



Bangkok Bank Public Company Limited

Basel III - Pillar 3 Disclosures

As at December 31, 2016

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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) 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, and market risk assessment 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 “About Bangkok Bank/ 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 new items by allowing to phase in the addition into or deduction from the capital at 20 percent p.a. starting from 2014 to 2018. As 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 2016	30 June 2016	31 December 2016	30 June 2016
Common Equity Tier 1 Capital	360,702	350,707	347,373	338,086
Tier 1 Capital	360,818	350,817	347,373	338,086
Total Capital	403,068	393,040	388,788	379,742

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 assessments of all substantial risks to the Bank's operations under projected normal and stressed scenarios, so that the Bank can effectively manage its risks while ascertaining and ensuring that it has a sound capital base in line with its risk profile. Therefore, the Bank will expand the capital management process to the Group.

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. However, the aforementioned minimum ratio has yet to include the Capital Conservation Buffer which BOT sets out to phasing in additional capital ratio of more than 0.625 percent p.a. beginning 2016 until completion of the increment to more than 2.50 percent in 2019. Consequently, Common Equity Tier1 capital adequacy ratio of more than 5.125 percent, Tier 1 capital adequacy ratio of more than 6.625 percent, and Total capital adequacy ratio of more than 9.125 percent must be maintained within 2016. Effective from 2019, Common Equity Tier 1 ratio, Tier 1 ratio and Total capital ratio must be of more than 7.00, 8.50 and 11.00 percent of the total risk-weighted assets respectively.

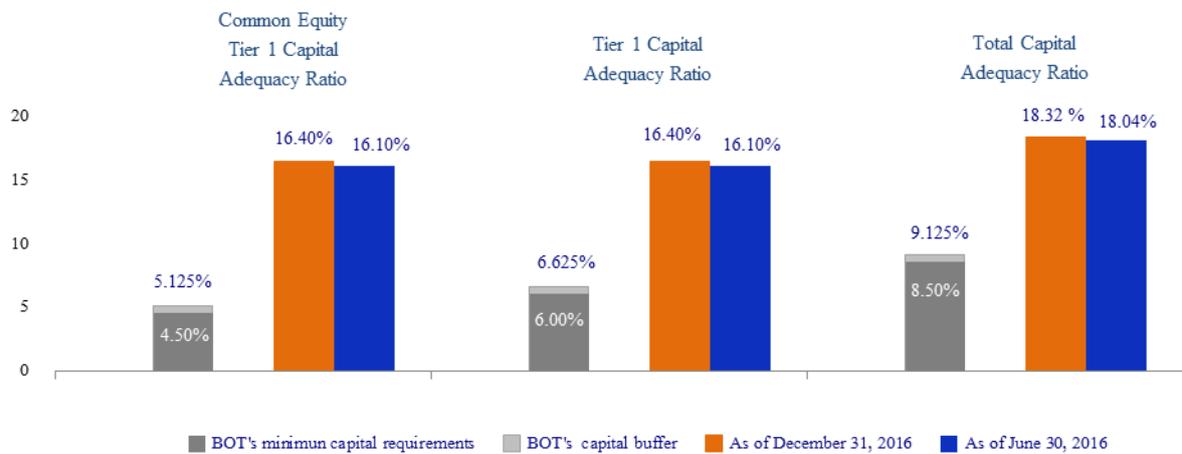
Moreover, BOT may require banks to maintain additional capital for Countercyclical Buffer at maximum 2.50 percent. As at December 31, 2016, the Bank and the Group has adequate capital for such buffers.

Table 2: Capital Adequacy

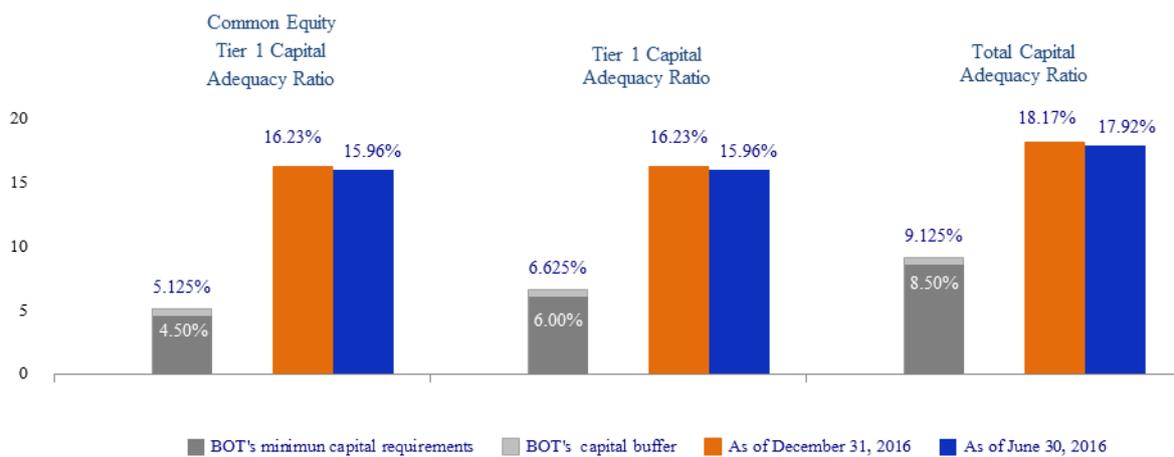
Capital	The Group		The Bank	
	31 December 2016	30 June 2016	31 December 2016	30 June 2016
Common Equity Tier 1 Capital	16.40%	16.10%	16.23%	15.96%
Tier 1 Capital	16.40%	16.10%	16.23%	15.96%
Total Capital	18.32%	18.04%	18.17%	17.92%

Capital Adequacy Ratio

Group Level (Full Consolidation Basis)



Bank Level (Solo Basis)



Remark: The Bank of Thailand requires commercial banks to maintain an additional capital conservation buffer. The buffer will gradually increase by more than 0.625% each year from January 1, 2016 until it reaches more than 2.5% on January 1, 2019.

Table 3: Component of Capital

Unit : Million Baht

Component of Capital	The Group		The Bank	
	31 December 2016	30 June 2016	31 December 2016	30 June 2016
Tier 1 Capital	360,818	350,817	347,373	338,086
Common Equity Tier 1 Capital	360,702	350,707	347,373	338,086
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	21,000	20,500	21,000	20,500
Reserves appropriated from net profit	91,500	86,500	91,500	86,500
Net profit after appropriations	118,911	112,164	104,926	99,714
¹ Other comprehensive income *	54,354	56,408	54,977	56,211
² Deductions from Common Equity Tier 1 Capital *	(497)	(299)	(464)	(273)
Additional Tier 1 Capital	116	110	-	-
³ Non-controlling interest *	116	110	-	-
Tier 2 Capital	42,250	42,223	41,415	41,656
⁵ Subordinated debenture *	17,721	17,721	17,721	17,721
General provision	24,523	24,496	23,694	23,935
⁴ Non-controlling interest *	6	6	-	-
Total Capital	403,068	393,040	388,788	379,742

*Component of capital subject to phasing in (out)

Unit : Million Baht

As at December 31, 2016	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 20 percent p.a. beginning 2014 - 2018				
¹ Other comprehensive income	54,354	61	54,977	565
² Deductions from Common Equity Tier 1 Capital	(497)	(331)	(464)	(309)
³ Non-controlling interest	116	(76)	-	-
⁴ Non-controlling interest	6	4	-	-
Phasing in (out) at 10 percent p.a. beginning 2013 - 2022				
⁵ Subordinated debenture	17,721	(17,721)	17,721	(17,721)

*Component of capital subject to phasing in (out)

Unit : Million Baht

As at 30 June 2016	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 20 percent p.a. beginning 2014 - 2018				
¹ Other comprehensive income	56,408	1,302	56,211	1,279
² Deductions from Common Equity Tier 1 Capital	(299)	(199)	273	(182)
³ Non-controlling interest	110	(72)	-	-
⁴ Non-controlling interest	6	4	-	-
Phasing in (out) at 10 percent p.a. beginning 2013 - 2022				
⁵ Subordinated debenture	17,721	(17,721)	17,721	(17,721)

Table 4: Minimum Capital Requirements for Each Type of Risks

Unit : Million Baht

Type of Risks	The Group		The Bank	
	31 December 2016	30 June 2016	31 December 2016	30 June 2016
Minimum capital requirements for credit risk	168,996	166,575	165,139	162,760
Performing	167,194	164,575	163,371	160,796
- 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	2,046	2,025	2,046	2,025
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	8,541	8,317	7,959	7,661
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	120,767	119,484	116,013	114,773
- Retail	13,784	13,557	13,689	13,450
- Residential mortgage loans	7,211	7,097	7,210	7,096
- Other assets	14,845	14,095	16,454	15,791
Non-Performing	1,802	2,000	1,768	1,964
Minimum capital requirements for market risk	3,525	4,517	3,381	4,282
- Interest Rate Risk	2,783	3,576	2,777	3,561
- Equity Price Risk	144	212	-	-
- Foreign Exchange Risk	598	729	604	721
- Commodity Price Risk	-	-	-	-
Minimum capital requirements for operational risk	14,478	14,120	13,366	13,032
Total minimum capital requirements	186,999	185,212	181,886	180,074

Remark

¹ Multilateral Development Banks

² Non-central Government Public Sector Entities

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
ISIN Code	TH0001010006	USY0606WBQ25 (Reg S) US059895AH54 (144A)	TH0001032C09
Regulatory treatment			
Instrument type	Common Equity Tier 1	Tier 2 capital	Tier 2 capital
Qualified Basel III	Qualified	Non-qualified	Non-qualified
Non-qualified Basel III features	N/A	No loss absorption features	No loss absorption features
Phased-out or full-amount	Full-amount	Phased-out at 10% p.a.	Phased-out at 10% p.a.
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	5,721	12,000
Par value	10 Baht	1,000 U.S. Dollar	1,000 Baht
Accounting classification	Shareholder's equity	Amortized-cost debt	Amortized-cost debt
Original date of issuance	Multiple	January 28, 1999	December 7, 2012
Perpetual or dated	Perpetual	Dated	Dated
Original maturity date	No maturity	March 15, 2029	December 7, 2022
Issuer's authority to call subject to prior supervisory approval	No	No	No
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.	December 7, 2017 / Full redemption amount
Subsequent call dates, if applicable	N/A	Any date after original date of issuance	At any coupon payment dates after 5 years from original date of issuance

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.	4.375 % 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	No
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 shall of the return of capital in a winding-up after preferred shareholders, depositors and general creditors.

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

The Group capital			Unit : Million Baht
Item	31 December 2016	30 June 2016	References based on balance sheet under the consolidated supervision
	Amount	Amount	
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	21,000	20,500	C
Reserves appropriated from net profit	91,500	86,500	D
Net profit after appropriation	118,911	112,164	E
Other comprehensive income			
Revaluation surplus on land building and condominium appraisal	24,433	24,903	F
Revaluation surplus (deficit) of available for sale equity and debt securities	31,233	32,210	G
Foreign currency translation differences	(1,312)	(705)	H
Other owner changes items	-	-	
Total CET1 capital before regulatory adjustments and deduction	361,199	351,006	
Regulatory adjustments on CET1	-	-	
Regulatory deduction on CET1			
Intangible assets (Software computer license)	(497)	(299)	I
Total regulatory deduction on CET1	(497)	(299)	
Total CET1	360,702	350,707	
Additional Tier 1 capital			
Non-controlling interest	116	110	J
Total Tier 1 capital	360,818	350,817	
Tier 2 capital			
Proceeds from issuing subordinated debt securities	17,721	17,721	K
General provision	24,523	24,496	L
Non-controlling interest	6	6	M
Total Tier 2 capital	42,250	42,223	
Total regulatory capital	403,068	393,040	

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 2016	30 June 2016	References for the Group capital items
	Amount	Amount	
Assets			
Cash	66,338	54,871	
Interbank and money market items, net	394,612	475,968	
Claim on securities	7	84	
Derivative assets	24,471	30,947	
Investments, net	546,614	479,234	
Investments in subsidiaries and associates, net	1,327	1,236	
Loans to customers and accrued interest receivables, net			
Loans to customers	1,941,586	1,907,517	
Accrued interest receivables	4,653	3,483	
Total Loans to customers and accrued interest receivables	1,946,239	1,911,000	
<u>Less</u> Deferred revenue	(493)	(582)	
<u>Less</u> Allowance for doubtful accounts	(116,809)	(109,880)	
Qualified as capital	(24,523)	(24,496)	L
<u>Less</u> Revaluation allowance for debt restructuring	(2,710)	(1,983)	
Total Loans to customers and accrued interest receivables, net	1,826,227	1,798,555	
Customers' liabilities under acceptances	686	2,499	
Properties for sale, net	12,263	13,296	
Premises and equipment, net	45,231	45,873	
Other Intangible assets, net	829	497	
Deduction from capital	(497)	(299)	I
Deferred tax assets	3,348	2,830	
Collateral placed with financial counterparties	4,367	11,082	
Other assets, net	17,910	15,235	
Total assets	2,944,230	2,932,207	
Liabilities			
Deposits	2,178,141	2,154,256	
Interbank and money market items, net	130,928	150,394	
Liabilities payable on demand	12,326	12,514	
Liabilities to deliver securities	273	494	
Derivative liabilities	26,714	34,786	
Debt issued and borrowings	137,815	135,371	
Debt instruments that are qualified as capital	17,721	17,721	K
Bank's liabilities under acceptances	686	2,499	
Provisions	12,941	11,654	
Deferred tax liabilities	5,702	6,589	
Other liabilities	59,459	54,337	
Total liabilities	2,564,985	2,562,894	

Table 6: Reconciliation of Regulatory Capital and Financial Statement under Consolidated Supervision (Continued)
Balance sheet under the consolidated supervision¹

Unit : Million Baht

Items	31 December 2016	30 June 2016	References for the Group capital items
	Amount	Amount	
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 share capital			
Premium on common shares	56,346	56,346	B
Other comprehensive income	55,239	58,539	
Qualified as capital	54,354	56,408	F, G, H
Retained earnings			
Appropriated			
Legal reserve	21,000	20,500	C
Others	91,500	86,500	D
Unappropriated	135,842	128,123	
Qualified as capital	118,911	112,164	E
Total shareholders' equity	379,015	369,096	
Non-controlling interest	230	217	
Qualified as Tier 1 capital	116	110	J
Qualified as Tier 2 capital	6	6	M
Total owner's equity	379,245	369,313	
Total liabilities and owner's equity	2,944,230	2,932,207	

Remark
¹The 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 Management 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 to the senior management, the Board of Executive Directors and the Risk Management Committee on a regular basis.

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 Management 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, 2016 and 2015.

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

The Group									
31 December 2016									
Remaining maturity	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	889,490	85,458	196,738	8,711	1,180,397	43,003	925,334	14,433	982,770
Over 1 year	1,159,772	356,425	-	15,760	1,531,957	16,150	939,514	54,308	1,009,972
Total	2,049,262	441,883	196,738	24,471	2,712,354	59,153	1,864,848	68,741	1,992,742

* Including interbank and money market items but excluding general provisions

Unit: Million Baht

The Group									
31 December 2015									
Remaining maturity	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	891,415	99,656	200,378	6,154	1,197,603	41,809	963,329	14,184	1,019,322
Over 1 year	1,074,175	321,000	-	16,591	1,411,766	5,979	795,941	62,054	863,974
Total	1,965,590	420,656	200,378	22,745	2,609,369	47,788	1,759,270	76,238	1,883,296

* Including interbank and money market items but excluding general provisions

The Bank

31 December 2016

Remaining maturity	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	852,486	71,688	150,677	8,281	1,083,132	40,629	901,487	18,016	960,132
Over 1 year	1,144,993	349,049	-	15,760	1,509,802	7,123	939,515	54,308	1,000,946
Total	1,997,479	420,737	150,677	24,041	2,592,934	47,752	1,841,002	72,324	1,961,078

* Including interbank and money market items but excluding general provisions

The Bank

31 December 2015

Remaining maturity	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	852,485	90,093	163,589	6,046	1,112,213	37,905	946,905	17,793	1,002,603
Over 1 year	1,057,601	313,978	-	16,591	1,388,170	3,864	795,941	62,054	861,859
Total	1,910,086	404,071	163,589	22,637	2,500,383	41,769	1,742,846	79,847	1,864,462

* 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

The Group									
31 December 2016									
Customer's country of residence ¹	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	1,669,455	361,574	24,129	16,860	2,072,018	30,811	1,454,315	50,949	1,536,075
Asia	333,146	74,472	133,635	3,739	544,992	28,026	196,768	13,197	237,991
Europe	25,156	1,628	23,885	3,436	54,105	185	189,463	116	189,764
America	17,352	2,417	12,772	181	32,722	131	14,106	4,479	18,716
Others	4,153	1,792	2,317	255	8,517	-	10,196	-	10,196
Total	2,049,262	441,883	196,738	24,471	2,712,354	59,153	1,864,848	68,741	1,992,742

¹ Based on customer's country of residence

² Including interbank and money market items but excluding general provisions

Unit: Million Baht

The Group									
31 December 2015									
Customer's country of residence ¹	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	1,606,574	352,076	22,943	17,893	1,999,486	28,576	1,421,818	61,113	1,511,507
Asia	316,909	62,628	126,745	2,338	508,620	19,020	162,774	10,614	192,408
Europe	22,832	2,706	17,738	2,456	45,732	86	148,202	-	148,288
America	15,237	1,449	31,672	57	48,415	106	20,934	4,511	25,551
Others	4,038	1,797	1,280	1	7,116	-	5,542	-	5,542
Total	1,965,590	420,656	200,378	22,745	2,609,369	47,788	1,759,270	76,238	1,883,296

¹ Based on customer's country of residence

² Including interbank and money market items but excluding general provisions

The Bank

31 December 2016

Customer's country of residence ¹	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	1,670,033	350,482	16,273	1,520	2,038,308	30,811	1,454,103	50,949	1,535,863
Asia	280,785	64,419	95,827	20,327	461,358	16,625	173,134	16,780	206,539
Europe	25,156	1,628	23,852	1,759	52,395	185	189,463	116	189,764
America	17,352	2,417	12,435	179	32,383	131	14,106	4,479	18,716
Others	4,153	1,791	2,290	256	8,490	-	10,196	-	10,196
Total	1,997,479	420,737	150,677	24,041	2,592,934	47,752	1,841,002	72,324	1,961,078

¹ Based on customer's country of residence² Including interbank and money market items but excluding general provisions

The Bank

31 December 2015

Customer's country of residence ¹	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	1,607,942	347,284	13,043	17,858	1,986,127	28,576	1,421,753	61,113	1,511,442
Asia	260,036	50,835	100,334	2,267	413,472	13,002	146,556	14,223	173,781
Europe	22,833	2,705	17,732	2,455	45,725	86	148,173	-	148,259
America	15,237	1,450	31,252	57	47,996	105	20,935	4,511	25,551
Others	4,038	1,797	1,228	-	7,063	-	5,429	-	5,429
Total	1,910,086	404,071	163,589	22,637	2,500,383	41,769	1,742,846	79,847	1,864,462

¹ Based on customer's country of residence² 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 2016							
Customer's country of residence [*]	Loans and accrued interest receivables					Total	Investment in debt securities: Doubtful of Loss
	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss		
Thailand	1,657,803	31,634	8,866	15,894	40,691	1,754,888	1,267
Asia	324,470	14,608	629	149	2,401	342,257	101
Europe	25,141	2	-	1	51	25,195	-
America	17,347	6	-	6	172	17,531	2
Others	4,380	3	-	-	1	4,384	-
Total	2,029,141	46,253	9,495	16,050	43,316	2,144,255	1,370

^{*} Based on customer's country of residence

Unit: Million Baht

The Group							
31 December 2015							
Customer's country of residence [*]	Loans and accrued interest receivables					Total	Investment in debt securities: Doubtful of Loss
	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss		
Thailand	1,594,517	30,538	9,397	13,057	30,545	1,678,054	34
Asia	309,583	12,039	253	616	2,215	324,706	68
Europe	22,823	3	-	52	-	22,878	-
America	15,224	20	-	-	183	15,427	4
Others	3,334	1,101	-	-	3	4,438	3
Total	1,945,481	43,701	9,650	13,725	32,946	2,045,503	109

^{*} Based on customer's country of residence

Unit: Million Baht

The Bank

31 December 2016

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	1,658,390	31,634	8,857	15,800	40,690	1,755,371	1,267
Asia	273,652	11,945	507	148	1,306	287,558	52
Europe	25,141	2	-	1	51	25,195	-
America	17,347	5	-	6	173	17,531	2
Others	4,379	3	-	-	2	4,384	-
Total	1,978,909	43,589	9,364	15,955	42,222	2,090,039	1,321

^{*} Based on customer's country of residence

Unit: Million Baht

The Bank

31 December 2015

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	1,595,887	30,538	9,396	12,963	30,544	1,679,328	34
Asia	253,531	10,588	101	398	1,191	265,809	47
Europe	22,823	3	-	52	1	22,879	-
America	15,224	20	-	-	183	15,427	4
Others	3,334	1,101	-	-	3	4,438	3
Total	1,890,799	42,250	9,497	13,413	31,922	1,987,881	88

^{*} 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 2016				
Customer's country of residence [*]	Loans and accrued interest receivables			Investment in debt securities:
	General provision	Specific provision	Bad debt written off	Specific provision
Thailand		85,433	1,202	3,084
Asia		9,111	31	106
Europe		39	-	-
America		179	-	2
Others		231	-	-
Total	25,160	94,993	1,233	3,192

^{*} Based on customer's country of residence

Unit: Million Baht

The Group				
31 December 2015				
Customer's country of residence [*]	Loans and accrued interest receivables			Investment in debt securities:
	General provision	Specific provision	Bad debt written off	Specific provision
Thailand		71,480	5,056	3,084
Asia		7,797	505	69
Europe		46	-	-
America		190	-	4
Others		400	-	3
Total	24,966	79,913	5,561	3,160

^{*} Based on customer's country of residence

Unit: Million Baht

The Bank				
31 December 2016				
Customer's country of residence *	Loans and accrued interest receivables			Investment in debt
	General provision	Specific provision	Bad debt written off	securities: Specific provision
Thailand		85,338	1,202	3,084
Asia		6,773	-	57
Europe		39	-	-
America		179	-	2
Others		231	-	-
Total	23,759	92,560	1,202	3,143

* Based on customer's country of residence

Unit: Million Baht

The Bank				
31 December 2015				
Customer's country of residence *	Loans and accrued interest receivables			Investment in debt
	General provision	Specific provision	Bad debt written off	securities: Specific provision
Thailand		71,386	5,054	3,084
Asia		5,773	462	49
Europe		46	-	-
America		190	-	4
Others		400	-	3
Total	23,606	77,795	5,516	3,140

* 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 2016						
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	36,986	884	363	50	358	38,641
Manufacturing and commercial	738,939	25,452	5,560	9,045	33,020	812,016
Real estate and construction	168,716	5,051	1,008	1,669	4,071	180,515
Utilities and services	382,796	10,564	1,248	3,074	2,588	400,270
Housing loans	211,884	2,511	1,161	1,400	2,889	219,845
Others	489,820	1,791	155	812	390	492,968
Total	2,029,141	46,253	9,495	16,050	43,316	2,144,255

Unit: Million Baht

The Group						
31 December 2015						
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	36,561	844	287	178	240	38,110
Manufacturing and commercial	769,647	15,654	7,337	9,127	25,850	827,615
Real estate and construction	172,598	6,226	820	2,183	2,737	184,564
Utilities and services	333,774	16,153	512	578	1,508	352,525
Housing loans	202,566	1,933	615	869	2,314	208,297
Others	430,335	2,891	79	790	297	434,392
Total	1,945,481	43,701	9,650	13,725	32,946	2,045,503

Unit: Million Baht

The Bank						
31 December 2016						
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	33,705	883	364	50	358	35,360
Manufacturing and commercial	712,948	23,166	5,535	9,045	31,990	782,684
Real estate and construction	163,355	5,051	912	1,669	4,017	175,004
Utilities and services	379,294	10,564	1,248	3,074	2,588	396,768
Housing loans	211,870	2,509	1,158	1,400	2,880	219,817
Others	477,737	1,416	147	717	389	480,406
Total	1,978,909	43,589	9,364	15,955	42,222	2,090,039

Unit: Million Baht

The Bank						
31 December 2015						
Type of Business	Normal	Special Mentioned	Substandard	Doubtful	Doubtful of Loss	Total
Agriculture and mining	33,587	844	181	178	240	35,030
Manufacturing and commercial	739,197	14,472	7,293	8,909	24,924	794,795
Real estate and construction	166,994	5,959	820	2,183	2,691	178,647
Utilities and services	331,158	16,153	512	578	1,508	349,909
Housing loans	202,546	1,931	614	869	2,304	208,264
Others	417,317	2,891	77	696	255	421,236
Total	1,890,799	42,250	9,497	13,413	31,922	1,987,881

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

Type of Business	The Group					
	31 December 2016			31 December 2015		
	General provision	Specific provision	Bad debt written off	General provision	Specific provision	Bad debt written off
Agriculture and mining		911	1		818	160
Manufacturing and commercial		59,128	150		49,603	3,414
Real estate and construction		8,187	14		6,844	846
Utilities and services		17,481	9		15,079	664
Housing loans		4,745	33		5,609	132
Others		4,541	1,026		1,960	345
Total	25,160	94,993	1,233	24,966	79,913	5,561

Unit: Million Baht

Type of Business	The Bank					
	31 December 2016			31 December 2015		
	General provision	Specific provision	Bad debt written off	General provision	Specific provision	Bad debt written off
Agriculture and mining		873	1		766	160
Manufacturing and commercial		57,275	119		48,047	3,372
Real estate and construction		8,035	14		6,630	846
Utilities and services		17,450	9		15,060	663
Housing loans		4,739	33		5,603	132
Others		4,188	1,026		1,689	343
Total	23,759	92,560	1,202	23,606	77,795	5,516

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 2016			31 December 2015		
	General provision	Specific provision	Total	General provision	Specific provision	Total
Beginning balance	24,966	79,913	104,879	23,103	69,491	92,594
Bad debt written off	-	(1,233)	(1,233)	-	(5,561)	(5,561)
Doubtful accounts	194	16,718	16,912	1,863	14,797	16,660
Others	-	(405)	(405)	-	1,186	1,186
Ending balance	25,160	94,993	120,153	24,966	79,913	104,879

Unit: Million Baht

Item	The Bank					
	31 December 2016			31 December 2015		
	General provision	Specific provision	Total	General provision	Specific provision	Total
Beginning balance	23,606	77,795	101,401	21,790	68,170	89,960
Bad debt written off	-	(1,202)	(1,202)	-	(5,516)	(5,516)
Doubtful accounts	153	16,183	16,336	1,816	13,965	15,781
Others	-	(216)	(216)	-	1,176	1,176
Ending balance	23,759	92,560	116,319	23,606	77,795	101,401

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 2016			31 December 2015		
	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	517,136	60,359	577,495	436,221	89,888	526,109
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	221,724	48,484	270,208	254,121	41,780	295,901
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	1,387,520	190,447	1,577,967	1,335,761	168,920	1,504,681
- Retail	239,639	10,960	250,599	239,333	10,699	250,032
- Residential mortgage loans	209,453	-	209,453	199,298	-	199,298
- Other assets	270,101	-	270,101	258,049	-	258,049
Non-performing	19,180	1,544	20,724	16,718	1,133	17,851
Total	2,864,753	311,794	3,176,547	2,739,501	312,420	3,051,921

* Including repo-style transactions

Type of Asset	The Bank					
	31 December 2016			31 December 2015		
	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	489,293	60,360	549,653	419,266	89,888	509,154
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	187,108	48,760	235,868	222,261	42,392	264,653
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	1,334,817	178,280	1,513,097	1,279,116	160,781	1,439,897
- Retail	236,099	10,890	246,989	236,268	10,568	246,836
- Residential mortgage loans	209,434	-	209,434	199,273	-	199,273
- Other assets	285,225	-	285,225	273,893	-	273,893
Non-performing	18,806	1,519	20,325	16,242	1,132	17,374
Total	2,760,782	299,809	3,060,591	2,646,319	304,761	2,951,080

* 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 2016														
	Risk weight (%)	Rating					No rating								
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	545,696	15,127	4,152	8,526	6,965				-		-				
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	-	137,510	58,521	41,226	1,659						-				
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	-	77,717	78,952	29,503	40,918				5,312		1,272,228				
- Retail										200,856	11,523				
- Residential mortgage loans								182,189		24,738	2,517				
- Other assets						92,599	1,883				171,887	662	24	9	42
	Risk weight (%)	0	20	50	100	150									
Non-performing	345	-	2,417	12,515	4,988										
Items deducted from capital	497														

Type of Asset	The Bank														
	31 December 2016														
	Risk weight (%)	Rating					No rating								
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	517,853	15,127	4,152	8,526	6,965				-						
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial Institutions	-	102,923	58,661	41,226	1,659										
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	-	77,717	78,752	29,503	40,918				5,311		1,216,408				
- Retail										199,699	11,270				
- Residential mortgage loans								182,179		24,730	2,517				
- Other assets						90,902	1,833				192,372	43	24	9	42
	Risk weight (%)	0	20	50	100	150									
Non-performing	345	-	2,411	12,147	4,963										
Items deducted from capital	465														

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

Type of Asset	The Group			
	31 December 2016		31 December 2015	
	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	53,822	-	83,468	-
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial institutions	1,957	40,353	165	60,612
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	61,051	29,449	52,654	26,202
- Retail	23,049	15,171	22,832	12,293
- Residential mortgage loans	9	-	15	-
- Other assets	2,995	-	1,556	-
Non-performing	458	371	134	263
Total	143,341	85,344	160,824	99,370

Type of Asset	The Bank			
	31 December 2016		31 December 2015	
	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	53,822	-	83,468	-
- Financial institutions, Securities firms, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Financial institutions	1,950	40,353	165	60,612
- Corporates, and Provincial organizations/ Government entities/ State enterprises (PSEs) which have the same risk weight as Corporates	52,315	29,335	49,886	27,756
- Retail	20,849	15,171	21,368	12,293
- Residential mortgage loans	9	-	15	-
- Other assets	-	-	-	-
Non-performing	458	371	126	263
Total	129,403	85,230	155,028	100,924

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 and interest rate swap. 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 Management 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 Management 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 2016 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 107 million, Baht 295 million and Baht 152 million, respectively. The average VaR in 2016 increased from Baht 128 million in 2015, because a larger trading position in debt securities during the second quarter of 2016 resulted in higher Interest Rate VaR.

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, 2016 and June 30, 2016 are as follows:

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

Unit: Million Baht

Capital requirements for market risk	The Group		The Bank	
	31 December 2016	30 June 2016	31 December 2016	30 June 2016
Interest Rate Risk	2,783	3,576	2,777	3,561
Equity Price Risk	144	212	-	-
Foreign Exchange Risk	598	729	604	721
Commodity Price Risk	-	-	-	-
Total Capital Requirement	3,525	4,517	3,381	4,282

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, 2016 and 2015 are as follows:

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

Unit: Million Baht

Currency	The Group			
	31 December 2016		31 December 2015	
	NII Impact	% Earning at Risk	NII Impact	% Earning at Risk
THB	(403)	(0.63%)	(1,145)	(1.99%)
USD	1,363	2.13%	1,825	3.17%
EUR	19	0.03%	21	0.04%
Others	431	0.67%	296	0.52%
Total NII Impact	1,410	2.20%	997	1.73%
Estimated NII in next 12 months	63,998		57,510	

Unit: Million Baht

Currency	The Bank			
	31 December 2016		31 December 2015	
	NII Impact	% Earning at Risk	NII Impact	% Earning at Risk
THB	(437)	(0.80%)	(1,158)	(2.11%)
USD	1,326	2.42%	1,730	3.15%
EUR	21	0.04%	22	0.04%
Others	237	0.43%	192	0.35%
Total NII Impact	1,147	2.09%	786	1.43%
Estimated NII in next 12 months	61,687		54,913	

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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 Management 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.

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, 2016 and 2015 are as follows:

Table 19: Equity exposures in the banking book

Unit: Million Baht

Equity exposures	The Group		The Bank	
	31 December 2016	31 December 2015	31 December 2016	31 December 2015
Equity exposures *				
• Equity securities listed on a securities exchange (domestic and foreign)				
– Cost value	26,987	26,533	26,946	26,530
– Market value	61,508	60,058	61,464	60,057
• Other equity securities (both in domestic and foreign)	42,175	38,952	69,044	66,004
Gains (losses) on sales of equity securities for the year	4,051	5,872	2,177	2,568
Unrealized gains (losses) on revaluation from available-for-sale equity securities	37,474	36,214	37,424	36,320
Minimum capital for equity exposures under SA approach	8,948	8,528	11,146	10,757

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

2.3 Operational Risk

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

The Bank is of the view that good operational risk management is vital to sustainable business success, particularly in the current environment of uncertainty, both domestically and internationally. 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 intense.

Furthermore, the Bank pays close attention to quality of customer service and customer care, suitability of selling products and services sold, reinforcement in system security, information management systems, and all electronic/digital channels as well as fraud risk management related to bank products and services such as credit cards, ATM cards and other electronic services to ensure customers' confidence. In relation to a new product launch, the product 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 to this effort and for embedding operational risk management as part of the organizational culture.

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

The Bank has established the Operational Risk Management unit within the Risk Management Division to be responsible for operational risk management. This includes 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 aspects in product and service development process, calculating the capital requirements for operational risk in line with the Basel framework, and maintaining the operational risk database and analyzing the loss data in the database, etc.

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 operational risk management framework of the Bank and the subsidiaries in the Group is that operational risk management is the responsibility of every staff member in the organization. Everyone in the organization is trained to have 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 risk, assess the effectiveness of controls, as well as develop options for mitigating risks based on careful analysis, and subsequently to 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 to enhance their resilience and their capability of responding to unexpected interruptions. The Group has a Business Continuity Management Policy and Business Continuity Plans, which are regularly 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.