Unofficial Translation

This translation is for the convenience of those unfamiliar with the Thai language

Please refer to Thai text for the official version

Notification of the Bank of Thailand

No. FPG. 9/2562

Re: Regulations on the Calculation of Credit Risk-Weighted Assets for Commercial Banks under the Standardised Approach (SA)

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1. Rationale

The Bank of Thailand has enacted the regulations on capital supervision under the Basel III framework based on the Basel Committee on Banking Supervision (BCBS)'s guidelines on Basel III: A global regulatory framework for more resilient banks and banking systems (revised version: June 2011). The regulations, which have come into effect since 1 January 2013, are to ensure that commercial banks sufficiently hold good quality capital that can absorb losses during normal and stressed periods and to preserve the stability of the overall financial system.

For this time, the Bank of Thailand deems it appropriate to amend the regulations on the calculation of credit risk-weighted assets under the Standardized Approach (SA) to accommodate the implementation of the new Thai financial reporting standard No. 9: Financial instruments (TFRS 9), which will come into effect from 1 January 2020 (B.E.2563) onwards. This accounting standard sets out the revised framework for the classification and the valuation of financial assets and liabilities, as well as expected credit loss impairment requirements for financial assets and obligations in order to reflect changes in credit risk and to report expected credit losses in a timely manner.

For this amendment, the Bank of Thailand, still, adheres to the Basel III framework on the calculation of credit risk-weighted assets under the Standardized Approach (SA). The main revisions are the amendment of the definition of Non-performing claims and Specific provision, to be in line with the revised Asset Classification and Provisioning under TFRS 9.

2. Statutory Power

By virtue of Sections 29, Section 30 and Section 32 of the Financial Institutions Businesses Act B.E. 2551 (2008), the Bank of Thailand hereby issues the Regulation on the Calculation of Credit Risk-Weighted Assets for Commercial Banks under the Standardized Approach (SA) and all commercial banks shall comply accordingly.

3. Repealed/Amended Notifications

The Notification of the Bank of Thailand No. FPG. 15/2555 Re: Regulation on the Calculation of Credit Risk-Weighted Assets for Commercial Banks under the Standardised Approach (SA), dated 8th November 2012.

4. Scope of Application

This Notification shall apply to all commercial banks according to the law on financial institutions businesses.

5. Content

5.1 Definition

In this Notification:

"Claims" mean loans, debt security investments, deposits and off-balance sheet items, including obligations and other legal claims regarding debt payments of the commercial banks. In case of loans, debt security investments and deposits, claims shall include accrued interests booked in financial accounts.

"Non-performing claims" mean claims on assets classified as non-performing and purchased or originated credit impaired under the Notification of the Bank of Thailand on Asset Classification and Provisioning of Financial Institutions.

"Specific provision" means a provision ascribed to identified deterioration of any particular assets and off-balance sheet items, including allowance for a decrease occurred from financial instruments that measured at fair value through profit or loss (FVTPL), financial instruments that measured at fair value through other comprehensive income (FVTOCI) and allowance for expected credit loss but excluding general provision that has already been included in Tier 2 capital.

5.2 Principle

The Bank of Thailand prescribed regulations on the calculation of risk-weighted assets under the Standardised Approach (SA) and under Internal Ratings-based Approach (IRB) for commercial banks to choose for the calculation of credit risk-weighted assets in accordance with the complexity of their own credit risk management system.

The SA is a method for the calculation of credit risk-weighted assets where commercial banks shall use rating information from external credit rating agency for the calculation of credit risk-weighted assets. The risk weights depend on asset class, quality of assets and off-balance sheet items. In this regard, the SA is less complex than the IRB, where under the IRB the commercial banks shall use their internal ratings for estimating risk components to determine credit risk-weighted assets in accordance with the risk weight function as prescribed by the Bank of Thailand.

Commercial banks shall sum all of credit risk-weighted assets calculated under this Notification together with other risk-weighted assets as prescribed in other Notifications of the Bank of Thailand on Capital Requirement for Commercial banks, then use the total of all risk-weighted assets for the calculation of capital adequacy ratio as prescribed by the Bank of Thailand.

5.3 Regulation on the calculation of credit risk-weighted assets under the SA

In calculating credit risk-weighted assets under the SA, commercial banks using the SA shall comply with the following regulations as prescribed by the Bank of Thailand.

5.3.1 Calculation of credit risk-weighted assets under the SA

(1) On-balance sheet assets

Commercial banks shall calculate net asset value by deducting specific provision held against particular assets. Then net asset value shall be multiplied by the risk weight prescribed by the Bank of Thailand in Section 5.3.2 to obtain risk-weighted assets.

(2) Non-market related off-balance sheet items

Commercial banks shall calculate net value of off-balance sheet by deducting specific provision held against particular off-balance sheet items. The net value of each off-balance sheet shall be multiplied by the Credit Conversion Factor (CCF) prescribed by the Bank of Thailand in Attachment 2 to obtain net credit equivalent amount. Then net credit equivalent amount shall be multiplied by the risk weight prescribed by the Bank of Thailand in Section 5.3.2 to obtain credit risk-weighted assets.

(3) Market related off-balance sheet items

Commercial banks shall calculate counterparty credit risk-weighted assets of derivatives in both trading book and banking book in accordance with the regulations as prescribed in the Notification of the Bank of Thailand on Regulation on the Calculation of Counterparty Credit Risk-weighted Assets of for Derivatives. Commercial banks undertaking derivatives in trading book must maintain capital for market risk for such transactions in accordance with the regulations as prescribed in the Notification of the Bank of Thailand on Regulation on Market Risk Supervision and Minimum Capital Requirement for Market Risk of Financial Institutions.

However, for credit derivatives in banking book both in case where commercial banks are protection sellers and buyers, commercial banks shall comply with the regulations as prescribed by the Bank of Thailand in Attachment 3.

(4) Positions in unsettled transactions

Commercial banks shall calculate credit risk-weighted assets in accordance with the Notification of the Bank of Thailand on Regulation on the Calculation of Credit Risk-Weighted Assets for Non-Delivery versus Payment (Non-DvP) for Commercial Banks.

Where commercial banks have credit risk mitigation (CRM) under the SA, commercial banks may carry out credit risk mitigation in accordance with the methods prescribed by the Bank of Thailand.

Where commercial banks have assets and off-balance sheet items denominated in foreign currencies, commercial banks shall convert those value into Thai Baht using the current exchange rate at the reporting date as prescribed in the Notification of the Bank of Thailand on Guideline on Accounting of Financial Institutions.

5.3.2 Risk weights of assets and off-balance sheet items

Commercial banks shall determine risk weight of assets and off-balance sheet items[1] in accordance with their asset class and quality, divided into 2 categories (details in Attachment 1) as follows:

(1) **Performing assets and off-balance sheet items,** sub-divided into 9 types of claims.

(1.1) Claims on sovereigns and central banks

(1.2) Claims on local government organizations, state agencies and state enterprises (PSEs)

(1.3) Claims on multilateral development banks (MDBs)

(1.4) Claims on financial institutions

(1.5) Claims on securities companies

(1.6) Claims on corporates

(1.7) Claims on retail portfolios

(1.8) Residential mortgage loans

(1.9) Other assets

In assigning risk weights for assets classified under (1.1) to (1.9), commercial banks must refer to attachment 1 **and Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan.** Commercial banks must also comply with the regulations on credit ratings from external credit assessment institutions in Section 5.3.3.

(2) Non-performing claims and off-balance sheet items, sub-divided into 3 classifications.

[1] Commercial banks shall calculate net credit equivalent amount of each off-balance sheet item using the calculation methods as specified in Section 5.3.1 (2) and 5.3.1 (3)

(2.1) Non-performing claims for which there is no credit risk mitigation in accordance with the types as prescribed by the Bank of Thailand in the regulations on credit risk mitigation in Section 5.3.4.

(2.2) Non-performing claims for which there is no credit risk mitigation following the types prescribed by the Bank of Thailand in the regulations on credit risk mitigation in Section 5.3.4 but fully collateralized by the following: (a) Commercial Real Estate (CRE) (b) Residential Real Estate (RRE) and (c) receivables of commercial banks

(2.3) Residential mortgage loans following Section 5.3.2 (1.8) which receive a risk weight of 35% or 75% and are classified as non-performing claims.

5.3.3 Credit ratings from external credit assessment institutions (ECAIs)

(1) Use of credit ratings from ECAIs to assign the risk weights to debtors

Commercial banks shall use credit ratings from ECAIs that have been recognized by the Bank of Thailand to determine risk weights by mapping rating given by ECAIs with the corresponding rating grade as prescribed by the Bank of Thailand. The commercial banks must also comply with the regulations on the use of credit ratings from ECAIs in Attachment 4.

(2) Regulations on recognition of ECAIs and the mapping process

Commercial banks and ECAIs shall refer to the regulations on recognition and mapping process as prescribed in the Circular of the Bank of Thailand on Recognition of External Credit Assessment Institutions (ECAIs) following the Regulation on the Calculation of Credit Risk-Weighted Assets under the Standardized Approach (SA)[2]. The commercial banks and ECAIs shall submit the request for recognition as well as supplemental information to Bank of Thailand as prescribed in Public Handbook. The consideration will be completed within 60 days from the request date that all required documents have been completely and correctly submitted.

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[2] The current circular is dated 30 April 2007

5.3.4 Credit risk mitigation (CRM) for the SA

(1) Minimum requirements for credit risk mitigation

(1.1) Minimum statutory requirements

(1.1.1) Commercial banks must have documents or agreements that are binding on all related parties, legally enforceable and do not contradict nor contest by other legislations.

(1.1.2) Commercial banks must have processes and frameworks to evaluate legal clauses, and shall follow up and review whether such documents or agreements continue to be legally enforceable.

(1.2) Commercial banks must have policies and procedures to manage risks associated with the use of credit risk mitigation, such as operational risk, market risk and credit concentration risk.

In case where commercial banks do not have policies and procedures to manage risks associated with the use of credit risk mitigation, the Bank of Thailand may require commercial banks to maintain additional capital or implement other measures as prescribed in the Bank of Thailand Notification on Supervisory Review Process (Pillar 2).

(1.3) Commercial banks shall comply with the regulations regarding disclosure of risk mitigation as prescribed by the Bank of Thailand in the Notification of the Bank of Thailand on Disclosure on Capital Requirement of Commercial Banks.

(2) Credit risk mitigation techniques

There are 3 main credit risk mitigation techniques that the Bank of Thailand allows commercial banks to use under the SA as follows:

(2.1) Financial collaterals

Commercial banks may reduce the outstanding value of assets by the value of financial collaterals approved by the Bank of Thailand to calculate credit risk-weighted assets, in accordance with the regulations on credit risk mitigation by financial collateral (details in Attachment 5). Commercial banks can select one of two following methods to calculate the value of credit risk mitigation by financial collateral, the Simple Approach or the Comprehensive Approach.

For the Comprehensive Approach, commercial banks can select one of the two following methods to calculate the haircut: (1) Standard supervisory haircut and (2) Own estimates for haircut.

(2.2) On-balance sheet netting

Commercial banks can apply the on-balance sheet netting between assets (loans) and debts (deposits) of the same counterparty to mitigate credit risks in accordance with the regulations on credit risk mitigation by on-balance sheet netting (details in Attachment 6).

(2.3) Guarantees and credit derivatives

Commercial banks can mitigate credit risk by using guarantees and credit derivatives in accordance with the regulations for credit risk mitigation using guarantees and credit derivatives (details in Attachment 7).

Commercial banks must submit the Self-Assessment of Compliance Form for credit risk mitigation as prescribed by the Bank of Thailand (details in Attachment 8) at least 15 days prior to using credit risk mitigation in the calculation of credit risk-weighted assets, where the form must be submitted to the Bank of Thailand as prescribed in Public Handbook.

For commercial banks that have submitted the Self-Assessment of Compliance Form for credit risk mitigation prior to the effective date of this Notification, the commercial banks are not required to resubmit the form.

(3) Maturity mismatch

In case where the residual maturity of the credit risk mitigation is less than that of the underlying credit exposures, maturity mismatch occurs. Commercial banks shall comply with the regulations prescribed by the Bank of Thailand (details in Attachment 9).

(4) Using multiple types of credit risk mitigation

In cases where commercial banks have multiple credit risk mitigation techniques to mitigate against credit risks from the same exposure, for example, where commercial banks have both financial collaterals and guarantees, commercial banks shall apportion assets by credit risk mitigation techniques and calculate risk-weighted assets separately for each portion.

In cases where commercial banks use multiples credit risk mitigations techniques from the same counterparty but have different maturities, commercial banks shall apportion assets into different groups and calculate risk-weighted assets separately for each credit risk mitigation techniques.

(5) Double counting of credit risk mitigation

The effect of credit risk mitigation shall not be double counted. Therefore, no additional recognition of credit risk mitigation for capital purpose will be granted on claims for which an issue-specific rating already reflected that credit risk mitigation.

5.4 Calculation of credit risk-weighted assets under the Simplified Standardized Approach (SSA)

The Bank of Thailand permits only retail banks to choose the SSA, which is an alternative to calculate credit risk-weighted assets, since retail banks' scope of business is limited and generally less complex than that of commercial banks (details in Attachment 10).

5.5 Request for approval of the SA

Commercial banks shall submit the request to the Bank of Thailand for approval at least 3 months prior to using risk weight of 100% for all corporate claims following Section 5.3.2 (1.6), and at least 6 months prior to using own estimates for haircuts of financial collateral in Comprehensive Approach following Section 5.3.4 (2.1) as prescribed in Public Handbook. After a request and all required documents have been completely and correctly submitted to Bank of Thailand, the consideration for approval to use risk weight of 100% for all corporate claims will be completed within 30 days and to use own estimates for haircuts of financial collateral in Comprehensive Approach will be completed within 90 days.

For commercial banks that have already received the approval from the Bank of Thailand to use risk weight of 100% for all corporate claims and/or receive approval to use own estimates for haircuts of financial collateral in Comprehensive Approach prior to this Notification becoming legally effective, it is hereby deemed that such approvals are given in accordance with the methodologies under this Notification and banks are not required to seek approval again.

5.6 <u>Preparation, storage and submission of data and documents in electronic format</u>

For the purpose of Bank of Thailand's supervision, commercial banks may document, retain and submit document related to the calculation of credit risk-weighted assets under the Standardized Approach (SA) according to the regulations as specified in this Notification in electronic format.

6. Effective date

This Notification shall come into force from the date which accounting period begins on or after 1 January 2020 (B.E.2563) onwards, except for the amended issues which are not related to the TFRS 9, this Notification shall come into force as from the day following the date of its publication in the Government Gazette.

Announced on 7th May **2019**

(Mr. Veerathai Santiprabhob)

Governor

Bank of Thailand

Regulatory Policy Department
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Attachment 1

Regulations on assigning risk weights to assets and off-balance sheet items

Commercial banks shall classify assets and off-balance sheet items, and apply risk weights in accordance with the regulations prescribed by the Bank of Thailand in this Attachment, by dividing assets into 2 categories as follows: I. Performing assets and off-balance sheet items, and II. Non-performing assets and off-balance sheet items

For performing assets and off-balance sheet items type I.1 – I.6, commercial banks shall map credit ratings of assets and off-balance sheet items given by external credit assessment institutions (ECAIs) recognized by the Bank of Thailand to credit rating grades[1] and determine risk weights prescribed by the Bank of Thailand. Commercial banks must notify to the Bank of Thailand, which ECAIs to be used in assigning risk weights, and when commercial banks wish to change their ECAIs.

I. Performing assets and off-balance sheet items, dividing into 9 types, as follows:

1. Claims on sovereigns and central Banks

1.1 Thai Baht denominated claims on the Thai government and the Bank of Thailand (including the Financial Institutions Development Fund, the Thai Asset Management Corporation, the Bangkok Commercial Asset Management Co., Ltd, and the Deposit Protection Agency): The portion of assets and off-balance sheet items that do not exceed the commercial banks' liabilities in Thai Baht shall be assigned a risk weight of 0%.

1.2 Claims on foreign sovereigns and central banks denominated in domestic currency of their respective country: The portion of assets and off-balance sheet items that do not exceed the commercial bank's liabilities in the same currency, shall be assigned a risk weight of 0%.

For Euro denominated assets and off-balance sheet items of governments in the European Community, commercial banks shall first compare their Euro denominated claims with Euro denominated liabilities of the country that has the lowest Local Currency Rating.

1.3 Claims on Thai/foreign sovereigns and central banks denominated in the domestic currency of their respective country that exceed the commercial banks'

[1] Commercial banks shall refer to the list of external credit assessment institutions recognized by the Bank of Thailand and compare the rating grades of the claims on debtors prescribed by the Bank of Thailand, including operational guidelines on use of credit ratings from ECAIs following Attachment 4.

liabilities denominated in the same currency shall be assigned risk weights in accordance with local currency ratings given to the country's sovereign and central bank by the external credit assessment institutions, as followed:

Rating Grade of Sovereigns and Central Banks	**1**	**2**	**3**	**4-5**	**6**	**No ECAI Credit Rating**
Risk weight (%)	0	20	50	100	150	Refer to the OECD Country Risk Classification Scores in Section 1.5

In this regard, in comparing assets and off-balance sheet items with the banks' liabilities following 1.1 – 1.3, commercial banks shall use the amount of assets after deducted by specific provision. In case of off-balance sheet items which are OTC derivatives, the credit equivalent amount after deducted by specific provision shall be used, and in case of off-balance sheet items which are not derivatives, the amount of off-balance sheet items after deducted by specific provision and multiplied by Credit Conversion Factor, prescribed by the Bank of Thailand, shall be used.

1.4 Claims on Thai/foreign sovereigns and central banks denominated in foreign currencies shall be assigned risk weights in accordance with foreign currency ratings given to the countries' sovereign by external credit assessment institutions, and the risk weights table under Section 1.3 shall be used.

1.5 Claims on sovereigns and central banks denominated in domestic currency or foreign currency which have no credit rating from ECAIs shall be assigned risk weights in accordance with the OECD Country Risk Classification Scores[2] as follow:

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[2] OECD Country Risk Classification Scores mean the consensus scores based on assessments by a number of Export Credit Agencies (ECAs) following the Arrangement on Guidelines for Officially Supported Export Credits available on the OECD website.

OECD Country Risk Classification Scores	0 - 1	2	3	4 - 6	7	No Country Risk Classification Score[3]
Risk weight (%)	0	20	50	100	150	100

1.6 Claims on the Bank for International Settlements, the International Monetary Fund, the European Central Bank, the European Community, **European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM)** shall be assigned a risk weight of 0%.

2. Claims on local government organizations, state agencies and state enterprises

2.1 Claims on Local Government Organizations[4], state agency and state enterprises[5] (non-central government public sector entities or PSEs) in Thailand:
Risk weights shall be assigned in accordance with type of PSEs, which are divided into 2 categories as follows:

2.1.1 Claims on PSEs using the same risk weights as claims on financial institutions

Claims on local government organizations, state agencies and state enterprises established by specific laws shall be assigned the same risk weights as claims on financial institutions as prescribed in Section 4, namely:

(1) Claims on state enterprises that are financial institutions[5]

(2) Claims on PSEs that are not financial institutions, namely: Claims on local government organizations, state agencies and state enterprises which are not financial institutions[5]

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[3] Commercial banks shall first consider the regulations on use of ratings of securities and organizations following Section III.3 in Attachment 4. If considered not relevant, commercial banks shall use a risk weight of 100% as prescribed in the table.

[4] Local Government Organizations mean those established by specific laws as follows: (1) Provincial Administrative Organization (PAO) (2) Municipality (3) Sub-district Administrative Organization (SAO) (4) Special Regional Administration, namely: Bangkok and Pattaya

[5] Following the list in Attachment 1.1 or further prescribed by the Bank of Thailand

In this regard, claims on PSEs that are not financial institutions, with original maturities not exceeding 3 months, shall not receive the lower risk weight as claims on financial institutions prescribed in Section 4.3, but shall be assigned risk weights as prescribed in Section 4.2.

2.1.2 Claims on PSEs using the same risk weights as claims on corporate

Claims on commercial state enterprises established by the Civil and Commercial Code or the Law on Public Company Limited[5] shall be assigned the same risk weight as claims on corporate as prescribed in Section 6.

2.2 Claims on PSEs in foreign countries

The commercial banks shall classify PSEs in accordance with the regulations as prescribed by supervisory authority of the country where such PSEs are located, and use risk weights as prescribed by the Bank of Thailand for each type of PSE claim[6].

2.3 In assigning risk weights to claims on PSEs using the same risk weight as claims on financial institutions, and claims on PSEs using the same risk weight as claims on corporate, commercial banks shall choose to use credit ratings from the same ECAI they use for claims on financial institutions and claims on corporate as prescribed in Section 4 and Section 6 respectively.

2.4 In case where commercial banks choose to use a risk weight of 100% for all claims on corporate, PSEs using the same risk weight as claims on the corporate shall also be assigned a risk weight of 100%.

3. Claims on multilateral development banks (MDBs)

3.1 Claims on the following multilateral development banks (MDBs)[7] shall be assigned a risk weight of 0%.

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[6] Supervisory authority in the country where PSEs are located may assign the risk weight of claims on PSEs to be the same as claims on sovereigns, claims on financial institutions or claims on corporate. If the supervisory authority prescribes the risk weight of claims on PSEs is the same as claims on sovereigns, commercial banks shall use the risk weight that the Bank of Thailand prescribes for claims on sovereigns and central banks.

[7] The Bank of Thailand may amend the list of MDBs to receive a risk weight of 0% in Section 3.1 when the BCBS amends its lists.

- The World Bank Group comprised of the International Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC) **and International Development Association (IDA)**

- The Asian Development Bank (ADB)
- The Africa Development Bank (AfDB)
- The European Bank for Reconstruction and Development (EBRD)
- The Inter-American Development Bank (IADB)
- The European Investment Bank (EIB)
- The European Investment Fund (EIF)
- The Nordic Investment Bank (NIB)
- The Caribbean Development Bank (CDB)
- The Islamic Development Bank (IDB)
- The Council of Europe Development Bank (CEDB)
- The International Finance Facility for Immunization (IFFIm)
- The Multilateral Investment Guarantee Agency (MIGA)
- **Asian Infrastructure Investment Bank (AIIB)**

3.2 Claims on multilateral development banks not specified in Section 3.1 shall be assigned risk weights in accordance with credit ratings given by ECAIs, as follows:

Rating Grade of MDBs	**1**	**2-3**	**4-5**	**6**	**No Credit Rating**[8]
Risk weight (%)	20	50	100	150	50

[8] Commercial banks shall first consider the regulations on use of ratings of securities and organizations following Section III.3 in Attachment 4. If considered not relevant, commercial banks shall use a risk weight of 50% as prescribed in the table.

4. Claims on financial institutions

4.1 Claims on financial institutions mean claims on Thai financial institutions under the supervision of the Bank of Thailand, such as commercial banks, finance companies, credit foncier companies, asset management companies[9], and foreign financial institutions under supervision of foreign supervisory authorities.

4.2 Claims on financial institutions shall be assigned risk weights according to the credit rating of the sovereign and central bank of the country where the financial institution is registered regardless of ECAI credit ratings of the financial institutions. Commercial banks shall apply the Local Currency Rating or Foreign Currency Rating given by ECAIs depending on the currency of the claims and risk weights shall be as the following:

Rating Grade of Sovereigns	1	2	3-5	6	No Credit Rating
Risk weight (%)	20	50	100	150	100

4.3 For claims on financial institutions denominated in their country's domestic currency with original maturity not exceeding 3 months[10]: The portion of assets and off-balance sheet items not exceeding commercial banks' liabilities denominated in that currency shall be assigned a risk weight of 20%, regardless of the country's sovereign and central bank credit rating. The portion exceeding the liabilities shall be assigned risk weights in accordance with the Local Currency Rating of the sovereign and central bank of the country where the financial institution is registered, and the risk weights specified in Section 4.2 shall be used.

In this regard, in comparing value of assets and off-balance sheet items with commercial banks' liabilities, commercial banks shall apply the same principle as specified in Section

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[9] Means asset management companies following the Emergency Decree on the Asset Management Company B.E. 2541 (1998).

[10] Includes deposits in savings accounts, current accounts, Nostro accounts, call loan and overdraft loan (O/D), but excludes claims that have been rolled over.

5. Claims on securities companies

Risk weights for claims on securities companies shall be the same as those for claims on financial institutions specified in Section 4.

6. Claims on corporates

6.1 Claims on corporate mean claims on legal entities established by the Civil and Commercial Code or the Law on Public Company Limited, including claims on an individual person and persons[11] who have objectives to borrow for their businesses, and small business loans unqualified to be retail claims specified in Section 7.1, but excluding claims already classified as claims under Sections 1-5 and Section 7.

6.2 Claims on corporate shall be assigned risk weights in accordance with its long term credit ratings from ECAIs, as follows:

Rating Grade of Corporate	1	2	3-4	5-6	No Credit Rating[12]
Risk weight (%)	20	50	100	150	100

6.3 Claims on corporate with short term debt ratings from ECAIs shall be assigned risk weights, as follows:

Rating Grade of Corporate	1	2	3	4
Risk weight (%)	20	50	100	150

6.4 Commercial banks may assign a risk weight of 100% for all claims on corporate regardless of credit ratings from ECAIs, provided that approval has been granted

[11] Means joint borrowings by more than one individual.

[12] Commercial banks shall first consider the regulations on use of ratings of securities and organizations following Section III.3 in Attachment 4. If considered not relevant, commercial banks shall use a risk weight of 100% as prescribed in the table.

by the Bank of Thailand. The consideration will be completed within 30 days from the request date that all required documents have been completely and correctly submitted.

In cases where commercial banks wish to change from using a risk weight of 100% for all claims on corporate to assign risk weights according to credit ratings of claims on corporate, the commercial banks must notify the Bank of Thailand in advance, in accordance with the regulations as specified in Attachment 4.

In any case, the Bank of Thailand expects that full-scale commercial banks[13] should assign the risk weights in accordance with credit ratings of the claims from ECAIs.

For assets and off-balance sheet items under Section I.1 - I.6 with a risk weight of 150% and for which provisioning has been made, the commercial banks may apply lower risk weights as prescribed by the Bank of Thailand, as follows:

(1) If such assets and off-balance sheet items have specific provisions less than 20% of total outstanding loans, a risk weight of 150% shall be assigned;

(2) If such assets and off-balance sheet items have specific provisions at least 20% but less than 50% of total outstanding loans, a risk weight of 100% shall be assigned;

(3) If such assets and off-balance sheet items have specific provisions at least 50% of total outstanding loans, a risk weight of 50% shall be assigned.

And, for assets and off-balance sheet items under Section I.1 - I.6 which received a risk weight of 100% with specific provisions of at least 50% of total outstanding loans, a risk weight of 50% shall be assigned.

7. Claims on retail portfolios

7.1 Claims on retail portfolios which meet all of the following criteria shall have a risk weight of 75%.

(1) Orientation criterion: Claims on an individual person, persons, or a small business

[13] Full-scale commercial banks mean commercial banks under the Financial Institutions Businesses Act B.E.2551 (2008), excluding retail banks.

In this regard, commercial banks shall specify suitable internal guidelines for considering small businesses which are consistent with commercial banks' lending and risk management practices.

(2) Product criterion: Claims in the form of revolving credits or lines of credit including credit cards and overdrafts (O/D), personal loans and hire purchase loans or contingent liabilities, but excluding investment in debt or equity securities of listed and non-listed companies in securities exchanges.

(3) Granularity criterion: Claims on retail portfolios must be sufficiently diversified to the extent that risks are reduced. The aggregate of credit lines and contingent liabilities granted to each retail debtor and related parties[14] must not exceed 0.2% of total credit lines and contingent liabilities of qualified retail portfolios including residential mortgage loans qualified as retail claims as prescribed in the **Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.3)** but excluding credit lines of non-performing retail loans.

(4) Low value of individual exposures: The aggregate of credit lines and contingent liabilities granted to each retail debtor and related parties cannot exceed an absolute threshold of 50 million baht.

In this regard, the calculation of total credit lines granted to each retail debtor and related parties shall include all off-balance items which are not derivatives, using the notional amount (before multiplied by credit conversion factor). For retail debtors which are small businesses, commercial banks shall also include credit equivalent amount of OTC derivatives in the calculation of total credit lines.

Nonetheless, in cases where a particular retail debtor has several credit lines totaling over 50 million Baht, the Bank of Thailand permits commercial banks to classify credit card debts as claims on retail portfolios and assigned a risk weight of 75%. For the remaining debts, commercial banks shall categorise them by the type of credit line and assign risk weight of 100%. If commercial banks are unable to separate credit card debts from other debts, a risk weight of 100% shall be assigned to the total debts.

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[14] Commercial banks shall refer to the definition of related parties as specified in Section 4 of the Financial Institutions Businesses Act B.E. 2551 (2008). If the commercial bank can prove that the bank has been vigilant and carried out comprehensive assessments of related parties but is unable to determine the total number of related parties, it is deemed that the commercial banks are not at fault.

7.2 Claims on an individual person or persons without business purpose which do not meet all four criteria as claims on retail portfolios as specified in Section 7.1 shall receive a risk weight of 100%.

7.3 Claims on an individual person and persons with business purpose which do not meet all four criteria as claims on retail portfolios specified in Section 7.1 shall be treated as claims on corporate and receive the risk weight in accordance with Section 6.

8. Residential mortgage loans

The risk weights assigned for residential mortgage loans under this section are in accordance with the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan.

9. Other Assets

9.1 A risk weight of 0% shall be assigned to:

9.1.1 Cash in Thai baht and foreign currencies

9.1.2 Inter-office balances of the commercial banks

9.1.3 Prepaid expenses

9.1.4 Assets arising from mark-to-market of derivative contracts

9.1.5 Assets that the Bank of Thailand prescribes to be deducted from the capital, such as goodwill, deferred taxes, etc.

9.2 A risk weight of 20% shall be assigned to:

9.2.1 Cash in collection process, which are cash sub-items in the balance sheet as follows: Demand instruments in collection process and instruments that the collection must be in accordance with the regulation on interbank clearing and can be collected on the following business day, such as drafts, bank cheques that have not been cleared but the customers' account have been credited, and returned cheques.

9.2.2 Investment in securities or investment in funds including accrued interests, only for the amount that Ministry of Finance has entered into a contract to provide risk protection or has agreed to bear the risks for, such as the Vayupak 1 Fund.

9.3 A risk weight of 100% shall be assigned to:

9.3.1 Investment in equity instruments and warrants in the companies that are:

(1) Companies operating financial business and financial supporting businesses[15] in full consolidation group that are required to be included in consolidated financial statements

(2) Companies operating financial business and financial supporting business that commercial banks do not own more than 10% of the total issued common shares of each company, the calculation method is as follows:

Commercial banks shall compare the sum of direct and indirect[16] investment[17] in equity instrument and warrants, eligible financial instruments as Tier 1[18] and Tier 2 capital[19] of the companies as specified in (2) with 10% of Net Common Equity Tier 1[20]. In consequence, commercial banks shall use the sum of such investment only for an amount not exceeding 10% of Net Common Equity Tier 1 to calculate risk-weighted assets in proportion to the type of investment (Pro-rata basis)[21]. For the parts that are investment in equity instruments and warrants in banking book, commercial banks shall assign a risk weight of 100%. As for eligible financial instruments as capital of such companies in the banking book, commercial banks shall assign a risk weight in accordance with the types of asset. In this regard, if investments are in the trading book, commercial banks shall comply with the Notification of the Bank of Thailand: Regulation

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[15] Refer to definitions of financial business and financial supporting businesses as specified in the Notification of the Bank of Thailand: Regulation on Consolidated Supervision

[16] Indirect investment means the case where commercial banks undertake equity and debt derivatives in the position of buyers of such derivatives or it is likely to receive such derivatives in the future

[17] Refer to investments in the trading book and banking book

[18] Only in case where insurance companies and securities companies are able to issue financial instruments eligible as tier 1 capital, and where such instruments are invested by commercial banks

[19] Only in case where insurance companies and securities companies are able to issue financial instruments eligible as tier 2 capital, and where such instruments are invested by commercial banks

[20] Net Common Equity Tier 1 capital means tier 1 capital that is net equity capital of commercial banks deducted by the items as prescribed in the Notification of the Bank of Thailand: Components of Capital for Locally-incorporated Banks. In case of foreign banks branches, it shall be compared with 10% of net capital deducted by the items as prescribed in the Notification of the Bank of Thailand: Components of Capital for Foreign Banks Branches

[21] Commercial banks shall refer to the calculation methods as specified in Attachment 4 of the Notification of the Bank of Thailand: Components of Capital for Locally-incorporated Banks, and Attachment 4 of the Notification of the Bank of Thailand: Components of Capital for Foreign Banks Branches.

on Supervision of Market Risk and Maintenance of Capital Requirement for Market Risk of Financial Institutions.

(3) Companies providing supporting functions for the financial institution system or companies acquired from debt restructuring, as follows:

(3.1) Companies providing supporting function for the business operation of financial institutions and overall financial institution system, such as National Credit Bureau Co., Ltd., National ITMX Co., Ltd., S.W.I.F.T Co., Ltd. and Thai Rating and Information Service Co., Ltd., etc.

(3.2) Companies acquired from debt restructuring, debt repayment, execution of debt repayment or guarantee of debt repayment, as permitted by the Bank of Thailand

(3.3) Companies in liquidation process

9.3.2 Mutual fund investment units; commercial banks may specify the risk weights by the type, proportion and size of assets that the mutual fund has actually invested in (look-through) where commercial banks must be able to calculate the net asset value on a daily basis.

9.3.3 Investment in equity instruments and warrants in the companies that neither operate financial business nor financial supporting business in which commercial banks do not own more than 10% of the total issued common shares of each company.

9.3.4 Land, premises, equipment, other fixed assets, and assets held for sale.

9.3.5 Other assets that risk weights have not been assigned

9.4 A risk weight of 250% shall be assigned to:

9.4.1 Investment in equity instruments and warrants issued by companies operating financial business and financial supporting business where commercial banks own more than 10% of the total issued common shares of each company (except companies under the scope of full consolidation that are required to be included in the consolidated financial statements, and companies providing supporting functions for the financial institution system or acquired from debt restructuring); the calculation method is as follows:

Commercial banks shall compare the sum of direct and indirect[18] investment[19] in equity instruments and warrants of the company with 10% of Net Common Equity Tier 1. In consequence, commercial banks shall use the sum of such investments only for an amount not exceeding 10% of Net Common Equity Tier 1[22] to calculate risk-weighted assets in proportion to the type of investment in each company (Pro-rata basis). For the parts that are investment in equity instruments and warrants in banking book, commercial banks shall assign a risk weight of 250%. In this regard, if investments are in the trading book, commercial banks shall comply with the Notification of the Bank of Thailand: Regulation on Supervision of Market Risk and Maintenance of Capital Requirement for Market Risk of Financial Institutions. In this regard, if the risk weight following the aforementioned Notification is less than 250%, commercial banks shall assign a risk weight of 250%.

9.5 Assign a risk weight of 100% divided by 8.5% (100/8.5%), or equal to 1176.5%

9.5.1 Value of loans or investments in debt instruments for the part that is less than minimum loss, where commercial banks are protection buyers and are in the first loss position, where materiality threshold is specified in an agreement on credit protection (details in Section 5.2 of Attachment 7).

9.5.2 Investment in equity instruments and warrants of companies operating businesses other than financial businesses and supporting businesses where commercial banks own more than 10% of the total issued common shares of each company.

II. Non-performing assets

In case where commercial banks classify assets and off-balance items following Section I.1 – I.8 as non-performing assets, commercial banks shall assign them a risk weight of 150%, except for residential mortgage loans following **the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.1) and 5.2.3 (1.2)** which is classified as non-performing assets, commercial banks shall assign a risk weight of 100%.

Nonetheless, where the aforementioned non-performing debts have high specific provisions relative to total exposures, commercial banks shall assign the lower risk weights in accordance with the regulations as prescribed by the Bank of Thailand, as follows:

1. Non-performing assets with no credit risk mitigation as prescribed by the Bank of Thailand, following Attachments 5 - 7 shall be assigned the following risk weights:

1.1 Where specific provisions are less than 20% of total exposures: a risk weight of 150% shall be assigned.

1.2 Where specific provisions are at least 20% but less than 50% of total exposures: a risk weight of 100% shall be assigned.

1.3 Where specific provisions are at least 50% of total exposures and where payments are less than one year past due: a risk weight of 50% shall be assigned.

1.4 Where specific provisions are at least 50% of total exposures and where payments are over one year past due: a risk weight of 100% shall be assigned.

2. Non-performing assets with no credit risk mitigation as prescribed by the Bank of Thailand in regulations on credit risk mitigation under the SA but fully collateralised by: (1) Commercial Real Estate (CRE) (2) Residential Real Estate (RRE) and (3) Receivables[22] shall be assigned the following risk weights:

2.1 Where specific provisions are less than 15% of total exposures: a risk weight of 150% shall be assigned.

2.2 Where specific provisions are at least 15% but less than 50% of total exposures: a risk weight of 100% shall be assigned.

2.3 Where specific provisions are at least 50% of total exposures and where payments are less than one year past due: a risk weight of 50% shall be assigned.

2.4 Where specific provisions are at least 50% of total exposures and where payments are over one year past due: a risk weight of 100% shall be assigned.

3. Residential mortgage loans that receive a risk weight of 35% as prescribed in the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.1) and are non-performing assets shall be assigned the following risk weights:

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[22] Commercial banks shall refer to the definitions and guidelines for collaterals in the form of CRE, RRE and Receivables of commercial banks following the Notification of the Bank of Thailand: Regulation on the Calculation of Risk-weighted Assets for Commercial Banks under the Internal Ratings-based Approach (IRB).

3.1 Where specific provisions are less than 20% of total exposures: a risk weight of 100% shall be assigned.

3.2 Where specific provisions are at least 20% of total exposures: a risk weight of 50% shall be assigned.

4. Residential mortgage loans that receive a risk weight of 75% as prescribed in the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.2) and are non-performing assets shall be assigned the following risk weights:

4.1 Where specific provisions are less than 20% of total exposures: a risk weight of 100% shall be assigned.

4.2 Where specific provisions are at least 20% but less than 50% of total exposures: a risk weight of 75% shall be assigned.

4.3 Where specific provisions are at least 50% of total exposures: a risk weight of 50% shall be assigned.

Attachment 1.1

List of state enterprises[1] categorized by the risk weights as prescribed by the Bank of Thailand

1. State enterprises using the same risk weights as claims on financial institutions, categorised as:

1.1 State Enterprises that are financial institutions

(1) Government Savings Bank
(2) Government Housing Bank
(3) Bank for Agriculture and Agricultural Cooperatives
(4) Export-Import Bank of Thailand
(5) Small and Medium Enterprise Development Bank of Thailand
(6) Thai Credit Guarantee Corporation
(7) Islamic Bank of Thailand
(8) Secondary Mortgage Corporation

1.2 State enterprises that are not financial institutions and established by specific laws

A. Established by the Act

1) Metropolitan Electricity Authority
2) Provincial Electricity Authority
3) Electricity Generating Authority of Thailand
4) State Railway of Thailand
5) Port Authority of Thailand
6) Mass Rapid Transit Authority of Thailand
7) Metropolitan Waterworks Authority
8) Mobile Menu Provincial Waterworks Authority
9) Industrial Estate Authority of Thailand
10) The Government Lottery Office
11) Tourism Authority of Thailand
12) Thailand Institute of Scientific and Technological Research
13) Government Pharmaceutical Organization

[1] Commercial banks shall refer to the latest updated list from the State Enterprise Policy Office, the Ministry of Finance (http://www.sepo.go.th)

14) Office of the Rubber Replanting Aid Fund >>Rubber Authority of Thailand

15) Fish Marketing Organization
16) Sports Authority of Thailand
17) Wastewater Management Authority

B. **Established by the Royal Decree**

1) Bangkok Mass Transit Authority
2) Civil Aviation Training Center
3) Botanical Garden Organization
4) Forest Industry Organization
5) Rubber Estate Organization>>Rubber Authority of Thailand
6) Marketing Organization for Farmers
7) Dairy Farming Promotion Organization of Thailand
8) Public Warehouse Organization
9) Marketing Organization
10) Zoological Park Organization
11) National Science Museum

C. **Established by the National Council Announcement**

1) National Housing Authority
2) Expressway Authority of Thailand

D. **Established by the Rule or Regulation**

1) Thailand Tobacco Monopoly, Ministry of Finance
2) Liquor Distillery Organization, Excise Department
3) Playingcards Factory, Excise Department
4) Printing Royal Thai Police
5) Office Pawnshop Department of Social Development and Welfare

2. **State enterprises using the same risk weights as claims on corporate,** namely:

2.1 PTT Public Company Limited
2.2 The Transport Company Limited
2.3 Thai Marine Navigation Company Limited
2.4 Bangkok Dock Limited
2.5 Airports of Thailand Public Company Limited

2.6 Thai Airways International Public Company Limited
2.7 Aeronautical Radio of Thailand Limited
2.8 TOT Public Company Limited
2.9 CAT Telecom Public Company Limited
2.10 Thai Post Company Limited
2.11 MCOT Public Company Limited
2.12 The Syndicate of Thai Hotels & Tourists Enterprises Limited
2.13 Thai Farmers Business Promotion Company Limited
2.14 Dhanarak Asset Development Company Limited

Attachment 2

Regulations on credit conversion factors for non-market related off-balance sheet items

Commercial banks shall convert all non-market related off-balance sheet items which are not derivatives to obtain credit equivalent amounts by multiplying the off-balance sheet items by the credit conversion factors (CCF) corresponding to the types of off-balance sheet items prescribed by the Bank of Thailand, as follows:

I. Credit conversion factors for undrawn credit lines

1. Credit conversion factor 0%

- Undrawn credit lines that commercial banks can cancel immediately and unconditionally[1]
- Undrawn credit lines for derivative transactions

2. Credit conversion factor 20%

- Undrawn credit lines with original maturities of less than 1 year

3. Credit conversion factor 50%

- Undrawn credit lines with remaining maturities over 1 year

4. Credit conversion factor 100%

- Credit lines not qualifying under 1-3.

In cases where commercial banks can identify that the undrawn credit lines are for off-balance sheet items that have credit conversion factors lower than the conversion factors specified for the undrawn credit lines, commercial banks may elect to use the lower conversion factor.

[1] In a credit line agreement, there must be a provision that gives commercial banks the rights to cancel the credit lines immediately and unconditionally, at any time. Where “event of default” or “material adverse change clause” is specified as a condition to cancel the agreement, it must not limit the rights of the commercial banks to cancel the credit lines only in the case where debtor credit quality deteriorates or in a particular case.

II. Credit conversion factors for other off-balance sheet items

1. Credit conversion factor 0%

- Bills for collection

- Contingent liabilities that commercial banks can cancel immediately and unconditionally

2. Credit conversion factor 20%

- Contingent liabilities arising from letters of credit[2], both in the case of the issuing banks and confirming banks, with or without documentations, including contingent liabilities arising from acceptances on trade bills

- Shipping guarantees

3. Credit conversion factor 50%

- Contingent liabilities that are dependent on performances of customers, such as surety bonds for construction contracts, bid bonds, performance bonds and surety bonds for sales or purchase of materials etc.

- Guarantees related to payments of taxes, such as import tariffs, taxes on foreign workers working in Thailand travelling to foreign countries, customs and excise taxes, sales tax for imported goods or tax returns

- Guarantees for payments of water bills or water meters, electricity bills or electricity meters

- Guarantees regarding payments of goods

- Advance payment guarantees

- Guarantees for compliances with contracts, such as guarantees for immigrants entering the country, guarantees for synergy cards or star cards used for payments of petrol.

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[2] Including other transactions that have the same practices as the letters of credit, but may be different in terms of delivering and receiving processes and verification of documents or information related to international trade transactions of which the electronic methods are used instead of the officers of the commercial banks.

- Retention / warranty bonds

- Guarantees to the court, such as guarantees for court proceedings or guarantee while waiting for court's verdict

- Firm underwriting

4. **Credit conversion factor 100%**

- Aval to Promissory Notes or Bills of Exchange

- Loan guarantees

- Guarantees of other types of borrowings where guarantors are required to make unconditional repayment in place of borrowers

- Guarantees of payment with regards to selling, discounting or rediscounting of bills

- Endorsement of bills where endorsees have recourse rights.

- Contracts to purchase assets where commercial banks must comply with the contracts unconditionally

- Guarantees, warranties or any form of contingent liabilities of commercial banks arising from the sales of assets

- Contingent liabilities pursuant to sales of instruments under repurchase agreements

- Contingent liabilities pursuant to securities borrowing and lending agreements (SBL)

- Contingent liabilities pursuant to risk protection contracts or agreements, namely contracts where commercial banks accept the credit risk transferred by counterparties or agree to provide protection against credit risk of counterparties through an agreement to pay certain amount of money, or take losses when counterparties do not receive repayment from credits granted or investments in debt securities, or when a credit event occurs.

- Liabilities arising from acceptances for customers, such as acceptance of bills

- Guarantees for recapitalisation or other types of guarantees for another party for the purposes of borrowing

- Other contingent liabilities that credit conversion factors are not specified in this Attachment

Attachment 3

Regulations on assigning risk weights and credit conversion factors for credit derivatives in the banking book[1]

1. In case where commercial banks are credit risk protections[2] sellers

Commercial banks shall calculate credit risk-weighted assets for credit derivatives in accordance with the methodologies prescribed by the Bank of Thailand. Credit derivatives are categorized as follows.

1.1 Credit default swaps (CDS): Commercial banks are CDS sellers

Commercial banks shall calculate credit risk-weighted assets for contingent liabilities from underlying assets' credit risk, using a credit conversion factor of 100% and risk weights following the types of the underlying assets.

1.2 Credit linked notes (CLN): Commercial banks are CLN buyers

Commercial banks shall use the higher value between (1) credit risk-weighted assets calculated for contingent liabilities from the underlying assets' credit risk, using a credit conversion factor of 100% and risk weights following the types of underlying assets, and (2) credit risk-weighted assets calculated for amounts lent or amounts of securities bought through the CLN, using the risk weights of the CLN issuers.

1.3 First to default products: Commercial banks are the first to default swaps sellers, or the first to default CLN buyers

<u>In case where commercial banks are the first to default swaps sellers</u>

Commercial banks shall calculate credit risk-weighted assets for the maximum payment that the commercial banks that are credit risk protection sellers may have to pay for under the swaps contracts, using a credit conversion factor of 100% and the aggregate risk weights of the individual underlying assets within the group.

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[1] Commercial banks shall refer to the definition for credit derivatives following the Notification of the Bank of Thailand on Permissions for Commercial Banks to Engage in Credit Derivatives.

[2] The receivers of the credit risk of the underlying assets.

In case where commercial banks are the first to default CLN buyers

Commercial banks shall use the higher value between (1) credit risk-weighted assets for the maximum payment that the commercial banks, which are credit risk protection sellers, may have to pay for under the swaps contract, using a credit conversion factor of 100% and the aggregate risk weights of the individual underlying assets within the asset pool, and (2) credit risk-weighted assets calculated for amounts lent or amounts of securities bought through the first to default CLN, using the risk weights of the risk protection buyers as the first to default CLN issuers.

However, the value of the credit risk-weighted assets for the first to default products after converted to minimum required capital amount[3] must not exceed the maximum payment that the commercial banks that are credit risk protection sellers may have to pay to the credit risk protection buyers under the derivative contracts.

In cases where the aforementioned financial derivatives have credit ratings from external credit assessment institutions that the Bank of Thailand has recognised for securitisation transaction, commercial banks shall compare such credit ratings with the rating grades prescribed by the Bank of Thailand for securitisation transactions[4].

1.4 Proportionate CDS and proportionate CLN: Commercial banks are the proportionate CDS sellers, or the proportionate CLN buyers

In case where commercial banks are the proportionate CDS sellers

Commercial banks shall calculate the aggregate credit risk-weighted assets for the contingent liabilities from each underlying asset's credit risk following the proportions of risk protections provided as specified in the contracts, using a credit conversion factor of 100% and risk weights following the types of each underlying asset within the group.

In case where commercial banks are the proportionate CLN buyers

The Commercial banks that lend cash or buy securities or putting down collaterals shall calculate risk-weighted assets using the higher value between (1) the aggregate credit risk-weighted asset for the contingent liabilities from each underlying

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[3] Calculated as the credit risk-weighted assets multiplied by the capital ratio following the Notification of the Bank of Thailand on Supervision of Capital

[4] as detailed following the Notification of the Bank of Thailand on Permissions for Financial Institutions to Conduct Securitisation Business, the contents are to be amended in line with Basel II and Basel III in the future

asset's credit risk following the proportions of risk protections provided as specified in the contracts, using a credit conversion factor of 100% and risk weights following the types of each underlying asset within the group, and (2) credit risk-weighted assets calculated from the amounts lent or amounts of securities bought, using the risk weights of the risk protection buyers as the proportionate CLN issuers.

1.5 Total rate of return swaps (TRORS): Commercial banks are the TRORS sellers

Commercial banks shall calculate credit risk-weighted assets for (1) the contingent liabilities from the underlying assets' credit risk, using a credit conversion factor of 100% and risk weights following the types of underlying assets, and (2) the counterparty risks from the credit risk protection buyers' obligations to make payments for increases in the fair values of the underlying assets using the current exposure method (CEM method) as specified in the Notification of the Bank of Thailand on the Calculation of Counterparty Credit Risk-Weighted Assets for Derivative Transactions.

2. In case where commercial banks are the buyers of credit risk protection[5]

Commercial banks shall refer to the calculation of risk-weighted assets for assets subject to risk protections following the regulations on credit risk mitigation through guarantees and credit derivatives in Attachment 7.

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[5] The transferors of the credit risk of the underlying assets.

Attachment 4

Regulations on the Use of Credit Ratings from External Credit Assessment Institutions

I. External credit assessment institutions (ECAIs) recognised by the Bank of Thailand[1]

The Bank of Thailand permits commercial banks to use credit ratings from the following ECAIs for assigning risk weights to claims under the SA.

(1) Standard and Poor's

(2) Moody's Investors Service

(3) Fitch Ratings

(4) Fitch Ratings (Thailand)

(5) TRIS Rating

II. Mapping of Ratings from Recognised ECAIs into Rating Grades

Commercial bank shall map the claims' credit ratings given by ECAIs into the rating grades prescribed by the Bank of Thailand in Table 1 for long-term debt ratings and organisations' credit ratings, and Table 2 for short-term debt ratings[2], in order to map into risk weights by the type of claims prescribed by the Bank of Thailand in Attachment 1.

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[1] Recognition of ECAIs and mapping of credit ratings under this Notification does not cover the permissions for commercial banks to map ratings from ECAIs into credit risk weights for securitisation.

[2] The mapping of claims' credit ratings following Table 2 shall be applied only in cases where commercial banks invest in short-term debt securities of corporate or claims that receive the same risk weights as claims on corporate.

Table 1 Rating Grades Prescribed by the Bank of Thailand Mapped with Long-term Debt Ratings or Issuer Ratings Received from ECAIs

Rating Grade of Claims	S&P	Moody's	Fitch	Fitch (Thailand)	TRIS
1	AAA AA+ AA AA-	Aaa Aa1 Aa2 Aa3	AAA AA+ AA AA-	AAA(THA) AA+(THA) AA(THA) AA-(THA)	AAA AA+ AA AA-
2	A+ A A-	A1 A2 A3	A+ A A-	A+(THA) A(THA) A-(THA)	A+ A A-
3	BBB+ BBB BBB-	Baa1 Baa2 Baa3	BBB+ BBB BBB-	BBB+(THA) BBB(THA) BBB-(THA)	BBB+ BBB BBB-
4	BB+ BB BB-	Ba1 Ba2 Ba3	BB+ BB BB-	-	-
5	B+ B B-	B1 B2 B3	B+ B B-	BB+(THA) BB(THA) BB-(THA)	BB+ BB BB-
6	CCC+ CCC CCC- CC C **SD** D	Caa1 Caa2 Caa3 Ca C	CCC+ CCC CCC- CC C **RD** D	B+(THA) B(THA) B-(THA) CCC+(THA) CCC(THA) CCC-(THA) CC(THA) C(THA) D(THA) DDD(THA) DD(THA) D(THA)	B+ B B- CCC+ CCC CCC- CC C **SD** D

Table 2 Rating Grades Prescribed by the Bank of Thailand Mapped with Short-term Debt Ratings Received from ECAIs (Applicable only for cases where commercial banks invest in short-term corporate debt securities or claims that receive the same risk weights as claims on corporate)

Rating Grade of Claims	Risk weight (%)	S&P	Moody's	Fitch	Other ECAI	TRIS
1	20	A-1+ A-1	P-1	F1+ F1	F1+(THA) F1(THA)	T1+ T1
2	50	A-2	P-2	F2	F2(THA)	T2
3	100	A-3	P-3	F3	F3(THA)	T3
4	150	Other [3]	Other	Other	Other	Other

III. Regulations on Use of Credit Ratings from ECAIs

Commercial banks shall comply with the following criteria on use of ECAI credit ratings to determine risk weights.

1. Procedures for use of ECAI credit ratings

1.1 Commercial banks must consistently use credit ratings from the ECAIs that commercial banks select for each type of claims for both purposes of risk weight calculation and internal risk management of the commercial banks. As such, the Bank of Thailand does not permit commercial banks to cherry pick credit ratings to obtain lower risk weights.

1.2 Commercial banks must notify the Bank of Thailand which ECAIs whose credit ratings shall be used to assign risk weights following Attachment 1 at least 15 days prior to using the credit ratings of such ECAIs in assigning risk weights to claims under the SA. This shall be applied in the same manner when commercial banks wish to change ECAIs used. The notification shall be submitted to the Bank of Thailand as prescribed in Public Handbook. The consideration will be completed within 60 days from the request date that all required documents have been completely and correctly submitted.

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[3] "Other" includes non-prime credit ratings and B and C credit ratings

1.3 Commercial banks must disclose information of the ECAIs used by the commercial banks in assigning risk weights for each type of claims, complying with the Bank of Thailand Notification Re: Disclosure of Capital Maintenance for Commercial Banks.

2. Assigning risk weights in case of multiple credit ratings form ECAIs

2.1 In case where a claim has 1 credit rating from the selected ECAIs, commercial banks shall use such rating to assign the risk weight to such claim.

2.2 In case where a claim has 2 different credit ratings from the selected ECAIs which map into different risk weights, commercial banks shall use the higher risk weight.

2.3 In case where a claim has more than 2 credit ratings from the selected ECAIs which map into different risk weights, commercial banks shall compare the two lowest risk weights and use the higher risk weight; except the case where 2 or more credit ratings correspond to the lowest risk weight, the commercial banks shall use such risk weight.

3. Use of Issue-specific and Issuer Ratings

3.1 In case where there are issue-specific or issuer ratings

3.1.1 In case where commercial banks hold debt securities with issue-specific ratings, the commercial banks shall use the risk weights in accordance with the credit ratings of those securities, with the following exceptions.

(1) In case where commercial banks hold debt securities of financial institutions or claims using the same risk weights as claims on financial institutions, the commercial banks shall use the ratings of sovereign and central bank of the debtor's country of incorporation to assign risk weights as specified in Attachment 1.

(2) In case where commercial banks invest in short-term debt securities of sovereigns and central banks or multilateral development banks, the commercial banks shall assign risk weights to such short-term debt securities in accordance with the approach in Section 3.2.1.

3.1.2 In case where commercial banks lend, have deposits or off-balance sheet items with debtors with issuer ratings, the commercial banks shall use the risk weights corresponding to the issuer ratings; except the case where commercial banks lend, have deposits or off-balance sheet items with financial institutions or claims using the same risk weights as claims on financial institutions, then the commercial banks shall use the ratings of sovereign and central bank of the debtor's country of incorporation to assign risk weights as specified in Attachment 1.

3.2 In Case where there are no issue-specific or issuer rating

3.2.1 For claims on sovereigns and central banks or claims on multilateral development banks

(1) In case where commercial banks invest in unrated debt securities, the commercial banks shall comply with the following.

(1.1) In case where debtors have other long-term debt securities with low quality credit ratings (equivalent to a risk weight of 100% or higher), commercial banks shall use risk weights of such long-term debt securities in assigning risk weights to unrated debt securities[4] only if the unrated debt securities are debt securities that the commercial banks have the claim rights ranked pari passu or junior to such debt securities with ratings[5].

(1.2) In case where debtors have low quality issuer ratings (equivalent to a risk weight of 100% or higher), commercial banks shall use such issuer ratings to assign the risk weights of unrated debt securities only if the unrated debt securities are debt securities that the commercial banks have the claim rights ranked pari passu or junior to senior unsecured debt securities of such debtors[5].

(1.3) In case where debtors have other long term debt securities with high quality credit ratings (equivalent to a risk weight of less than 100%), commercial banks shall use such ratings to assign risk weights to unrated debt securities only if the commercial banks have claim rights ranked pari passu or senior to such debt securities with ratings.

(1.4) In case where debtors have high quality issuer ratings (equivalent to a risk weight of less than 100%), commercial banks shall use such issuer

[4] As such, if the debtors have more than one long-term debt securities with low quality credit ratings under the aforementioned criteria, and where such debt securities are assigned different risk weights, the commercial banks shall assign the higher risk weight to the unrated debt securities.

[5] In case where debtors have both an issue-specific rating of other long term debt securities under Section 3.2.1 (1.1) and an issuer rating under Section 3.2.1 (1.2), and such low quality credit ratings are mapped into different risk weights, the commercial banks shall assign the higher risk weight to the unrated debt securities.

ratings to assign risk weights to unrated debt securities only if the unrated debt securities are neither subordinated debts nor unsecured (senior unsecured)[6].

If commercial banks are unable to comply with the criteria specified in Section 3.2.1 (1.1) to (1.4) above, commercial banks shall not use the ratings of other debt securities or issuer ratings to assign the risk weights to the unrated debt securities. That is, commercial banks shall assign risk weights to the unrated debt securities as unrated claims in accordance with the regulations in Attachment 1.

(2) In case where commercial banks lend, or have deposits, or off-balance sheet items with debtors with no issuer ratings, the commercial bank shall comply with the following.

(2.1) In case where debtors have other long-term debt securities with low quality credit ratings (equivalent to a risk weight of 100% or higher), the commercial banks shall assign the risk weights of such long-term debt securities to unrated loans, deposits or off-balance sheet items[7] only if the commercial banks have the claim rights on the loans, deposits and off-balance sheet items ranked pari passu or junior to such debt securities with ratings.

(2.2) In case where debtors have other long-term debt securities with high quality credit ratings (equivalent to a risk weight of less than 100%), commercial banks shall use such credit ratings to assign risk weights to unrated loans, deposits and off-balance sheet items only if the commercial banks have claim rights ranked pari passu or senior to such debt securities with ratings.

If commercial banks are unable to comply with the criteria specified in Section 3.2.1 (2.1) to (2.2) above, commercial banks shall not use the ratings of other debt securities to assign risk weights to debtors with no issuer ratings. That is, commercial banks shall assign risk weights to unrated debt securities as unrated claims in accordance with the regulations in Attachment 1.

3.2.2 For claims on corporate or claims using the same risk weights as claims on corporate

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[6] Includes unsecured debt securities which are not subordinated.

[7] If debtors have more than one long-term debt securities with low quality credit ratings under the aforementioned criteria, and where such debt securities are assigned different risk weights, commercial banks shall assign the higher risk weight to the unrated loans, deposits or off-balance sheet items.

(1) In case where commercial banks hold unrated debt securities, commercial banks shall comply with the following.

(1.1) In case where debtors have other short-term debt securities with credit ratings mapped into a risk weight of 150%, commercial banks shall assign a risk weight of 150% to such debtors' unrated securities.

(1.2) In case where commercial banks hold unrated short-term debt securities of debtors that are claims on corporate or claims using the same risk weights as claims on corporate; but debtors have other short term debt securities with credit ratings mapped into a risk weight of 50%, commercial banks shall assign a risk weight of no lower than 100% to such debtors' unrated short-term debt securities.

If the criteria in Section 3.2.2 (1) are not met, commercial banks shall comply with the methods as specified in Section 3.2.1 (1).

(2) In case where commercial banks lend, have deposits or off-balance sheet items with debtors with no issuer rating the commercial banks shall comply with the following.

(2.1) In case where debtors have other short-term debt securities with credit ratings mapped into a risk weight of 150%, commercial banks shall assign a risk weight of 150% to such debtors' loans, deposits and off-balance sheet items.

If the criteria in Section 3.2.2 (2) are not met, commercial banks shall comply with the methods as specified in Section 3.2.1 (2).

3.3 Whether commercial banks use issuer ratings or issue-specific ratings, commercial banks must consider all credit risk exposures including principal and accrued interests.

3.4 Commercial banks cannot use credit risk mitigation if the results of credit enhancements have already been reflected in the credit ratings; this stipulation is consistent with the regulations on credit risk mitigation disallowing double counting of credit enhancements.

4. Local Currency Ratings and Foreign Currency Ratings

Commercial banks shall use foreign currency ratings for risk weight calculations only for foreign currency claims, and use local currency ratings for risk weight calculations only for local currency claims[8].

5. Credit Rating Hierarchy

The credit rating of any particular company under a group cannot be used to assign risk weights to other debtors under the same company group.

6. Unsolicited Credit Ratings

6.1 The Bank of Thailand does not allow commercial banks to use unsolicited ratings, or ECAI credit ratings of companies without requests for the rating, without the companies' payment for the rating to be carried out, or credit ratings by ECAIs without participation of the companies being rated, such as in case where ECAIs use only the companies' public information for credit rating assessments. Exceptions apply for claims on sovereigns and central banks for which unsolicited ratings can be used.

6.2 Should it happen that ECAIs use unsolicited ratings to pressure companies to agree to the solicited ratings, the Bank of Thailand will reassess its recognition for the use of such ECAIs' credit ratings.

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[8] In case where commercial banks participate in syndicated lending with guarantees against convertibility and transfer risk from multilateral development banks that receive a risk weight of 0% in accordance with Attachment 1 Section I.3.1; the Bank of Thailand will consider that all convertibility and transfer risks are mitigated, and the commercial banks shall therefore use the borrowers' local currency ratings instead of foreign currency ratings for the portion of loans with guarantees from the MDBs. For the portion of loans that does not have these risk guarantees, risk weights corresponding to foreign currency ratings shall be used.

Attachment 5

Regulations on Credit Risk Mitigation Using Financial Collaterals

Commercial banks are able to use financial collaterals approved by the Bank of Thailand to mitigate credit risks. In this regard, commercial banks must comply with the minimum requirements and methodologies prescribed by the Bank of Thailand, as follows:

1. Minimum Requirements for Use of Financial Collaterals for Credit Risk Mitigation

1.1 For collaterals pledged or transferred, commercial banks must have the right to liquidate or take legal action over them in a timely manner in the event of default, insolvency or bankruptcy. In addition, commercial banks must take all necessary steps to ensure that all legal actions with regards to such collaterals are enforceable, for example, registering the collaterals with a registrar.

1.2 Commercial banks must have methods to assess and check that the collaterals do not have a material positive correlation with the debtors. For example, securities issued by the debtors or by any related entity shall be excluded as collaterals as they will not be able to provide effective risk protection.

1.3 Commercial banks must specify clear processes and procedures for liquidation of collaterals, in case where the debtors default on their obligations, to ensure that the commercial banks have full legal rights to liquidate the collaterals promptly.

1.4 In case where collaterals are deposited with a custodian, commercial banks must ensure that the custodian has rigorous process in segregating other parties' securities, which are collaterals deposited with it, from its own assets.

1.5 Commercial banks must maintain capital for transactions where both sides of the transactions are secured e.g. repurchase/reverse repurchase and securities lending/borrowing transactions (repo-style transactions), and collateral postings in connection with OTC derivative exposures or other borrowings[1].

1.6 In cases where commercial banks act as agents in undertaking a repo-style transaction between a customer and a third party, and commercial banks provide a guarantee to the customer against default on repayment of the third party, then commercial banks' risk is the same as if commercial banks are the customer's counterparty. Commercial banks shall also calculate credit risk-weighted assets for such transaction.

2. Calculation of Credit Risk Mitigation Using Financial Collaterals

2.1 For positions in the banking book, commercial banks are able to choose between the two approaches to calculate credit risk mitigation using financial collateral, as follows: (1) the Simple Approach and (2) the Comprehensive Approach. Once commercial banks have chosen the approach, they must apply the chosen method for all positions in the banking book.

2.2 For positions in OTC derivatives and repo-style transactions in the trading book for which commercial banks must calculate counterparty credit risk-weighted assets, commercial banks shall use the Comprehensive Approach only.

2.3 Commercial banks wishing to apply netting for positions in repo-style transactions in the trading book and positions in the banking book under the same master netting agreement, commercial banks shall use the Comprehensive Approach only for credit risk mitigation following the methods specified in Sections 5.1 (4) or 5.1 (5).

2.4 Commercial banks must report to the BOT the approach they have chosen for credit risk mitigation using financial collaterals, or their intention to change from

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[1] For example, if a commercial bank undertakes (1) Repo transactions with counterparty A, that is, the commercial bank borrows from counterparty A and pledges security "a" as collateral, and (2) Reverse repo transactions with counterparty B, that is, the commercial bank lends to counterparty B and receives security "b" as collateral; the commercial bank must maintain capital for both transactions. For instrument (1), the commercial bank's risk is when the value of pledged security "a" is higher than cash received from the counterparty; for instrument (2), the commercial bank's risk is similar to normal secured credits where the value of collateral "b" can deteriorate.

- Other similar transactions include Securities Borrowing and Lending transactions (SBL). For example, a commercial bank (1) borrows security A from counterparty 1 and gives security B as collateral, and (2) lends security C to counterparty 2 and receives security D as collateral; the commercial bank must maintain capital for both transactions. For transaction (1), the risk is when the counterparty cannot return collateral B that was pledged when the commercial bank borrowed security A as its value may be higher than security A; for instrument (2), the risk is when the counterparty cannot return security C that was borrowed as its value may be higher than the collateralised security D. Further, the commercial bank must also maintain capital against issuer risks for securities B and C.

one approach to the other. In this regard, the commercial banks must receive approval from BOT in the following cases:

(1) Commercial banks wish to use the Comprehensive Approach and use their own estimates for haircuts, as the commercial banks must be qualified following the minimum requirements prescribed by the Bank of Thailand before using such approach. The consideration will be completed within 90 days from the request date that all required documents have been completely and correctly submitted.

(2) Commercial banks wish to change from the Comprehensive Approach to the less complicated Simple Approach, for which Bank of Thailand will not grant approval under normal circumstances, except where the commercial banks have sufficient justification and necessity. For example, the commercial banks fail to comply with the minimum requirements for the Comprehensive Approach and the financial institution examiner orders commercial banks to use the Simple Approach, or in the case of business downsizing where the Comprehensive Approach may not be justifiable. The consideration will be completed within 60 days from the request date that all required documents have been completely and correctly submitted.

3. Eligible Financial Collaterals

The Bank of Thailand permits commercial banks to use liquid financial collaterals for which market values or prices can be determined to mitigate credit risk in each approach, as follows:

3.1 Financial collaterals in case where commercial banks use the Simple Approach include:

(1) Cash, deposits at lending banks, certificates of deposit and bills of exchange issued by lending banks[2], including cash that commercial banks received as collaterals from issuing Credit Linked Notes, First to Default CLN and Proportionate CLN to transfer credit risk of debtors in their banking book

(2) Gold

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[2] For deposits, certificates of deposit and bills of exchange issued by the lending banks which have been deposited with another financial institution in a non-custodial arrangement where assets are pledged or their rights have been transferred to the lending banks; where this pledge or rights transfer is unconditional and irrevocable, the risk weight of financial institution that oversees the assets shall be applied for the secured portion of the exposure.

(3) Debt securities with credit ratings from ECAIs approved by the Bank of Thailand, issued by the following:

(3.1) Sovereigns and central banks, local government organisations, state agencies and state enterprises (non-central government public sector entities or PSEs) that the supervisory authority requires to use the same risk weights as claims on sovereigns, and multilateral development banks (MDBs) with a 0% risk weight. Debt securities used as financial collaterals must have a credit rating better or equivalent to Rating Grade 4 or above.

(3.2) Other issuers such as financial institutions, securities companies, corporate, PSEs that the supervisory authority requires to use the same risk weight as claims on financial institutions, PSEs that the supervisory authority requires to use the same risk weight as claims on corporate, and MDBs not assigned a 0% risk weight. Debt securities used as financial collaterals must have a credit rating better or equivalent to Rating Grade 3 or above.

(3.3) Short-term debt securities of above issuers with credit ratings better or equivalent to Rating Grade 3 or above

(4) Debt securities with no ratings from ECAIs recognised by the Bank of Thailand, but with all of the following characteristics.

(4.1) The issuer is a sovereign, central bank, PSE that the supervisory authority requires to use the same risk weight as claims on sovereigns, financial institutions, PSEs which are financial institutions, and debt securities of PSEs that the principal and interests are fully guaranteed by the government

(4.2) Listed on a recognised secondary market for debt securities

(4.3) Senior debt

(4.4) All of the issuer's other debts pari-passu to the unrated debt security used as financial collaterals must have credit ratings better or equivalent to Rating Grade 3 or above

(4.5) There is no information suggesting that the commercial banks should deem above debt securities to have a credit rating below Rating Grade 3.

(5) Equity securities, warrants, and convertible debentures included in the main index. For Thailand, these include all equity securities and convertible

debentures on the Securities Exchange of Thailand, but excluding equity securities on the Market for Alternative Investment (MAI) Index

(6) Unit trusts investing in securities eligible as financial collaterals above, with public disclosure of market prices on a daily basis

3.2 Financial collaterals in case where commercial banks use the Comprehensive Approach include:

(1) All financial collaterals permitted by the Bank of Thailand for the aforementioned Simple Approach

(2) Equity securities, warrants and convertible debentures not included in the main securities index but listed on recognised securities exchanges[3]

(3) Unit trusts investing in equity securities specified in Section 3.2 (2)

4. Credit Risk Mitigation Using the Simple Approach

4.1 Minimum requirements for commercial banks using the Simple Approach

(1) Debtors must pledge the financial collateral for at least the life of the exposure, that is, there must be no maturity mismatch following the definition specified in Attachment 9.

(2) Financial collateral valuations must be carried out at least every 6 months, where commercial banks shall comply with the Policy Statement Re: Valuation of Collaterals and Foreclosed Immovable Properties Acquired from Debt Repayment of Financial Institutions.

4.2 Calculation of risk mitigation using the Simple Approach

(1) On-balance sheet assets

Commercial banks shall divide net credit equivalent amounts of transactions, which are gross credit equivalent amounts minus specific provisions, into two portions and calculate risk-weighted assets, as follows:

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[3] For Thailand, these include all equity securities and convertible debentures on the Securities Exchange of Thailand, but excluding equity securities on the Market for Alternative Investment (MAI) Index.

(1.1) <u>Collateralised portion of net credit equivalent amounts (Secured net credit equivalent amounts)</u>: Commercial banks shall multiply the secured net credit equivalent amount, the fair value of the financial collateral, by the financial collateral's risk weight as specified in Attachment 1 instead of the debtor's risk weight.

(1.2) <u>Non-collateralised portion of net credit equivalent amounts (Unsecured net credit equivalent amounts)</u>: Commercial banks shall multiply the unsecured net credit equivalent amount, the difference between the net credit equivalent amount and the secured net credit equivalent amount, by the debtor's risk weight.

(2) Other off-balance sheet items that are not derivatives

Commercial banks shall divide the net credit equivalent amounts of transactions, the notional amounts of the contracts minus specific provisions and multiplied by credit conversion factor (CCF) as prescribed by the Bank of Thailand, into two portions and calculate risk-weighted assets, as follows:

(2.1) <u>Collateralised portion of net credit equivalent amounts (Secured net credit equivalent amounts)</u>: Commercial banks shall multiply the secured net credit equivalent amount, the fair value of the financial collateral multiplied by credit conversion factor of the off-balance sheet item for credit risk mitigation, by the risk weight of the financial collateral as specified in Attachment 1 instead of the debtor's risk weight.

(2.2) <u>Non-collateralised portion of net credit equivalent amounts (Unsecured net credit equivalent amounts)</u>: Commercial banks shall multiply the unsecured net credit equivalent amount, the difference between the net credit equivalent amount and the secured net credit equivalent amount, by the debtor's risk weight.

(3) Off-balance sheet items that are derivatives

Commercial banks shall divide net credit equivalent amounts, gross credit equivalent amounts minus specific provisions, into two portions and calculate risk-weighted assets, as follows:

(3.1) <u>Collateralised portion of net credit equivalent amounts (Secured net credit equivalent amounts)</u>: Commercial banks shall multiply the secured net credit equivalent amount, the fair value of the financial collateral, by the risk weight of the financial collateral as specified in Attachment 1 instead of the counterparty's risk weight.

(3.2) <u>Non-collateralised portion of net credit equivalent amounts (Unsecured net credit equivalent amounts)</u>: Commercial banks shall multiply the unsecured net credit equivalent amount, the difference between the net credit equivalent amount and the secured net credit equivalent amount, by the counterparty's risk weight.

4.3 Minimum risk weight for secured net credit equivalent amounts under the Simple Approach

Risk weights of the secured net credit equivalent amounts shall not be lower than 20%, except for the following cases:

(1) Commercial banks are able to assign a risk weight of 0% to the secured net credit equivalent amounts, in the following cases:

(1.1) Repo-style transactions with counterparties that are core market participants[4] and meet the following criteria prescribed by the Bank of Thailand as follows:

(1.1.1) Both the exposures and collaterals must be cash or securities issued by sovereigns, central banks, local government organisations, state agencies or state enterprises that receive a risk weight of 0%.

(1.1.2) Both the exposures and the collaterals must be denominated in the same currency.

(1.1.3) The transactions are overnight instruments, or both the exposures and the collaterals are marked to market and re-margined on a daily basis.

(1.1.4) In case where the counterparties cannot pledge additional collaterals (re-margin), the period between the latest mark-to-market prior to the failure to re-margin and the liquidation date must not exceed 4 business days.

(1.1.5) The instruments are settled across a proven settlement system for that type of instrument.

[4] Thai core market participants include 1) sovereigns, central banks, all types of local government organisations, state agencies and state enterprises; 2) financial institutions under the supervision of the Bank of Thailand and securities companies; 3) other financial institutions including life insurance companies, casualty insurance companies with a risk weight of 20%; 4) mutual funds supervised by authorities regarding capital; 5) pension funds supervised by authorities; and 6) recognised clearing houses. However, Thai core market participants shall exclude foreign companies operating in Thailand. For foreign core market participants, lists prescribed by the supervisor of that country shall be used. If a country does not specify core market participants, the commercial bank may make submissions to the Bank of Thailand for consideration on a case by case basis.

(1.1.6) Documentation or contracts must meet the standards used in the market for such instruments.

(1.1.7) The documentation or contracts used for the instruments must specify that if counterparties fail to meet contractual obligations, such as they do not make cash payment or cannot deliver specified securities or margin as specified in the contract, the transactions shall be immediately considered terminated.

(1.1.8) In an event of default, whether the counterparties are insolvent or bankrupt, commercial banks must have legal rights to immediately enforce the collaterals for their own benefits.

(1.2) OTC derivatives that are marked-to-market on a daily basis with cash collaterals denominated in the same currency as the exposures.

(1.3) Cash collaterals or cash equivalent collaterals as specified in 3.1 (1), denominated in the same currency as the exposures.

(1.4) Collaterals in the form of securities issued by sovereigns, central banks, local government organisations, state agencies and state enterprises that receive a risk weight of 0%, where a 20% haircut has been deducted on the collateral values, and such collaterals are denominated in the same currency as the exposures.

(2) Commercial banks are able to assign a risk weight of 10% to secured net credit equivalent amounts, in the following cases:

(2.1) Repo-style transactions that meet the criteria to assign a risk weight of 0% above, but the counterparties are not core market participants.

(2.2) OTC derivatives that are marked to market on a daily basis and have collaterals in the form of securities issued by sovereigns, central banks, local government organisations, state agencies and state enterprises that receive a risk weight of 0%, and such collaterals are denominated in the same currency as the exposures.

5. Credit Risk Mitigation Using the Comprehensive Approach

Commercial banks shall adjust downward the value of financial collaterals or adjust upward the net credit equivalent amounts of transactions (haircut), taking into account the effect of changes in market prices which may occur in the future, including exchange rate fluctuations in cases where the net credit equivalent amounts and the financial collaterals are denominated in different currencies, before taking the net credit equivalent amounts after haircuts to calculate the credit risk-weighted assets. In this regard, commercial banks must comply with the following methodologies for risk mitigation prescribed by the Bank of Thailand.

5.1 Calculation of risk mitigation using the Comprehensive Approach

Commercial banks shall calculate risk-weighted assets by multiplying the risk weights of the debtors or the counterparties, as prescribed by the Bank of Thailand in Attachment 1, by the net credit equivalent amounts after credit risk mitigation using financial collateral (E*) calculated in accordance with Section 5.1 (1) – Section 5.1 (5).

In this regard, the E* are net credit equivalent amounts not covered by the financial collaterals which shall be multiplied by the risk weights of the debtors or counterparties in order to calculate the risk-weighted assets. For the differences between the net credit equivalent amounts and E*, which are net credit equivalent amounts covered by financial collaterals equivalent to cash after haircuts, the exposures therefore have a risk weight of 0%. This is different from the Simple Approach where commercial banks must calculate the risk-weighted assets for transactions secured by financial collaterals as haircuts are not applied to the financial collateral values.

Where financial collateral is a group of assets, the haircut for the group of assets is equal to $H = \sum a_i H_i$ where a_i is the weight of the individual asset in the asset group and H_i is the haircut applicable to that asset.

(1) In case of on-balance sheet items

$$E^* = \max \{0, \{[(E - SP) \times (1 + H_e)] - [C \times (1 - H_c - H_{fx})]\}\}$$

where:

E* = net credit equivalent amount after credit risk mitigation (after deducting financial collateral value)

E = net credit equivalent amount before deducting specific provision and financial collateral value

SP = Specific provision

H_e = haircut appropriate to the net exposure in accordance with the regulations prescribed by the Bank of Thailand

C = financial collateral value

H_c = haircut appropriate to the financial collateral in accordance with the regulations prescribed by the Bank of Thailand

H_{fx} = haircut appropriate for currency mismatch between the net credit equivalent amount and the financial collateral in accordance with the regulations prescribed by the Bank of Thailand

(2) In case of other off-balance items which are not derivatives

$$E^* = \max \{0, \{[(NPA-SP) \times (1+H_e) \times CCF] - [C \times (1-H_c-H_{fx}) \times CCF]\}\}$$

where:

E^* = net credit equivalent amount after credit risk mitigation (after deducting financial collateral value)

NPA = notional principal amount of the off-balance sheet item

SP = specific provision

H_e = haircut appropriate to the net exposure in accordance with the regulations prescribed by the Bank of Thailand

CCF = credit conversion factor for the off-balance sheet item

C = financial collateral value

H_c = haircut appropriate to the financial collateral in accordance with the regulations prescribed by the Bank of Thailand

H_{fx} = haircut appropriate for currency mismatch between the net credit equivalent amount and the financial collateral in accordance with the regulations prescribed by the Bank of Thailand

(3) In case of off-balance items which are derivatives

$$E^* = \max \{0, \{(CEA - SP) - [C \times (1 - H_c - H_{fx})]\}\}$$

where:

E^* = net credit equivalent amount after credit risk mitigation (after deducting financial collateral value)

CEA = gross credit equivalent amount, calculated using the Original Exposure Method or the Current Exposure Method before deducting the specific provision and financial collateral value

SP = specific provision

C = financial collateral value

H_c = haircut appropriate to the financial collateral in accordance with the regulations prescribed by the Bank of Thailand

H_{fx} = haircut appropriate for currency mismatch between the net credit equivalent amount and the financial collateral in accordance with the regulations prescribed by the Bank of Thailand

(4) In case of repo-style transactions under master netting agreements

Commercial banks may net positions having with the same counterparty if all following conditions specified the Bank of Thailand are satisfied.

(4.1) The non-defaulting counterparty must have the rights to terminate and close-out all transactions under the agreement upon an event of default, including in the event of insolvency or bankruptcy of the counterparty in a timely manner.

(4.2) The netting of profits and losses from the positions is allowed when the contract is terminated or closed out so that a single net amount is owed by one party to the other.

(4.3) Immediate liquidation of securities which are financial collaterals is allowed upon an event of default.

(4.4) Is legally enforceable (including the rights arising from Sections (4.1) - (4.3) above) in each relevant jurisdiction upon an event of default, whether the counterparty is insolvent or bankrupt.

In this regard, commercial banks are able to net the positions in the banking book and trading book if the conditions following Sections (4.5) and (4.6) are satisfied, as follows:

(4.5) All transactions are marked-to-market on a daily basis; and

(4.6) The collaterals are financial collaterals, and meet the criteria for eligible financial collaterals permitted to use in the risk mitigation in the banking book.

The formula for calculating E* of repo-style transactions under a master netting agreement is as follows:

$$E^* = \max \{0, [(\Sigma(E) - \Sigma(C)) + \Sigma(E_s \times H_s) + \Sigma(E_{fx} \times H_{fx})]\}$$

where:

E^*= net credit equivalent amount after credit risk mitigation (after deducting financial collateral value)

E = net credit equivalent amount before deducting financial collateral value

C = financial collateral value

E_s = absolute value of the net position in a given security

H_s = haircut appropriate to E_s in accordance with the regulations prescribed by the Bank of Thailand

E_{fx} = absolute value of the net position in the currency that is different from the currency used for debt repayment

H_{fx} = haircut appropriate for currency mismatch between the net credit equivalent amount and the financial collateral in accordance with the regulations prescribed by the Bank of Thailand

(5) In case of repo-style transactions under master netting agreements and haircuts estimated using a value-at-risk (VaR) model

Commercial banks may elect to use a VaR model to calculate haircuts for repo-style transactions under a master netting agreement which satisfies the conditions specified in Section 5.1 (4). The methods for calculating E* for repo-style transactions under a master netting agreement, and calculating haircuts using a VaR model are as follows:

$$E^* = \max \{0,[(\Sigma E - \Sigma C) + \text{ผลลัพธ์ที่ได้จากแบบจำลอง VaR}]\}$$

where:

E*= net credit equivalent amount after credit risk mitigation (after deducting financial collateral value)

E = net credit equivalent amount before deducting financial collateral value

C = financial collateral value

VaR model outputs are VaR estimates of the previous day

5.2 Calculation of haircuts

Commercial banks can choose between two approaches to calculate haircuts for net credit equivalent amount and financial collaterals under the Comprehensive Approach as follows: (1) Standard Supervisory Haircuts specified in Section 5.2.1; and (2) Own estimates for haircuts specified in Section 5.2.2 which is divided into two methods, namely: (1) Haircuts calculated from price and exchange rate volatilities; and (2) Haircuts calculated from a Value at Risk (VaR) model.

In this regard, once commercial banks have chosen to use standard supervisory haircuts prescribed by the Bank of Thailand or their own estimates for haircuts, the commercial banks must apply the chosen haircuts to all types of collaterals[5].

5.2.1 Standard supervisory haircuts prescribed by the Bank of Thailand

(1) Commercial banks shall use standard supervisory haircuts in accordance with the type of issuer, residual maturity of the security and ECAI credit rating in the following table, prescribed by the Bank of Thailand under the assumption that securities are marked to market or re-margined on a daily basis, with a holding period of 10 business days.

[5] The Bank of Thailand does not prescribe that commercial banks using the SA and IRB to calculate credit risk-weighted assets must use standard supervisory haircuts prescribed by BOT or own estimates for haircuts. However, if commercial banks choose own estimates for haircuts, the commercial banks must be able to estimate the haircuts for all types of financial collaterals used for credit risk mitigation, except for types of collateral used for immaterial portfolios, where the commercial banks can choose to use standard supervisory haircuts prescribed by the Bank of Thailand.

Table 1 Standard supervisory haircuts prescribed by the Bank of Thailand for the Comprehensive Approach

Unit: Percent

Characteristic of financial collateral	Residual maturity	Sovereign issuers[6]	Other issuers
Rating grade 1	≤ 1 yr	0.5	1
	> 1 yr but ≤ 5 yr	2	4
	> 5 yr	4	8
- Rating grade 2 and 3 - Unrated securities as specified in Section 3.1. (4)	≤ 1 yr	1	2
	> 1 yr but ≤ 5 yr	3	6
	> 5 yr	6	12
Rating grade 4 of government securities	any	15	
Equity securities, warrants, convertible debentures in main securities indices[7], and gold		15	
Equity securities including warrants, convertible debentures listed on recognised exchanges but not included in main securities indices[8]		25	
Unit trusts of mutual funds		The highest haircut applicable to the securities the fund can invest in	
Cash or near cash collateral following Section 3.1 (1) denominated in the same currency as the net credit equivalent amount of the transactions		0	
Where there are currency mismatches between the net credit equivalent amount and financial collateral		8	

[6] Including PSEs that supervisory authorities require to use the same risk weights as claims on sovereigns, MDBs with a risk weight of 0%, and for cases where collateral is a PSE security that the principal and interests are fully guaranteed by the government.

[7] For Thailand, this refers to all equities forming the SET 100 Index.

[8] For Thailand, this refers to all equities listed in the Securities Exchange of Thailand (SET), but excluding equities in the SET 100 Index and equities listed in the Market for Alternative Investment (MAI).

(2) In case where commercial banks lend securities that the Bank of Thailand does not allow to be used as financial collaterals for credit risk mitigation, commercial banks shall apply the haircuts for the equity securities listed on recognised exchanges but not included in main securities indices.

(3) In case where the above assumptions of haircuts[9] are not in line with the minimum holding period, and the requirements regarding the frequency of marking-to-market and remargining prescribed by the Bank of Thailand for various types of transactions in Table 2 in Section 5.3, commercial banks shall scale such haircuts in accordance with the methods in Section 5.3 (3).

5.2.2 Own estimates for haircuts

Commercial banks wishing to calculate their own estimates for haircuts under the Comprehensive Approach must receive approval from the Bank of Thailand before using such approach in credit risk mitigation, and must be able to comply with the minimum requirements prescribed by the Bank of Thailand. The commercial banks may calculate their own estimates for haircuts by 2 methods as follows:

(1) Haircuts calculated from price and exchange rate volatilities

Commercial banks shall estimate haircuts without taking account of correlations between collateral value, exchange rate and the unsecured net credit equivalent amount. Commercial bank shall comply with the following regulations:

(1.1) Commercial banks may consider estimating the volatility by groups of securities in cases where the financial collaterals are debt securities rated better or equivalent to Rating Grade 3. If so, commercial banks shall classify securities by the following attributes: (1) Type of issuer; (2) Credit rating; (3) Residual maturity; and (4) Modified duration; whereby the estimated volatility must truly be representative of each of commercial banks' securities group.

(1.2) Commercial banks must estimate the haircuts for each individual security where the collateral are debt securities rated below or equivalent to Rating Grade 3, or the collaterals are equity securities.

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9 Assumptions for standard supervisory haircuts prescribed by the Bank of Thailand mean having marked-to-market and remargined on a daily basis, and with a holding period of 10 business days.

(1.3) Commercial banks must comply with minimum quantitative and qualitative requirements specified in Attachment 5.1.

(1.4) In case where commercial banks' own estimates for haircuts are not in line with the minimum holding period, and the requirements on the mark-to-market and remargining frequency prescribed by the Bank of Thailand for various types of transactions in Table 2 in Section 5.3, commercial banks shall scale such haircuts in accordance with the methods specified in Sections 5.3 (1) and 5.3 (2).

(2) Haircuts calculated from Value at Risk (VaR) models

Commercial banks may choose to use a VaR model, which reflects price and exchange rate volatilities, as well as correlations between prices of each type of securities and exchange rates, to calculate haircuts for repo-style transactions.

In this regard, the commercial banks must receive approval from the Bank of Thailand to use the VaR model to calculate haircuts for repo-style transactions before using it[10]. The Bank of Thailand will carry out assessments based on the minimum requirements and back testing results which commercial banks must comply with as follows:

(2.1) Qualitative and quantitative requirements

Commercial banks must comply with the Notification of the Bank of Thailand Re: Regulation on Market Risk Supervision and Maintenance of Capital Requirement for Market Risk of Financial Institutions, in the topic of regulations on calculation of market risk capital requirement using models; except for the holding period. The commercial banks shall use a holding period of 5 business days for repo-style transactions, as well as consider adjusting holding periods appropriate to the liquidity of each security.

(2.2) Assessment of model reliability using backtesting results

[10] Commercial banks having received an approval from the Bank of Thailand to use VaR models to calculate market risk-weighted assets still have to request for an approval from the Bank of Thailand to use VaR models for risk mitigation calculations for repo-style transactions before using them.

Commercial banks shall carry out backtesting using the representative counterparty portfolio's[11] latest historical data going back 1 year (or 250 business days). The commercial banks shall compare the estimated VaR values obtained from the model with changes in reference exposures. The commercial banks shall carry out backtesting continuously at least every quarter, with reference to hypothetical changes or actual changes.

In this regard, the Bank of Thailand may use results from above assessments of model reliability as a factor in determining whether the commercial banks need to maintain additional capital funds in accordance with the Notification of the Bank of Thailand on Supervisory Review Process.

5.3 Adjustments for different holding periods and non-daily mark-to-market or re-margining

The haircuts used by commercial banks for net credit equivalent amount and financial collaterals including guarantees and credit derivatives in calculation formulas under the Comprehensive Approach, must be in line with the minimum holding period and the required frequency of marking-to-market and re-margining prescribed by the Bank of Thailand for each type of transaction in the following table.

Table 2 Minimum holding periods and requirements for applying haircuts in the calculation of credit risk-weighted assets by instrument type

Instrument type	Minimum holding Period	Requirement
Repo-style transactions	5 business days	Daily re-margining
Capital market transactions[12]	10 business days	Daily re-margining
Lending secured by financial collaterals[13], or with guarantees or credit derivatives	20 business days	Daily revaluation

[11] For selection of the representative counterparty portfolios, commercial banks shall assess and select them from counterparties that can reflect the portfolios' sensitivity to material risk factors and correlations in a comprehensive manner.

[12] e.g. transactions related to OTC derivatives

[13] include on-balance sheet netting

In case where the haircuts used by commercial banks do not meet the requirements on minimum holding periods and/or the frequency of marking-to-market and re-margining prescribed by the Bank of Thailand, commercial banks shall adjust such haircuts in accordance with the following regulations.

(1) Holding period adjustment formula for own estimates for haircuts

In case where commercial banks use a holding period (T_N) different from the minimum holding period (T_M) prescribed by the Bank of Thailand, the haircut shall be scaled following the minimum holding period (H_M) for each type of transaction using the following formula.

$$H_M = H_N \sqrt{\frac{T_M}{T_N}}$$

where:

H_M = haircut appropriate to the minimum holding period

H_N = haircut value based on the holding period T_N

T_N = holding period used in calculation of H_N

T_M = minimum holding period for the type of transaction

(2) Mark-to-market and remargining frequency adjustment formula for own estimates for haircuts

$$H = H_M \sqrt{\frac{N_R + (T_M - 1)}{T_M}}$$

where:

H = haircut appropriate to the minimum frequency and minimum holding period

H_M = haircut appropriate to the minimum holding period

T_M = minimum holding period for the type of transaction

N_R = actual number of business days between the previous and the next re-margining date (for repo-style transaction or capital market transaction), or between the previous and the next mark-to-market date (for lending secured by financial collateral[13], guarantee or credit derivative), or frequency of marking-to-market or re-margining.

(3) Frequency and holding period adjustment formula for standard supervisory haircuts prescribed by the Bank of Thailand

Commercial banks using the standard supervisory haircuts, the 10-business day haircuts will be the basis and this haircut will be scaled up or down depending on the type of transaction and the frequency of re-margining or revaluation using the following formula:

$$H = H_{10}\sqrt{\frac{N_R + (T_M - 1)}{10}}$$

where:

H = haircut appropriate to the minimum holding period and minimum frequency

H_{10} = standard supervisory haircut prescribed by the Bank of Thailand

T_M = minimum holding period by instrument type

N_R = actual number of business days between the previous and the next re-margining date (for repo-style transaction or capital market transaction), or between the previous and the next mark-to-market date (for lending secured by financial collateral[13], or with guarantee, or credit derivative), or frequency of marking-to-market or re-margining.

5.4 Criteria for 0% haircut

The Bank of Thailand permits commercial banks using the Comprehensive Approach to apply 0% haircut for repo-style transactions with counterparties which are core market participants meeting the criteria prescribed by the Bank of Thailand in Section 4.3 (1.1)[14], except for commercial banks using haircuts calculated from Value-at-Risk (VaR) models which the Bank of Thailand does not permit to use the 0% haircut.

[14] In the case where another country's supervisory authority states that commercial banks in that country may use a 0% haircut for repo-style transactions in that country's government securities, the Bank of Thailand permits the commercial banks registered in that country to use a 0% haircut for the same type of transaction.

5.5 Maturity mismatch

In case where a residual maturity of financial collateral is shorter than that of the net credit equivalent amount of transaction requiring risk mitigation, commercial banks shall comply with the regulations prescribed by the Bank of Thailand in Attachment 9.

Attachment 5.1

Minimum Requirements for Commercial Banks Using Haircuts Calculated from Market Price and Exchange Rate Volatilities

1. Quantitative Criteria

1.1 Commercial banks shall calculate haircuts based on a 99% one-tailed confidence interval.

1.2 Minimum holding period and frequency of marking-to-market or re-margining must be consistent with the type of transaction as prescribed by the Bank of Thailand. In case where the holding period is shorter than that prescribed by the Bank of Thailand, commercial banks shall scale up the haircuts by multiplying by the square root of time.

1.3 For low quality and/or illiquid assets, commercial banks should consider lengthening the holding periods as appropriate, and be cautious for cases where use of historical data may underestimate volatility, for example, exchange rate data during a fixed exchange rate regime. The commercial banks should therefore carry out stress testing to prevent the underestimation in such cases.

1.4 Commercial banks must use historical data of at least one year for the calculation of haircuts. And, in case where the commercial banks use a weighting scheme or another method, the effective observation period must be at least one year, that is, the weighted average time lag must be at least 6 months.

1.5 Commercial banks must update data sets at least every 3 months and when market prices are subject to material changes, that is, new haircuts must be calculated every 3 months. In this regard, the Bank of Thailand may require the commercial banks to calculate haircuts using a shorter observation period if the market price is deemed significantly volatile.

1.6 Commercial banks can choose various models, such as historical simulation or Monte Carlo, to estimate haircuts provided the selected model captures all the commercial banks' material risks.

2. Qualitative Criteria

2.1 Commercial banks must use information on volatility (and holding period) in their day-to-day risk management processes of the banks.

2.2 Commercial banks must have strict processes in place to ensure compliance with a documented set of internal policies, as well as controls and operating procedures in relation to the risk assessment systems.

2.3 The risk assessment systems shall be implemented in conjunction with the commercial banks' internal risk limits.

2.4 Commercial banks must have independent evaluations of the risk assessment system as part of their own internal audit procedures at least once a year. At the least, the review must cover the following.

2.4.1 Integration of risk estimates in commercial banks' day-to-day risk management processes

2.4.2 Review of any material changes in the risk assessment processes

2.4.3 Accuracy and completeness of the positions data

2.4.4 Review of the consistency, timeliness, reliability and independence of data sources used in the models

2.4.5 Accuracy and suitability of assumptions

Attachment 6

Regulations on credit risk mitigation using on-balance sheet netting

Commercial banks may apply on-balance sheet netting between assets (loans) and liabilities (deposits) within the same counterparty for credit risk mitigation in accordance with the calculation of credit risk mitigation prescribed by the Bank of Thailand in Section 2. In this regard, the commercial banks must comply with the minimum requirements in Section 1 in order to apply credit risk mitigation using on-balance sheet netting.

1. Minimum requirements

1.1 Has a well-founded legal basis for concluding that the netting or offsetting arrangement is enforceable in each relevant jurisdiction regardless of whether the counterparty is insolvent or bankrupt;

1.2 Is able to determine those assets and liabilities with the same counterparty that are subject to the netting agreement;

1.3 Monitors and controls risks from maturity mismatches between assets and liabilities to be netted (roll-off risk);

1.4 Monitors and controls the relevant exposures on a net basis

2. Calculation of credit risk mitigation

The Bank of Thailand requires commercial banks applying on-balance sheet netting to use the Comprehensive Approach for credit risk mitigation, where the commercial banks must comply with the following guidelines.

2.1 Calculate the net amount of loans and deposits under the Comprehensive Approach prescribed in Section 5.1 (1) of Attachment 5, by regarding loans as exposures, deposits as collaterals, and applying a 0% haircut; except cases with currency mismatches.

2.2 Apply standard supervisory haircuts prescribed in Section 5.2.1 of Attachment 5, assuming a holding period of 10 business days if the collateral is marked-to-market daily.

2.3 In case where the collateral is not marked-to market daily, commercial banks are required to adjust the haircuts as prescribed in Section 5.3 (3) of Attachment 5.

2.4 In case where there are maturity mismatches between loans and deposits, commercial banks must comply with the Bank of Thailand’s regulations on credit risk mitigation in cases of maturity mismatches prescribed in Attachment 9.

Attachment 7

Regulations on credit risk mitigation using guarantees and credit derivatives[1]

Commercial banks can mitigate credit risk by using guarantees[2] and credit derivatives, if the commercial banks comply with the minimum requirements and methodologies prescribed by the Bank of Thailand as follows:

1. Minimum operational requirements

1.1 General minimum operational requirements

(1) Guarantees or purchase of credit derivatives for credit risk protections must represent direct claims on the guarantors or sellers[3] of the credit risk protections (protection sellers), and must explicitly specify assets or pool of assets receiving the protections in order to define the indisputable scopes of guarantees or risk protections.

(2) Guarantees or credit derivatives must not have clauses that allow the guarantors or protection sellers to unilaterally revoke the contracts or increase the cost of protection as a result of deteriorating credit quality of the assets requiring risk protections or the underlying assets[4], except in cases where the guarantees or protection buyers[5] do not meet payment obligations agreed under such contracts.

(3) Guarantees or credit derivatives must not have clauses outside the direct control of the commercial banks that could prevent the guarantors or protection

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[1] Commercial banks shall refer to the definition of credit derivatives as defined in the Notification of the Bank of Thailand on Permissions for Commercial Banks to Engage in Credit Derivatives.

[2] Including (1) export credit insurance; limit to the portion that commercial banks are the beneficiaries of the insurance policies or the portions that debtors or the Export-Import Bank of Thailand or insurers or reinsurers have transferred the rights of the claims to the commercial banks (2) In case where commercial banks issue loans and receive certificates of claims on inherited pensions issued by the Comptroller General's Department as collaterals, the commercial banks shall treat the loans as if they are guaranteed by the Comptroller General's Department.

[3] The receivers of credit risk of the underlying assets

[4] Note that the irrevocability condition does not require that the credit protection and the exposures be maturity matched; rather that the maturity agreed ex ante may not be reduced ex post by the guarantors. Except for the case where the protection sellers have the rights to revoke the contracts before maturity for which the commercial banks shall comply with the regulations in Attachment 9.

[5] The transferors of credit risk of the underlying assets

sellers from being obliged to make timely compensation payments in the event that the debtors default on debt repayment, or in a credit event.

1.2 Additional operational requirements for guarantees

Guarantees that commercial banks use for credit risk mitigation must have the following attributes.

(1) When debtors default, commercial banks must have the rights of recourses against the guarantors, and must have the rights to receive compensations from the guarantors without legal actions[6]. In this regard, the guarantors may make lump sum payments to the commercial banks for the full amount of the compensations, or assume future obligations to pay out compensations to the commercial banks following the guarantee contracts.

(2) Guarantees must be supported by documents that provide legal rights to claims against the guarantors.

(3) Guarantees should cover all types of payments the debtors are obliged to make under the contracts.

(4) In the case of partial guarantees, such as guarantees of the principle payments, where interests and other expenses are excluded, the portions not covered by the guarantees shall be treated as an unsecured amount in accordance with methodology for proportional cover agreements in Section 5.1.

1.3 Additional operational requirements for credit derivatives used in credit risk mitigation

Credit derivatives that commercial banks use for credit risk mitigation must have the following attributes.

(1) Terms do not violate the rights of the underlying assets under the agreements.

(2) Protection sellers have no rights of recourses against the protection buyers for any losses arising from the transactions, including where the protection sellers put down cash collaterals as risk protections for the protection buyers. There must be no

[6] If a guarantor is the Thai Credit Guarantee Corporation (TCG), the Bank of Thailand allows such guarantees to be effective for credit risk mitigation, despite SICGC regulations prescribe that legal actions must be taken against the debtors first.

obligations for the protection buyers to make early repayments, and there must be agreements between the protection buyers and sellers that the protection buyers will not be asked for repayment of cash collaterals as a result of losses incurred by the protection sellers.

(3) For the purchase of credit risk protection where the protection sellers do not put down cash collaterals as risk protection for the protection buyers, commercial banks' boards of directors have the responsibility to determine approaches necessary to control the correlations between credit risk of the assets requiring risk protection, and the protection sellers to be not too high. For example, by setting ceilings for correlations, or setting measures to assess such correlations to support the appropriate undertaking of transactions.

(4) Credit events where the protection sellers have to pay agreed payouts to the protection buyers must at a minimum cover:

(4.1) Failure to make payment on amount due under the terms of the underlying obligations of the credit derivative;

(4.2) Bankruptcy, insolvency, inability to repay debts, failure to pay debts when they become due, or the debtors admit in writing of their inability to repay the debts when they become due, and similar events; and

(4.3) Restructuring of the underlying obligations, such as debt reduction or postponement of principal repayment. Reduction on interests or fees resulting in credit losses (write-offs, increased provisioning or impacts on profit and loss accounts).

(5) Credit derivatives must not mature before the expiration of any grace period. If the credit derivatives mature before the expiration of the grace period, there is a maturity mismatch and commercial banks must comply with the regulations on credit risk mitigation for maturity mismatch following Attachment 9.

As such, in cases where the credit risk protection agreement is a standard contract, the residual maturity of the contract must not significantly exceed the residual maturity of the assets requiring risk protection. Commercial banks shall refer to the definition of maturity for credit derivatives in Attachment 9.

(6) For credit derivatives with terms allowing for cash settlement, commercial banks must have a robust valuation processes in place in order to estimate losses in a reliable manner. There must be a clearly specified timeframe for obtaining

post-credit event valuations of the underlying obligations. In case where, under the credit derivative contracts, the reference obligations used for purposes of determining cash settlement value are different from the underlying obligations, the commercial banks shall comply with the regulations in Section (9) to determine if credit derivatives with asset mismatches can be used to mitigate risk in the calculation of credit risk-weighted assets.

(7) In case where the delivery of the underlying obligations for settlement under credit derivative contracts requires the rights to transfer the underlying obligations of the buyers of credit derivatives, the terms of the underlying obligations must include a clause stating that consent to transfer the underlying obligations will not be unreasonably withheld.

(8) The parties responsible for determining a credit event must be clearly specified. This determination must not be the sole responsibility of the protection sellers; the protection buyers must also have the rights and ability to inform the protection sellers of the occurrence of the credit events.

(9) In case where the underlying obligations are the assets different from the reference obligations used to determine settlement value or the assets used to determine a credit event under the credit derivative contracts, the commercial banks that are the protection buyers can use the credit derivatives to mitigate risk for the calculation of credit risk-weighted assets only when:

(9.1) The reference obligations or assets used to determine a credit event are ranked pari-passu with or are junior to the underlying obligations; and

(9.2) The underlying obligations, and reference obligations or assets used to determine a credit event, must have the same issuers or obligors and legally enforceable cross-default or cross-acceleration clauses must be in place.

(9.3) In case of physical settlement, the credit derivative contracts must state that the underlying obligations are deliverable assets or liabilities.

(10) Shall not be credit spread products or other similar products.

(11) Shall not be risk protection agreements purchased from the head offices, branches or representative branches under the same legal entity as the protection buyers; except in cases where cash collaterals are placed with the foreign bank branches, or with the foreign bank branches' bank accounts at other branches of foreign

commercial banks, or with another commercial bank which foreign commercial bank branches have the rights to manage and netting between accounts. As such, the commercial banks can use such risk protection to mitigate credit risk equal to the amount of cash collaterals received.

If the risk protection agreements under the credit derivative contracts do not specify that restructuring of the underlying obligations is a credit event, but complied with all other requirements specified in Sections (1) - (11) above, the commercial banks that are protection buyers can use the credit derivatives to partially mitigate risk for the calculation of credit risk-weighted assets. In case where the credit derivative value is less than or equal to the value of the underlying obligations, the guaranteed portion of risk is 60% of the value agreed under the credit derivative contract; and where the credit derivative value is higher than the underlying obligation, the guaranteed portion of risk is capped at 60% of the value of the underlying obligation[7].

2. Type of guarantors or protection sellers for credit derivatives

2.1 Sovereigns and central banks, multilateral development banks, local government organisations, state agencies, state enterprises, financial institutions and securities firms receiving risk weights lower than those of the debtors.

2.2 Corporate, including parent, subsidiary and affiliated companies receiving risk weight lower than those of the debtors.

3. Calculation of credit risk mitigation using guarantees

Commercial banks shall divide the net exposures into two portions, where the guaranteed portion shall be assigned risk weight of the guarantors, and the remaining unguaranteed portion shall be assigned risk weight of the debtors.

4. Calculation of credit risk mitigation using credit derivatives

The Bank of Thailand permits commercial banks that are protection buyers to use credit derivatives that are eligible for credit risk mitigation as prescribed by the Bank of Thailand and are in the banking book to mitigate credit risk in accordance with the methodologies prescribed by the Bank of Thailand.

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[7] The 60% is a preliminary figure, it can be changed after obtaining additional data.

4.1 Types of credit derivatives eligible for credit risk mitigation

The Bank of Thailand permits commercial banks to use the following types of credit derivatives to mitigate credit risks.

(1) Credit default swaps (CDS)

(2) Credit linked notes (CLN)

(3) First to default products

(4) Proportionate CDS and proportional CLN

(5) Total rate of return swaps, except where commercial banks buy total rate of return swaps and record the net payments received from the swaps as net income without recording the deterioration in the value of the assets with risk protection (either through reduction in fair value or additional provisioning), such total rate of return swaps cannot be used to mitigate credit risk.

4.2 Credit risk mitigation methods

(1) Credit default swaps (CDS): Commercial banks are CDS buyers

Commercial banks shall calculate credit risk-weighted assets of assets requiring risk protection using risk weights of the CDS sellers instead of the risk weights of assets requiring risk protection.

(2) Credit linked notes (CLN): Commercial banks are CLN sellers

Commercial banks shall calculate credit risk-weighted assets of assets requiring risk protection by treating cash received from borrowing or issuance of CLN as cash collaterals. .

(3) First to default products: Commercial banks are first to default swaps buyers, or first to default CLN Sellers

<u>Commercial banks are first to default swaps buyers</u>

Commercial banks shall calculate credit risk-weighted assets of assets requiring risk protection using risk weights of the credit derivative sellers instead of the risk weight of the asset with the lowest risk weight within the asset group.

Commercial banks are first to default CLN Sellers

Commercial banks receiving a full cash pledge from the first day the loans or securities contracts are made shall treat the asset with the lowest risk weight within the asset group as if it has cash collateral when assigning the risk weight.

For the calculations of credit risk-weighted assets of other underlying assets requiring risk protection within the asset group, the original risk weights of the assets requiring risk protection shall be assigned.

(4) Proportionate CDS and proportionate CLN: Commercial banks are proportionate CDS buyers, or proportionate CLN Sellers

Commercial banks are proportionate CDS buyers

Commercial banks shall calculate credit risk-weighted assets of assets requiring risk protection using the risk weights of the protection sellers instead of the risk weights of each individual asset in the asset group according to the proportions protected as stated in the risk protection contracts.

Commercial banks are proportionate CLN sellers

Commercial banks shall mitigate credit risk of each asset in the group following the proportions of protection as stated in the risk protection contracts, using risk weights of the instruments with cash collaterals only for the portions receiving cash pledge against borrowings or securities issuances.

(5) Total rate of return swaps (TRORS): Commercial banks are TRORS buyers

Commercial banks shall calculate credit risk-weighted assets of the assets requiring risk protection using the risk weights of the TRORS sellers instead of the risk weights of the assets requiring risk protection.

4.3 Credit risk netting of the underlying assets under the credit derivatives contracts

For netting between credit derivatives, netting may be done between the same type of credit derivatives with the exact same characteristics and attributes but with opposite positions. In any case, commercial banks are still required to calculate risk-weighted assets for counterparty credit risk of such derivatives (if any).

5. **Partial risk transfer**

5.1 Proportional cover agreement

In case where the values of the risk protection agreements are less than the exposures, and the secured and unsecured portions have the same seniority, i.e. commercial banks and the guarantors or protection sellers share losses on a pro-rata basis, the values of the risk protections that may be used for risk mitigation shall also be reduced proportionately. That is, the secured portions shall be assigned the risk weights of the guarantors or the risk protection sellers, while the remainders shall be treated as unsecured portions and shall be assigned the risk weights of the debtors as per usual. As such, this shall include cases where the risk protection agreements specify fixed compensation amounts that the guarantors or protection sellers agree to pay (binary payout), where such agreements shall be given recognition for risk protection only for the fixed compensation amount stated in the agreements.

5.2 Material threshold clause

In cases where the credit risk protection agreements set out a material threshold of which the protection sellers will not compensate for losses below the threshold, it shall be recognized that commercial banks that are protection buyers shall take this first loss position and shall use such amounts to calculate credit risk-weighted using a risk weight of 100% divided by 8.5% (100/8.5%) or equal to 1176.5%

For remaining assets requiring risk protection, the commercial banks receiving guarantees or the protection buyers must calculate risk-weighted assets of such assets using the risk weights of the guarantors or protection sellers instead of the risk weights of the assets requiring risk protection. And for risk protection agreements where the protection buyers receive a full cash pledge from the first agreement date, the commercial banks shall apply risk weights as if there are cash collaterals.

5.3 Tranched cover clause

In case where commercial banks transfer a portion of credit risk to the guarantors or protection sellers while still retaining a portion of the risk, and where the transferred portion and the retained portion have different seniority, for example, commercial banks may be protected for senior tranches such as the second loss position, or for junior tranches such as the first loss position; the commercial banks shall comply with the regulations as prescribed in the Notification of the Bank of Thailand on Permissions for Financial Institutions to Conduct Securitisation Businesses[8].

6. Currency mismatch

In cases where the risk guarantees or protection agreements and the exposures are denominated in different currencies, commercial banks shall adjust the value of the protected portions using following haircut formula.

$$G_A = G \times (1 - H_{fx})$$

where:

G_A = the portion received risk protection after applying haircut for currency mismatch, H_{fx}

G = the nominal amount of the risk protection agreement

H_{fx} = haircut appropriate for currency mismatch between the risk protection agreement and the net exposure

The haircut used for currency mismatch (H_{fx}) must be based on a holding period of 10 business days and must be mark-to-market on a daily basis. For commercial banks that use the standard supervisory haircuts prescribed by the Bank of Thailand, the H_{fx} of 8% shall be applied. And if the period between the previous and the next revaluation date is not in accordance with the Bank of Thailand's requirements, the commercial banks shall adjust this haircut by using the same formulas as haircuts for financial collaterals, in accordance with the mark-to-market / re-margining frequency adjustment formulas in Section 5.3 of Attachment 5.

7. Maturity mismatch

In case where the residual maturities of the guarantees or credit derivatives are shorter than the residual maturities of the net exposures requiring risk protection, the commercial banks shall comply with the Bank of Thailand's regulations in Attachment 9.

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8 The Bank of Thailand does not generally permit commercial banks to undertake tranched cover transactions; if commercial banks wish to undertake such transactions, they must request permission from the Bank of Thailand on a case by case basis.

8. Government guarantees and counter-guarantees

In case where the debtors have guarantees from sovereigns or central banks, where such guarantees are in that country's domestic currency and commercial banks have liabilities denominated in the same currency to fund the claims, the commercial banks shall use a risk weight of 0% for the guaranteed portion.

The debtors may have indirect guarantees from sovereigns in the form of counter-guarantees, in such case the counter-guarantees can be treated as guarantees from sovereigns if the following criteria are satisfied.

8.1 Counter-guarantees from sovereigns must cover all credit risk of the debtors, including where the debtors default on debt repayment and where the debtors are bankrupt.

8.2 Both the original guarantees and the counter-guarantees must meet all the minimum operational requirements for guarantees specified above, except for the counter-guarantees where the contracts do not need to explicitly state that the claim can be made directly on the guarantors.

8.3 Commercial banks must demonstrate to the Bank of Thailand that the counter-guarantees are as effective as direct sovereign guarantees. That is, there are documentations or agreements showing that the counter guarantees give the same result as the direct sovereign guarantees.

Attachment 8

Self-assessment of commercial banks to comply with the minimum requirements prescribed by the Bank of Thailand for credit risk mitigation for capital purposes (Self-assessment of compliance – SAC-CRM)

Name of commercial bank: ____

Name of chief executive officer: ____________________________________ Signature ________________________________

Name and position of those responsible for filling in the below information that the Bank of Thailand can communicate with:

____ Telephone no. ______________________________

Date of assessment ____

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
1	Commercial banks must comply with minimum legal requirements prescribed by the Bank of Thailand as follow. 1) Documents or agreements related to credit risk mitigation using 1) financial collaterals 2) on-balance sheet netting and 3) guarantees and credit derivatives							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	are binding on all related parties, and legally enforceable without contradicting to other legislations. 2) Processes and frameworks to evaluate legal clauses are available and should be monitored and reviewed that such documents or agreements are legally enforceable regularly.							
2	Commercial banks must have processes to control other risks which may arise from applying credit risk mitigation, such as operational risk, market risk and credit concentration risk.							
3	Commercial banks must comply with the disclosure requirements for credit risk mitigation as prescribed in the Notification of the Bank of Thailand Re: Disclosure of Information on Capital Maintenance for Commercial Banks.							
4	In case of applying credit risk mitigation, commercial banks must compare credit risk mitigation's its original maturity and residual maturity with those claims. If maturity mismatch exists, commercial banks can only apply credit risk mitigation in case							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	where the CRM has an original maturity at least 1 year, and a residual maturity more than 3 months.							
5	<u>Minimum requirements for credit risk mitigation using financial collaterals (for Simple and Comprehensive Approach)</u> 5.1 For collaterals pledged or transferred, the legal mechanism must ensure that the bank has the right to liquidate or take legal possession of it, in a timely manner, in the event of default, insolvency or bankruptcy of the counterparty. In addition, commercial banks must take all steps to ensure that all legal actions with regards to such collaterals are enforceable, for example, registering collaterals with a registrar.							
	5.2 Commercial banks must ensure that the credit quality of the counterparty and the value of the collateral must not have a material positive correlation. For example, securities issued by the counterparty – or by any related group entity – would provide little protection and so would be ineligible.							
	5.3 Commercial banks must have clear and robust procedures							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	for the timely liquidation of collateral to ensure that any legal conditions required for declaring the default of the counterparty and liquidating the collateral are observed, and that the collateral can be liquidated promptly.							
	5.4 In case where collaterals are held by a custodian, commercial banks must take reasonable steps to ensure that the custodian segregates the collaterals from its own assets.							
	5.5 A capital requirement will be applied to a bank on either side of the collateralized transactions: for example, both repos and reverse repos will be subject to capital requirements. Likewise, both sides of a securities lending and borrowing transaction will be subject to explicit capital charges, as well as the posting of securities in connection with a derivative exposure or other borrowing.							
	5.6 Where a bank, acting as an agent, arranges a repo-style transaction between a customer and a third party and provides a guarantee to the customer that the third party will perform on its obligations, then the risk to the bank is the same as if the							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	bank had entered into the transaction as a principal. In such circumstances, a bank will be required to calculate capital requirements as if it were itself the principal.							
6*	<u>Minimum requirements for commercial banks using the Simple Approach</u> 1) Debtors must pledge the financial collateral for at least the life of the exposures, that is, there must be no maturity mismatch following the definition specified in Attachment 9.							
	2) Financial collateral valuations must be carried out at least every 6 months, where commercial banks shall comply with the Policy Statement Re: Valuation of Collaterals and Foreclosed Immovable Properties Acquired from Debt Repayment of Financial Institutions.							
7*	<u>If commercial banks wish to use own estimates for haircuts under the Comprehensive Approach</u>; by estimating haircuts from market price and exchange rate volatilities, commercial banks must comply with following							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	qualitative and quantitative criteria prescribed by the Bank of Thailand. <u>Quantitative criteria</u> 1) Commercial banks shall calculate haircuts based on a 99% one-tailed confidence interval 2) Minimum holding period and frequency of marking-to-market or remargining must be consistent with the type of transaction as prescribed by the Bank of Thailand. In case where the holding period is shorter than that prescribed by the Bank of Thailand, commercial banks shall scale up the haircuts by multiplying by the square root of time. 3) For low quality and/or illiquid assets, commercial banks should consider lengthening the holding periods as appropriate, and watch out for cases where use of historical data may underestimate volatility, for example, exchange rate data during a fixed exchange rate regime. The commercial banks should therefore carry out stress testing to prevent the underestimation in such cases.							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	4) Commercial banks must use historical data of at least one year for the calculation of haircuts. And, in case where the commercial banks use a weighting scheme or another method, the effective observation period must be at least one year, that is, the weighted average time lag must be at least 6 months. 5) Commercial banks must update data sets at least every 3 months and when market prices are subject to material changes, that is, new haircuts must be calculated every 3 months. In this regard, the Bank of Thailand may require the commercial banks to calculate haircuts for a shorter observation period if the market price is deemed significantly volatile. 6) Commercial banks can choose various models, such as historical simulation or Monte Carlo, to estimate haircuts provided the selected model captures all the commercial banks' material risks. <u>Qualitative criteria</u> 1) Commercial banks must use information on volatility (and							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	holding period) in their day-to-day risk management processes of the banks. 2) Commercial banks must have strict processes in place to ensure compliance with a documented set of internal policies, as well as controls and operating procedures in relation to the risk assessment systems. 3) Risk assessment systems shall be implemented in conjunction with the commercial banks' internal risk limits. 4) Commercial banks must have independent evaluations of the risk assessment system as part of their own internal audit procedures at least once a year. At the least, the review must cover the following. 4.1) Integration of risk estimates in the commercial banks' day-to-day risk management processes 4.2) Review of any material changes in the risk assessment processes 4.3) Accuracy and completeness of the positions data							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	4.4) Review of the consistency, timeliness, reliability and independence of data sources used in the models 4.5) Accuracy and suitability of assumptions							
8*	In case where commercial banks <u>use Value at risk (VaR) models to estimate haircuts under the Comprehensive Approach</u> for repo-style transactions, commercial banks must comply with the following criteria[1]. 1) <u>Qualitative and quantitative criteria</u> Commercial banks must comply with the Notification of the Bank of Thailand Re: the Regulation on Market Risk Supervision and Maintenance of Capital Requirement for Market Risk of Financial Institutions, in the topic of regulations on calculation of market risk capital requirement using models; except for the holding period. The commercial banks shall use a holding period of 5 business days for repo-style transactions, as well as							

[1] Commercial banks having received approval from the Bank of Thailand to use VaR models to calculate market risk-weighted assets still have to request the approval from the Bank of Thailand to use VaR models for risk mitigation calculations for repo-style transactions before using them.

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	consider adjusting holding periods appropriate to the liquidity of each security. 2) <u>Verification of VaR models using backtesting results</u> - Commercial banks shall carry out backtesting using the representative counterparty portfolio's[2] most latest historical data going back 1 year (or 250 business days). - Commercial banks shall compare the estimated VaR values obtained from the model with changes in reference exposures. - Commercial banks shall carry out backtesting continuously at least every quarter, with reference to hypothetical changes or actual changes.							
9	<u>Minimum requirements in case where commercial banks use on-balance sheet netting between assets (loans) and liabilities</u>							

[2] For selection of the representative counterparty portfolios, commercial banks shall assess and select them from counterparties that can reflect the portfolios' sensitivity to material risk factors and correlations in a comprehensive manner.

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	<u>(deposits) of the same counterparty for credit risk mitigation</u> are as follows: 1) Has a well-founded legal basis for concluding that the netting or offsetting arrangement is enforceable in each relevant jurisdiction regardless of whether the counterparty is insolvent or bankrupt 2) Is able to determine those assets and liabilities with the same counterparty that are subject to the netting agreement 3) Is able to monitor and control risks from maturity mismatches between assets and liabilities to be netted (roll-off risk) 4) Monitors and controls the relevant exposures on a net basis							
10	<u>General operational minimum requirements in case where commercial banks use guarantees and credit derivatives for risk mitigation</u> 1) Guarantees or purchase of credit derivatives for credit risk protection must represent direct claims on the guarantors or							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	sellers[3] of the credit risk protection (protection sellers), and must explicitly reference to specific assets or a pool of assets in order to define the scopes of indisputable guarantees or risk protection. 2) Guarantees or credit derivatives must not have clauses that allow the guarantors or protection sellers, to unilaterally revoke the contracts or increase the cost of protection as a result of deteriorating credit quality of the assets requiring risk protection or the underlying assets[4], except in cases where the protection buyers[5] do not meet payment obligations agreed under such contracts. 3) Guarantees or credit derivatives must not have clauses outside the direct control of commercial banks that could prevent the guarantors or protection sellers from being obliged							

[3] or mean the receivers of credit risk of the underlying assets

[4] The irrevocability condition does not require that the exposures and the guarantees or purchase of credit derivatives be maturity matched. In general, the maturity agreed in advance should not be reduced following the guarantees or purchase of credit derivatives undertaken at a later date, except for the case where protection sellers have the rights to revoke the contracts before maturity for which the commercial banks shall comply with the regulations in Attachment 9.

[5] The transferors of credit risk of the underlying assets

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	to make timely compensation payments in the event that the debtors default on debt repayment, or in a credit event.							
11	<u>Additional operational requirements for guarantees</u> 1) When debtors default, commercial banks must have the rights to pursue the guarantors for any monies outstanding, and must have the rights to receive compensation from the guarantors without legal actions required to obtain such compensation[6]. In this regard, the guarantors may make a lump sum payment to the commercial banks for the full amount of the compensation, or assume future obligations to pay out compensation to the commercial banks following the guarantee contracts. 2) Guarantees must have documentation that can be used as reference of legal rights with respect to the guarantors. 3) Guarantees should cover all types of payments the debtors							

[6] If a guarantor is the Small Industry Credit Guarantee Corporation (SICGC), the Bank of Thailand allows such guarantees to be effective for credit risk mitigation, despite SICGC regulations prescribe that legal actions must be taken against the debtors first.

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	are obliged to make under the contracts. 4) In the case of partial guarantees, such as a guarantee of the principle payment, where interests and other expenses are excluded, the portion not covered by the guarantee shall be treated as an unsecured amount in accordance with procedures for proportional cover agreement.							
12	<u>Additional operational requirements for use of credit derivatives in credit risk mitigation</u> 1) Terms of credit derivatives used in credit risk mitigation do not violate the rights of the underlying assets under the agreement. 2) Protection sellers have no rights to pursue protection buyers for any losses arising from the transaction, including where the protection sellers place cash collaterals as risk protection for the protection buyers. There must be no obligations for the protection buyers to make early repayments, and there must be an agreement between the protection buyers and sellers that the protection buyers will not be called upon to repay							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	cash collaterals as a result of losses incurred by the protection sellers. 3) For the purchase of credit risk protection where the protection sellers do not put down cash collaterals as risk protection for the protection buyers, commercial banks' boards of directors have the responsibility to determine approaches necessary to control the correlations between credit risk of the assets requiring risk protection, and the protection sellers to be not too high. For example, by setting ceilings for correlations, or setting procedures to assess such correlations to support the appropriate undertaking of transactions. 4) Credit events where, the protection sellers have to pay agreed payouts to the protection buyers, must as a minimum cover: 4.1) Failure to make payments on amount due under terms of the underlying obligation of the credit derivative; 4.2) Bankruptcy, insolvency, inability to repay the debts, failure to pay the debts when they become due, or the debtors							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	admit in writing of their inability to repay the debts when they become due, and similar events; and 4.3) Restructuring of the underlying obligations, such as debt reduction or postponement of principals, interests or fees resulting in credit losses (write-offs, increased provisioning or impacts on profit and loss accounts). 5) Credit derivatives must not mature before the expiration of any grace period. If the credit derivatives expired before the expiration of the grace period, there is a maturity mismatch and commercial banks must comply with the regulations on credit risk mitigation for maturity mismatch. 6) For credit derivatives with terms allowing for cash settlement, commercial banks must have a robust valuation processes in place in order to estimate losses in a reliable manner. There must be a clearly specified timeframe for obtaining post-credit event valuations of the underlying obligations. In case where, under the credit derivative contracts, the reference obligations used for purposes of determining cash settlement value are different from the underlying obligations,							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	the commercial banks shall comply with the regulations in Section (9) to determine if credit derivatives with asset mismatches can be used to mitigate risk in the calculation of credit risk-weighted assets. 7) In case where the delivery of the underlying obligations for settlement under credit derivative contracts requires the rights to transfer the underlying obligations of the buyers of credit derivatives, the terms of the underlying obligations must include a clause stating that consent to transfer the underlying obligations will not be unreasonably withheld. 8) The parties responsible for determining a credit event must be clearly specified. This determination must not be the sole responsibility of the protection sellers; the protection buyers must also have the rights and ability to inform the protection sellers of the occurrence of the credit events. 9) In case where the underlying obligations are the assets different from the reference obligations used to determine							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	settlement value or the assets used to determine a credit event under the credit derivative contracts, commercial banks that are the protection buyers can use the credit derivatives to mitigate risk for the calculation of credit risk-weighted assets only when: 9.1) The reference obligations or assets used to determine a credit event are ranked pari-passu with or are junior to the underlying obligations; and 9.2) The underlying obligations, and reference obligations or assets used to determine a credit event, must have the same issuers or obligors and legally enforceable cross-default or cross-acceleration clauses must be in place. 9.3) In case of physical settlement, the credit derivative contracts must state that the underlying obligations are deliverable assets or liabilities. 10) Shall not be credit spread products or other similar products 11) Shall not be risk protection agreements purchased from the head offices, branches or representative branches under the							

* to be answered by commercial banks that use the approach specified in such section

No.	Minimum requirement	Level of compliance				Details how commercial bank complies with the requirements	Documents supporting the compliance with the requirements	
		Passed	Most criteria passed	Most criteria failed	failed		Reference document	Reference number
	same legal entity as the protection buyers; except in cases where cash collaterals are placed with the foreign banks branches , or with the foreign bank branches' bank accounts at other branches of foreign commercial banks, or with another commercial bank which foreign commercial bank branches have the rights to manage and netting between accounts. As such, the commercial banks can use such risk protection to mitigate credit risk equal to the amount of cash collaterals received.							

* to be answered by commercial banks that use the approach specified in such section

Attachment 9

Regulations on credit risk mitigation in case of maturity mismatches

For the purpose of calculating risk-weighted assets, when the residual maturity of credit risk mitigation (CRM) under methodologies permitted by the Bank of Thailand; financial collateral, on-balance sheet netting, guarantees and credit derivatives; is less than the residual maturity of the underlying exposure, it shall be recognized that a maturity mismatch occurs.

1. **Definition of maturity**

1.1 The residual maturity of the underlying should be gauged as the longest possible remaining time before the counterparty is scheduled to fulfil its obligation, taking into account any applicable grace period.

1.2 For the hedge, embedded options which may reduce the term of the hedge should be taken into account so that the shortest possible residual maturity is used.

- Where a call is at the discretion of the protection seller, the maturity will always be at the first call date.

- If the call is at the discretion of the protection buying bank but the terms of the arrangement at origination of the hedge contain a positive incentive for the bank to call the transaction before contractual maturity, the remaining time to the first call date will be deemed to be the effective maturity. For example, where there is a step-up in cost in conjunction with a call feature or where the effective cost of cover increases over time even if credit quality remains the same of increases, the effective maturity will be the remaining time to the first call.

2. **Calculation of credit risk mitigation in case of maturity mismatches**

2.1 For transactions with CRM in case of maturity mismatch occurs, the Bank of Thailand allows commercial banks to use the CRM to mitigate credit risk in the calculation of risk-weighted assets only in case where the CRM has an original maturity of at least 1 year, and a residual maturity of over 3 months.

2.2 When there is a maturity mismatch with recognized credit risk mitigates (collateral, on-balance sheet netting, guarantees and credit derivatives) the following adjustment will be applied.

$$P_a = P \times \frac{t - 0.25}{T - 0.25}$$

where:

P_a = value of CRM adjusted for maturity mismatch

P = value of CRM adjusted for any haircuts

t = the lower value between T and the residual maturity of the CRM expressed in years

T = the lower value between 5 years and the residual maturity of the underlying exposure expressed in years

Attachment 10

Regulations on the calculation of credit risk-weighted assets under the Simplified Standardized Approach (SSA)

In calculating credit risk-weighted assets under the SSA, retail banks using the SSA shall comply with the following regulations as prescribed by the Bank of Thailand.

I. Calculation of credit risk-weighted assets under the SSA

(1) On-balance sheet assets

Retail banks shall calculate net asset value where, for each asset, retail banks shall deduct the specific provision of that asset to obtain the net asset value. The net asset value shall be multiplied by the risk weight prescribed by the Bank of Thailand in Section II to obtain risk-weighted assets.

(2) Off-balance sheet items that are not derivatives

Retail banks shall calculate net value of off-balance sheet items where, for each off-balance sheet item, retail banks shall deduct the specific provision of that item to obtain the net value of such item. The net value shall be multiplied by the Credit Conversion Factor (CCF) prescribed by the Bank of Thailand in Attachment 2 to obtain credit equivalent amount. The net credit equivalent amount shall be multiplied by the risk weight prescribed by the Bank of Thailand in Section II to obtain credit risk-weighted assets.

(3) Off-balance sheet items that are derivatives

Retail banks shall calculate counterparty credit risk-weighted assets of derivatives in both trading book and banking book in accordance with the regulations as prescribed in the Notification of the Bank of Thailand on the Calculation of Counterparty Credit Risk-Weighted Assets for Derivative Transactions.

(4) Positions in unsettled transactions

Retail banks shall calculate credit risk-weighted assets in accordance with the Notification of the Bank of Thailand on the Calculation of Credit Risk-weighted Assets for Failed Trade and Non-delivery versus Payment (Non-DvP) Transactions for Commercial Banks.

Where retailed banks have credit risk mitigation (CRM) under the SSA, retail banks may carry out credit risk mitigation in accordance with the methods prescribed by the Bank of Thailand in Section III.

Where retail banks have assets and off-balance sheet items denominated in foreign currencies, retail banks shall convert those values into Thai Baht using the current exchange rates as at the reporting date as prescribed in the Notification of the Bank of Thailand on Guideline on Accounting of Financial Institutions.

II. Assigning risk weights to claims[1]

Retail banks shall classify assets and off-balance sheet items, and apply risk weights in accordance with the regulations prescribed by the Bank of Thailand, by dividing assets into 2 categories as follows: 1. Performing assets and off-balance sheet items, and 2. Non-performing assets

1. **Performing assets and off-balance sheet items,** dividing into 9 classifications:

1.1 Claims on sovereigns and central Banks

1.1.1 Thai Baht denominated claims on the Thai government and the Bank of Thailand (including the Financial Institutions Development Fund, the Thai Asset Management Corporation, the Bangkok Commercial Asset Management Co., Ltd, and the Deposit Protection Agency): The portion of assets and off-balance sheet items that do not exceed the retail banks' liabilities in Thai Baht shall be assigned a risk weight of 0%.

1.1.2 Claims on foreign sovereigns and central banks denominated in domestic currency of their respective country: The portion of assets and off-balance sheet items that do not exceed the retailed bank's liabilities in each currency, shall be assigned a risk weight of 0%.

For Euro denominated assets and off-balance sheet items of governments in the European Community, retail banks shall first compare Euro denominated liabilities with Euro denominated assets of the country that has the lowest Local Currency Rating.

1.1.3 Claims on Thai and foreign sovereigns and central banks denominated in the domestic currency of their respective country that exceed retail banks' liabilities

[1] mean assets and off-balance items

denominated in the same currency shall be assigned risk weights in accordance with the OECD Country Risk Classification Scores[2], and following risk weights shall be used.

OECD Country Risk Classification Scores	0 - 1	2	3	4 - 6	7	No Country Risk Classification Score
Risk weight (%)	0	20	50	100	150	100

In this regard, in comparing value of assets and liabilities items with retail banks' liabilities following Section 1.1.1 – 1.1.3, retail banks shall use the amount of assets after deducted by specific provision. In case of off-balance sheet items which are OTC derivatives, the credit equivalent amount after deducted by specific provision shall be used, and in case of off-balance sheet items which are not derivatives, the amount of off-balance sheet items after deducted by specific provision and multiplied by Conversion Factor prescribed by the Bank of Thailand, shall be used.

1.1.4 Claims on Thai and foreign sovereigns and central banks denominated in foreign currencies shall be assigned risk weights in accordance with OECD Country Risk Classification Scores, and the risk weights following Section 1.1.3 shall be used.

1.1.5 Claims on the Bank for International Settlements, the International Monetary Fund, the European Central Bank, the European Community, **European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM)** shall be assigned a risk weight of 0%.

1.2 Claims on local government organizations, state agencies, and state enterprises

1.2.1 Claims on local government organizations[3], state agencies and state enterprises[4] (non-central government public sector entities or PSEs) in Thailand: risk weights shall be assigned in accordance with type of PSEs, which are divided into 2 categories as follows:

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[2] OECD Country Risk Classification Scores mean the consensus scores based on assessments by a number of Export Credit Agencies (ECAs) following the Arrangement on Guidelines for Officially Supported Export Credits available on the OECD website.

[3] Mean provincial administrations established by specific laws as follows: (1) Provincial Organizations (2) Municipal (3) Local Administration (4) Special Regional Administration, namely: Bangkok and Pattaya

[4] Following the list in Attachment 1.1 or further prescribed by the Bank of Thailand

(1) Claims on PSEs using the same risk weights as claims on financial institutions

Claims on local government organizations, state agencies and state enterprises established by specific laws shall be assigned the same risk weights as claims on financial institutions as prescribed in Section 1.4, namely:

(1.1) Claims on state enterprises that are financial institutions[4]

(1.2) Claims on PSEs that are not financial institutions, namely: claims on local government organizations, state agencies and state enterprises which are not financial institutions[4]

In this regard, claims on PSEs that are not financial institutions, with original maturities not exceeding 3 months, shall not receive the lower risk weight as claims on financial institutions prescribed in Section 1.4.3, but shall be assigned risk weights as prescribed Section 1.4.2.

(2) Claims on PSEs using the same risk weights as claims on corporate

Claims on commercial state enterprises established by the Civil and Commercial Code or the Law on Public Company Limited [4] shall be assigned the same risk weights as claims on corporate as prescribed in Section 1.6.

1.2.2 Claims on PSEs in foreign countries

Retail banks shall classify PSEs in accordance with the regulations as prescribed by supervisory authority of the country where such PSEs are located, and use risk weights as prescribed by the Bank of Thailand for each type of PSE claims[5].

1.3 Claims on multilateral development banks (MDBs)

1.3.1 Claims on the following multilateral development banks (MDBs)[6] shall be assigned a risk weight of 0%.

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[5] Supervisory authority in the country where PSEs are located may assign the risk weight of claims on PSEs to be the same as claims on sovereigns, claims on financial institutions or claims on corporate. If the supervisory authority prescribes the risk weight of claims on PSEs is the same as claims on sovereigns, retail banks shall use the risk weight that the Bank of Thailand prescribes for claims on sovereigns and central banks.

[6] The Bank of Thailand may amend the list of MDBs to receive a risk weight of 0% in Section 1.3.1, if the BCBS amends its lists.

- The World Bank Group comprised of the International Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC) **and International Development Association (IDA)**
- The Asian Development Bank (ADB)
- The Africa Development Bank (AfDB)
- The European Bank for Reconstruction and Development (EBRD)
- The Inter-American Development Bank (IADB)
- The European Investment Bank (EIB)
- The European Investment Fund (EIF)
- The Nordic Investment Bank (NIB)
- The Caribbean Development Bank (CDB)
- The Islamic Development Bank (IDB)
- The Council of Europe Development Bank (CEDB)
- The International Finance Facility for Immunization (IFFIm)
- The Multilateral Investment Guarantee Agency (MIGA)
- **Asian Infrastructure Investment Bank (AIIB)**

1.3.2 Claims on multilateral development banks not specified in Section 1.3.1 shall be assigned a risk weights of 100%.

1.4 Claims on financial institutions

1.4.1 Claims on financial institutions mean Thai financial institutions under the supervision of the Bank of Thailand, such as commercial banks, finance companies, credit foncier companies, asset management companies[7], and foreign financial institutions under supervision of foreign supervisory authorities.

[7] Means asset management companies following the Emergency Decree on the Asset Management Company B.E. 2541 (1998).

1.4.2 Claims on financial institutions shall be assigned risk weights in accordance with the Country Risk Classification Scores of the sovereigns and central banks for the countries where the financial institutions are registered as follows:

OECD Country Risk Classification Scores	0 - 1	2	3	4 - 6	7	No Country Risk Classification Score
Risk weight (%)	20	50	100	100	150	100

1.4.3 For claims on financial institutions denominated in their country's domestic currency with original maturity not exceeding 3 months[8]: The portion of assets and off-balance sheet items not exceeding retail banks' liabilities denominated in that currency shall be assigned a risk weight of 20%, regardless of the Country Risk Classification of the country's sovereign and central bank. The portion exceeding the liabilities shall be assigned risk weights in accordance with the Country Risk Classification Scores for the sovereign and central bank of the country that the financial institution is registered in, using risk weights specified in Section 1.4.2.

In this regard, in comparing value of assets and liabilities items with retail banks' liabilities, retail banks shall apply the same principle as specified in Section 1.1.

1.5 Claims on securities companies

Risk weights for claims on securities companies shall be the same as those for claims on financial institutions specified in Section 1.4.

1.6 Claims on corporate

1.6.1 Claims on corporate mean claims on legal entities established by the Civil and Commercial Code or the Law on Public Company Limited, including claims on an individual person and persons[9] who have objectives to borrow for their businesses, and small business loans unqualified to be retail claims specified in Section 1.7.1, but excluding claims already classified as the claims under Section 1.1 – 1.5 and Section 1.7.

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[8] Includes deposits in savings accounts, current accounts, Nostro accounts, call loan and overdraft loan (O/D), but excludes claims that have been rolled over.

[9] Means joint borrowings by more than one individual.

1.6.2 Claims on corporate shall be assigned a risk weight of 100%.

For assets and off-balance sheet items under Section 1.1 - 1.6 with a risk weight of 150% and for which provisioning has been made, the retail banks may apply lower risk weights as prescribed by the Bank of Thailand, as follows:

(1) If such assets and off-balance sheet items have specific provisions less than 20% of total outstanding loans, a risk weight of 150% shall be assigned;

(2) If such assets and off-balance sheet items have specific provisions at least 20% but less than 50% of total outstanding loans, a risk weight of 100% shall be assigned;

(3) If such assets and off-balance sheet items have specific provisions at least 50% of total outstanding loans, a risk weight of 50% shall be assigned.

Moreover, for assets and off-balance sheet items under Section 1.1 - 1.6 with a risk weight of 100% with specific provisions of at least 50% of total outstanding loans, a risk weight of 50% shall be assigned.

1.7 Claims on retail portfolios

1.7.1 Claims on retail portfolios which meet all of the following criteria shall have a risk weight of 75%.

(1) Orientation criterion: Claims on an individual person, persons, or small businesses

In this regard, retail banks shall specify suitable internal guidelines for considering small businesses consistent with retail banks' lending and risk management practices.

(2) Product criterion: Claims in the form of revolving credits or lines of credit including credit cards and overdrafts (O/D), personal loans and hire purchase loans or contingent liabilities, but excluding investment in debt or equity securities of listed and non-listed companies in securities exchanges.

(3) Granularity criterion: Claims on retail portfolios must be sufficiently diversified to the extent that risks are reduced. The total credit line for credits and contingent liabilities granted to each retail debtor and related parties[10] must not

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[10] Retail banks shall refer to the definition of related parties as specified in Section 4 of the Financial Institutions Businesses Act B.E. 2551 (2008). If the retail banks can prove that they have been vigilant and carried out comprehensive

exceed 0.2% of total credit lines and contingent liabilities of qualified retail portfolios including residential mortgage loans qualified as retail claims as prescribed in the **Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.3)** but excluding credit lines for non-performing retail loans.

(4) Low value of individual exposures: the aggregate of credit lines and contingent liabilities granted to each retail debtor and related parties shall not exceed an absolute threshold of 50 million baht.

In this regard, the calculation of total credit lines granted to each retail debtor and related parties shall include all off-balance items which are not derivatives, using the notional amount (before multiplied by credit conversion factor). For retail debtors which are small businesses, retail banks shall also include credit equivalent amount of OTC derivatives in the calculation of total credit lines.

Nonetheless, in cases where a particular retail debtor has several credit lines totaling over 50 million Baht, the Bank of Thailand permits retail banks to classify credit card debts as claims on retail portfolios assigned a risk weight of 75%. For the remaining debts, retail banks shall categorise them by the type of credit line and assign risk weight of 100%. If retail banks are unable to separate credit card debts from other debts, a risk weight of 100% shall be assigned to total debts.

1.7.2 Claims on individual persons or persons which do not meet all four criteria as claims on retail portfolios specified in Section 1.7.1 shall receive a risk weight of 100%.

1.7.3 Claims on individual persons and persons with business purposes which do not meet all four criteria as claims on retail portfolios specified in Section 1.7.1 shall receive the same risk weight as claims on corporate following Section 1.6.

1.8 Residential mortgage loans

The risk weights assigned for residential mortgage loans under this section are in accordance with the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan.

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assessments of related parties but are unable to determine the total number of related parties, it is deemed that the retail banks are not at fault.

1.9 Other Assets

1.9.1 A risk weight of 0% shall be assigned to:

- Cash in Thai baht and foreign currencies

- Inter-office balances of the commercial banks

- Prepaid expenses

- Assets arising from mark-to-market of derivative contracts

- Assets that the Bank of Thailand prescribes to be deducted from the capital, such as goodwill and deferred taxes, etc.

1.9.2 A risk weight of 20% shall be assigned to:

- Cash in collection process, which are cash sub-items in the balance sheet as follows: Demand instruments in collection process and instruments that the collection must be in accordance with the regulation on interbank clearing and can be collected on the following business day, such as drafts, bank cheques that have not been cleared but the customers' account have been credited, and returned cheques.

- Investment in securities or investment in fund units including accrued interests, only for an amount that the Ministry of Finance has entered into a contract to provide risk protection or has agreed to bear the risks for, such as the Vayupak 1 Fund.

1.9.3 A risk weight of 100% shall be assigned to:

(1) Investment in equity securities and warrants in the companies that are:

(1.1) Companies operating financial business and financial supporting businesses[11] in full consolidation group that are required to be included in consolidated financial statements

(1.2) Companies operating financial business and financial supporting businesses that retail banks do not own more than 10% of the total issued common shares of each company, the calculation method is as follows:

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[11] Refer to definitions of financial business and supporting businesses as specified in the Notification of the Bank of Thailand on Consolidated Supervision

Retail banks shall compare the sum of investment[12] in equity instruments and warrants, securities counted as Tier 1 capital[13] and securities counted as Tier 2 capital[14] of the companies as specified in (1.2) with 10% of Net Common Equity Tier 1. In consequence, retail banks shall use the sum of such investment only for an amount not exceeding 10% of Net Common Equity Tier 1[15] to calculate risk-weighted assets in proportion to the type of investment (Pro-rata basis)[16]. For the parts that are investment in equity instruments and warrants in banking book, retail banks shall assign a risk weight of 100%. As for eligible financial instruments as capital of such companies in banking book, retail banks shall assign a risk weight in accordance with the type of asset. In this regard, if investments are in the trading book, retail banks shall comply with the Notification of the Bank of Thailand on Supervision of Market Risk and Maintenance of Capital Requirement for Market Risk of Financial Institutions.

(1.3) Companies providing supporting functions for the financial institution system or companies acquired from debt restructuring, as follows:

(1.3.1) Companies providing supporting functions for the sake of business operation of financial institutions and overall financial institution system, such as National Credit Bureau Co., Ltd., National ITMX Co., Ltd., S.W.I.F.T Co., Ltd. and Thai Rating and Information Service Co., Ltd, etc.

(1.3.2) Companies acquired from debt restructuring, debt repayment, execution of debt repayment or guarantee of debt repayment, as permitted by the Bank of Thailand

(1.3.3) Companies in liquidation process

(2) Mutual fund investment units; retail banks may specify the risk weights by the type, proportion and size of assets that the mutual fund has actually invested in (look-through) where retail banks must be able to calculate the net asset value on a daily basis.

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[12] Mean investments in the trading book and banking book

[13] Only in case where insurance companies and securities companies are able to issue financial instruments that can be counted as tier 1 capital, and where such instruments are invested by retail banks

[14] Only in case where insurance companies and securities companies are able to issue financial instruments that can be counted as tier 2 capital, and where such instruments are invested by retail banks

[15] Net common equity tier 1 capital means tier 1 capital that is net equity capital of retail banks deducted by the items as prescribed in the Notification of the Bank of Thailand on Components of Capital for Locally-incorporated Banks

[16] Retail banks shall refer to the calculation methods as specified in Attachment 4 of the Notification of the Bank of Thailand on Components of Capital for Locally-incorporated Banks.

(3) Investment in equity instruments and warrants in the companies that neither operate financial business nor financial supporting business in which retail banks have do not own more than 10% of the total issued common shares of each companies.

(4) Land, premises, equipment, other fixed assets and assets held for sale.

(5) Other assets that risk weights have not been assigned

1.9.4 A risk weight of 250% shall be assigned to:

(1) Investment in equity instruments and warrants issued by companies operating financial business and financial supporting business where retail banks own more than 10% of the total issued common shares of each companies (except companies under the scope of full consolidation group that are required to be included in consolidated financial statements, and companies providing supporting functions for the financial institution system or acquired from debt restructuring); the calculation method is as follows:

Retail banks shall compare the sum of investment[15] in such equity instruments and warrants of the company with 10% of Net Common Equity Tier 1. In consequence, retail banks shall use the sum of such investment only for an amount not exceeding 10% of Net Common Equity Tier 1[17] to calculate risk-weighted assets in proportion to the type of investment in each company (Pro-rata basis)[18]. For the part that are investments in banking book, retail banks shall assign a risk weight of 250%. In this regard, if investments are in the trading book, retail banks shall comply with the Notification of the Bank of Thailand on Supervision of Market Risk and Maintenance of Capital Requirement for Market Risk of Financial Institutions. In this regard, if the risk weight following the aforementioned Notification is less than 250%, retail banks shall assign a risk weight of 250%.

1.9.5 Assign a risk weight of 100% divided by 8.5% (100/8.5%), or equal to 1176.5% to:

(1) An investment in equity instruments and warrants of companies operating businesses other than financial business and supporting businesses where retail banks own more than 10% of total issued common shares of each companies.

2. Non-performing assets

In case where retail banks classify assets and off-balance items following Section I.1 – I.8 as non-performing assets, retail banks shall assign them a risk weight of 150%, except for residential mortgage loans following **the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.1) and 5.2.3 (1.2)** which is classified as non-performing assets, retail banks shall assign a risk weight of 100%

Nonetheless, where the aforementioned non-performing debts have high specific provisions relative to total exposures, retail banks shall assign the lower risk weights in accordance with the regulations as prescribed by the Bank of Thailand, as follows:

2.1 Non-performing assets with no credit risk mitigation as prescribed by the Bank of Thailand, following the regulations on credit risk mitigation in Section III, shall be assigned the following risk weights:

2.1.1 Where specific provisions are less than 20% of total exposures: assign a risk weight of 150%

2.1. Where specific provisions are at least 20% but less than 50% of total exposures: assign a risk weight of 100%

2.1.3 Where specific provisions are at least 50% of total exposures and where payments are less than one year past due: assign a risk weight of 50%

2.1.4 Where specific provisions are at least 50% of total exposures and where payments are over one year past due: assign a risk weight of 100%

2.2 Non-performing assets with no credit risk mitigation as prescribed by the Bank of Thailand in regulations on credit risk mitigation under the SA but fully collateralised by: (1) Commercial Real Estate (CRE) (2) Residential Real Estate (RRE) and (3) Receivables[17] shall be assigned the following risk weights:

2.2.1 Where specific provisions are less than 15% of total exposures: assign a risk weight of 150%

[17] Retail banks shall refer to the definitions and guidelines for collaterals in the form of CRE, RRE, and Receivables of retail banks following the Notification of Bank of Thailand Notification on the Calculation of Risk-weighted Assets for Commercial Banks under the Internal Ratings-based Approach (IRB).

2.2.2 Where specific provisions are at least 15% but less than 50% of total exposures: assign a risk weight of 100%

2.2.3 Where specific provisions are at least 50% of total exposures and where payments are less than one year past due: assign a risk weight of 50%

2.2.4 Where specific provisions are at least 50% of total exposures and where payments are over one year past due: assign a risk weight of 100%.

2.3 Residential mortgage loans that receive a risk weight of 35% as prescribed in the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.1) and are non-performing assets shall be assigned the following risk weights:

2.3.1 Where specific provisions are less than 20% of total exposures: assign a risk weight of 100%

2.3.2 Where specific provisions are at least 20% of total exposures: assign a risk weight of 50%

2.4 Residential mortgage loans that receive a risk weight of 75% as prescribed in the Notification of Bank of Thailand on Regulation on mortgage and mortgage related loan in section 5.2.3 (1.2) and are non-performing assets shall be assigned the following risk weights:

2.4.1 Where specific provisions are less than 20% of total exposures: assign a risk weight of 100%

2.4.2 Where specific provisions are at least 20% but less than 50% of total exposures: assign a risk weight of 75%

2.4.3 For specific provisions of at least 50% of total exposures: assign a risk weight of 50%

III. Credit risk mitigation (CRM) for the SSA

2.1 Minimum requirements for credit risk mitigation

1.1 Minimum statutory requirements

1.1.1 Retail banks must have documents or agreements related to credit risk mitigation that are binding on all related parties, are enforceable by law, and do not contradict nor contest other legislations.

1.1.2 Retail banks must have processes and frameworks to evaluate legal clauses, and shall follow up and review whether such documents or agreements continue to be legally enforceable.

1.2 Retail banks must have processes to control other types of risk which may arise from an implementation of credit risk mitigation, such as operational risk, market risk and credit concentration risk.

If the retail banks do not control other risks which may arise from the implementation of credit risk mitigation, the Bank of Thailand may determine that such retail banks must maintain additional capital funds or implement other measures as prescribed in the Bank of Thailand Notification on Supervisory Review Process (Pillar 2).

1.3 Retail banks shall comply with the regulations regarding disclosure of risk mitigation as prescribed by the Bank of Thailand in the Notification of the Bank of Thailand on Disclosure on Capital Requirement of Commercial Banks.

1.4 The claims' risk weights after credit risk mitigation must not be higher than their risk weights before risk mitigation.

2. Types of credit risk mitigation

There are two main types of credit risk mitigation that the Bank of Thailand allows retail banks to use under the SSA: 1) Financial Collaterals; and 2) Guarantees

2.1 Financial collaterals

2.1.1 Minimum requirements for use of financial collaterals for credit risk mitigation

Retail banks must comply with the following minimum requirements in addition to minimum requirements for credit risk mitigation in Section III.

(1) Debtors must pledge the financial collaterals for a t least the life of the exposures, and collateral valuations must be carried out at least every 6 months.

(2) Retail banks must have methods to assess and check that the collaterals do not have a material positive correlation with the debtors. For example, securities issued by debtors or by any related entities shall be excluded as collaterals as they will not be able to provide effective risk protection.

(3) Retail banks must specify clear processes and procedures for liquidation, in case where debtors default on their obligations, to ensure that the retail banks have full legal rights to liquidate the collaterals promptly.

(4) In case where collaterals are deposited with a custodian, retail banks must ensure that the custodian has rigorous processes in segregating other parties' securities, which are collaterals deposited with it, from its own assets.

(5) Retail banks must maintain capital for transactions where both sides of the transactions are secured e.g. repurchase/reverse repurchase and securities lending/borrowing transactions (repo-style transactions), and collateral postings in connection with OTC derivatives and other borrowings[18].

(6) In cases where retail banks act as agents in undertaking repo-style transactions between customers with third parties, and the retail banks provide guarantees to the customers against defaults on repayment of the third parties, then retail banks' risk is the same as if retail banks are the customers' counterparties. Retail banks shall also calculate credit risk-weighted assets for such transactions.

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[18] For example, if a retail bank undertakes (1) Repo transactions with a counter party A, that is, the retail bank borrows from counterparty A and pledges security "a" as collateral, and (2) Reverse Repo transactions with counter party B, that is, the retail bank lends to counterparty B and receives security "b" as collateral; the retail bank must maintain capital funds for both transactions. For instrument (1), the retail bank's risk is when the value of pledged security "a" is higher than cash received from the counterparty; for instrument (2), the retail bank's risk is similar to normal secured credits where the value of collateral "b" can deteriorate.

- Other similar transactions include Securities Borrowing and Lending transactions (SBL). For example, retail bank (1) borrows security A from counterparty 1 and gives security B as collateral and (2) lends security C to counterparty 2 and receives security D as collateral; the retail bank must maintain capital funds for both transactions. For transaction (1), the risk is when the counterparty cannot return collateral B that was pledged when the retail banks borrowed security A as its value may be higher than security A; for instrument (2), the risk is when the counterparty cannot return security C that was borrowed as its value may be higher than the collateralized security D. Further, the retail banks must also maintain capital funds against issuer risks for securities B and C.

2.1.2 Eligible financial collaterals

The Bank of Thailand permits retail banks to use liquid financial collaterals for which market values or prices can be determined to mitigate credit risk, as follows:

(1) Cash, deposits at lending banks, certificates of deposit and bills of exchange issued by the lending banks[19], including cash that retail banks received as collaterals from issuing Credit Linked Notes, First to Default CLN and Proportionate CLN to transfer credit risk of debtors in their banking book

(2) Gold

(3) Debt securities issued by sovereigns and central banks; local government organization, state agencies, and state enterprises (non-central government public sector entities or PSEs); that the supervisory authority requires use the same risk weight as claims on sovereigns and multilateral development banks (MDBs) with 0% risk weight. Debt securities used as financial collaterals must have a credit rating better or equivalent to Rating Grade 4 or above.

As such, the Bank of Thailand shall not permit credit risk mitigation if the exposures and the collaterals have maturity mismatches or currency mismatches.

2.1.3 Calculation of Credit Risk Mitigation by Financial Collateral

The retail bank shall adopt the Simple Approach and apply the risk weights of the collaterals instead of the risk weights of the debtors for the secured portion of the exposures, and apply the risk weights of the debtors for the remaining unsecured portion of the exposures, as follows:

(1) On-balance sheet assets

Retail banks shall divide net credit equivalent amounts of transactions, which are gross credit equivalent amount minus specific provisions, into two portions and calculate risk-weighted assets, as follows:

[19] For of deposits, certificates of deposit and bills of exchange issued by the lending banks which have been deposited with another financial institution in a non-custodial arrangement where assets are pledged or rights have been transferred to the lending banks; where this pledge or rights transfer is unconditional and irrevocable, the risk weight of financial institution that oversees the assets shall be applied for the secured portion of the exposure.

(1.1) Collateralised portion of net credit equivalent amounts (Secured net credit equivalent amounts): Retail banks shall multiply the secured net credit equivalent amount, the fair values of the financial collaterals, by of financial collaterals' risk weights as specified in Section II instead of the debtors' risk weights.

(1.2) Non-collateralised portion of net credit equivalent amounts (Unsecured net credit equivalent amounts): Retail banks shall multiply the unsecured net credit equivalent amount, the difference between the net credit equivalent amounts and the secured net credit equivalent amounts, by the debtors' risk weights.

(2) Other off-balance sheet items that are not derivatives

Retail banks shall divide the net credit equivalent amounts of transactions, the notional amounts of the contracts minus specific provisions and multiplied by credit conversion factor (CCF) as prescribed by the Bank of Thailand, into two portions and calculate risk-weighted assets, as follows:

(2.1) Collateralised portion of net credit equivalent amounts (Secured net credit equivalent amounts): Retail banks shall multiply the secured net credit equivalent amounts, the fair values of the financial collaterals multiplied by credit conversion factor of the off-balance sheet items for credit risk mitigation, by the risk weights of financial collaterals as specified in Section II instead of the debtors' risk weights.

(2.2) Non-collateralised portion of net credit equivalent amounts (Unsecured net credit equivalent amounts): Retail banks shall multiply the unsecured net credit equivalent amounts, which are equal to the difference between the net credit equivalent amounts and the secured net credit equivalent amounts, by the debtors' risk weights.

(3) Off-balance items that are derivatives

Retail banks shall divide net credit equivalent amounts, gross credit equivalent amounts minus specific provisions, into two portions and calculate risk-weighted assets, as follows:

(3.1) Collateralised portion of net credit equivalent amounts (Secured net credit equivalent amounts): Retail banks shall multiply the secured net credit equivalent amounts, the fair value of the financial collaterals, by risk weights of the financial collaterals as specified in Section II instead of the counterparties' risk weights.

(3.2) Non-collateralised portion of net credit equivalent amounts (Unsecured net credit equivalent amounts): Retail banks shall multiply the unsecured net credit equivalent amounts, the difference between the net credit equivalent amounts and the secured net credit equivalent amounts, by the counterparties' risk weights.

2.1.4 Minimum risk weights for secured net exposures

Risk weights of the secured net credit equivalent amounts shall not be lower than 20%, except for the following cases where a risk weight of 0% is permitted.

(1) Collateral in the form of cash or cash equivalent collaterals specified in Section 2.1.2 (1)

(2) Collaterals in the form of securities issued by sovereigns, central banks, local government organizations, state agencies or state enterprises that receive a risk weight of 0%, where a 20% haircut has been deducted on the collateral values.

2.2 Guarantees[20]

2.2.1 Minimum operational requirements for guarantees

Retail banks can mitigate credit risk by using guarantees with the following attributes.

(1) Guarantees must represent direct claims on the guarantors and must explicitly specify assets or pools of asset under the guarantees in order to define the indisputable scopes of guarantees.

(2) Guarantees must not have clauses that allow guarantors to unilaterally revoke the contracts or increase the cost of protection as a result of deteriorating credit quality of the assets under the guarantees[21], except in case where the guarantees do not meet payment obligations agreed under such contracts.

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[20] Including (1) export credit insurance; limit to the portion that retail banks are the beneficiaries of the insurance policy or the portions that debtors or the Export-Import Bank of Thailand or insurers or reinsurers have transferred the rights of the claims to the retail banks (2) In case where retail banks issue loans and receive certificates of claims on inherited pensions issued by the Comptroller General's Department, the retail banks shall treat the loans as if they are guarantees by the Comptroller General's Department.

[21] Note that the irrevocability condition does not require that the credit protection and the exposures be maturity matched; rather that the maturity agreed *ex ante* may not be reduced *ex post* by the guarantors.

(3) Guarantees must not have clauses outside the direct control of retail banks that prevent the guarantors from their obligations to make timely compensation payments when the event that the debtors default on debt repayment, or in a credit event.

(4) When debtors default, retail banks must have the rights of recourse against the guarantors, and must have the rights to receive compensations from the guarantors without legal actions[22]. In this regard, the guarantors may make lump sum payments to the retail banks for the full amount of the compensation, or assume future obligations to pay out compensations to the retail banks following the guarantee contracts.

(5) Guarantees must be supported by documents that provide legal rights to claims against the guarantors.

(6) Guarantees should cover all types of payments the debtors are obliged to make under the contracts.

(7) In the case of partial guarantees, such as a guarantee of the principle payments, where interests and other expenses are excluded, the portion not covered by the guarantees shall be treated as an unsecured amount in accordance with methodology for proportional cover agreement in Section 5.

2.2.2 Type of guarantors

The Bank of Thailand permits the following guarantors to be used for credit risk mitigation: sovereigns and central banks[23], local government organizations, state agencies, state enterprises, and other organizations receiving risk weight not exceeding 20%, where the guarantors' risk weights must be lower than those of the debtors'.

2.2.3 Calculations of credit risk mitigation using guarantees

(1) Retail banks shall divide the net exposures into two portions, where the guaranteed portion shall be assigned the risk weight of the guarantors, and the remaining unguaranteed portion shall be assigned risk weight of the debtors.

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[22] If a guarantor is the Small Industry Credit Guarantee Corporation (SICGC), the Bank of Thailand allows such guarantees to be effective for the credit risk mitigation, despite SICGC regulations prescribe that legal actions must be taken against the debtors first.

[23] Includes the Bank for International Settlements, the International Monetary Fund, the European Central Bank, and the European Community

(2) As the Bank of Thailand permits the use of risk weight of 0% for loans or investments in securities issued by sovereigns or central banks of any country denominated in that country's domestic currency that do not exceed the retail banks' liabilities denominated in the same currency, therefore the risk weight of 0% shall also apply to loans or investments in securities guaranteed by such sovereigns or central banks in that country's domestic currency that does not exceed the retail banks' liabilities denominated in the same currency.

3. Multiple types of credit risk mitigation

3.1 In cases where retail banks have multiple types of credit risk mitigation to protect against risk from the same exposures, for example, where the retail banks have both financial collaterals and guarantees, the retail banks shall apportion assets by the type of credit risk mitigation and calculate risk-weighted assets separately for each portion.

3.2 In cases where retail banks use credit risk mitigations from the same counterparty but where credit risk mitigations have different maturities, the retail banks shall apportion assets into different groups and calculate risk-weighted assets separately for each credit risk mitigation expiry.

4. Double counting of credit risk mitigation

The effect of credit risk mitigation shall not be double count. Therefore, no additional recognition of credit risk mitigation for capital purpose will be granted on claims for which an issue-specific ratings is used that already reflect that credit risk mitigation.

5. Proportional cover

In case where the value of the risk protection agreements are less than the exposures, and the secured and unsecured portions have the same seniority, i.e. the retail banks and the guarantors share losses on a pro-rata basis, the value of risk protection that may be used for risk mitigation shall also be reduced proportionately. That is, the secured portion shall be assigned the risk weights of the guarantor, while the remaining shall be treated as unsecured portions and shall be assigned the risk weight of the debtors as per usual.