**
Interest Rate Risk	3,421	3,578	3,417	3,566
Equity Price Risk	754	484	-	-
Foreign Exchange Risk	1,131	1,143	1,152	1,163
Commodity Price Risk	-	-	-	-
Total Capital Requirement	**5,306**	**5,205**	**4,569**	**4,729**

2.2.3 Interest Rate Risk in the Banking Book (IRRBB)

Interest rate risk in the banking book normally arises when the repricing and/or maturity schedule of assets, liabilities, and off-balance sheet positions are not matched, or when the movements of reference interest rates on assets and liabilities are not correlated, negatively affecting net interest income (NII) and/or economic value of equity (EVE).

Sources of Interest Rate Risk can be classified as follows:

- Repricing risk arises from timing differences in maturity (for fixed rate items) and repricing period (for floating rate items) of the Bank's assets, liabilities, and off-balance sheet positions. Repricing risk is the primary form of interest rate risk.
- Yield curve risk arises from changes in the shape and slope of yield curves arising from unparallel shifts of the yield curves, including yield curve twist.
- Basis risk arises from imperfect correlation of reference interest rates applicable to the Bank's assets, liabilities and off-balance sheet positions.
- Embedded option risk arises from changes in interest rate, causing uncertainty of cash flows due to the options embedded in assets, liabilities and off-balance sheet positions, such as non-maturity deposits and loans without prepayment penalty.

Risk Assessment and Monitoring for IRRBB

The measurement of interest rate risk in the banking book provides an assessment of the potential impact of interest rate change on NII, which will help the Bank and the subsidiaries in the Group to manage the risk and determine alternative balance sheet strategies to achieve business return targets. Furthermore, it also provides an assessment of the potential impact on EVE reflecting the sensitivity of the value of assets, liabilities and off-balance sheet positions to changes in interest rates.

The Bank employs both static analysis tools and dynamic simulation techniques to assess interest rate risk in the banking book, including:

1. Repricing Gap Analysis and Sensitivity Analysis

Repricing gap analysis is a traditional method widely used to assess the interest rate risk of current balance sheet positions. It captures repricing risk which is a primary form of interest rate risk, but does not capture yield curve risk, basis risk and embedded option risk.

The Bank uses repricing gap analysis to assess NII impact in the year ahead assuming assets, liabilities and off-balance sheet positions are static and interest rates change immediately across the curves. Repricing gap analysis is also used in conjunction with duration-based weights to estimate the potential impact of interest rate change on EVE.

The Bank assesses and monitors interest rate risk in the banking book through NII impact and EVE impact on a monthly basis.

2. Net Interest Income Simulation (NII Simulation)

NII simulation is a more granular and complex technique than repricing gap analysis. The Bank also uses NII simulation to measure interest rate risk because this technique allows for a projection of future NII under various interest rate scenarios, based on current positions of assets, liabilities, and off-balance sheet items, and assumptions regarding new business activities (dynamic position). This includes assumptions regarding the growth in the positions of balance sheet items, maturity profile of new transactions, product pricing, and the launch of new products. NII simulation is able to capture other types of interest rate risks i.e. yield curve risk, basis risk, and embedded option risk.

The Bank uses NII simulation technique to assess interest rate risk and project future NII from the business plan at least once a year.

3. Stress Testing

The Bank performs stress testing for interest rate risk in the banking book at least on a quarterly basis using static NII simulation on the current position, to assess the potential negative impact to NII under various stress scenarios. The results of stress testing are analyzed and used to determine alternative balance sheet strategies more suited to the business environment in order to achieve the business return target under an acceptable level of risk.

The NII impact for the Bank and the Group of a 100 bps interest rate change using NII Simulation as at December 31, 2019 and 2018 are as follows:

Table 18: Net Interest Income Impact if interest rate rises by 100 bps

Unit: Million Baht

	The Group			
Currency	**31 December 2019**		**31 December 2018**	
	NII Impact	% Earning at Risk	NII Impact	% Earning at Risk
THB	(123)	(0.17%)	(305)	(0.43%)
USD	1,802	2.54%	1,563	2.19%
EUR	27	0.04%	276	0.39%
Others	494	0.69%	577	0.81%
Total NII Impact	**2,200**	**3.10%**	**2,111**	**2.96%**
Estimated NII in next 12 months	**71,071**		**71,376**	

Unit: Million Baht

	The Bank			
Currency	**31 December 2019**		**31 December 2018**	
	NII Impact	% Earning at Risk	NII Impact	% Earning at Risk
THB	(148)	(0.22%)	(335)	(0.49%)
USD	1,741	2.55%	1,503	2.19%
EUR	27	0.04%	276	0.40%
Others	221	0.32%	390	0.57%
Total NII Impact	**1,841**	**2.70%**	**1,834**	**2.68%**
Estimated NII in next 12 months	**68,255**		**68,530**	

Risk Control for IRRBB

The Bank monitors and controls interest rate risk by specifying a NII Impact Limit (being the cumulative NII impact within 1 year) and an EVE Impact Limit, assuming interest rates change immediately by 100 bps. These limits are reviewed by ALCO and approved by the Board of Executive Directors, the Risk Oversight Committee and the Board of Directors at least annually or more frequently when warranted by material changes in circumstances.

The Bank manages the interest rate risk by adjusting its asset and liability structure in line with forecast interest rate trends, taking into consideration the changes in NII impact and EVE impact. The Bank may deploy plain vanilla derivatives, such as interest rate swaps and cross currency interest rate swaps, to hedge or mitigate interest rate risk to be within the risk tolerance limit, and manage the risk in accordance with ALCO's guidelines.

The subsidiaries in the Group with significant interest rate risks in the banking book use repricing gap analysis to assess and control IRRBB in the similar fashion as mentioned above.

2.2.4 Equity Exposure in the Banking Book

Equity price risk is the risk associated with equity price changes resulting in the deterioration of investment value and affecting the Bank's and the Group's capital.

Objectives of equity investment in the banking book are as follows

- To enhance income in terms of dividends and capital gains for medium to long-term investments
- To support core banking business by establishing good relationships with customers and creating networks of strategic investment partners
- To exchange for debt repayments from debt restructuring agreements

The Bank's equity price risk arises from various types of investments in both domestic and overseas markets in order to diversify risk, to enhance returns, and to support the development of the Thai capital market, such as investments in property funds and infrastructure funds. In the past year, the Bank's portfolio of equity investment grew considerably, mainly from investment in domestic and foreign listed companies.

The Bank and the subsidiaries in the Group classify equity investments in the banking book in accordance with the applicable accounting standards, with marketable securities classified as available-for-sale investment, non-marketable securities classified as general investment, investment in subsidiaries and investment in associated companies.

Risk Assessment and Monitoring for Equity Exposure in the Banking Book

The market risk management policy is used as a guideline by the Bank and the subsidiaries in the Group in assessing, monitoring, and controlling equity price risk. Measurement techniques for the assessment of equity price risk can be categorized by equity type as follows:

- Listed equity securities: Fair value is used for risk assessment. Stress testing is performed on a quarterly basis, based on the stress scenarios implied from historical movements of the security exchange indices, to estimate the maximum potential losses that may occur during volatile market conditions.
- Other equity securities: Fair value is used for risk assessment, the reliability of which is reviewed at least annually or more frequently as warranted by market conditions.

In managing equity risk in the banking book, the Bank, as the parent company, controls the ratio of equity exposures to total capital to be in accordance with the BOT's regulation and the Bank's internal guidelines.

Valuation Policy for Equity Exposure in the Banking Book

In establishing the fair value of equity securities, the Bank and the subsidiaries in the Group adopts the following valuation policy:

- Listed equity securities are fair valued by referencing the last bid price on the last business day of the period. If this is not available, the last closing price will be applied. Listed equity securities under rehabilitation are fair valued using the discounted cash flow approach or the net asset value approach, as appropriate.
- Other equity securities that are non-listed equity securities are fair valued using the discounted cash flow approach or the net asset value approach, as appropriate. For unit trusts, the fair value is based on net asset value (NAV) as at the end of the period.

Equity exposure in the banking book for the Bank and the Group as at December 31, 2019 and 2018 are as follows:

Table 19: Equity exposures in the banking book

Unit: Million Baht

	The Group		The Bank	
Equity exposures	**31 December 2019**	**31 December 2018**	**31 December 2019**	**31 December 2018**
Equity exposures *				
• Equity securities listed on a securities exchange (domestic and foreign)				
- Cost value	32,503	39,133	32,503	39,133
- Market value	57,359	71,671	57,359	71,671
• Other equity securities (both in domestic and foreign)	40,372	37,921	74,285	69,502
Gains (losses) on sales of equity securities for the year	19,531	10,461	18,869	6,802
Unrealized gains (losses) on revaluation from available-for-sale equity securities	27,327	34,975	27,284	34,881
Minimum capital for equity exposures under SA approach	8,388	9,417	11,188	12,024

* Net of the impairment charges for the investment in equity securities

2.3 Liquidity Coverage Ratio (LCR)

According to the Basel III guideline, the Bank is subject to the Liquidity Coverage Ratio (LCR) requirement imposed by the BOT. This guideline aims to ensure that a bank has adequate liquidity to support short-term severe liquidity stress scenarios by requiring a bank to maintain High-Quality Liquid Assets (HQLA) to cover total Net Cash Outflows over the next 30 calendar days under severe liquidity stress scenarios (Net COF). The BOT requires commercial banks to maintain LCR at the end of each month not less than 60%, starting from January 1, 2016. The LCR requirement is to increase by 10% yearly until it reaches 100% on January 1, 2020. The LCR calculation is as follow.

$$\text{LCR} = \frac{\text{Stock of High-Quality Liquid Assets}}{\begin{array}{c}\text{Total Net Cash Outflows over the next 30 days estimated}\\ \text{under severe liquidity stress scenarios}\end{array}}$$

HQLA is unencumbered high-quality liquid asset that can be easily and immediately converted into cash at little or no loss of value even under severe liquidity stress scenarios. All high-quality liquid assets must also meet the minimum standard as stipulated by the BOT. When calculating the amount of HQLA, the value of all qualified assets must be combined and deducted by the haircut value as specified by the BOT. The caps of each class of HQLA must be considered.

Net COF is calculated by deducting the total expected cash inflow from the total expected cash outflow within the period of 30 days during the severe liquidity stress scenario. The total expected cash inflow cannot exceed 75% of the total expected cash outflow and cannot include those assets that are already qualified as HQLA. In calculating expected cash inflow and outflow, the Bank estimates the flows by applying the inflow rates and the run-off rates specified by the BOT.

The Bank's quarterly LCR which is an average of month-end value in each quarter is shown below.

Table 20: Liquidity Coverage Ratio

Unit: Million Baht

Items	Average Value for the fourth quarter[2]	
	Year 2019	**Year 2018**
Total High-Quality Liquid Assets	800,007	687,826
Total expected net cash outflows within the next 30 days	255,041	239,104
LCR[1]	314%	288%
Minimum LCR required by the Bank of Thailand	90%	80%

Note

[1] The LCR is computed as an average ratio of month-end LCR in the quarter. This may not be equal to an LCR computed with the average values of HQLA and Net COF.

[2] Average of month-end value in the quarter.

The Bank's average LCR for the third quarter and the fourth quarter of 2019 in comparison with those of 2018 are shown below.

Table 21: Comparison of Liquidity Coverage Ratio

Average LCR	Year 2019	Year 2018
The third quarter	322%	259%
The fourth quarter	314%	288%

For the fourth quarter of 2019, the Bank's average LCR was 314 percent, well above the regulatory minimum requirement of 90 percent.

The Bank's average HQLA was 800,007 million Baht for the fourth quarter of 2019. Of this amount, 90 percent was Level 1 HQLA, which included cash and qualifying debt securities issued or guaranteed by governments, central banks and state enterprises. The remaining was Level 2 HQLA, which were mainly qualifying corporate debt securities rated at least A or equivalent and promissory notes issued by Thailand's Ministry of Finance.

The Bank's average Net COF was 255,041 million Baht for the fourth quarter of 2019. The expected net cash outflows of the Bank were mainly driven by deposits and borrowings from retails and corporates, as well as contingent bond bought. The main drivers of the Bank's inflows were fully-performing loans, interbank placement and contingent bond sold.

The Bank assesses, monitors and controls liquidity risk through a variety of measurements, along with the LCR, such as loan-to-deposit ratio, cumulative net cash flow positions, funding concentration and Net Stable Funding Ratio. The Bank also regularly monitors the early warning indicators to detect any potential liquidity crisis. This is to ensure that the Bank has sufficient liquidity for business operation as usual and can proactively manage liquidity risk.

2.4 Operational Risk

Operational Risk is the risk of loss from inadequate or failed internal processes, people and systems, or from external events. This includes legal risks, but does not include strategic risks and reputational risks.

The Bank understands that good operational risk management is vital to sustainable business success, particularly in the current environment of uncertainty, both domestic and international, prevail. Thus, effective operational risk management with sufficient coverage of all aspects of operations is a key priority for the Bank and the Group, and includes being well-prepared to deal promptly with unexpected events, including the compliance with regulations in Thailand and overseas which has become more demanding.

Furthermore, the Bank pays close attention to quality of customer service and customer care, suitability of products and services sold, reinforcement in system security, information systems, and all electronic/digital channels as well as risk management of fraud related to bank products and services such as credit cards, ATM cards and electronic services to ensure customer confidence. In relation to a new product launches, the product and service risks must be well analyzed, assessed and controlled to be at the acceptable level, and the appropriate risk control procedures must be in place.

Operational Risk Management

The process by which the Bank and the subsidiaries in the Group addresses operational risk management covers defining, assessing, monitoring, mitigating and controlling risk. Each unit in the organization is directly responsible for managing its operational risk and for establishing measures to mitigate, monitor and control risk to the designated level by allocating appropriate resources and establishing an organizational culture for managing operational risk.

The Bank has The Operational Risk Management Committee ("ORMC"), comprising senior executives from various business and support units, which is responsible for supporting and overseeing the functioning of the Bank's operational risk management and business continuity management to comply with the Bank's policy.

The Bank has a dedicated unit for operational risk management under its Risk Management Division, which is responsible for the operational risk management system,such as monitoring and supporting every unit in implementing the operational risk management framework at the unit level, managing operational risk at the organization level, reviewing operational risk management in the process of product and service development, calculating the capital required for operational risk under the Basel framework, and maintaining and analyzing data on the operational risk loss data system.

The Bank also ensures the cooperation among Operational Risk Unit, Compliance and Audit and Control Division, in respect of information sharing, analyzing and setting of controls to enhance the efficiency of operational risk management and internal control of the Bank

Likewise, the subsidiaries in the Group have assigned the responsibility for operational risk management at both the unit and the organization level, in line with the Bank's practices, although the relevant units responsible for overseeing, monitoring, and managing operational risk may differ depending on each company's organizational structure.

Operational Risk Assessment and Monitoring

A key principle underlying the Bank and the subsidiaries' operational risk management is to educate staff throughout the organizationby providing them with a consistent understanding of operational risk, and to cultivate a sustainable operational risk culture as part of day-to-day business activities across the Bank, through Operational Risk Management Tools, e.g. Risk Control Self-assessment (RCSA), so that they are able to accurately and completely identify the operational risks, assess the risk, analyze details of the risks, assess the effectiveness of controls, find appropriate solutions to mitigate risks, and implement the selected solutions to minimize risks. This is followed by systematic monitoring of progress, measurement of potential risk, e.g., Risk Monitoring Information (RMI) and Loss Data collection, and the use of reporting systems as key elements of compiling and analyzing preventive and control measurements, and/or effectively diminishing operational risk, as well as regular reviews of the entire process.

Loss data arising from operational risk events for the Bank and the subsidiaries in the Group are maintained in a database. Reports on operational risk exposures and operational risk management are provided on a regular basis.

Operational Risk Mitigation

An important mechanism in controlling, preventing, and mitigating operational risk is an effective internal control system with strong participation of management. Each business unit must enforce operational controls vigorously, ensure compliance with regulations including anti-money laundering measures, implement the segregation of duties and procedures for verification and reconciliation, define approval authorities as well as establish limits commensurate with the scale of the business, the business type and level of staff. The reliability of the information technology system and the security measures related thereto is also of paramount importance.

The Bank and the subsidiaries in the Group have implemented Business Continuity Management (BCM) to enhance their resilience and their capability of responding to unexpected interruptions. The Group has adopted a BCM Policy and a Business Continuity Plans, which are reviewed and updated in accordance with potential threats, as well as being tested on a regular basis.

The Calculation of Value Equivalent to Operational Risk-weighted Asset

The Bank currently uses the Standardised Approach - Operation Risk (SA-OR) to calculate the value equivalent to operational risk-weighted asset at both the Bank level and the Group level. This calculation approach allocates the gross income into business lines and multiplies with a Beta value each business line as prescribed by the BOT.

2.5 Information Technology Risk

Information Technology (IT) Risk is the potential risk from using technology which will have an impact on the system or operation, and the risk from cyber threats.

Key IT risk factors of the Bank are composed of internal factors and external factors. Internal factors are the Bank's systems, in terms of their capability, their complexity and the adoption of technology for the Bank's business operations; the issue of system and data security; the accuracy and completeness of data processing; the development of, and changes in, technologies; and the adequacy of the Bank's personnel regarding IT risk awareness and understanding, including malicious and inadvertent insiders. External factors are more diversified, rapid and complex forms of IT risk and Cyber threat. Moreover, current risks from changes in the business-chain environment that rely on technology and data security management in operating businesses become factors for creating business opportunity as well as risk due to the business landscape transforming in the era of digitalization.

The Bank is aware of the risks arising from the use of IT and the importance of information security and cyber security. The Bank has developed an IT Risk Management Policy and updated the Information Security Policy to cover cyber security. Moreover, the Bank has enhanced the readiness of its IT governance and IT risk management throughout the Bank by putting in place a framework for the following areas: Strengthening cyber security to meet the most up-to-date standards; Assessing cyber risk and making appropriate adjustments to the assessment framework according to each situation; Regularly building awareness and understanding of cyber security with its staff and customers; Developing contingency plans to rapidly and effectively handle different forms of cyber risk to reduce its impact; and Collaborating with external organizations to further strengthen the Bank's readiness to both effectively prevent and handle cyber risk.