



NATIONAL BANK OF CAMBODIA

Number B7.024.471 Prokor

*Unofficial Translation*

**PRAKAS**  
**ON**  
**OPERATIONAL RISK FOR CAPITAL ADEQUACY RATIOS**  
**IN DEPOSIT-TAKING BANKS AND FINANCIAL INSTITUTIONS**

**The Governor of the National Bank of Cambodia**

- With reference to the Constitution of the Kingdom of Cambodia;
- With reference to the Royal Decree NS/RKT/0723/1675 of July 29, 2023 on the appointment of Her Excellency Chea Serey as Governor General of the National Bank of Cambodia, equivalent to Senior Minister;
- With reference to the Royal Kram NS/RKM/0196/27 of January 26, 1996 promulgating the Law on Organization and Conduct of the National Bank of Cambodia;
- With reference to the Royal Kram NS/RKM/1206/036 of December 29, 2006 promulgating the Law on the Amendment of Article 14 and 57 of the Law on Organization and Conduct of the National Bank of Cambodia;
- With reference to the Royal Kram NS/RKM/1199/13 of November 18, 1999 promulgating the Law on Banking and Financial Institutions;
- Pursuant to the necessity of the National Bank of Cambodia

**Decides**

**Chapter I**

**General Provision**

**Article 1.- Purpose**

The purpose of this Prakas is to provide a measure of operational risk of the implementation of capital adequacy framework.

**Article 2.- Scope**

This Prakas is applicable to deposit-taking banks and financial institutions, hereinafter collectively referred to as "Institutions" or singularly as "Institution", under the National Bank of Cambodia (NBC)'s supervisory authority.

The Institution shall calculate risk-weighted assets (RWA) for operational risk on both solo and consolidated basis when relevant. The templates of Report on Risk-Weighted Assets (RWA) for Operational Risk is provided in Appendix 1 of this Prakas.

## **Chapter II**

### **Governance**

#### **Article 3.- Operational Risk Management**

Operational risk refers to the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events; this includes legal risk but excludes strategic and reputational risk.

The Institution shall have in place an operational risk management framework fully integrated in their overall risk management policies and processes that is commensurate with the nature, complexity, and size of their business activities.

#### **Article 4.- Board of Directors' Responsibilities**

Board of directors shall establish, approve, and regularly review the operational risk management framework. The Board of directors is responsible for ensuring that policies, processes and systems are effectively implemented to continuously identify, assess, monitor, control, and address operational risks under the direct responsibility of the senior management.

Board of directors shall identify and approve risk appetite that the Institution is willing to assume for operational risk that specifies the nature, types, and levels of operational risk.

#### **Article 5.- Senior Management Responsibilities**

Senior management is responsible for implementing and maintaining throughout the Institution policies, processes and systems for managing the operational risk consistently with the Board of directors approved framework.

Senior management shall ensure that there is an approval process for all new products, services, activities, processes, and systems that fully assesses operational risk.

#### **Article 6.- Information and Communication Technology-ICT**

The Institutions shall have in place a robust information and communication technology (ICT) risk management mechanism and its implementation in alignment with their operational risk management framework.

ICT risk management mechanism includes security management, system development and change management, information processing, communications network and management of technology service providers.

#### **Article 7.- Reporting Line**

An appropriate reporting mechanism shall be in place throughout the Institution at the Board of directors, senior management and business lines levels enabling an overall proactive management of the operational risk.

#### **Article 8.- Business Continuity Plan**

Business Continuity Plan (BCP) refers to an action plan that sets out the necessary measurements and procedures to continue or restore the operation of an Institution in the event when the system does not work and/or in an emergency including disasters, natural disasters or cyber-attacks.

The Institution shall have BCP in place to ensure an ability to operate on an ongoing basis whatever the circumstances are and limit losses in the event of severe business disruptions.

### Chapter III

#### The Method of Calculation Risk-Weighted Assets (RWA) for Operational Risk

##### Article 9.- Risk-weighted assets (RWA) for operational risk

The Institution shall calculate the RWA for operational risk with the following formula:

$$\text{RWA for operational risk} = \text{Operational risk capital requirement} \times 12.50$$

##### Article 10.- The Calculation of operational risk capital requirement

The Institution shall calculate operational risk capital requirement (ORC) by multiplying *business indicator component (BIC)* and *internal loss multiplier (ILM)*.

Formula:

$$\text{ORC} = \text{BIC} \times \text{ILM}$$

Where:

- BIC = Business indicator (BI) × Marginal coefficients as stated in Article 11 and 12 of this Prakas and
- ILM = Internal Loss Multiplier as stated in Article 13 of this Prakas.

##### Article 11.- BIC Calculation

The Institution shall calculate BIC by multiplying the *BI* and *Marginal coefficients*.

The Institution shall calculate BIC on a tiered basis based on the increment with the size of BI and Marginal coefficients as shown in the table below:

Bucket	BI Range (in KHR Million)	Marginal coefficients
1	≤ 150,000	12%
2	150,000 < BI ≤ 300,000	15%
3	> 300,000	18%

The NBC may revise BI range and Marginal coefficients in the above table when deemed necessary and according to the development of banking system and economic situation.

##### Article 12.- BI Calculation

BI comprise the sum of:

- Interest, Leases, and Dividend Component (ILDC);
- Services Component (SC); and
- Financial Component (FC).

Formula:

$$\text{BI} = \text{ILDC} + \text{SC} + \text{FC}$$

where:

$$\text{ILDC} = \min(\overline{\text{Abs}(\text{interest income} - \text{interest expense})}, 2.25\% \times \overline{\text{interest earning assets}}) + \overline{\text{dividend income}}$$

Means {minimum between [the average of absolute value of (interest income – interest expense) and [2.25% x the average of interest earning assets]] + {the average of dividend income}}

$$\text{SC} = \max(\overline{\text{other operating income}}, \overline{\text{other operating expense}}) + \max(\overline{\text{fee income}}, \overline{\text{fee expense}})$$

Means {maximum between [the average of other operating income and the average of other operating expense]} + {maximum between [the average of fee income and the average of fee expense]}

$$\text{FC} = \overline{\text{Abs}(\text{Net P\&L trading book})} + \overline{\text{Abs}(\text{Net P\&L banking book})}$$

Means (the average of absolute value of net P&L trading book) + (the average of absolute value of net P&L banking book)

and

- (i) Each component of BI is explained in detail in Appendix 2 of this Prakas and
- (ii) ILDC, SC and FC are calculated following the formula above, where a bar above a term indicates that it is calculated as average over three consecutive years, based on audited year-end financial statements, if any.

The example of BI calculation is provided in Appendix 3 of this Prakas.

#### **Article 13.- ILM Calculation**

For current situation, the NBC set ILM equals to 1. ILM level may be applied differently based on Institution's level of operational risk and may be set greater than 1 for the Institution with high operational risk.

The Institution shall compile data on the history and loss component for future ILM calculation purposes and shall present it to the NBC when deemed necessary.

### **Chapter IV**

#### **Other Provisions**

#### **Article 14.- BI Calculation with Less Than Three Year Available Data**

For Institutions which do not have full three-year data, ILDC, SC and FC shall be annualized as a proxy for BI for any year that does not have full year data following the same formula as stated in Article 12 of this Prakas. An example of BI annualization in case the Institution does not have full three-year data is provided in Appendix 3 of this Prakas.

#### **Article 15.- Acquisition or Divestiture**

When an Institution acquires or divests business (partial or the whole), the Institution shall consult with the NBC in advance on operational risk capital requirement.

#### **Article 16.- Reporting Requirements**

The Institution shall submit monthly report on risk-weighted assets (RWA) for operational risk in deposit-taking banks and financial institutions on solo basis no later than the 10<sup>th</sup> day of the next month and shall submit quarterly report on a consolidated basis, if any, no later than the 15<sup>th</sup> day of the first month of the next reporting period to the NBC.

## **Chapter V**

### **Sanctions and Fines**

#### **Article 17.- Disciplinary Sanctions**

Any Institution failing to comply with this Prakas shall be penalized according to Article 52 of Law on Banking and Financial Institutions.

#### **Article 18.- Transactional Fines**

In addition to the above disciplinary sanctions, the NBC may impose transactional fines as follows:

1. Any Institution failing to comply with reporting requirements as stated in Article 16 of this Prakas shall be liable to transactional fine of KHR 1,000,000 (one million riels) per day; and
2. Any Institution failing to comply with this Prakas except item 1 of this Article shall be subject to transactional fine of KHR 3,000,000 (three million riels) per day counting from the deadline the NBC requires the Institution to take corrective action.

## **Chapter VI**

### **Final Provisions**

#### **Article 19.- Implementation**

The General Secretary, the General Director of Banking Supervision, the General Director of Policy and International Cooperation, the General Director of Central Banking Operations, the General Cashier, the General Inspector, Directors of all relevant Departments in the National Bank of Cambodia and all Deposit-taking Banks and Financial Institutions under the National Bank of Cambodia's supervisory authority shall strictly implement this Prakas.

#### **Article 20.- Effect**

This Prakas shall have effect from the signing date.

Phnom Penh, August 16, 2024

**The Governor**

Signed and Sealed: **Chea Serey**

#### **To:**

- As stated in Article 19 "for implementation"
- Files-archives

#### **Cc:**

- All members of the Board of Directors
- Council of Ministers  
"for information"
- Administrative Department of CM  
"for publication in the National Gazette"

Appendix 1

**របាយការណ៍ប្រចាំខែ/ត្រីមាស ស្តីពី ទ្រព្យសកម្មក្រោយធ្លីងហានិភ័យសម្រាប់ហានិភ័យប្រតិបត្តិការរបស់គ្រឹះស្ថានធនាគារនិងហិរញ្ញវត្ថុឧស្សាហកម្ម**  
**Monthly/Quarterly Report on Risk-Weighted Assets (RWA) for Operational Risk in Deposit-taking Banks and Financial Institutions**

លេខសម្គាល់របាយការណ៍

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As at

ឈ្មោះគ្រឹះស្ថាន

Institution's Name

អត្រាប្តូរប្រាក់ក្នុង ១ ដុល្លារអាមេរិក = X រៀល

Exchange Rate 1 USD = X Riel

ឯកតាគិតជាលានរៀល

In million Riels


ឧ្ម័ង Items	ឆ្នាំ-២ T-2	ឆ្នាំ-១ T-1	ឆ្នាំ T	ជាមធ្យម Average
<b>១. សមាសធាតុការប្រាក់ ភតិសន្យា និងភាគលាភ</b>				
<b>1. Interest, Leases and Dividend Component (ILDC)</b>				
ចំណូលការប្រាក់ Interest income				X
ចំណាយការប្រាក់ Interest expense				X
តម្លៃដាច់ខាតនៃ (ចំណូលការប្រាក់ – ចំណាយការប្រាក់) Abs (Interest income – Interest expense)				
ទ្រព្យសកម្មដែលអាចរកបានចំណូលការប្រាក់ Interest earning assets				
ចំណូលភាគលាភ Dividend income				

<b>២. សមាសធាតុសេវា</b>				
<b>2. Service Component (SC)</b>				
ចំណូលប្រតិបត្តិការផ្សេងៗ	Other operating income			
ចំណាយប្រតិបត្តិការផ្សេងៗ	Other operating expense			
ចំណូលកម្រៃសេវា	Fee income			
ចំណាយកម្រៃសេវា	Fee expense			
<b>៣. សមាសធាតុហិរញ្ញវត្ថុ</b>				
<b>3. Financial Component (FC)</b>				
ចំណេញ/ខាតសុទ្ធលើបញ្ជីកាតព្វកិច្ច	Net P&L trading book			
ចំណេញ/ខាតសុទ្ធលើបញ្ជីកាតព្វកិច្ច	Net P&L banking book			
<b>៤. កត្តាអាជីវកម្ម (៤) = (១) + (២) + (៣)</b>				
<b>4. Business Indicator (BI) (4) = (1) + (2) + (3)</b>				
<b>៥. សមាសធាតុកត្តាអាជីវកម្ម (៥) = (៤) x មេគុណម៉ាជីណាល</b>				
<b>5. Business Indicator Component (BIC) (5) = (4) x Marginal coefficients</b>				
<b>៦. មេគុណការខាតបង់ផ្ទៃក្នុង</b>				
<b>6. Internal Loss Multiplier (ILM)</b>				1
<b>៧. ទាតព្វកិច្ចនៃទុនសម្រាប់ហានិភ័យប្រតិបត្តិការ (៧) = (៥) x (៦)</b>				
<b>7. Operational Risk Capital Requirement (ORC) (7) = (5) x (6)</b>				
<b>៨. ទ្រទ្រង់សម្រាប់ហានិភ័យប្រតិបត្តិការ (៨) = (៧) x ១២,៥០</b>				
<b>8. RWA for Operational Risk (8) = (7) x 12.50</b>				

Note: Every row and column need to be filled, either any number or zero (0) and no negative number.

**Appendix 2**  
**Component of BI**

**Table 1: ILDC**

<b>Items</b>	<b>Description</b>	<b>Examples</b>
Interest income (Statement of Profit or Loss item)	Interest income from all financial assets and other interest income (Includes interest income from financial and operating leases and profits from leased assets).	<ul style="list-style-type: none"> <li>- Interest income from loans and advances, investment and trading securities, financial leases and operating leases</li> <li>- Interest income from hedge accounting derivatives</li> <li>- Other interest income</li> <li>- Profits from leased assets</li> </ul>
Interest expense (Statement of Profit or Loss item)	Interest expenses from all financial liabilities and other interest expenses (includes interest expense from financial and operating leases, depreciation and impairment of, and losses from, operating leased assets).	<ul style="list-style-type: none"> <li>- Interest expenses from deposits, debt securities issued, financial leases, and operating leases</li> <li>- Interest expenses from hedge accounting derivatives</li> <li>- Other interest expenses</li> <li>- Losses from leased assets</li> <li>- Depreciation and impairment of operating leased assets</li> </ul>
Interest earning assets (Statement of Financial Position item or Report on Interest Sensitivity Gap)	Total gross outstanding loans, advances, interest bearing securities (including government bonds), and lease assets measured at the end of each financial year.	
Dividend income (Statement of Profit or Loss item)	Dividend income from investments in stocks and funds not consolidated in the Institution's financial statements, including dividend income from non-consolidated subsidiaries and associates, and joint ventures.	



**Table 2: SC**

Items	Description	Examples
<p>Fee income (Statement of Profit or Loss item)</p>	<p>Income received from providing advice, services including income received by the Institution as an outsourcer of financial services and bancassurance business.</p>	<p>Fee and commission income from:</p> <ul style="list-style-type: none"> <li>- Securities (issuance, execution of orders on behalf of customers);</li> <li>- Clearing and settlement, asset management, custody, trust transactions, payment services, securitizations, loan commitments and guarantees given and foreign transactions</li> </ul>
<p>Fee expense (Statement of Profit or Loss item)</p>	<p>Expenses paid for receiving advice and services including outsourcing fees but not outsourcing fees paid for the supply of non-financial services such as logistical, IT and human resources.</p>	<p>Fee and commission expenses from clearing and settlement, custody, servicing of securitizations, loan commitments and guarantees received, and foreign transactions</p>
<p>Other operating income (Statement of Profit or Loss item)</p>	<p>Income from ordinary banking operations but not included in Table 1: ILDC and items of Table 2: SC above but of similar nature (income from operating leases shall be excluded because it is already included in Table 1: ILDC).</p>	<ul style="list-style-type: none"> <li>- Rental income from investment properties</li> <li>- Gains from non-current assets and disposal groups classified as held for sale not qualifying as discontinued operations (CIFRS 5.37)</li> </ul>
<p>Other operating expenses (Statement of Profit or Loss item)</p>	<p>Expenses and losses from ordinary banking operations but not included in Table 1: ILDC and items of Table 2: SC above but of similar nature and from operational loss events (expenses from operating leases shall be excluded because it is already included in Table 1: ILDC).</p>	<ul style="list-style-type: none"> <li>- Losses from non-current assets and disposal groups classified as held for sale not qualifying as discontinued operations (CIFRS 5.37)</li> <li>- Losses incurred as a consequence of operational loss events (e.g. penalties, settlements, replacement cost of damaged assets), which have not been provisioned/reserved for in previous years</li> <li>- Expenses related to establishing provisions/reserves for operational loss events</li> </ul>

**Table 3: FC**

Items	Examples
Net profit/loss on the trading book (Statement of Profit or Loss item)	<ul style="list-style-type: none"> <li>- Net profit/loss on trading assets and trading liabilities (derivatives, debt securities, equity securities, loans and advances, short positions, other assets and liabilities)</li> <li>- Net profit/loss from hedge accounting</li> <li>- Net profit/loss from exchange differences</li> </ul>
Net profit/loss on the banking book (Statement of Profit or Loss item)	<ul style="list-style-type: none"> <li>- Net profit/loss on financial assets and liabilities measured at fair value through profit and loss</li> <li>- Realized gains/losses on financial assets and liabilities not measured at fair value through profit and loss (loans and advances, investment and trading securities, and financial liabilities measured at amortized cost)</li> <li>- Net profit/loss from hedge accounting</li> <li>- Net profit/loss from exchange differences</li> </ul>

**The Institution shall not include the following items in the BI calculation:**

- (a) administrative expenses, including staff expenses, outsourcing fees paid for the supply of non-financial services (e.g. logistical, human resources, information technology – IT), and other administrative expenses (e.g. IT, utilities, telephone, travel, office supplies, postage).
- (b) recovery of administrative expenses including recovery of payments on behalf of customers (e.g. taxes debited to customers);
- (c) expenses of premises and fixed assets (except when these expenses result from operational loss events);
- (d) depreciation/amortization of tangible and intangible assets (except depreciation related to operating lease assets, which shall be included in financial and operating lease expenses);
- (e) provisions/reversal of provisions (e.g. on pensions, commitments and guarantees given) except for provisions related to operational loss events;
- (f) expenses due to share capital repayable on demand;
- (g) impairment/reversal of impairment (e.g. on financial assets, non-financial assets, investments in subsidiaries, joint ventures and associates);
- (h) changes in goodwill recognized in profit or loss; and
- (i) corporate income tax (tax based on profits including current and deferred tax).

## Appendix 3

### The Calculation of RWA for operational risk

#### A- The calculation of RWA for operational risk in case Institution has three years available data

To calculate RWA for operational risk, the Institution shall follow the steps below:

**Step 1:** Calculate BI

**Step 2:** Calculate BIC

**Step 3:** Calculate ORC and

**Step 4:** Calculate RWA.

Example: Institution has data extract from Statement of Profit or Loss as shown below:

In million riels

Items	2021	2022	2023
<b>1. Interest Income</b>	<b>300,000</b>	<b>500,000</b>	<b>700,000</b>
<b>2. Interest Expense</b>	<b>180,000</b>	<b>160,000</b>	<b>220,000</b>
<b>3. Net Interest Income</b>	<b>120,000</b>	<b>340,000</b>	<b>480,000</b>
<b>4. Non-Interest Income (After deduction of Non-interest expense)</b>	<b>162,295</b>	<b>188,863</b>	<b>213,466</b>
4.1 Dividend Income	475	483	1,666
4.2 Profit/Loss from Financial Operation	820	1,380	1,800
4.2.1 Monthly Valuation and Disposal Securities	100	180	270
4.2.1.1 Gains	200	230	370
4.2.1.2 Expense Incurred	100	50	100
4.2.2 Net Gain/Loss from Trading on Foreign Exchange	500	800	1,000
4.2.3 Transactions in Derivative Instruments	200	350	450
4.2.4 Others	20	50	80
4.3 Commissions and Fees	131,000	137,000	140,000
4.3.1 Income Earned	136,000	143,000	149,000
4.3.2 Expense Incurred	5,000	6,000	9,000
4.4 Non-operating Banking Income	30,000	50,000	70,000
4.4.1 of which rents received	10,000	20,000	30,000
<b>5. Gross Operating Income/Loss</b>	<b>282,295</b>	<b>528,863</b>	<b>693,466</b>
<b>6. Operating Expenses</b>	<b>168,008</b>	<b>204,641</b>	<b>258,123</b>
6.1 Salaries and Wages	40,000	60,000	100,000
6.2 Other Staff and Directors Costs and Benefits	500	1,000	2,000
6.3 Rent and Lease Paid	43,267	48,279	49,475

6.3.1 Depreciation charge for Right of Use Assets	42,319	45,983	48,023
6.3.2 Expense Relating to Short-term Leases	11	15	20
6.3.3 Expense Relating to Leases of Low Value Assets	39	50	80
6.3.4 Expense Relating to Variable Lease Payments	69	107	118
6.3.5 Other Rental Expenses	829	2,124	1,234
6.4 Taxation, License Fee, Penalties and Fines Expense	4,541	7,272	7,198
6.4.1 Taxation	150	1,000	2,500
6.4.2 License Fee, Penalties and Fines Expenses	4,391	6,272	4,698
6.5 Premises Expenses including Depreciation	250	390	450
6.6 Equipment Expenses	350	500	650
6.7 Amortization Expenses of Intangible Assets	100	200	350
6.8 Other Operating Expense	79,000	87,000	98,000
6.8.1 From Banking Operation	60,000	76,000	83,000
6.8.2 From Non-banking Operation	19,000	11,000	15,000
<b>7 Net Operating Income/Expenses</b>	<b>114,287</b>	<b>324,222</b>	<b>435,343</b>
<b>8 Loss/Profit from Provision Expenses and Recoveries</b>	<b>(5,635)</b>	<b>(3,144)</b>	<b>(4,138)</b>
8.1 Expected Credit Loss - Principal	(5,566)	(3,240)	(5,144)
8.2 Expected Credit Loss - Accrued Interest	-	(11)	-
8.3 Expected Credit Loss - Off-balance Sheet	(114)	82	275
8.4 Recoveries	45	25	731
<b>9 Expected Credit Loss for Security and Loss from Write-Down of Participating Interests</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>10 Capital Gain/Loss on Assets Disposals</b>	<b>67</b>	<b>(41)</b>	<b>153</b>
<b>11 Income/Loss Before Extraordinary Items</b>	<b>108,719</b>	<b>321,037</b>	<b>431,358</b>
<b>12 Extraordinary Items</b>	<b>(30)</b>	<b>10</b>	<b>-</b>
12.1 Extraordinary Gains	10	-	-
12.2 Extraordinary Losses	-	-	-
12.3 Net Gain/Loss from Foreign Exchange Translations	(40)	10	-
<b>13 Net Profit/Loss Before Tax</b>	<b>108,689</b>	<b>321,047</b>	<b>431,358</b>
<b>14 Profit Tax</b>	<b>21,738</b>	<b>64,209</b>	<b>86,272</b>
<b>15 Net Profit /Loss of The Period</b>	<b>86,951</b>	<b>256,838</b>	<b>345,086</b>
<b>16 Accumulated Profit/Loss at the beginning of the Year before Appropriation</b>	<b>180</b>	<b>-</b>	<b>290</b>
<b>17 Transfer to Reserves</b>	<b>-</b>	<b>-</b>	<b>12</b>
<b>18 Dividends</b>	<b>39</b>	<b>45</b>	<b>50</b>
<b>19 Transfer to Head Office in .... (show country)</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>20 Accumulated Profit/Loss for this Years</b>	<b>87,092</b>	<b>256,793</b>	<b>345,314</b>

The Institution shall calculate RWA for operational risk for the January 2024 report as follow:

### Step 1: Calculate BI

$$BI = ILDC + SC + FC$$

#### 1- ILDC

In million riels

Items	2021	2022	2023	Average
Interest income	300,000	500,000	700,000	
Interest expense <sup>(1)</sup>	222,438	206,155	268,241	
Abs (Interest income – Interest expense)	77,562	293,845	431,759	267,722
Interest earning assets	25,860,000	28,894,000	32,373,000	29,042,333
Dividend income	475	483	1,666	875

(1) Interest expense in item 2 Interest Expense and item 6.3 Rent and Lease Paid but exclude item 6.3.5 Other Rental Expenses (extracted from Statement of Profit or Loss)

$$\begin{aligned}
 ILDC &= \min (\text{Abs}(\text{interest income} - \text{interest expense}), 2.25\% \times \text{interest earning assets}) + \text{dividend income} \\
 &= \min [\text{KHR } 267,722 \text{ million}, (2.25\% \times \text{KHR } 29,042,333 \text{ million})] + \text{KHR } 875 \text{ million} \\
 &= \min (\text{KHR } 267,722 \text{ million}, \text{KHR } 653,452 \text{ million}) + \text{KHR } 875 \text{ million} \\
 &= \text{KHR } 267,722 \text{ million} + \text{KHR } 875 \text{ million} \\
 &= \text{KHR } 268,597 \text{ million}
 \end{aligned}$$

#### 2- SC

In million riels

Items	2021	2022	2023	Average
Other operating income <sup>(2)</sup>	30,000	50,000	70,000	50,000
Other operating expense <sup>(3)</sup>	64,391	82,272	87,698	78,120
Fee income	136,000	143,000	149,000	142,667
Fee expense	5,000	6,000	9,000	6,667

(2) Other operating income in item 4.4 Non-operating Banking Income (extracted from Statement of Profit or Loss)

(3) Other operating expense in item 6.8 Other Operating Expense and item 6.4.2 License Fee, Penalties and Fines Expenses (extracted from Statement of Profit or Loss)

$$\begin{aligned}
 SC &= \max (\text{other operating income}, \text{other operating expense}) + \max (\text{fee income}, \text{fee expense}) \\
 &= \max (\text{KHR } 50,000 \text{ million}, \text{KHR } 78,120 \text{ million}) + \max (\text{KHR } 142,667 \text{ million}, \text{KHR } 6,667 \text{ million}) \\
 &= \text{KHR } 78,120 \text{ million} + \text{KHR } 142,667 \text{ million} \\
 &= \text{KHR } 220,787 \text{ million}
 \end{aligned}$$

### 3- FC

In million riels

Items	2021	2022	2023	Average
Abs (Net P&L trading book) + Abs (Net P&L banking book) <sup>(4)</sup>	820	1,380	1,800	1,333

<sup>(4)</sup> Net P&L trading book and Net P&L banking book in item 4.2 Profit/Loss from Financial Operation (extracted from Statement of Profit or Loss)

$$\begin{aligned} \text{FC} &= \overline{\text{Abs (Net P\&L trading book)}} + \overline{\text{Abs (Net P\&L banking book)}} \\ &= \text{KHR } 1,333 \text{ million} \end{aligned}$$

$$\begin{aligned} \text{Thus, BI} &= \text{ILDC} + \text{SC} + \text{FC} \\ &= \text{KHR } 268,597 \text{ million} + \text{KHR } 220,787 \text{ million} + \text{KHR } 1,333 \text{ million} \\ \text{BI} &= \text{KHR } 490,717 \text{ million} \end{aligned}$$

#### Step 2: Calculate BIC

$$\text{BIC} = \text{BI} \times \text{Marginal coefficients}$$

Since BI in Step 1 equals to KHR 490,717 million, the Institution shall calculate BIC based on a tiered basis by using BI range and Marginal coefficients as shown in the table below:

In million riels

BI ranges and Marginal coefficients				BIC
Bucket	BI range	BI	Marginal coefficients	
1	≤ 150,000	150,000	12%	18,000
2	150,000 < BI ≤ 300,000	150,000	15%	22,500
3	> 300,000	190,717	18%	34,329
<b>Total</b>		<b>490,717</b>		<b>74,829</b>

#### Step 3: Calculate ORC

$$\begin{aligned} \text{ORC} &= \text{BIC} \times \text{ILM} \\ &= \text{KHR } 74,829 \text{ million} \times 1 \\ &= \text{KHR } 74,829 \text{ million} \end{aligned}$$

#### Step 4: Calculate RWA

$$\begin{aligned} \text{RWA} &= \text{ORC} \times 12.50 \\ &= \text{KHR } 74,829 \text{ million} \times 12.50 \\ &= \text{KHR } 935,363 \text{ million} \end{aligned}$$

After calculating from step 1 to step 4, the Institution has the data to complete the monthly report on Risk-Weighted Assets (RWA) for Operational Risk in Deposit-taking Banks and Financial Institutions as below:

**របាយការណ៍ប្រចាំខែ ស្តីពី ទ្រព្យសកម្មក្រោយឆ្នាំហោរិស័យសម្រាប់ហោរិស័យប្រតិបត្តិការរបស់គ្រឹះស្ថានធនាគារនិងហិរញ្ញវត្ថុធុនទូលំទូលាយ**

**Monthly Report on Risk-Weighted Assets (RWA) for Operational Risk in Deposit-taking Banks and Financial Institutions**

In million riels

Items	2021	2022	2023	Average
<b>១. សមាសធាតុការប្រាក់ ភតិសន្យា និងភាគលាភ</b>				<b>268,597</b>
<b>1. Interest, Leases and Dividend Component (ILDC)</b>				
ចំណូលការប្រាក់ Interest income	300,000	500,000	700,000	
ចំណាយការប្រាក់ Interest expense	222,438	206,155	268,241	
តម្លៃដាច់ខាតនៃ (ចំណូលការប្រាក់ – ចំណាយការប្រាក់) Abs (Interest income – Interest expense)	77,562	293,845	431,759	267,722
ទ្រព្យសកម្មដែលអាចរកបានចំណូលការប្រាក់ Interest earning assets	25,860,000	28,894,000	32,373,000	29,042,333
ចំណូលភាគលាភ Dividend income	475	483	1,666	875
<b>២. សមាសធាតុសេវា</b>				<b>220,767</b>
<b>2. Service Component (SC)</b>				
ចំណូលប្រតិបត្តិការផ្សេងៗ Other operating income	30,000	50,000	70,000	50,000
ចំណាយប្រតិបត្តិការផ្សេងៗ Other operating expense	64,391	82,272	87,698	78,120
ចំណូលកម្រៃសេវា Fee income	136,000	143,000	149,000	142,667
ចំណាយកម្រៃសេវា Fee expense	5,000	6,000	9,000	6,667

<b>៣. សមាសធាតុហិរញ្ញវត្ថុ</b> <b>3. Financial Component (FC)</b>	<b>1,333</b>		
ចំណេញ/ខាតសុទ្ធលើបញ្ជីកាដូញដូរ Net P&L trading book	200	350	450
ចំណេញ/ខាតសុទ្ធលើបញ្ជីកាធនាគារ Net P&L banking book	620	1,030	1,000
<b>៤. កត្តាអាជីវកម្ម (៤) = (១) + (២) + (៣)</b> <b>4. Business Indicator (BI) (4) = (1) + (2) + (3)</b>	<b>490,717</b>		
<b>៥. សមាសធាតុកត្តាអាជីវកម្ម (៥) = (៤) x មេគុណម៉ាជីណាល</b> <b>5. Business Indicator Component (BIC) (5) = (4) x Marginal coefficients</b>	<b>74,829</b>		
<b>៦. មេគុណការខាតបង់ផ្ទៃក្នុង</b> <b>6. Internal Loss Multiplier (ILM)</b>	<b>1</b>		
<b>៧. ការត្រួតពិនិត្យលើទុនសម្រាប់ហានិភ័យប្រតិបត្តិការ (៧) = (៥) x (៦)</b> <b>7. Operational Risk Capital Requirement (ORC) (7) = (5) x (6)</b>	<b>74,829</b>		
<b>៨. ទ្រព្យសកម្មប្រាយន្ត័យហានិភ័យសម្រាប់ហានិភ័យប្រតិបត្តិការ (៨) = (៧) x ១២,៥០</b> <b>8. RWA for Operational Risk (8) = (7) x 12.50</b>	<b>935,363</b>		

Note: Every row and column need to be filled, either any number or zero (0) and no negative number.



**B- Calculation of RWA for operational risk in case Institution has less than three years available data**

To calculate RWA for operational risk, the Institution shall follow the steps below:

**Step 1:** Calculate BI

**Step 2:** Calculate BIC

**Step 3:** Calculate ORC and

**Step 4:** Calculate RWA.

Example: Institution has commenced operations since August 2022 with data extract from Statement of Profit or Loss as shown below:

In million riels

Items	Aug-Dec 2022	2023
<b>1 Interest Income</b>	<b>450</b>	<b>2,000</b>
<b>2 Interest Expense</b>	<b>144</b>	<b>500</b>
<b>3 Net Interest Income</b>	<b>306</b>	<b>1,500</b>
<b>4 Non-Interest Income (After deduction of Non-interest expense)</b>	<b>77</b>	<b>272</b>
4.1 Dividend Income	-	10
4.2 Profit/Loss from Financial Operation	27	72
4.2.1 Monthly Valuation and Disposal Securities	-	30
4.2.1.1 Gains	-	40
4.2.1.2 Expense Incurred	-	10
4.2.2 Net Gain/Loss from Trading on Foreign Exchange	27	(10)
4.2.3 Transactions in Derivative Instruments	-	50
4.2.4 Others	-	2
4.3 Commissions and Fees	10	40
4.3.1 Income Earned	29	200
4.3.2 Expense Incurred	19	160
4.4 Non-operating Banking Income	90	304
4.4.1 of which rents received	40	150
<b>5 Gross Operating Income/Loss</b>	<b>383</b>	<b>1,772</b>
<b>6 Operating Expenses</b>	<b>309</b>	<b>782</b>
6.1 Salaries and Wages	45	110
6.2 Other Staff and Directors Costs and Benefits	5	20
6.3 Rent and Lease paid	105	354
6.3.1 Depreciation charge for Right of Use Assets	60	245
6.3.2 Expense relating to Short-term Leases	30	85

6.3.3 Expense relating to Leases of Low Value Assets	-	-
6.3.4 Expense relating to Variable Lease Payments	-	-
6.3.5 Other Rental Expenses	15	42
6.4 Taxation, License Fee, Penalties and Fines Expense	61	92
6.4.1 Taxation	5	15
6.4.2 License fee, Penalties and Fines expenses	56	77
6.5 Premises Expenses including Depreciation	-	-
6.6 Equipment Expenses	1	4
6.7 Amortization Expenses of Intangible Assets	2	7
6.8 Other Operating Expense	90	195
6.8.1 From Banking Operation	30	105
6.8.2 From Non-banking Operation	60	90
<b>7 Net Operating Income/Expenses</b>	<b>74</b>	<b>990</b>
<b>8 Loss/Profit from Provision Expenses and Recoveries</b>	<b>(29)</b>	<b>(12)</b>
8.1 Expected Credit Loss - Principal	12	(8)
8.2 Expected Credit Loss - Accrued Interest	(41)	(5)
8.3 Expected Credit Loss - Off-balance Sheet	-	(2)
8.4 Recoveries	-	3
<b>9 Expected Credit Loss for Security and Loss from Write-Down of Participating Interests</b>	<b>-</b>	<b>-</b>
<b>10 Capital Gain/Loss on Assets Disposals</b>	<b>-</b>	<b>-</b>
<b>11 Income/Loss Before Extraordinary Items</b>	<b>45</b>	<b>978</b>
<b>12 Extraordinary Items</b>	<b>(5)</b>	<b>3</b>
12.1 Extraordinary Gains	-	-
12.2 Extraordinary Losses	-	(3)
12.3 Net Gain/Loss from Foreign Exchange Translations	(5)	6
<b>13 Net Profit/Loss before Tax</b>	<b>40</b>	<b>981</b>
<b>14 Profit Tax</b>	<b>8</b>	<b>196</b>
<b>15 Net Profit /Loss of the Period</b>	<b>32</b>	<b>785</b>
<b>16 Accumulated Profit/Loss at the beginning of the Year before Appropriation</b>	<b>-</b>	<b>-</b>
<b>17 Transfer to Reserves</b>	<b>-</b>	<b>-</b>
<b>18 Dividends</b>	<b>-</b>	<b>-</b>
<b>19 Transfer to Head Office in ....(show country)</b>	<b>-</b>	<b>-</b>
<b>20 Accumulated Profit/Loss for this Years</b>	<b>32</b>	<b>785</b>

The Institution shall calculate RWA for operational risk for the January 2024 report as follow:

**Step 1: Calculate BI**

$$BI = ILDC + SC + FC$$

**1- ILDC**

In million riles

Items	Aug-Dec 2022	2022 (Annualized)	2023	Average
Interest income	450	1,080 <sup>(6)</sup>	2,000	
Interest expense <sup>(5)</sup>	234	562 <sup>(7)</sup>	812	
Abs (Interest income – Interest expense)	216	518	1,188	853
Interest earning assets	810	1,944	2,531	2,238
Dividend income	-	-	10	5

<sup>(5)</sup> Interest expense in item 2 Interest Expense and item 6.3 Rent and Lease Paid but exclude item 6.3.5 Other Rental Expenses (extracted from Statement of Profit or Loss)

To derive 1 year data of 2022 that has only 5 months data (August to December 2022). The Institution shall calculate the average of the 5-month data and then multiply by 12 (annualize) to obtain full year figure.

$$^{(6)} \frac{450}{5} \times 12 = \text{KHR } 1,080 \text{ million}$$

$$^{(7)} \frac{234}{5} \times 12 = \text{KHR } 562 \text{ million}$$

$$\begin{aligned} ILDC &= \min (\text{Abs}(\text{interest income} - \text{interest expense}), 2.25\% \times \text{interest earning assets}) + \text{dividend income} \\ &= \min [ \text{KHR } 853 \text{ million}, (2.25\% \times \text{KHR } 2,238 \text{ million})] + \text{KHR } 5 \text{ million} \\ &= \min (\text{KHR } 853 \text{ million}, \text{KHR } 50 \text{ million}) + \text{KHR } 5 \text{ million} \\ &= \text{KHR } 55 \text{ million} \end{aligned}$$

**2- SC:**

In million riels

Items	Aug-Dec 2022	2022 (Annualized)	2023	Average
Other operating income <sup>(8)</sup>	90	216	304	260
Other operating expense <sup>(9)</sup>	86	206	182	194
Fee income	29	70	200	135
Fee expense	19	46	160	103

<sup>(8)</sup> Other operating income in item 4.4 Non-operating Banking Income (extracted from Statement of Profit or Loss)

<sup>(9)</sup> Other operating expense in item 6.8 Other Operating Expense and item 6.4.2 License Fee, Penalties and Fines Expenses (extracted from Statement of Profit or Loss)

$$\begin{aligned}
 \text{SC} &= \max(\overline{\text{other operating income}}, \overline{\text{other operating expense}}) + \max(\overline{\text{fee income}}, \overline{\text{fee expense}}) \\
 &= \max(\text{KHR } 260 \text{ million}, \text{KHR } 194 \text{ million}) + \max(\text{KHR } 135 \text{ million}, \text{KHR } 103 \text{ million}) \\
 &= \text{KHR } 260 \text{ million} + \text{KHR } 135 \text{ million} \\
 &= \text{KHR } 395 \text{ million}
 \end{aligned}$$

### 3- FC

In million riels

Items	Aug-Dec 2022	2022 (Annualized)	2023	Average
Abs (Net P&L trading book) + Abs (Net P&L banking book) <sup>(10)</sup>	27	65	72	69

<sup>(10)</sup> Net P&L trading book and Net P&L banking book in item 4.2 Profit/Loss from Financial Operation (extracted from Statement of Profit or Loss)

$$\begin{aligned}
 \text{FC} &= \overline{\text{Abs (Net P\&L trading book)}} + \overline{\text{Abs (Net P\&L banking book)}} \\
 &= \text{KHR } 69 \text{ million}
 \end{aligned}$$

Thus, BI = ILDC + SC + FC

$$= \text{KHR } 55 \text{ million} + \text{KHR } 395 \text{ million} + \text{KHR } 69 \text{ million}$$

$$\text{BI} = \text{KHR } 519 \text{ million}$$

### Step 2: Calculate BIC

$$\text{BIC} = \text{BI} \times \text{marginal coefficients}$$

Since BI in Step 1 equals to KHR 519 million, the Institution shall calculate BIC based on a tiered basis by using BI range and Marginal coefficients as shown in the table below:

In million riels

BI ranges and Marginal coefficients				BIC
Bucket	BI range	BI	Marginal coefficients	
1	≤150,000	519	12%	62
2	150,000 < BI ≤ 300,000	-	15%	-
3	> 300,000	-	18%	-
<b>Total</b>		<b>519</b>		<b>62</b>

### Step 3: Calculate ORC

$$\text{ORC} = \text{BIC} \times \text{ILM}$$

$$= \text{KHR } 62 \text{ million} \times 1$$

$$= \text{KHR } 62 \text{ million}$$

#### **Step 4: Calculate RWA**

$$\text{RWA} = \text{ORC} \times 12.50$$

$$= \text{KHR } 62 \text{ million} \times 12.50$$

$$= \text{KHR } 779 \text{ million}$$

After calculating from step 1 to step 4, the Institution has the data to complete the monthly report on Risk-Weighted Assets (RWA) for Operational Risk in Deposit-taking Banks and Financial Institutions as below:

**របាយការណ៍ប្រចាំខែ ស្តីពី ទ្រព្យសកម្មក្រោយឆ្លើយទោលនិងសម្រាប់ទោលនិងប្រតិបត្តិការរបស់គ្រឹះស្ថានធនាគារនិងធនាគារហិរញ្ញវត្ថុកម្ពុជាប្រចាំខែ**

**Monthly Report on Risk-Weighted Assets (RWA) for Operational Risk In Deposit-taking Banks and Financial Institutions**

In million riels

Items	2021	2022	2023	Average
<b>១. សមាសធាតុកម្រាក់ ភតិសន្យា និងភាគលាភ</b>	<b>55</b>			
<b>1. Interest, Leases and Dividend Component (ILDC)</b>				
ចំណូលកម្រាក់ Interest income	-	1,080	2,000	
ចំណាយកម្រាក់ Interest expense	-	562	812	
តម្លៃដាច់ខាតនៃ (ចំណូលកម្រាក់ – ចំណាយកម្រាក់) Abs (Interest income – Interest expense)	-	518	1,188	853
ទ្រព្យសកម្មដែលអាចរកបានចំណូលកម្រាក់ Interest earning assets	-	1,944	2,531	2,238
ចំណូលភាគលាភ Dividend income	-	-	10	5
<b>២. សមាសធាតុសេវា</b>	<b>395</b>			
<b>2. Service Component (SC)</b>				
ចំណូលប្រតិបត្តិការផ្សេងៗ Other operating income	-	216	305	260
ចំណាយប្រតិបត្តិការផ្សេងៗ Other operating expense	-	206	182	194
ចំណូលកម្រៃសេវា Fee income	-	70	200	135
ចំណាយកម្រៃសេវា Fee expense	-	46	160	103

<b>៣. សមាសធាតុហិរញ្ញវត្ថុ</b> <b>3. Financial Component (FC)</b>	<b>69</b>			
ចំណេញ/ខាតសុទ្ធលើបញ្ជីកាដូញដូរ Net P&L trading book	-	-	50	25
ចំណេញ/ខាតសុទ្ធលើបញ្ជីកាធនាគារ Net P&L banking book	-	65	22	44
<b>៤. កត្តាអាជីវកម្ម (៤) = (១) + (២) + (៣)</b>	<b>519</b>			
<b>4. Business Indicator (BI) (4) = (1) + (2) + (3)</b>				
<b>៥. សមាសធាតុកត្តាអាជីវកម្ម (៥) = (៤) x មេគុណម៉ាជីណាល</b>	<b>62</b>			
<b>5. Business Indicator Component (BIC) (5) = (4) x Marginal coefficients</b>				
<b>៦. មេគុណការខាតបង់ផ្ទៃក្នុង</b>	<b>1</b>			
<b>6. Internal Loss Multiplier (ILM)</b>				
<b>៧. ភាគច្រើននៃទុនសម្រាប់ហានិភ័យប្រតិបត្តិការ (៧) = (៥) x (៦)</b>	<b>62</b>			
<b>7. Operational Risk Capital Requirement (ORC) (7) = (5) x (6)</b>				
<b>៨. ទ្រព្យសកម្មប្រោយន្តីចំហានិភ័យសម្រាប់ហានិភ័យប្រតិបត្តិការ (៨) = (៧) x ១២,៥០</b>	<b>779</b>			
<b>8. RWA for Operational Risk (8) = (7) x 12.50</b>				

Note: Every row and column need to be filled, either any number or zero (0) and no negative number.