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Notification of the Bank of Thailand
No. FPG. 5/2559
Re: Regulations on Asset Classification and Provisioning of Financial Institutions

1. Rationale

Previously, the Bank of Thailand has issued regulations on asset classification and provisioning so that financial institutions would have adequate provisions for impairment of their assets, especially loans, which are the core assets of financial institutions. Afterwards, In 2008 (B.E. 2551) the Bank of Thailand amended those regulations in order to encourage financial institutions to have provisions to buffer against expected losses arising from the business operations, more reflecting the actual risks. For example, financial institutions shall consider classifying debtors and related parties of debtors in the same classification if there are the indicators that cash inflows of the debtors and those of related parties of debtors, for any particular account, are correlated and this may affect the repayment capability of the debtors. In addition, there were the amendments to types of collaterals the values of which can be deducted from outstanding balances of loans before provisions.

According to the Business Security Act B.E. 2558 (2015), which will be effective on 2nd July 2016 (B.E. 2559), debtors may place assets that have economic value as collaterals for debt repayment, where the debtors are not required to deliver those assets to the collateral receivers. Therefore, to accommodate the practices according to the Business Security Act B.E. 2558 (2015) and to promote the access to finance of small-sized enterprises, the Bank of Thailand hereby amended the regulations on asset classification and provisioning by prescribing more types of collaterals, covering business collateral with a value of no more than 50 million Baht and non-contractual claims that financial institutions can deduct their values from the outstanding balances of loans before provisions.

2. Statutory Power

By virtue of Sections 60 and 61 of the Financial Institution Business Act B.E. 2551 (2008), the Bank of Thailand hereby issues the regulations on asset classification and provisioning for financial institutions to comply with.

3. Repealed Notification

Notification of the Bank of Thailand No. FPG. 31/2551 Re: Regulations on Asset Classification and Provisioning of Financial Institutions dated 3 August 2008

4. Scope of Application

This Notification shall apply to financial institutions according to the law on financial institution business.

5. Content

5.1 Definition

“Irrecoverable assets” means assets classified as Loss.

“Assets that may be irrecoverable” means

(a) Assets classified as Doubtful of Loss

(b) Assets classified as Doubtful

(c) Assets classified as Substandard

(d) Assets classified as Special Mention

(e) Assets classified as Pass

“Provisions” means reserves set aside as allowance for bad debts or doubtful debts, allowances for price reduction, allowances for impairment, and allowances for revaluation of assets that may be irrecoverable, including other assets and obligations that are not irrecoverable. Financial institutions shall, at the minimum, set provision for each class of classified assets in accordance with the rates and regulations specified in this Notification.

5.2 Regulations on asset classification and provisioning

5.2.1 Policies and practices

Financial institutions shall set out clearly written policies and practices regarding asset classification, provisioning, and writing-off for assets that are irrecoverable or may be irrecoverable. Those policies and practices shall be approved by the board of directors of financial institutions and shall include the following:

(1) Roles and responsibilities of directors, executives, and relevant staff of financial institutions

(2) Quantitative and qualitative factors used for consideration of asset classification

(3) Assumptions and methodologies for provisioning calculation

(4) Write-off of bad debts and recovery of bad debts of financial institutions

(5) Internal control system and accounting policies

(6) Monitoring of accuracy of asset classification, provisioning, and write-off of bad debts, as well as reliability of supporting data and documents

5.2.2 Asset classification

Financial institutions shall classify assets, by each account of assets, in accordance with their attributes. Financial institutions shall consider the relationship of cash flow of each account. That is, if the cash flow of each account of debtors and that of each account of debtors' related parties are related, the financial institutions may classify those related cash-flow accounts of debtors or debtors' related parties into the same classification.

The Bank of Thailand may require financial institutions to reclassify assets as considered appropriate.

(1) **Assets classified as Loss** mean assets with any one of the following attributes:

(1.1) Claim, for which a reasonable action for the receipt of debt repayment has been taken but there is no possibility of such receipt, satisfied any one of the criteria below:

(1.1.1) A debtor is dead or adjudged as disappearance or there is an evidence of disappearance and there are no assets to repay the debt.

(1.1.2) A debtor has dissolved the business operations and is in debt to other creditors with preferential rights over total assets of the debtor where total claims of such creditors exceed total assets of the debtor.

(1.1.3) Financial institutions has sued the debtor or has applied for the participation in properties in the case that other creditors have also sued such debtor and the court has already ruled the case but the debtor does not have assets to repay the debt.

(1.1.4) has filed the debtor a bankruptcy suit or has applied for the receipt of debt repayment in the case that other creditors have also filed such debtor for bankruptcy, and in that case, all parties have agreed for debt restructuring with the approval from the court or such debtor has been adjudged as bankrupt and the first distribution of properties has taken place.

(1.2) Claim of which the nature or circumstance is treated as irrecoverable

(1.3) Other assets, which are impaired, damaged, or worthless

(1.4) Loss from debt restructuring carried out in accordance with the regulations and guidelines prescribed by the Bank of Thailand.

(2) Assets classified as Doubtful of Loss mean assets with any one of the following attributes:

(2.1) A debtor overdue the principal or interest payments for a cumulative period exceeding 12 months starting from the contractual due date regardless of the contractual conditions or terms or the date that a financial institution makes the claim or call for the repayment, whichever is earlier, except a debtor classified as Loss. An overdraft debtor shall be classified under 5.2.2 (2.2).

(2.2) An overdraft debtor with no credit line or whose credit line has been revoked, or whose book value of loan has exceeded the credit line, or whose contract has expired and no fund has been transferred to the account for the repayment of principal and interests exceeding 12 months starting from the date which the credit line is revoked or the date which loan outstanding exceeds the credit line or the maturity date of the contract, whichever is earlier.

(2.3) The immovable property acquired through the debt repayment or the public auction, only for the portion that the book value exceeds the value obtained from appraisal carried out within the last 12 months, whereby the estimated sale expense is deducted from the mentioned obtained value before comparing to the book value. In case where a financial institution undertook the appraisal more than 12 months ago, only 50% of the value obtained from the appraisal can be used. For the foreclosed properties appraisal, the policy guideline of the Bank of Thailand Re: Policy Statement on Valuation on Collaterals and Foreclosed Properties must be complied with.

(2.4) Other assets, only for the portion that the book value exceeds the fair value or the expected recoverable value, whereby a financial institution must assign the fair value or the expected recoverable value for the asset following the rules prescribed in the accounting standard.

(2.5) Asset or claim of which the entire value is expected to be irrecoverable.

(2.6) Loss from debt restructuring carried out in accordance with the regulations and guidelines prescribed by the Bank of Thailand.

(2.7) There is an indicator that an asset or claim may not be entirely recovered as ordered by the Bank of Thailand.

(3) Assets classified as Doubtful mean assets with any one of the following attributes:

(3.1) A debtor overdue the principal or interest payments for a cumulative period exceeding 6 months starting from the contractual due date regardless of the contractual conditions or terms or the date that a financial institution makes the claim or call for the repayment, whichever is earlier, except a debtor classified as Loss or Doubtful of Loss. An overdraft debtor shall be classified under 5.2.2 (3.2)

(3.2) An overdraft debtor with no credit line or whose credit line has been revoked, or whose loan outstanding has exceeded the credit line, or whose contract has expired and no fund has been transferred to the account for the repayment of principal and interests exceeding 6 months starting from the date which the credit line is revoked or the date which loan outstanding exceeds the credit line or the maturity date of the contract, whichever is earlier.

(3.3) A debtor under the receivership by the court order.

(3.4) A debtor who has ceased or dissolved the business operations or the business of such debtor is in the process of liquidation.

(3.5) A debtor who has delayed the debt repayment or has taken any actions in order to prevent the creditor from receiving debt repayment such as moving outside the Kingdom, or removing or disposing the assets.

(3.6) A debtor whom a financial institution is unable to contact or find or a debtor who has left the domicile stated in the agreement without informing the financial institution.

(3.7) A debtor whose business is uncertain or a debtor who has not undertaken any business permanently, or a debtor who has used the fund for the purpose other than that agreed.

(3.8) A financial institution has applied for the participation in properties with other creditors who have also sued the debtor.

(3.9) Asset or claim where the debt (principal and interests) is unlikely to be repaid in full amount.

(3.10) There is an indicator that an asset or claim may not be fully recoverable as ordered by the Bank of Thailand.

(4) Assets classified as Substandard mean assets with any one of the following attributes:

(4.1) A debtor overdue the principal or interest payments for a cumulative period exceeding 3 months starting from the contractual due date regardless of the contractual conditions or terms or the date that a financial institution makes the claim or call for the repayment, whichever is earlier, except a debtor classified as Loss, Doubtful of Loss, or Doubtful. An overdraft debtor shall be classified under 5.2.2 (4.2).

(4.2) An overdraft debtor with no credit line or whose credit line has been revoked, or whose loan outstanding has exceeded the credit line, or whose contract has expired and no fund has been transferred to the account for the repayment of principal and interests exceeding 3 months starting from the date which the credit line is revoked or the date which loan outstanding exceeds the credit line or the maturity date of the contract, whichever is earlier.

(4.3) There is an indicator that there are difficulties in the call for repayment of an asset or a claim, or such an asset or claim no longer generates income as usual as ordered by the Bank of Thailand.

(5) **Assets classified as Special Mention or assets classified as Requiring Special Caution** mean assets with any one of the following attributes:

(5.1) A debtor overdue the principal or interest payments for a cumulative period exceeding 1 month starting from the contractual due date regardless of the contractual conditions or terms or the date that a financial institution makes the claim or call for the repayment, whichever is earlier, except a debtor classified as Loss, Doubtful of Loss, Doubtful, or Substandard. An overdraft debtor shall be classified under 5.2.2 (5.2).

(5.2) An overdraft debtor with no credit line or whose credit line has been revoked, or whose loan outstanding has exceeded the credit line, or whose contract has expired and no fund has been transferred to the account for the repayment of principal and interests exceeding 1 month starting from the date which the credit line is revoked or the date which loan outstanding exceeds the credit line or the maturity date of the contract, whichever is earlier.

(6) **Assets classified as Pass** mean assets with any one of the following attributes:

(6.1) A debtor who has no past due or who is not overdue the debt. An overdraft debtor shall be classified under 5.2.2 (6.2).

(6.2) An overdraft debtor who has not fully drawn down the credit line and whose credit line has not been revoked, or whose contract has not reached maturity or the overdraft debtor with the accrued interests of less than 1 month.

(6.3) Other debtor who is not classified as Loss, Doubtful of Loss, Doubtful, Substandard, or Special Mention (or Requiring Special Caution).

(6.4) A debtor with the confirmation letter on the acceptance of completed work issued less than 6 months starting from the acceptance date from the government agency under the regulation of such agency. The part of loan covered by the said letter shall be classified as Pass.

5.2.3 Classification for the case of debt restructuring

For debt restructuring according to the regulation on debt restructuring of financial institutions prescribed by of the Bank of Thailand, a financial institution shall comply with the following:

(1) A Financial institution shall write-off or set provision as follows:

(1.1) In case where a financial institution has made a concession to a debtor by reducing the principle or interests accrued prior to the debt restructuring, or has accepted the repayment by the transfer of assets, financial instruments, or has accepted the equity of such debtor from securitization (the conversion of the debt into equity), such a financial institution can write-off such debtor account and recognize the incurred loss as well as reverse the entry for the portion that exceeds the provision reserved for such a debtor for the whole amount.

(1.2) In case where a financial institution has made a concession to a debtor by relieving the conditions on debt repayment without reducing the principal or interests accrued prior to the debt restructuring, which causes the expected recoverable amount of restructured debt calculated according to the regulation on debt restructuring of financial institutions prescribed by of the Bank of Thailand to be lower than the sum of the original book value of the loan and accrued interests recorded in the account prior to the debt restructuring, such financial institution shall recognize the provision for the entire amount of incurred loss. A financial institution can reverse the entry for the provision set before debt restructuring of such a debtor only the portion that exceeds the incurred loss. However, in case where the provision set before the debt restructuring of such a debtor is lower than the incurred loss, a financial institution shall set additional provision to cover such loss.

(1.3) In case where a financial institution has granted the debtor a reduction in the principal or interests accrued prior to the debt restructuring, or has accepted the partial repayment by the transfer of assets, financial instruments, or securitization and has made a concession by relieving the conditions on the remaining debt repayment to a debtor, such a financial institution shall comply with 5.2.3 (1.1) for the case of concession by reducing of the principal or interests or receiving of the debt repayment, and comply with 5.2.3 (1.2) for the case of concession by relieving the conditions on debt repayment.

(2) During the monitoring of debtor's compliance with the debt restructuring conditions where a debtor is required to make the debt repayment according to the new terms of the debt restructuring agreement for at least a period of 3 consecutive months or 3 installments, whichever is longer, a financial institution shall comply with the following:

(2.1) A debtor originally classified as Doubtful of Loss or Doubtful shall be reclassified as Substandard.

(2.2) A debtor originally classified as Substandard or Special Mention (or Requiring Special Caution) shall be retained in the same class.

In this regards, a financial institution shall set provision based on the debtor status after the debt restructuring for the case where the provision set according to 5.2.3 (2) is greater than the provision for incurred loss from the debt restructuring under 5.2.3 (1.1) (1.2) and (1.3).

A debtor who has successfully complied with the new terms of the debt restructuring agreement where the debt repayment has been made for at least a period of 3 consecutive months or 3 installments, shall be reclassified such as Pass.

In case where a debtor is unable to abide by the new conditions of the debt restructuring agreement, a financial institution shall add up the past due dates during the debt restructuring period with the past due dates under the original contract before the debt restructuring. Then, such debtor shall be reclassified and appropriate provision shall be set according to the rules in this Notification.

(3) For a debtor who has undertaken the debt restructuring according to the regulation on debt restructuring of financial institutions prescribed by of the Bank of Thailand and meets one of the following criteria, a financial institution shall immediately reclassify such debtor as Pass regardless of whether the conditions of the debt restructuring agreement has been fulfilled:

(3.1) A debtor is able to pay the interests at the rate no less than the market interest rate without the grace period for interest repayment. However, there may be the grace period for the principal repayment.

(3.2) A debtor with the loss incurred from the debt restructuring no less than 20% of the book value of the loan prior to the debt restructuring, where such loss has been written off or full provision has been made. Moreover, the proper analysis for the remaining book value of loan on the debtor’s business, financial status and cash flows has also been reasonably conducted with sound principle and there is evidence that such a debtor is able to fulfill the debt restructuring agreement.

(3.3) A debtor with the debt in the form of loan syndication or a debtor with several creditors having agreed to have their loans mutually restructured and there is evidence from the reasonable analysis with sound principle of the debtor's business, financial status and cash flows indicating that such a debtor is able to fulfill the debt restructuring agreement.

(3.4) In case where a financial institution has filed a lawsuit against a debtor and later the contract of compromise endorsed by the court has been settled and in case where a financial institution has filed a bankruptcy lawsuit against a debtor and the court has approved the debtor's request for debt restructuring or a rehabilitation plan.

(4) In case that there is any apparent irregularity regarding the debt restructuring, the Bank of Thailand may order a financial institution to rectify or to employ an independent expert to evaluate or review the debt restructuring plan or to order to reclassify and make provision for each individual debtor.

5.2.4 Provisions and write-off of assets that are irrecoverable or may be irrecoverable

Financial institutions shall write off assets and set aside provisions according to classification of assets, as follows:

(1) **Assets classified as Loss:** financial institutions shall write off assets classified as Loss.

(2) **Assets classified as Doubtful of Loss, Doubtful or Substandard:**

(2.1) A financial institution shall set a provision of 100% for the difference between the book value of loan and the present value of expected cash flows from the debtor or the present value of expected cash flows from the sale of collateral. Methods of the calculation of the present value of expected cash flows from the debtor or the present value of expected cash flows from the sale of collateral shall be in accordance with the guideline specified by the Bank of Thailand in Attachment 1.

For calculating cash flows expected to receive from disposing other types of collaterals apart from immovable properties, leasehold, marketable machineries and vehicles, financial institutions may use the values of collaterals with haircut rates according to the “Summary table of types and values of collaterals that can be deducted from the book value of loan before making provision ” as prescribed by the Bank of Thailand in Attachment 3 without calculating the present value of expected cash flows from the sale of such collateral.

(2.2) In case of retail loans with the similar credit risk characteristic, financial institutions has the option to set the provision in accordance with the approach specified in Section 5.2.4 (2.1) or the collective approach where the provision is set from historical loss experience as prescribed by the Bank of Thailand in Attachment 2.

In case where the Bank of Thailand considers that the assumptions and the factors used in the calculation of expected cash flows from the debtor or the present value of expected cash flows from the sale of collateral or historical loss experience of retail loans with the similar credit risk characteristic is inappropriate, the Bank of Thailand may order such a financial institution to set additional provision or change the calculation methodologies.

(3) Assets classified as Special Mention or Pass

(3.1) Financial institutions shall set aside provisions by using the principal outstanding excluding accrued interest as base for the calculation by the following rates:

(3.1.1) 2 percent in case of assets classified as Special Mention

(3.1.2) 1 percent in case of assets classified as Pass

In this regards, a financial may use the values of collaterals with haircut rates according to the "Summary table of types and values of collaterals that can be deducted from the book value of loan before making provision" as prescribed by the Bank of Thailand in Attachment 3

(3.2) In case of loans with the similar credit risk characteristic, financial institutions has the option to set the provision in accordance with the approach specified in Section 5.2.4 (3.1) or the collective approach where the provision is set from historical loss experience as prescribed by the Bank of Thailand in Attachment 2.

If a financial institution do not have adequate data for calculation of provisions under the Collective Approach in accordance with 5.2.4 (3.2), such as having the data of less than 5-year period, the financial institution shall set aside provisions as calculated in accordance with 5.2.4 (3.2) or 5.2.4 (3.1), whichever is greater.

5.2.5 Provisions for off-balance sheet obligations

(1) Off-balance sheet obligations for which provisions shall be set aside

Financial institutions shall set aside provisions for off-balance sheet obligations that meet all of the following conditions:

(1.1) Off-balance sheet obligations of debtors classified as Loss, Doubtful of Loss, Doubtful and Substandard in accordance with 5.2.2

(1.2) Off-balance sheet obligations that have been recognized as Liabilities on the balance sheet in accordance with the Accounting Standards No.37 Re: Provisions, Contingent Liabilities and Contingent Assets and the amendments thereof and meet all of the following conditions:

(1.2.1) Financial institutions have present obligations (legal or constructive) as a result of past events;

(1.2.2) It is highly probable that financial institutions will lose resources embodying economic benefits to settle the obligations;

(1.2.3) A reliable estimate can be made of the amount of the obligations.

(1.3) Off-balance sheet obligations that have high level of credit risk, such as loan guarantees, avals or irrevocable obligations where the Bank of Thailand assigns the credit conversion factor of 1 for calculation of minimum capital requirements in accordance with the Bank of Thailand Notification Re: Regulations on the Calculation of Credit Risk-Weighted Assets for Commercial Banks or financial Companies or Credit Foncier Companies, as the case may be.

(2) Provisioning rates

Financial institutions shall set aside provisions for off-balance sheet obligations that meet the conditions as prescribed in 5.2.5 (1) by using the rate as used for the same debtor's loan shown as an on-balance sheet item.

In case where debtors have several types of debts with different provisioning rates, financial institutions shall set aside provisions for off-balance sheet obligations by using the highest rate used for loan of such debtors. This is except the case where the financial institutions can identify the relationship between the sources of repayment for any obligation and the particular account of the debtor, the financial institutions may set aside provision for the obligation using the same rate as for that account.

Financial institutions shall report data related to those provisions under the items of other expenses and other liabilities. When the Bank of Thailand subsequently adds such data to the Data Set Classification, financial institutions shall report such data according to the Classification as prescribed by the Bank of Thailand. In addition, financial institutions shall keep relevant documents at the financial institutions for an inspection by the Bank of Thailand.

5.2.6 Provisioning for hire purchase loans and leasing loans

A financial institution shall calculate such provision from the outstanding balance of hire purchase loans or leasing loans, which is the amount after netting of deferred hire purchase income or deferred financial income.

In case of the vehicle and machinery hire purchase and leasing loans, financial institutions may deduct the value of the vehicles or machineries as specified in Section 5.2.9 from the book value of loan prescribed in the first paragraph prior to making provision.

5.2.7 Provision for the debtor with an agreement to buy or to sell

For calculating provision of the debtors that a financial institution has an agreement to buy or to sell with other outside parties, a financial institution shall calculate such provision by deducting the trading value from the outstanding balance of the loan before making provision with the following conditions:

(1) The bank guarantee for buying from the financial institution or other financial institutions is required or the buyer must put the deposit at the amount not less than 20% of the trading value.

(2) The purchasing / selling process must be completed within 1 year starting from the date on the agreement to buy or sell.

5.2.8 Provisions for loans for purchasing securities

If finance companies still have loans for purchasing securities before separating their businesses into the finance business and the securities business, the finance companies shall classify such loans for purchasing securities only for the portion that the outstanding balance of loans is greater than the value of collateral as Doubtful of Loss and set aside provisions at the rate of 100 percent of that portion.

5.2.9 The value of collateral used in the calculation of provision

For the calculation for making provision for all classified assets except for assets classified as Doubtful of Loss under Section5.2.2 (2.3), (2.4) and (2.6), a financial institution shall first deduct the value of collateral which has been appraised in accordance with the policy statement of the Bank of Thailand Re: Appraisal of Collaterals and Foreclosed Properties from the book value of loan before making provision. A commercial bank may choose any account of the debtor to be deducted first.

However, the value of the collateral deducted must not exceed the credit line stated in the pledge contract, the mortgage contract, the guarantee contract, Business Collateral Contract, or other collateral contracts, as the case may be. The types of collaterals and the value that can be deducted, as well as the frequency of collateral appraisal of each type of collaterals shall be in accordance with the summary table of collateral types and collateral value to be deducted from the book value of loan before making provision as specified by the Bank of Thailand in Attachment 3.

5.2.10 Dividend payment

In the period during which financial institutions have not yet written off impaired assets or have not yet set aside provisions for assets and obligations in full, irrespective of whether they are irrecoverable or not, the financial institutions shall neither pay the dividend nor any other forms of returns to its shareholders.

5.2.11 Provision at the rate more stringent than that prescribed by the Bank of Thailand

In case where a financial institution wishes to classify assets or claims and set provision by using more stringent criteria than that prescribed in this Notification, such financial institution is permitted to do so.

In case where a financial institution wishes to write-off the debtors due to the debtors' inability to repay the loan, for example, after the litigation is preceded, the debtor has no other assets to repay for the loan or has no guarantors, or the collateral has become worthless, the financial institution is permitted to do so. Moreover, for the case of writing-off debtors, a financial institution is also permitted to write-off any accounts of the debtor. For the purpose of internal control and preventing the fraud that may occur in the future, financial institutions shall proceed as follows:

(1) The policy, criteria, or guideline in writing –off the debtor and the internal control shall be clearly set and examined.

(2) Writing-off debtors must not be for the benefit of committee, senior management, shareholders of such a financial institution, or related parties or the entities that such persons have beneficial interest.

5.2.12 Loan and contingent liability review

Financial institutions shall conduct a review and prepare a report on reviewing loans, lending and contingent liability and transaction similar to granting credits in accordance with the guidelines as prescribed by the Bank of Thailand in the Policy Statement Re: Bank's Credit Review or the Policy Statement Re: Finance Companies and Credit Foncier Companies' Credit Review, as the case may be.

6. Effective Date

This Notification shall come into force as from 2 July 2016.

Announced on 10th June 2016

(Mr. Veerathai Santiprabhob)
Governor
Bank of Thailand

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Attachment 1

Methods of the Calculation of the Present Value of Expected Cash Flows from the Debtor or the Present Value of Expected Cash Flows from the Sale of Collateral

1. **<u>For a financial institution choosing to use the present value (PV) of expected cash flows from the debtor method</u>:**

- A financial institution shall project the expected cash flows from the debtor by determining appropriate assumptions and relevant factors in accordance with the economic conditions and current situations.

- A financial institution is required to set aside provisions for the difference between the outstanding balance of loans and the present value of expected cash inflows. The discount rate used for calculation of present value must be the effective interest rate as prescribed by accounting standards. Initially, financial institutions may apply the interest rate of 7% as the discount rate instead of the effective interest rate.

- For the first three months of the payment, if the actual cash flows are different from the projected cash flows, a financial institution shall set additional provision for the difference between the projected cash flows and the actual cash flows. Moreover, a financial institution shall re-estimate its expected cash flows.

- After three months of the payment, a financial institution shall review whether the projected cash flows are consistent with the actual cash flows.

  - In case where the actual cash flows are more than or equal to the projected cash flows, a commercial bank shall continually use its projected cash flows.

  - In case the where the actual cash flows are less than the projected cash flows, a financial institution shall immediately change the calculation method to the present value of collateral, and in case where there is no collateral, a financial institution shall immediately set the provision at 100% of the outstanding balance of loan.

- A financial institution shall review the expected cash inflow every accounting period.

In case where the effective interest rate is a discount rate, financial institutions shall prepare documents related to provisioning, such as supporting documents for calculation of the effective interest rate. Those documents shall be kept at financial institution for the Bank of Thailand's examination.

2. <u>Method of the calculation of the present value (PV) of expected cash flows from the sale of collateral</u>:

In case where a financial institution chooses to use the present value (PV) of expected cash flows from the sale of collateral method, such a financial institution may not switch back to use the present value of expected cash flows from the debtor method except for the case where such a financial institution has undertaken the debt restructuring for the debtor according to the regulation of the Bank of Thailand.

2.1 <u>Property and leasehold</u>

The collateral value, after deducted all expenses, used in the calculation of the present value is equal to 90% of the appraised value where the collateral appraisal is conducted in accordance with the regulation specified by the Bank of Thailand in 5.2.9 (every 3 years).

- The number of years where the collateral is expected to be sold is about 5.5 years.

- The discount rate used for calculation of PV is equal to the effective interest rate as prescribed by accounting standards. Initially, a financial institution may apply the interest rate of 7% as the discount rate instead of the effective interest rate.

In case where a financial institution use the assumptions or factors for calculation of PV apart from the above guidelines and where there are verifiable justifications, the financial institution are allowed to do so but they must have in place supporting documents related to provisioning, such as supporting documents related to the calculation of provisions. Those documents shall be kept at financial institution for the Bank of Thailand's examination.

2.2 <u>Marketable machineries</u>

- The collateral value used in the calculation of the present value of machinery is equal to 100% of the appraisal value, where the collateral appraisal is conducted in accordance with the regulation specified by the Bank of Thailand in 5.2.9 (every 3 years), deducted by the depreciation of such a machinery which is calculated up to the date expected to be sold

- The number of years where the collateral is expected to be sold is about 2.5 years.

- The discount rate used for calculation of PV is equal to the effective interest rate as prescribed by accounting standards. Initially, a financial institution may apply the interest rate of 7% as the discount rate instead of the effective interest rate.

In case where a financial institution use the assumptions or factors for calculation of PV apart from the above guidelines and where there are verifiable justifications, the financial institution are allowed to do so but they must have in place supporting documents related to provisions, such as supporting documents related to the calculation of provisions. Those documents shall be kept at financial institution for the Bank of Thailand's examination.

2.3 Vehicles

For hire purchase loans, leasing loans, or loans with an insured vehicle as collateral, a financial institution shall calculate the present value (PV) of expected cash flows from the sale of collateral according to the following conditions:

- The collateral value used in the calculation of the present value of vehicle is equal to 100% of the appraisal value, where the collateral appraisal is conducted in accordance with the regulation specified by the Bank of Thailand in 5.2.9 (every 3 years), deducted by the depreciation of such a vehicle which is calculated up to the date expected to be sold.

- The number of years where the collateral is expected to be sold is about 1 years **and about 5.5 years in case of ships.**

- The discount rate used for calculation of PV is equal to the effective interest rate as prescribed by accounting standards. Initially, a financial institution may apply the interest rate of 7% as the discount rate instead of the effective interest rate.

In case where debtors have been classified as Doubtful of Loss or for which the principal and interest payment is past due for more than 12 months, a financial institution cannot use vehicles placed as collaterals, **except ships**, to calculate PV of expected cash inflows from disposal of collaterals.

In case where a financial institution use the assumptions or factors for calculation of PV apart from the above guidelines and where there are verifiable justifications, the financial institution are allowed to do so but they must have in place supporting documents related to provisions, such as supporting documents related to the calculation of provisions. Those documents shall be kept at financial institution for the Bank of Thailand's examination.

Attachment 2

Guidelines on loan categorization and provisioning under the Collective Approach

1. Financial institutions shall categorize loans in order to calculate historical losses, as follows:

- Objective of loans: such as mortgage loans, credit card loans, personal loans, leasing
- Overdue repayment or loan classification: such as Pass (0 - 1 month overdue), Special Mention (1 - 3 months overdue), Substandard (3 - 6 months overdue)
- Term of loans: such as short-term loans, medium-term loans, long-term loans

In addition, financial institutions may incorporate other factors for loan categorization in order to better reflect the homogeneous characteristics of credit risk of loans, as follows:

- Characteristic of debtor: such as industry, occupation, income, residence or credit rating
- Characteristic of collateral: such as type of collateral, quality of collateral, liquidity and marketability of collateral, location of collateral
- Other factors that may affect repayment capability: such as repayment ratio, credit utilization ratio

2. In calculating historical losses, financial institutions shall consider the impact from the time value of money, which is calculated by the effective interest rate in accordance with accounting standards. Initially, financial institutions may apply the interest rate of 7% as the discount rate instead of the effective interest rate.

In addition, the model used for the calculation, which may be in form of financial model, statistical model or mathematical model, must be generally acceptable and constructed by methods and assumptions that are in accordance with accounting standards.

3. Financial institutions may calculate historical losses in accordance with the example for calculation of historical losses as prescribed by the Bank of Thailand in form of mathematical model, as follows:

Historical losses = EAD x PD x LGD

Where:

EAD is the outstanding balance of loans or exposure at default

PD is the probability of default, such as the probability that the group of loans will be classified as Substandard

LGD is the loss given default in percentage terms, which can be calculated by the difference between 100 percent and recovery rate of loans, such as a ratio of discounted cash inflows from disposal of collateral to loan amount or a ratio of discounted cash inflows from debtors after loans have been classified as Substandard to loan amount

4. Financial institutions shall update historical losses by taking into consideration tendencies and factors that may affect repayment capability, which shall at least cover:

- Risk management policy of financial institution: such as policy on credits granting, reviews, classification and provisioning, write-off of non-performing loans or debt restructuring
- Changes in operating guidelines or procedures of financial institution or relevant supervisory agencies: such as Bank of Thailand, Revenue Department, Legal Execution Department, Department of Lands
- Domestic and international economic conditions: such as GDP, policy interest rate, inflation rate, exchange rate, oil price, unemployment rate
- Other factors: such as competitive environment of debtor's industry, fluctuation of collateral price

5. Financial institutions shall keep supporting documents related to provisioning, such as supporting documents related to the calculation of historical losses and relevant revisions, at the financial institutions for an inspection by the Bank of Thailand.

Example 1: The calculation of historical losses of Group A Loans
(In case where a financial institution can reliably calculate the probability that the loan classification will change)

A financial institution can calculate provisions under the Collective Approach for Group A Loans, which have the outstanding balance as of 31 December 2015 (B.E. 2558) (Classified as Pass: 5,000 Baht and classified as Special Mention: 1,000 Baht), as follows:

1. <u>The calculation of the probability that loans will be classified as Substandard (PD)</u>

Historical data suggests that Group A Loans have the historical average of transition probabilities as follows:

Loan classification in the current accounting period	**Probability that the loans will be the classified assets in the next accounting period**		
	Pass	**Special Mention**	**Substandard**
Pass	95%	4.5%	0.5%
Special Mention	14%	85%	1%

According to the above data, a financial institution can calculate the probabilities that Group A Loans will be classified as Substandard within a 1-year period as follows:

An event which would cause Group A Loans to be classified as Substandard within a 1-year period			**Probability**
At the beginning of the first accounting period	**At the end of the first accounting period**	**At the end of the second accounting period**	
Pass	Pass	Substandard	95%*0.5% = 0.48%
Pass	Special Mention	Substandard	4.5%*1% = 0.05%
Pass	Substandard		0.5%
Probability that Group A Loans will be reclassified from Pass to Substandard within a 1-year period			0.48% + 0.05% + 0.5% = 1.03%
Special Mention	Pass	Substandard	14%*0.5% = 0.07%
Special Mention	Special Mention	Substandard	85%*1% = 0.85%
Special Mention	Substandard		1%
Probability that Group A Loans will be reclassified from Special Mention to Substandard within a 1-year period			0.07% + 0.85% +1% = 1.92%

2. The calculation of percentage of expected losses when debtors default to loan amount (LGD)

According to historical losses, Group A Loans after being classified as Substandard will have recovery rates as follows:

Number of years after the loans have been classified as Substandard	Percentage of recovery amount to loan amount	
	Cash inflows	Discounted cash inflows (Discount rate = 7%)
1	10	9.35
2	6	6.99
3 (Maturity)	5	4.08
Total	**23**	**20.42**

Recovery rate (RR) is 20.42%.

Therefore, LGD can be calculated as follows:

LGD = 1 - RR = 1 - 0.2042 = 79.58% or approximately 80%

3. The calculation of historical losses

- Historical loss rate of Group A Loans classified as Pass can be calculated as follows:

  Historical loss rate = PD * LGD = 1.03% * 80% = 0.82%

- Historical loss rate of Group A Loans classified as Special Mention can be calculated as follows:

  Historical loss rate = PD * LGD = 1.92% * 80% = 1.54%

4. The calculation of provisions

According to the analysis conducted by financial institution, if there are no tendencies or factors that may significantly affect repayment capability of debtors, the financial institution shall set aside provisions for Group A Loans as follows:

Classification of Group A Loans	Loan amount at the end of the quarter (EAD)	Provisions (Baht)
Pass	5,000	5,000 * 0.82% = 41.0
Special Mention	1,000	1,000 * 1.54% = 15.4

Example 2: The calculation of historical losses of Group B Loans (In case where a financial institution cannot reliably calculate the probability that the loan classification will change)

A financial institution can calculate provisions under the Collective Approach for Group B Loans, which have the outstanding balance as of 31 December 2015 (B.E. 2558) (Classified as Pass: 6,000 Baht and classified as Special Mention: 1,600 Baht), as follows:

1. <u>The calculation of the probability that loans will be classified as Substandard (PD)</u>

In case where a financial institution cannot reliably calculate the probability that the classification of Group B Loans will change, the financial institution may calculate the probability that Group B Loans will be classified as Substandard for the next 1-year period using the loan ratios, which can be calculated from the past classification of Group B Loans, as follows:

Unit: Baht

Data as of	Pass	Special Mention	Substandard
1 January 2011	1,000	600	16
30 June 2011	1,500	700	17
31 December 2011	2,000	800	18
30 June 2012	2,500	900	19
31 December 2012	3,000	1,000	20
30 June 2013	3,500	1,100	21
31 December 2013	4,000	1,200	22
30 June 2014	4,500	1,300	23
31 December 2014	5,000	1,400	24
30 June 2015	5,500	1,500	25
31 December 2015	6,000	1,600	26

- The probability that Group B Loans classified as Pass will be reclassified as Substandard within 1 year can be calculated from the average historical rate, which is calculated by dividing the outstanding balance of loans classified as Substandard by the outstanding balance of loans classified as Pass in the previous 2 accounting periods, as follows:

Classification of Group B Loans		Average historical rate of the outstanding balance of loans classified as Substandard divided by the outstanding balance of loans classified as Pass
Classified as Substandard, as of	Classified as Pass, as of	
31 December 2011	1 January 2011	18 / 1,000 = 1.80%
30 June 2012	30 June 2011	19 / 1,500 = 1.27%
31 December 2012	31 December 2011	20 / 2,000 = 1.00%
30 June 2013	30 June 2012	21 / 2,500 = 0.84%
31 December 2013	31 December 2012	22 / 3,000 = 0.73%
30 June 2014	30 June 2013	23 / 3,500 = 0.66%
31 December 2014	31 December 2013	24 / 4,000 = 0.60%
30 June 2015	30 June 2014	25 / 4,500 = 0.56%
31 December 2015	31 December 2014	26 / 5,000 = 0.52%

Weighted average (percent)

$$\frac{\left[\begin{array}{c}(1.80\% * 1{,}000) + (1.27\% * 1{,}500) + (1.00\% * 2{,}000) + (0.84\% * 2{,}500)\\ + (0.73\% * 3{,}000) + (0.66\% * 4{,}000) + (0.56\% * 4{,}500) + (0.52\% * 5{,}000)\end{array}\right]}{(1{,}000 + 1{,}500 + 2{,}000 + 2{,}500 + 3{,}000 + 3{,}500 + 4{,}000 + 4{,}500 + 5{,}000)} = \mathbf{0.73\%}$$

- The probability that Group B Loans classified as Special Mention will be reclassified as Substandard within 1 year can be calculated from the average historical rate of the outstanding balance of loans classified as Substandard divided by the outstanding balance of loans classified as Special Mention in the previous 2 accounting periods as follows:

Classification of Group B Loans		Average historical rate of the outstanding balance of loans classified as Substandard divided by the outstanding balance of loans classified as Special Mention
Classified as Substandard, as of	Classified as Pass, as of	
31 December 2011	1 January 2011	18 / 600 = 3.00%
30 June 2012	30 June 2011	19 / 700 = 2.71%
31 December 2012	31 December 2011	20 / 800 = 2.50%
30 June 2013	30 June 2012	21 / 900 = 2.33%
31 December 2013	31 December 2012	22 / 1,000 = 2.20%
30 June 2014	30 June 2013	23 / 1,100 = 2.09%
31 December 2014	31 December 2013	24 / 1,200 = 2.00%
30 June 2015	30 June 2014	25 / 1,300 = 1.92%
31 December 2015	31 December 2014	26 / 1,400 = 1.86%

Weighted average (percent)

$$\frac{\left[\begin{array}{l}(3.00\% * 600) + (2.71\% * 700) + (2.50\% * 800) + (2.33\% * 900) + (2.20\%\ 1{,}000) \\ + (2.09\% * 1{,}100) + (2.00\% * 1{,}200) + (1.92\% * 1{,}300) + (1.86\% * 1{,}400)\end{array}\right]}{(600 + 700 + 800 + 900 + 1{,}000 + 1{,}100 + 1{,}200 + 1{,}300 + 1{,}400 + 1{,}500 + 1{,}600)} = \mathbf{2.20\%}$$

2. <u>The calculation of loss given default (LGD)</u>

Historical losses suggest that Group B Loans after being classified as Substandard will have loss given default (LGD) of approximately 80% (calculated from recovery rates of Group B Loans classified as Substandard by using the same approach as Example 1)

3. <u>The calculation of historical losses experience</u>

- Historical loss rate of Group B Loans classified as Pass can be calculated as follows:

  Historical loss rate = PD * LGD = 0.73% * 80% = 0.59%

- Historical loss rate of Group B Loans classified as Special Mention can be calculated as follows:

Historical loss rate = PD * LGD = 2.20% * 80% = 1.76%

4. <u>The calculation of provisions</u>

According to the analysis conducted by financial institution, if there are no tendencies or factors that may significantly affect repayment capability of debtors, the financial institution shall have provisions for Group B Loans as follows:

Classification of Group B Loans	**Loan amount as of the end of the quarter (EAD)**	**Provisions (Baht)**
Pass	6,000	6,000 * 0.59% = 35.40
Special Mention	1,600	1,600 * 1.76% = 28.16

Example 3: The calculation of historical losses of Group C Loans
(In case where a financial institution can reliably calculate the probability that the loan classification will change)

A financial institution can calculate provisions under the Collective Approach for Group C Loans, which have the outstanding balance as of 31 December 2015 (B.E. 2558) (Classified as Pass: 10,000 Baht), as follows:

Historical losses may be calculated from the expected losses resulting from reclassification from Pass or Special Mention to Substandard, Doubtful, Doubtful of Loss, and Loss. The expected losses are calculated from the amount of loans classified as Pass or Special Mention at the beginning of the quarter that are reclassified as Substandard or below at the end of that quarter, as follows:

	Group C Loans classified as Pass at the beginning of the quarter	**Group C Loans reclassified as Substandard or below at the end of the quarter**	**Expected losses resulting from reclassification (%)**
1^{st} quarter 2015	6,000	40	0.66
2^{nd} quarter 2015	7,000	60	0.86
3^{rd} quarter 2015	8,000	80	1.00
4^{th} quarter 2015	9,000	100	1.11
Weighted average of reclassification rate $= \left(\frac{(0.66\%*6{,}000 + 0.86\%*7{,}000 + 1\%*8{,}000 + 1.11\%*9{,}000)}{(6{,}000 + 7{,}000 + 8{,}000 + 9{,}000)}\right)$			0.93

According to the analysis conducted by financial institution, if there is no data, tendencies or factors that may significantly affect repayment capability of debtors, the financial institution shall have provisions for Group C Loans for portion classified as Pass (outstanding balance of 10,000 Baht) as follows:

Provisions for Group C Loans for portion classified as Pass = 10,000 * 0.93%
= 93 Baht

Attachment 3

Summary table of types and values of collaterals that can be deducted from outstanding balances of loans before provisions as prescribed in 5.2.9

Type of collaterals	Deductible amount	Appraisal Frequency
1. Cash	100%	-
2. Commemorative banknote for special occasions such as note for auspicious coronation wedding and 50th anniversary coronation to the throne of value 500,000 baht	100% of face value	-
3. Right of claim in deposit account at such financial institution or Promissory Note or bills of exchange issued by financial institutions for borrowing from the public **In case where the accounts are owned by the third parties and where those accounts have not been placed as collaterals in accordance with the Collateral Security Act, the owners of the accounts must enter into an agreement to guarantee loans of the debtors and give rights to financial institutions to debit the accounts for debt payment. In addition, financial institutions must comply with the Amendments to the Civil and Commercial Code for related sections.**	100%	-
4. Avals, acceptance or letter of guarantee in case of: 4.1 Standby letters of credit (SBLC) issued by domestic and foreign financial institution and the Export and Import Bank of Thailand (EXIM Bank) 4.2 Avals, acceptance, or letters of guarantee (LG) issued by domestic and foreign commercial	 100% of credit line specified in SBLC 95% of aval amount, acceptance amount,	-

Type of collaterals	Deductible amount	Appraisal Frequency
banks and the EXIM Bank	or guarantee line in LG	
4.3 LG issued by Thai Credit Guarantee Corporation (TCG)	90% of credit line of LG	
4.4 Export Credit Insurance issued by the EXIM Bank only the part that the claim is already transferred to financial institutions	75% of value of Export Credit Insurance Letter	
5. Guarantees, bonds or securities issued by the government in case of:		-
5.1 Guarantee from the Ministry of Finance, or the case where the government will allocate budgets for payment of debt, or there is evidence that money will be provided by the authority with certainty, or loans to BOT	100% of value of guarantee or credit line given by the government agency	
5.2 Government bonds, treasury bills, the Bank of Thailand bonds, Financial Institutions Development Fund bonds, state enterprise bonds of which principle and interest are guaranteed by government	100% of market price	
5.3 Securities issued by the foreign government that receive a risk weight of 0 in accordance with the Bank of Thailand Notification Re: Regulations on the Calculation of Credit Risk-Weighted Assets for Commercial Banks or Finance Companies, as the case may be	100% of market price	

Type of collaterals	Deductible amount	Appraisal Frequency
6. Cash equivalent collaterals 6.1 Marketable securities, both equities and debt securities such as common stocks, preferred stocks, debenture, and debt instruments which are listed on the Stock Exchange of Thailand or securities trading centers Those securities exclude securities issued by the debtors or their related parties in accordance with Section 4 of the Financial Institutions Business Act B.E. 2551 6.2 Gold 6.3 Unit trusts that can be used as financial collaterals for credit risk mitigation under the Comprehensive Approach in accordance with the Bank of Thailand Notification Re: Regulations on the Calculation of Credit Risk-Weighted Assets for Commercial Banks under the Standardized Approach (SA), where the market prices of those unit trusts are generally disclosed on a daily basis	95% of market price	At the end of every accounting period

Type of collaterals	Deductible amount	Appraisal Frequency
7. Other collaterals		(Only loans classified as Substandard, Doubtful, and Doubtful of Loss)
7.1 Immovable properties, such as lands, premises, buildings 7.2 Transferable leasehold, the price of which must be assessed 7.3 Marketable machineries 7.4 Vehicles (with insurance) such as cars, motorcycles, airplanes and **ships**	90% of appraisal value <u>except</u> loans classified as Doubtful of Loss, Doubtful, and Substandard, which shall be calculated using the methods as prescribed in 5.2.4 (2)	Every 3 years (Depreciation shall be reviewed every year in case of machineries and vehicles)
7.5 Business with a value of 50 million Baht or less – the definition of "business" is as prescribed in the Business Security Act **There must be internal control guidelines as approved by the board of directors of financial institutions to ensure that the assets included in the business value are prevented from being placed as collaterals with other financial institutions and to ensure the existence of those assets for both qualitative and quantitative aspects.**	**60% of appraisal value**	**Every year and within 60 days after loans have been reclassified from Pass or Special Mention to Substandard, Doubtful, or Doubtful of Loss**
7.6 Intellectual property that can be legally accepted as collateral, appraised on a reliable ground, and legally taken possession of	90% of assessed value	Every 3 years

Type of collaterals	Deductible amount	Appraisal Frequency
7.7 Inventories There must be internal control guidelines as approved by the board of directors of financial institutions to ensure that those inventories are prevented from being placed as collaterals with other financial institutions and to ensure the existence of those inventories for both qualitative and quantitative aspects.	60% of assessed value, except agricultural products traded on the Thailand Futures Exchange	At the end of every accounting period
7.8 Claims in accordance with the Business Security Act (Non-contractual claims) that can be legally transferrable, excluding claims on deposit accounts and leasehold as specified in 3 and 7.2 – the deductible values depend on the owner of claims, as follows:		
a. Claims on Thai government agencies, Bank of Thailand, the Financial Institutions Development Fund and foreign governments that receive a risk weight of 0 in accordance with the Bank of Thailand Notification Re: Regulations on the Calculation of Credit Risk-Weighted Assets for Commercial Banks or Finance Companies, as the case may be	100% of amount that the financial institution has preferential rights over the claims	-
b. Claims on domestic and foreign commercial banks	95% of amount that the financial institution has preferential rights over the claims	
c. Claims on other persons apart from 7.8 (a) and (b)	40% of amount that the financial institution has	-

Type of collaterals	Deductible amount	Appraisal Frequency
Financial institutions must ensure that the debtors are responsible for debt repayment under those claims, and this must be irrevocable in any case. Those claims do not include the case where the debtors are related parties of debtors in accordance with Section 4 of the Financial Institutions Business Act B.E. 2551.(2008)	**preferential rights over the claims**	-
7.9 Collaterals other than those specified in 8.1 – 8.6 that are approved by the Bank of Thailand	The Bank of Thailand will consider on a case-by-case basis	The Bank of Thailand will consider on a case-by-case basis