

Unofficial Translation

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

Please refer to the Thai text for the official version.

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## AUDITOR'S REPORT

**To the Board of the Bank of Thailand**

### Opinion

The State Audit Office of the Kingdom of Thailand has audited the financial statements of the Bank of Thailand (the Bank), which comprise the statement of financial position as at December 31, 2021, the statement of income, statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In the State Audit Office of the Kingdom of Thailand's opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Bank of Thailand as at December 31, 2021, and its financial performance and its cash flows for the year then ended in accordance with Thai Financial Reporting Standards and the Bank of Thailand Act.

### Basis for Opinion

The State Audit Office of the Kingdom of Thailand conducted the audit in accordance with the State Audit Standards and Thai Standards on Auditing (TSAs). The State Audit Office of the Kingdom of Thailand's responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of the report. The State Audit Office of the Kingdom of Thailand is independent of the Bank in accordance with the ethical requirements set out in the State Audit Standards issued by the State Audit Commission and the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that are relevant to the State Audit Office of the Kingdom of Thailand's audit of the financial statements, and the State Audit Office of the Kingdom of Thailand has fulfilled other ethical responsibilities in accordance with these requirements. The State Audit Office of the Kingdom of Thailand believes that the audit evidence the State Audit Office of the Kingdom of Thailand has obtained is sufficient and appropriate to provide a basis for the State Audit Office of the Kingdom of Thailand's opinion.

**State Audit Office of the Kingdom of Thailand**

**Emphasis of Matter**

The State Audit Office of the Kingdom of Thailand draws attention to Note 3.2 of the financial statements regarding Assets and Liabilities Revaluation Recognition, which describes unrealized gains or losses from revaluation of assets and liabilities of the Bank of Thailand under the equity section, Note 3.3 regarding Foreign Currency Transactions, which describes gains or losses from foreign currency transactions in the statement of income, and Note 28.1.2) regarding Financial Risk Management of International Reserves, in which the Bank of Thailand has disclosed information to be in conformity with the practices of central banks. As a result, the financial statements are suitable for the specific purpose of the Bank. However, the State Audit Office of the Kingdom of Thailand's opinion is not qualified in respect of these matters.

**Other Information**

Management is responsible for the other information, which includes the information in the annual report, but does not include the financial statements and auditor's report thereon.

The State Audit Office of the Kingdom of Thailand's opinion on the financial statements does not cover the other information and the State Audit Office of the Kingdom of Thailand will not express any form of assurance conclusion thereon.

In connection with the audit of the financial statements, the State Audit Office of the Kingdom of Thailand's responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the financial statements or the State Audit Office of the Kingdom of Thailand's knowledge obtained in the audit, or otherwise appears to be materially misstated.

When the State Audit Office of the Kingdom of Thailand reads the annual report, if the State Audit Office of the Kingdom of Thailand, concludes that there is a material misstatement therein, the State Audit Office of the Kingdom of Thailand is required to communicate the matter to those charged with governance.

## **Responsibilities of Management and Those Charged with Governance for the Financial Statements**

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Thai Financial Reporting Standards, and the Bank of Thailand Act, and for such internal control as management determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Bank's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Bank or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Bank's financial reporting process.

## **Auditor's Responsibilities for the Audit of the Financial Statements**

The State Audit Office of the Kingdom of Thailand's objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes the State Audit Office of the Kingdom of Thailand's opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the State Audit Standards and TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with the State Audit Standards and TSAs, the State Audit Office of the Kingdom of Thailand exercises professional judgment and maintains professional skepticism throughout the audit. The State Audit Office of the Kingdom of Thailand also:

- Identifies and assesses the risks of material misstatement of the financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence that is sufficient and appropriate to provide a basis for the State Audit Office of the Kingdom of Thailand's opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Bank's internal control.
- Evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Concludes on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Bank's ability to continue as a going concern. If the State Audit Office of the Kingdom of Thailand concludes that a material uncertainty exists, the State Audit Office of the Kingdom of Thailand is required to draw attention in the auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify the State Audit Office of the Kingdom of Thailand's opinion. The State Audit Office of the Kingdom of Thailand's conclusions are based on the audit evidence obtained up to the date of the auditor's report of the State Audit Office of the Kingdom of Thailand. However, future events or conditions may cause the Bank to cease to continue as a going concern.
- Evaluates the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

The State Audit Office of the Kingdom of Thailand communicates with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that the State Audit Office of the Kingdom of Thailand identifies during the audit.

(Signed)

(Mr. Prajuck Boonyoung)  
Auditor General

(Signed)

(Ms. Wilaiwan Promyue)  
Acting Director of Financial and Procurement Audit Office No. 5

**Bank of Thailand**  
**Statement of Financial Position**  
**As at December 31, 2021**

	Note	2021	2020
<b>Unit : THB</b>			
<b>ASSETS</b>			
Cash and Deposits	5	719,257,868,377	646,539,577,116
Gold		177,146,365,867	-
Reserve Tranche and Special Drawing Rights Holdings	6	231,477,480,510	80,887,520,182
Investment in Securities	7	4,316,013,284,805	4,507,868,474,021
Loans	8	283,280,775,819	118,759,624,055
Premises and Equipment	9	5,414,086,459	5,702,376,484
Other Assets	10	545,045,563,225	467,486,123,952
Total Assets		<u>6,277,635,425,062</u>	<u>5,827,243,695,810</u>
<b>LIABILITIES AND EQUITY</b>			
Deposits	12	542,311,586,124	693,671,840,657
Special Drawing Rights Allocations	13	189,487,758,211	42,038,542,806
Securities Sold under Repurchase Agreements	14	597,263,000,000	648,996,780,242
Debt Securities Issued by the Bank of Thailand	15	4,756,469,675,685	5,216,468,486,098
Other Liabilities	16	749,981,306,385	428,317,311,713
Total Liabilities		<u>6,835,513,326,405</u>	<u>7,029,492,961,516</u>

The accompanying notes form part of these financial statements.

Bank of Thailand  
Statement of Financial Position (Continued)  
As at December 31, 2021

	Note	2021	2020
Unit : THB			
<b>LIABILITIES AND EQUITY (Continued)</b>			
Equity			
Initial Capital		20,000,000	20,000,000
Statutory Appropriation	17	27,307,931,128	27,307,931,128
Reserve for Stabilization of Profit Payable to the Government	18	624,075,747	624,075,747
Assets and Liabilities Revaluation Reserve	19	371,973,777,870	(136,977,579,442)
Accumulated Losses	20	<u>(957,803,686,088)</u>	<u>(1,093,223,693,139)</u>
Total Equity		<u>(557,877,901,343)</u>	<u>(1,202,249,265,706)</u>
Total Liabilities and Equity		<u><u>6,277,635,425,062</u></u>	<u><u>5,827,243,695,810</u></u>

The accompanying notes form part of these financial statements.

(Mr. Sethaput Suthiwartnarueput)

Governor

(Mrs. Khwankamon Jiwalai)

Director, Finance and Accounting Department

Bank of Thailand  
Statement of Income  
For the Year Ended December 31, 2021

	Note	2021	2020
<b>Unit : THB</b>			
<b>Income</b>			
Interest Income	21	67,425,824,530	80,879,921,698
Net Gains on Sale of Investments	22	47,812,610,380	18,451,421,666
Fee Income		553,104,849	492,133,533
Net Gains on Foreign Exchange		46,944,347,840	-
Other Income		17,702,545,808	9,111,649,833
Total Income		<u>180,438,433,407</u>	<u>108,935,126,730</u>
<b>Expenses</b>			
Interest Expense		35,485,520,965	55,261,590,494
Net Losses on Foreign Exchange		-	64,027,697,861
Personnel Expenses		5,495,403,811	5,755,073,172
Other Expenses	23	4,131,348,105	3,570,980,010
Total Expenses		<u>45,112,272,881</u>	<u>128,615,341,537</u>
Net Profit (Loss)		<u><u>135,326,160,526</u></u>	<u><u>(19,680,214,807)</u></u>

The accompanying notes form part of these financial statements.



Bank of Thailand  
Statement of Comprehensive Income  
For the Year Ended December 31, 2021

	Unit : THB	
	2021	2020
Net Profit (Loss)	135,326,160,526	(19,680,214,807)
<b>Other Comprehensive Income</b>		
<b>Items that might be reclassified subsequently</b>		
<b>to Profit or Loss</b>		
Change in Assets and Liabilities Revaluation Reserve	508,522,551,992	290,617,507,541
<b>Items that will not be reclassified subsequently</b>		
<b>to Profit or Loss</b>		
Change in Assets and Liabilities Revaluation Reserve	428,805,320	2,265,384,181
Actuarial Gain (Loss)	93,846,525	(4,177,231,736)
Total Other Comprehensive Income	509,045,203,837	288,705,659,986
Total Comprehensive Income	644,371,364,363	269,025,445,179

The accompanying notes form part of these financial statements.

Bank of Thailand  
Statement of Changes in Equity  
For the Year Ended December 31, 2021

	Initial Capital	Statutory Appropriation	Reserve for Stabilization of Profit Payable to the Government	Assets and Liabilities Revaluation Reserve	Accumulated Losses	Unit : THB Total
Balance as at January 1, 2020	20,000,000	27,307,931,128	624,075,747	(429,860,471,164)	(1,069,366,246,596)	(1,471,274,710,885)
Impact of Initial Application of TFRS 9	-	-	-	2,005,882,011	-	2,005,882,011
Balance as at January 1, 2020, as adjusted	20,000,000	27,307,931,128	624,075,747	(427,854,589,153)	(1,069,366,246,596)	(1,469,268,828,874)
Net Loss	-	-	-	-	(19,680,214,807)	(19,680,214,807)
Other Comprehensive Income (Loss)	-	-	-	290,877,009,711	(4,177,231,736)	286,699,777,975
Balance as at December 31, 2020	<u>20,000,000</u>	<u>27,307,931,128</u>	<u>624,075,747</u>	<u>(136,977,579,442)</u>	<u>(1,093,223,693,139)</u>	<u>(1,202,249,265,706)</u>
Balance as at January 1, 2021	20,000,000	27,307,931,128	624,075,747	(136,977,579,442)	(1,093,223,693,139)	(1,202,249,265,706)
Net Profit	-	-	-	-	135,326,160,526	135,326,160,526
Other Comprehensive Income	-	-	-	508,951,357,312	93,846,525	509,045,203,837
Balance as at December 31, 2021	<u>20,000,000</u>	<u>27,307,931,128</u>	<u>624,075,747</u>	<u>371,973,777,870</u>	<u>(957,803,686,088)</u>	<u>(557,877,901,343)</u>

The accompanying notes form part of these financial statements.

**Bank of Thailand**  
**Statement of Cash Flows**  
**For the Year Ended December 31, 2021**

	Unit : THB	
	2021	2020
<b>Cash Flows from Operating Activities</b>		
Net Profit (Loss)	135,326,160,526	(19,680,214,807)
<b>Adjustments to Reconcile Net Gain (Loss) to Net Cash</b>		
<b>Provided by (Used in) Operating Activities:</b>		
Depreciation and Amortization Expenses	747,594,893	765,917,269
Gain on Disposal of Premises and Equipment	(13,803,256)	(2,362,930)
Write Off of Work in Progress	22,321,836	19,385,625
Expected Credit Losses (Reversal)	(20,106,531)	28,488,035
Gain on Disposal of Investments	(47,812,610,380)	(18,451,421,666)
Interest Income	(67,425,824,530)	(80,879,921,698)
Interest Expense	35,485,520,965	55,261,590,494
Loss from Non-cash Foreign Assets and		
Liabilities Cost Averaging	153,545,919,977	54,527,932,838
Gain on Forward Contracts under Resale Agreements	-	(3,963,824)
Net (Increase) Decrease in Accrued Income	(25,650,182)	6,467,807
Net Increase (Decrease) in Accrued Expenses	(191,590,984)	738,957,461
Net Increase in Prepaid Expenses	(30,673,680)	(62,957,360)
	209,607,258,654	(7,732,102,756)
Cash Received on Interest Income	79,354,984,994	93,315,230,360
Cash Paid on Interest Expense	(30,584,857,518)	(39,868,708,372)
Net Gain from Operation before Changing in		
Operating Assets and Liabilities	258,377,386,130	45,714,419,232

The accompanying notes form part of these financial statements.

**Bank of Thailand**  
**Statement of Cash Flows (Continued)**  
**For the Year Ended December 31, 2021**

	Note	2021	2020
			Unit : THB
<b>(Increase) Decrease in Operating Assets</b>			
Foreign Currency Deposits		(19,484,366,178)	(66,783,748,527)
Reserve Tranche and Special Drawing Rights Holdings		(145,480,772,509)	(11,612,995,697)
Domestic Securities		(15,825,729,025)	(68,037,395,767)
Loans		(164,479,520,630)	(117,963,357,623)
Other Assets		308,501,750,070	112,651,110,612
<b>Increase (Decrease) in Operating Liabilities</b>			
Deposits		(151,360,606,366)	198,795,948,952
Securities Sold under Repurchase Agreements		(51,818,658,563)	97,226,658,563
Debt Securities Issued by the Bank of Thailand		(466,777,251,590)	116,668,135,340
Other Liabilities		(105,354,699,190)	(133,944,453,959)
Net Cash Flows from Operating Activities		<u>(553,702,467,851)</u>	<u>172,714,321,126</u>
<b>Cash Flow from Investing Activities</b>			
Purchase of Foreign Currency Securities		(2,382,288,663,969)	(4,724,734,276,526)
Proceeds from Disposal of Foreign Currency Securities		3,144,396,857,636	4,671,477,603,423
Purchase of Gold		(164,444,612,422)	-
Purchase of Premises and Equipment		(458,464,136)	(385,598,721)
Proceeds from Disposal of Premises and Equipment		15,238,055	2,700,613
Purchase of Intangible Assets		(459,073)	(4,746,937)
Net Cash Flows from Investing Activities		<u>597,219,896,091</u>	<u>(53,644,318,148)</u>
Assets and Liabilities Revaluation Reserve on Cash and Expected Credit Losses on Cash		<u>5,874,881,358</u>	<u>8,837,696,932</u>
Net Increase in Cash and Cash Equivalents		49,392,309,598	127,907,699,910
Cash and Cash Equivalents at the Beginning of the Year		<u>448,299,473,336</u>	<u>320,391,773,426</u>
Cash and Cash Equivalents at the End of the Year	5	<u><u>497,691,782,934</u></u>	<u><u>448,299,473,336</u></u>

The accompanying notes form part of these financial statements.

**Bank of Thailand**  
**Notes to Financial Statements**  
**For the Year Ended December 31, 2021**

## **1. General Information**

The Bank of Thailand (the BOT) was established by the Bank of Thailand Act, B.E. 2485 as amended (the BOT Act). The BOT's objectives are to carry out central banking functions to maintain monetary stability, financial institutions system stability and payment systems stability.

## **2. Basis of Preparation of the Financial Statements**

The financial statements of the BOT have been prepared in accordance with Section 54 of the BOT Act, stipulating that accounts of the BOT shall comply with generally accepted accounting principles, except for matters which the BOT Board deems necessary and appropriate to follow generally accepted practices of other central banks. Generally accepted accounting principles refer to Thai Financial Reporting Standards under the Accounting Professions Act B.E. 2547, including guidelines promulgated by the Thailand Federation of Accounting Professions.

The preparation of financial statements in conformity with Thai Financial Reporting Standards requires the BOT Management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses, thus actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized prospectively.

The financial statements are the accounts of the BOT, not including those of the Currency Reserve, the Note Issuance Business and the Financial Institutions Development Fund (FIDF), and have been prepared under historical cost basis unless otherwise disclosed in Note 3 (Summary of Significant Accounting Policies).

## **3. Summary of Significant Accounting Policies**

### **3.1 Revenue and Expenses Recognition**

3.1.1 Interest income is recognized on a time proportion basis using effective yield method unless otherwise disclosed. Other income is recognized on an accrual basis.

3.1.2 Interest expenses are recognized on a time proportion basis using effective yield method and other expenses are recognized on an accrual basis. The expense caused by negative interest rates on foreign currency deposits is presented as a part of interest expenses.

### **3.2 Assets and Liabilities Revaluation Recognition**

Unrealized gains or losses from revaluation of assets and liabilities of the BOT as at the end of period are presented in the Assets and Liabilities Revaluation Reserve under the equity section as prescribed under Section 16 of the BOT Act.

### **3.3 Foreign Currency Transactions**

Transactions denominated in foreign currencies are translated into Thai Baht at the exchange rates prevailing at the dates of the transactions. At year-end, assets and liabilities denominated in foreign currencies are revalued to Thai Baht at the exchange rates prevailing on the reporting date. Unrealized gains or losses from revaluation of foreign currency assets and liabilities are presented in the Assets and Liabilities Revaluation Reserve under the equity section. Gains or losses from foreign currency transactions are recognized in the statement of income when the position of each foreign currency is decreased. Whenever the position of any foreign currency increases, the cost of such foreign currency is daily calculated by using the weighted average cost (WAC) method. When the foreign currency is sold, WAC will be used as the cost of the transaction. This accounting policy is consistent with the practices of other central banks, and is prescribed by the BOT Board by virtue of the BOT Act.

### **3.4 Derivatives**

Derivatives are used for international reserve management to hedge risks arising from fluctuation of bond price, exchange rate, or interest rate. All derivatives are presented at fair value, and are revalued to Thai Baht at the exchange rates prevailing on the reporting date. Unrealized gains or losses from changes in the fair value are presented in the Assets and Liabilities Revaluation Reserve under the equity section, and are recognized in the statement of income when the contracts are early terminated, exercised, expired, or cash margin are settled.

### **3.5 Foreign Exchange Swap Contracts**

Foreign exchange swap contracts are used for the purpose of liquidity management. Foreign exchange swap is an agreement to simultaneously purchase and sale of one currency against another with two different value dates. The outstanding claims and obligations are revalued to Thai Baht at the exchange rates prevailing on the reporting date, the net value changes of the claims and obligations are presented in the statement of financial position as Assets and Liabilities Revaluation Reserve under the equity section. Differences between the spot and forward exchange rates are treated as interest income or interest expense on a time proportion basis.

### **3.5 Foreign Exchange Swap Contracts (continued)**

Foreign exchange swap contracts which are used for the purpose of international reserve management are treated as derivatives according to accounting policy in Note 3.4

### **3.6 Repurchase and Reverse Repurchase Transactions**

Repurchase and reverse repurchase transactions are conducted for the purpose of liquidity management as part of monetary operations to maintain stability in the financial system. They are also used for international reserve management purpose and presented at amortized cost. Income or expenses from these transactions are recognized in the statement of income.

### **3.7 Gold**

To preserve the value of international reserves, gold is held for risk diversification of the reserve management and is presented at fair value. Unrealized gains or losses from revaluation of gold are presented in the Assets and Liabilities Revaluation Reserve under the equity section and are recognized in the statement of income on disposal.

The cost of gold sold during the year is calculated based on the weighted average cost basis.

### **3.8 Investment in Securities**

Transactions on securities are recorded on a trade date basis.

Domestic securities are held to maturity for the purpose of monetary policy implementation and are stated at amortized cost.

Foreign currency securities, including those managed by external fund managers, are held for the purpose of international reserve management and are stated at fair value. Unrealized gains or losses from revaluation are presented in the Assets and Liabilities Revaluation Reserve under the equity section and are recognized in the statement of income on disposal.

Investment in Corporate Bond Stabilization Fund (BSF) under the Emergency Decree on the Maintenance of Stability of the Financial System and Economic Security of the Country, B. E. 2563 (2020), which was established to mitigate the impact of the COVID-19 pandemic to maintain overall financial stability, is presented at fair value. Unrealized gains or losses from revaluation and gains or losses on sale of BSF are presented in “Other Assets” or “Other Liabilities” and will be recognized in the statement of income when the amount of losses are greater than THB40,000 million and approved by the committee under section 21 of the Emergency Decree.

The cost of securities sold during the year is calculated based on the weighted average cost basis.

### 3.9 Subscription in other Organizations

Subscription in other organizations is for the purpose of being a member of an organization in order to pursue central bank roles, not held for trading. The subscription is stated at fair value through other comprehensive income. Unrealized gains or losses from revaluation are presented in the Assets and Liabilities Revaluation Reserve under the equity section and are recognized in the statement of comprehensive income upon unsubscription.

### 3.10 Loans

Loans are stated at amortized cost. The accrued interests are included in “Other Assets”.

### 3.11 Premises and Equipment

Land is stated at cost. Buildings and equipment are stated at cost less accumulated depreciation and allowance for impairment (if any).

Buildings and equipment are capitalized when their useful lives are over one year. The depreciation is calculated by using the straight-line method, based on the estimated useful lives of the assets, as follows:

<u>Type of Assets</u>	<u>Useful Life</u>
Buildings, Temporary Buildings and Improvements	5 - 20 years
Equipment	3 - 15 years

Depreciation methods, useful lives and residual values of the assets are reviewed at the end of financial year.

### 3.12 Intangible Assets

Intangible assets are stated at cost less accumulated amortization. The amortization is allocated by using the straight-line method, based on the estimated useful lives between 5- 10 years.

### 3.13 Heritage Assets

The BOT holds some antique objects which are considered heritage assets, such as antique coins, banknotes, and textiles which have been acquired through purchase or donation. They are held and maintained for the purpose of preservation and exhibition at the BOT’s museum, not for central bank’s function. Since 2005, purchased antiques have been recorded as assets at acquisition costs and presented under “Other Assets”. The antiques received from donation are not recorded. However, a registry containing details of all the items held at the museum is used for control purposes.



### **3.14 Securities Borrowing Facility**

Borrowing debt securities from specialized financial institutions and/or juristic persons, as prescribed by the BOT, and in return issuing the BOT debt securities as collateral are for the purpose of enhancing the efficiency of monetary policy implementation and supporting the development of the money market and debt securities market in Thailand. The securities borrowing facility fees are recognized as expense in the statement of income.

### **3.15 Post-employment Benefits**

#### **3.15.1 Defined Contribution Plans**

The BOT's Rules and Regulations for Provident Fund stipulated that the BOT and employees who are members of the provident fund make contributions to the provident fund in accordance with the prescribed conditions. This provident fund is registered under the Provident Fund Act B.E. 2530. The contributions made to the provident fund by the BOT are charged as expense in the statement of income.

#### **3.15.2 Defined Benefit Plans**

Defined benefit plans include pension plan, as prescribed by the BOT's Rules and Regulations for Pension Fund, and post-employment medical plan, as prescribed by the Rules and Regulations for Medical Care.

The obligations under defined benefit plans are valued actuarially using the Projected Unit Credit Method and are presented at present value as employee benefit obligations. The BOT recognizes all related expenses in the statement of income and all actuarial gains and losses in the statement of comprehensive income in the period occurred.

## 4. Classification and Measurement of Financial Assets and Financial Liabilities

Unit : Million THB

2021

Instruments	Financial Instruments measured at fair value through profit or loss	Financial Instruments measured at fair value through other comprehensive income	Financial Instruments Designated as at fair value through other comprehensive income	Financial Instruments measured at amortized cost	Total
<b>Financial Assets</b>					
Cash and Deposits		174,661		544,597	719,258
Gold	177,146				177,146
Reserve Tranche and Special Drawing Rights Holdings				231,477	231,477
Investment in Securities	667,780	3,210,788		437,445	4,316,013
Loans				283,281	283,281
Other Assets	31,227	13,226	4,255	495,444	544,152
<b>Financial Liabilities</b>					
Deposits				542,312	542,312
Special Drawing Rights Allocations				189,488	189,488
Securities Sold under Repurchase Agreements				597,263	597,263
Debt Securities Issued by the Bank of Thailand				4,756,470	4,756,470
Other Liabilities	24,277			713,890	738,167

## 4. Classification and Measurement of Financial Assets and Financial Liabilities (continued)

Unit : Million THB

2020

Instruments	Financial Instruments measured at fair value through profit or loss	Financial Instruments measured at fair value through other comprehensive income	Financial Instruments Designated as at fair value through other comprehensive income	Financial Instruments measured at amortized cost	Total
<b>Financial Assets</b>					
Cash and Deposits		65,791		580,748	646,539
Reserve Tranche and Special Drawing Rights Holdings				80,888	80,888
Investment in Securities	504,775	3,578,103		424,990	4,507,868
Loans				118,760	118,760
Other Assets	20,475	18,704	3,755	423,735	466,669
<b>Financial Liabilities</b>					
Deposits				693,672	693,672
Special Drawing Rights Allocations				42,039	42,039
Securities Sold under Repurchase Agreements				648,997	648,997
Debt Securities Issued by the Bank of Thailand				5,216,468	5,216,468
Other Liabilities	18,570			397,461	416,031

Unrealized gains or losses from revaluation of assets and liabilities at fair value are presented in the Assets and Liabilities Revaluation Reserve under the equity section as prescribed under Section 16 of the BOT Act.

## 5. Cash and Deposits

	Unit : Million THB	
	2021	2020
Cash and cash equivalents		
Cash	90,108	95,035
Demand deposits	18	12
Foreign currency demand deposits	<u>407,566</u>	<u>353,252</u>
Total cash and cash equivalents	497,692	448,299
Foreign currency time and special deposits	<u>221,566</u>	<u>198,240</u>
<b>Total</b>	<b><u>719,258</u></b>	<b><u>646,539</u></b>

## 6. Reserve Tranche and Special Drawing Rights Holdings

	Unit : Million THB	
	2021	2020
Reserve tranche		
Quota subscribed in International Monetary Fund (IMF)	150,323	139,162
<u>Less:</u> IMF current account no. 1	(8,737)	(741)
Promissory notes payable to IMF	<u>(100,554)</u>	<u>(100,435)</u>
	41,032	37,986
Special Drawing Rights Holdings	<u>190,445</u>	<u>42,902</u>
<b>Total</b>	<b><u>231,477</u></b>	<b><u>80,888</u></b>

## 7. Investment in Securities

	Unit : Million THB	
	2021	2020
Domestic securities - amortized cost		
Government and state enterprise bonds	<u>437,445</u>	<u>424,990</u>
Total domestic securities	<u>437,445</u>	<u>424,990</u>
Foreign currency securities - fair value		
Treasury bills and short-term debt securities	633,893	324,921
Treasury bonds and long-term debt securities	2,576,896	3,253,183
Other investments	<u>666,778</u>	<u>503,774</u>
Total foreign currency securities	<u>3,877,567</u>	<u>4,081,878</u>
Investment in BSF - fair value	<u>1,001</u>	<u>1,000</u>
<b>Total</b>	<b><u>4,316,013</u></b>	<b><u>4,507,868</u></b>

## 7. Investment in Securities (continued)

Fair value of domestic securities stated at amortized cost as at December 31, 2021 and 2020 amounted to THB445,978 million and THB446,760 million, respectively.

## 8. Loans

	Unit : Million THB	
	2021	2020
Soft loans to financial institutions, lending to those affected by the COVID-19	282,903	118,127
Loans to the IMF under the NAB	<u>378</u>	<u>633</u>
<b>Total</b>	<b><u>283,281</u></b>	<b><u>118,760</u></b>

The soft loans to financial institutions, lending to those affected by the COVID-19 are the financial assistance under the Emergency Decree on the Provision of Financial Assistance for Entrepreneurs Affected by the COVID-19 Pandemic B.E. 2563 (Soft Loan Emergency Decree) and the Emergency Decree on the Provision of Assistance and Rehabilitation of Business Operators Impacted by the Spread of the COVID-19 Pandemic B.E. 2564.

The loans to the IMF under the New Arrangements to Borrow (NAB) are the commitment with the IMF as mentioned in Note 26.3.1.

## 9. Premises and Equipment

	Unit : Million THB								
	2021								
	Cost				Accumulated Depreciation				Net
	Opening Balance	Increases	Decreases	Closing Balance	Opening Balance	Increases	Decreases	Closing Balance	
Land	2,193	-	-	2,193	-	-	-	-	2,193
Buildings	5,598	71	14	5,655	3,805	209	13	4,001	1,654
Equipment	5,191	241	62	5,370	3,525	406	62	3,869	1,501
Work in progress	<u>50</u>	<u>402</u>	<u>386</u>	<u>66</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>66</u>
<b>Total</b>	<b><u>13,032</u></b>	<b><u>714</u></b>	<b><u>462</u></b>	<b><u>13,284</u></b>	<b><u>7,330</u></b>	<b><u>615</u></b>	<b><u>75</u></b>	<b><u>7,870</u></b>	<b><u>5,414</u></b>

## 9. Premises and Equipment (continued)

Unit : Million THB

	2020									
	Cost				Accumulated Depreciation					
	Opening		Increases	Decreases	Closing		Opening			Closing
	Balance				Balance	Balance	Increases	Decreases	Balance	
Land	2,193	-	-	2,193	-	-	-	-	2,193	
Buildings	5,593	5	-	5,598	3,594	211	-	3,805	1,793	
Equipment	4,961	311	81	5,191	3,181	425	81	3,525	1,666	
Work in progress	<u>101</u>	<u>290</u>	<u>341</u>	<u>50</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>50</u>	
<b>Total</b>	<b><u>12,848</u></b>	<b><u>606</u></b>	<b><u>422</u></b>	<b><u>13,032</u></b>	<b><u>6,775</u></b>	<b><u>636</u></b>	<b><u>81</u></b>	<b><u>7,330</u></b>	<b><u>5,702</u></b>	

Depreciation expenses for the year 2021 and 2020 were THB615 million and THB636 million, respectively.

Premises and equipment as at December 31, 2021 included right-of-use assets amounted to THB89 million, accumulated depreciation amounted to THB27 million and depreciation of right-of-use assets amounted to THB21 million.

## 10. Other Assets

	Unit : Million THB	
	2021	2020
Receivables for unsettled sales of securities	360,183	269,704
Quota subscribed in the IMF - THB	109,291	101,176
Others	<u>75,572</u>	<u>96,606</u>
<b>Total</b>	<b><u>545,046</u></b>	<b><u>467,486</u></b>

The item "Others" as at December 31, 2021 and 2020 amounted to THB75,572 million and THB96,606 million, respectively, included the net balances of intangible assets (computer software and systems) of THB444 million<sup>1</sup> and THB408 million, respectively. "Others" item also included land with book value of THB273 million located in Surat Thani, Nakhon Ratchasima, and Rayong. The three pieces of land are no longer utilized and have been approved for sale by the BOT Board.

<sup>1</sup> The cost balance at the beginning of year 2021 amounted to THB2,154 million; during the year there was addition of THB168 million, and deduction for accumulated amortization of THB1,878 million. Amortization expenses for the year 2021 were THB132 million.

## 11. Provision for expected credit losses

Provision for expected credit losses is calculated on financial assets and commitment to provide liquidity assistance in accordance with agreements with other central banks and the International Monetary Fund. The provision is deducted from financial assets or recognized as other liabilities. The expected credit losses are recognized in the statement of income.

As at December 31, 2021, the amount of provision for expected credit losses was immaterial.

## 12. Deposits

	Unit : Million THB	
	2021	2020
Non interest-bearing deposits		
Government	352,463	499,361
Financial institutions	180,709	157,597
Others	<u>9,140</u>	<u>8,114</u>
Total non interest-bearing deposits	542,312	665,072
Interest-bearing deposits	<u>-</u>	<u>28,600</u>
<b>Total</b>	<b><u>542,312</u></b>	<b><u>693,672</u></b>

The interest-bearing deposits facility is an instrument to facilitate end-of-day liquidity adjustment of financial institutions, and to ensure appropriate money market interest rate for the transmission of monetary policy, as well as for money market development.

## 13. Special Drawing Rights Allocations

The IMF's member countries are allocated Special Drawing Rights in proportion to their subscriptions in the IMF. As at December 31, 2021 and 2020, Thailand was allocated the balance of SDR4,049 million and SDR970 million, which was equivalent to THB189,488 million and THB42,039 million, respectively.

## 14. Securities Sold under Repurchase Agreements

The outstanding balances of the securities sold under repurchase agreements as at December 31, 2021 and 2020 were THB597,263 million and THB648,997 million, respectively.

Securities are held as collateral under repurchase agreements, as at December 31, 2021 and 2020, stated at book value of THB438,747 million and THB525,564 million or calculated at fair value of THB447,104 million and THB547,355 million, respectively.

## 15. Debt Securities Issued by the Bank of Thailand

	Unit : Million THB	
	2021	2020
Bank of Thailand bonds		
Remaining maturity:		
- 1 year or less	2,409,678	2,544,939
- over 1 year	486,542	878,179
<u>Less: held by the BOT</u>	<u>(30,250)</u>	<u>(80,550)</u>
Total Bank of Thailand bonds	2,865,970	3,342,568
Other BOT debt securities	<u>1,890,500</u>	<u>1,873,900</u>
(Remaining maturity less than 1 year)		
<b>Total</b>	<b><u>4,756,470</u></b>	<b><u>5,216,468</u></b>

The BOT has issued BOT bonds and other BOT debt securities to be used as monetary policy instruments as well as to foster the development of money market and debt securities market in Thailand. In 2021, the interest paid on BOT bonds and other BOT debt securities amounted to THB20,540 million and THB10,365 million, respectively. The interest paid is presented as part of interest expense.

BOT bonds held by the BOT resulted from the repurchase of BOT bonds to facilitate liquidity management in the money market.

The fair value of BOT debt securities as at December 31, 2021 and 2020 amounted to THB4,757,827 million and THB5,227,112 million, respectively.

## 16. Other Liabilities

	Unit : Million THB	
	2021	2020
IMF current accounts no. 1 and 2	8,737	741
Promissory notes payable to the IMF	100,554	100,435
Payables for unsettled purchases of securities	583,974	257,289
Net liabilities from foreign exchange swaps	-	27,871
Employee benefit obligations	11,189	11,656
Others	<u>45,527</u>	<u>30,325</u>
<b>Total</b>	<b><u>749,981</u></b>	<b><u>428,317</u></b>



## 16. Other Liabilities (continued)

Employee benefit obligations as at December 31, 2021 included the obligation from pension plan amounted to THB6,026 million and the obligation from post-employment medical plan amounted to THB5,163 million. Changes in the present value of the employee benefit obligations are presented as follows:

	Unit : Million THB	
	2021	2020
Employee benefit obligations as at January 1	11,656	7,778
Current service cost	253	282
Interest cost	107	106
Benefit paid and transferred during the year	(733)	(687)
Actuarial (gain) loss	<u>(94)</u>	<u>4,177</u>
Employee benefit obligations as at December 31	<b><u>11,189</u></b>	<b><u>11,656</u></b>

The significant actuarial assumptions

	2021	2020
Discount rate (average)	0.94% - 4.99% (4.14%)	1.14% - 5.04% (3.98%)
Average rate of increase in salaries	6.00%	6.00%
Medical cost trend growth rate	8.00%	8.00%
Mortality	Thai Mortality Table 2017	Thai Mortality Table 2017

Sensitivity analysis of significant actuarial assumption that affected changes in the present value of employee benefit obligations as at December 31, 2021 and 2020 is as follows:

	Unit : Million THB	
	2021	2020
Discount rate		
Increase of 1%	(1,182)	(1,261)
Decrease of 1%	1,438	1,527

The maturity analysis of benefit payments is calculated based on the defined benefit plans expected to be paid in the future on an undiscounted basis.

	Unit : Million THB	
	2021	2020
Amount expected to be paid within 1 year	602	574
Amount expected to be paid between 1 to 5 years	2,761	2,608
Amount expected to be paid between 5 to 10 years	3,893	3,726

## 17. Statutory Appropriation

In 2002, THB165,000 million was transferred from the Special Reserve Account of the Currency Reserve to the BOT in accordance with the Emergency Decree on the Partial Transfer of Assets from the Special Reserve Account, B.E. 2545 in order to compensate for the accumulated losses and to enhance the stability of the BOT. The residual amount of THB27,308 million, after deducting the accumulated losses was presented as statutory appropriation. Since 2002, there has been no movement in this account.

## 18. Reserve for Stabilization of Profit Payable to the Government

As at December 31, 2021, the outstanding balance of the Reserve for Stabilization of Profit Payable to the Government was THB624 million. This reserve was accumulated from net profit after appropriation for the year 1990 - 1996. The Ministry of Finance (MOF) determines the guideline of profit appropriation. The balance of this account could be transferred to the Government upon request by the MOF. Since 2002, no profit appropriation has been made to this account.

## 19. Assets and Liabilities Revaluation Reserve

	Unit : Million THB	
	2021	2020
Unrealized gains (losses) from foreign exchange revaluation of assets and liabilities	151,801	(335,054)
Unrealized gains from revaluation of gold	1,906	-
Unrealized gains from price revaluation of investments		
Foreign currency securities - treasury bills, treasury bonds, and debt securities	13,109	77,461
Foreign currency securities - other investments	195,768	116,507
Unrealized gains from revaluation of derivatives	6,734	1,777
Unrealized gains from revaluation of subscription in other organizations and others	<u>2,656</u>	<u>2,331</u>
<b>Total</b>	<b><u>371,974</u></b>	<b><u>(136,978)</u></b>

Subject to Section 13 (2) of the BOT Act, the Assets and Liabilities Revaluation Reserve is established to accumulate gains or losses derived from the revaluation of the BOT's assets and liabilities.

## 20. Accumulated Losses

As at December 31, 2021 and 2020, the outstanding balances of accumulated losses were THB957,804 million and THB1,093,224 million, respectively. Changes to the accumulated losses are set out in the statement of changes in equity. However, the accumulated loss has no impact on the operation of the BOT.

## 21. Interest Income

	Unit : Million THB	
	2021	2020
Interest income from domestic securities	9,455	9,564
Interest income from foreign currency securities	57,379	65,574
Other interest income	<u>592</u>	<u>5,742</u>
<b>Total</b>	<b><u>67,426</u></b>	<b><u>80,880</u></b>

## 22. Net Gains on Sale of Investments

	Unit : Million THB	
	2021	2020
Gain on sale of foreign currency securities – treasury bills, treasury bonds, and debt securities	15,343	19,586
Gain (Loss) on sale of foreign currency securities – other investments	<u>32,470</u>	<u>(1,135)</u>
<b>Total</b>	<b><u>47,813</u></b>	<b><u>18,451</u></b>

## 23. Other Expenses

	Unit : Million THB	
	2021	2020
Depreciation and amortization	747	766
External fund manager management fees	949	1,069
Others	<u>2,435</u>	<u>1,736</u>
<b>Total</b>	<b><u>4,131</u></b>	<b><u>3,571</u></b>

## **24. Remuneration of Key Management Personnel**

The key management personnel of the BOT refers to the Governor, Deputy Governors, and members of the Boards and committees established under the BOT Act who have responsibility for planning, directing and supervising the activities of the BOT. In 2021 and 2020, total remuneration paid to key management personnel were THB69 million and THB68 million, respectively.

## **25. Notional amount of derivatives**

The notional amount of outstanding derivatives as at December 31, 2021 was as follows:

### **25.1 Foreign Exchange Forward Contracts**

The notional amount of foreign exchange forward contracts was equivalent to USD49,573 million, which will be due in 2022.

### **25.2 Foreign Exchange Swap Contracts**

The notional amount of foreign exchange swap contracts was equivalent to USD28,355 million, which will be due in 2022.

### **25.3 Option Contracts**

The notional amount of option contracts was equivalent to USD8,431 million, which will be due in 2022.

### **25.4 Futures Contracts**

The notional amount of futures contracts including security futures, index futures and other futures was equivalent to USD5,227 million, which will be due in 2022 - 2023.

### **25.5 Mortgage-Backed Securities To-Be-Announced**

The notional amount of mortgage-backed securities to-be-announced was equivalent to USD361 million, which will be due in 2022.

## **26. Commitments**

As at December 31, 2021, the outstanding commitments of the BOT were as follows:

### **26.1 Securities Borrowing Facility**

The BOT had outstanding obligations to return the borrowed debt securities amounting to THB161,087 million, which will be due in 2022 - 2039. The fair value of the borrowed debt securities sold under repurchase agreements as at December 31, 2021 amounted to THB155,897 million.

## 26.2 Agreements with other central banks

The BOT has signed the following financial agreements with other central banks in the region:

26.2.1 The ASEAN Swap Arrangement (ASA) was established in 1977 to provide financial assistance to ASEAN member countries facing short-term liquidity shortages or Balance of Payments difficulties. Under the ASA, should a member country face such financial difficulties, the BOT is committed to provide up to USD300 million of liquidity support, whereas if Thailand faces such financial difficulties, the BOT may request up to twice its contribution, or up to USD600 million. In 2019, the ASA was renewed for an additional two years, effective up until November 17, 2021. Negotiations on its renewal are currently in progress. In 2021, neither the BOT nor its counterparties activated the ASA.

26.2.2 The Chiang Mai Initiative Multilateralisation (CMIM) Agreement was established in 2010 to provide financial assistance to ASEAN member countries, China, Japan, and South Korea, in addressing short-term liquidity shortages or Balance of Payments difficulties. The CMIM Agreement has been continually revised to improve the effectiveness of its financing mechanisms, with the current Agreement in effect since March 31, 2021. Under the CMIM Agreement, should another CMIM party face potential or actual financial difficulties, the BOT is committed to contribute up to USD9,104 million. If the BOT needs liquidity support, the BOT may request up to 2.5 times its contribution, or up to USD22,760 million. In 2021, neither the BOT nor its counterparties activated the facilities under the CMIM.

26.2.3 The Bilateral Swap Arrangement (BSA) between the BOT and the Bank of Japan (BOJ), acting as agent for the Ministry of Finance of Japan, was first established in 2001 to provide financial support in addressing short-term liquidity shortages and Balance of Payments difficulties. Under this BSA, the BOT and the BOJ may conduct swap transactions using their local currencies (i.e. Thai Baht and Japanese Yen) for the provision of up to USD3,000 million or equivalent, in which the BOT may also swap the Thai Baht for the Japanese Yen, in addition to US Dollar. The amended fourth BSA is effective as from July 23, 2021 for a period of three years. In 2021, neither the BOT nor the counterparty activated this BSA.

## **26. Commitments (continued)**

### **26.2 Agreements with other central banks (continued)**

26.2.4 The Bilateral Local Currency Swap Arrangement (BSA) with the Bank of Japan (BOJ) was established in 2020 to enhance the financial stability of Thailand and Japan and to promote the usage of local currencies. When needed, the BSA allows each central bank to draw the other's local currency in exchange of their own local currency, in an amount up to THB240,000 million or JPY800,000 million, enabling both central banks to provide liquidity support in Thai Baht and Japanese Yen to their respective commercial banks in support of their cross-border transactions. This BSA is effective as from March 31, 2020 for a period of three years. In 2021, neither the BOT nor the counterparty activated this BSA.

26.2.5 The Chinese Yuan/Thai Baht Bilateral Currency Swap Arrangement (BSA) with the People's Bank of China (PBC) was established in 2011 to promote the usage of local currencies in trade and direct investment settlement between Thailand and China, in an amount up to CNY70,000 million, or equivalent to THB370,000 million. The third BSA is effective as from December 22, 2020 for a period of five years. In December 2021, the PBC activated the BSA to draw Thai Baht liquidity from the BOT to provide liquidity assistance to a Chinese financial institution in support of a Chinese business' cross-border transaction.

### **26.3 Commitments with the International Monetary Fund (IMF)**

The BOT, with the consent of the Finance Minister, has the following commitments with the IMF:

26.3.1 The BOT's credit line to the IMF under the New Arrangements to Borrow (NAB) in an amount up to SDR680 million, effective from January 1, 2021 until the end of 2025.

26.3.2 The BOT's credit line to the IMF under the 2020 Borrowing Agreements in the form of a Note Purchase Agreement in an amount up to USD1,723 million, effective from January 1, 2021 until the end of 2024.

## **27. Contingent Liabilities**

As at December 31, 2021, the BOT was involved in certain legal actions and claims arising from the ordinary course of business amounting to THB177 million. All cases are in process of court trial. However, the estimated amount of these claims, if the final judgment is made, will not have any material adverse effect on the BOT's financial position and operations.

## **28. The BOT's Risk Management**

The BOT's risk management adheres to the principles of good governance by having committees to oversee and manage the BOT's risk management processes, such as the Risk Management Committee (RMC) and the Financial Risk Management Sub-Committee (FRMC). Furthermore, there is a Risk Oversight Committee (ROC), whose members are appointed by the BOT Board, comprising non-executive BOT Board members and external experts. Its objective is to assist the BOT Board in overseeing the BOT's overall risk management and processes to ensure that the BOT Board and senior management are well aware of the key risks that may have material impact on the BOT's operations, under a risk management framework that is in accordance with good governance principles and international standards.

The BOT's Risk Management Group is responsible for the implementation of risk management policies prescribed by the BOT Board. The Risk Management Group comprises the Financial Risk Management Department (FRMD) that is responsible for managing financial risks, and the Enterprise Risk Management Department (ERMD) that oversees the management of enterprise risks and operational risks.

### **28.1 Financial Risk Management**

#### **1) Key Risks to the BOT's financial statements**

The BOT, as a central bank, has a role in conducting monetary policies and overseeing the stability of the Thai Baht, in order to build the public's confidence in the country's economic and financial stability. In carrying out this role, the BOT's financial statements are inevitably exposed to key financial risks, namely foreign exchange rate risk and interest rate risk.

Foreign exchange rate risk arises from the BOT's assets being mostly denominated in foreign currencies, whereas the BOT's liabilities are mostly denominated in Thai Baht. Interest rate risk arises from the BOT's obligations to pay interests in the domestic market as part of its monetary policy operations, which may differ from interests gained from its investments in foreign markets.

#### **2) Financial Risk Management for international reserves**

In the management of international reserves, the BOT takes into consideration, as priorities, the safety, liquidity, return, and risk management. Investing international reserves in foreign assets exposes the BOT to financial risks, namely market risk, credit risk, and liquidity risk.

## 28. The BOT's Risk Management (continued)

### 28.1 Financial Risk Management (continued)

#### 2) Financial Risk Management for international reserves (continued)

The following are the primary objectives of managing financial risks to mitigate the impact on the management of international reserves:

- a. Preserving the value of the international reserves, when measured in terms of major currencies; and
- b. Ensuring that the financial risks of the international reserves remain within an acceptable level, and that such risks are well diversified.

In so doing, the BOT has the following risk management framework and guidelines, which are instrumental to mitigating the impact on the value of international reserves.

#### Market Risk

Market risk is the risk of loss due to changes in market prices. International reserves are exposed to the following three market risk factors: interest rate risk from investment in debt securities; foreign exchange rate risk from investment in foreign currencies; and equity price risk from investment in equities.

The BOT manages market risk by setting up benchmark investment portfolios, in which asset and currency allocations are set in accordance with optimal risk/return trade-offs, in line with each portfolio's objectives, and within the BOT Board's risk tolerance limit. Market risks from active portfolio management are measured by the volatility of return margin between each portfolio and its benchmark (tracking errors). The BOT has set tracking error limits with monitoring systems in place to ensure that any deviation remains within the limits. Furthermore, the BOT also conducts scenario analysis, including stress testing, to assess the impact or maximum potential loss in each portfolio under the extreme adverse scenarios that may occur over a specific timeframe (Value-at-Risk).

#### Credit Risk

Credit risk is the risk that the BOT may not receive its principal or interest repayments it is owed, or face a loss due to a counterparty or security issuer's failure to fulfill their financial obligations to the BOT. This includes the risk of deterioration in the market value of securities resulting from credit rating downgrades of securities or their issuers.



## **28. The BOT's Risk Management (continued)**

### **28.1 Financial Risk Management (continued)**

#### **2) Financial Risk Management for international reserves (continued)**

The BOT manages credit risk by imposing prudent rules on credit risk management, such as by setting aggregate credit asset limits and counterparty exposure limits, to ensure that overall credit risks remain within an acceptable level. The BOT also assigns limits on the credit line to any counterparty or issuer, to avoid excessive concentration in any single party. Additionally, the BOT measures and monitors credit risk by calculating expected credit loss and utilizing indicators to predict potential credit rating downgrades before they occur. In order to reduce counterparty credit risk from OTC transactions, the BOT utilizes financial agreements that are in line with international standards (such as the ISDA Master Agreement) and margin requirements.

#### **Liquidity Risk**

Liquidity risk is the risk that may arise from the BOT's inability to liquidate its assets at reasonable prices within the required time. In managing liquidity risks, the BOT sets requirements on investment in highly liquid assets, to ensure the adequacy of the liquidity needs for BOT's operation on foreign exchange rate policies. The BOT also sets appropriate levels for illiquid assets, based on the risk-return trade-off between the return from investing in illiquid assets (illiquidity premium) and the potential cost of liquidation.

In addition to the above framework and rules on the risk management of international reserves, the BOT (Financial Risk Management Department) also studies and monitors market developments, new financial instruments, as well as changes in international supervisory regulations, in order to apply them and continually improve risk management and oversight, ensuring that the management of international reserves meets its objectives.

### **28.2 Enterprise and Operational Risk Management**

The Enterprise Risk Management Department (ERMD) is the main unit responsible for the development of enterprise and operational risk management frameworks, tools, and processes, in accordance with international standards. Enterprise-wide risk management policies have been instituted, and the operational risk management guidelines were revised to ensure that they keep pace with the changing environment, in order to enable the BOT achieves its missions. Key areas of the BOT's risk management guidelines are:

## 28. The BOT's Risk Management (continued)

### 28.2 Enterprise and Operational Risk Management (continued)

(1) Information Technology (IT) Risk Management: the BOT has continued to adhere to its IT risk management framework, in order to identify, analyze, and monitor key IT risks and to ensure proper and timely compliance with IT laws, regulations, and standards. To that end, the IT Risk Management Sub-committee is tasked with reviewing the BOT's IT risk management policy framework and guidelines, as well as approving and monitoring IT risk-related practices under the framework prescribed by the Risk Management Committee. In 2021, the BOT has issued additional implementation guidelines, namely: Third Party IT Risk Management Implementation Guidelines, to manage risks from more service usage, system linkages, and data access granted to external parties; and the Guidelines on Implementing Technologies, to suit each department's job context, technologies, and risks under prescribed standards. In response to cyber threats that have become more severe, complex, and unpredictable, the BOT has continuously enhanced its capabilities in cyber resilience and in detecting cyber threats. For example, by establishing a work from home platform that meets IT security standards, enhancing the Advanced Threat Protection systems, automating Security Operation Center (SOC), and conducting penetration tests. On the personnel front, the BOT has also enhanced its staff's digital mindset and capabilities through raising cyber risk awareness and conducting Cyber Security Incident Response exercises, both at operational and executive levels, as well as expanding collaborative networks with other relevant agencies to exchange cyber threat intelligence.

(2) Compliance Risk Management: the BOT has developed a legal database to be used for risk monitoring and assessments, as well as mechanisms to monitor compliance with laws and regulations related to the BOT's operations. Also, the BOT's ERMD, who is responsible for the BOT's compliance with Thailand's Personal Data Protection Act B.E. 2562 (2019), has developed a Data Protection Risk Management Framework, which includes a Data Leak Prevention system to ensure effective and law-compliant personal data protection. Furthermore, the BOT also promotes awareness on personal data protection among its staff, and discloses its Personal Data Privacy Policy to inform data owners and the general public on the BOT's objectives, principles, and standards in personal data protection. Going forward, ERMD intends to evaluate this framework to ensure that it is in line with international standards.

## 28. The BOT's Risk Management (continued)

### 28.2 Enterprise and Operational Risk Management (continued)

(3) Business Continuity Management: the BOT has continuously improved its business continuity management. In doing so, the BOT has established the policies on business continuity management that are certified to comply with ISO 22301:2019, in order to systematically set objectives and guidelines in managing business continuity for the payment systems operated by the BOT (BAHTNET and ICAS), as well as for the operations of the BOT's internal units that are BAHTNET members. In 2021, the BOT has activated its business continuity plan in response to the COVID-19 pandemic. This entails closely monitoring the outbreak, setting up management systems, and adequately allocating budget and IT resources. Additionally, to ensure the continuity of all critical operations, the BOT has established alternative working sites within the office, and established emergency response plans to further facilitate the BOT staff working on such critical operations to work remotely. Also, measures were put in place to monitor risks and enhance security; mitigate operational risks, IT risks, cyberattack risks; prevent data leakages; as well as to ensure that such measures are up to standard. In addition, the BOT also oversees the risk management of client computers of BAHTNET and ICAS service users, which may have linkages that pose systemic risks to overall payment system by issuing the "Implementation guidelines on using client computers for remote work under the COVID-19 pandemic emergency". The BOT also procured vaccinations for all BOT staff and their families, as well as outsourced personnel. Antigen Test Kits were used to screen staff before they entered BOT premises. Additional measures were issued in response to situation developments, and in compliance with the requirements of the Ministry of Public Health and other government-issued measures. As a result, BOT staff have remained safe and able to continue delivering on the BOT's missions.

In order to monitor and report key risks in a seamless, timely, and effective manner, the BOT has developed a digital risk management platform using data on key risks. The BOT also integrated the work processes and information exchange among the 3 Lines of Defense, in accordance with the Governance, Risk, and Compliance (GRC) principles, and utilized tools to manage enterprise and operational risks, as follows:

## 28. The BOT's Risk Management (continued)

### 28.2 Enterprise and Operational Risk Management (continued)

(1) Control Self-Assessment (CSA): The BOT requires all departments to conduct a CSA at least once a year to identify and assess key risks associated with their strategic and BAU operations, as well as issues that must be assessed on their compliance with government-issued requirements and the BOT's internal rules. The assessments are further examined, together with an evaluation on the adequacy of existing internal controls. The findings are then used to develop risk mitigation measures to help improve the efficiency and effectiveness of work processes and internal controls.

(2) Key Risk Indicators (KRIs): KRIs are tools in monitoring and assessing the BOT's risk exposures, covering enterprise-wide risks and other material risks. The monitoring of key risks (Risk Dashboard) and any progress in their risk management work plans are reported to the RMC on a quarterly basis, to ensure that such risks remain within an acceptable level, and to prescribe corrective or preventive measures accordingly.

(3) Operational Risk Incident Reporting: The BOT requires any department incurring a loss incident and the directly responsible departments to report such loss incident or a near-miss events through the in-house Risk Management System (RMS). The RMS serves as a database for risk events, which is used for analyzing the causes of risks and identifying appropriate measures to manage and prevent future incidents.

## 29. Fair Values of Financial Assets and Liabilities

### 29.1 Fair Values Hierarchy of Financial Assets and Liabilities

As at December 31, 2021 and 2020, the financial assets and liabilities measured at fair values are presented as follows:

Unit : Million THB				
2021				
	Level 1	Level 2	Level 3	Total
Financial assets				
Deposits and investment in securities	3,351,193	702,036	-	4,053,229
Gold	177,146	-	-	177,146
Subscription in other organizations	-	-	4,255	4,255
Other assets	<u>12,707</u>	<u>31,746</u>	<u>-</u>	<u>44,453</u>
<b>Total</b>	<b><u>3,541,046</u></b>	<b><u>733,782</u></b>	<b><u>4,255</u></b>	<b><u>4,279,083</u></b>
Financial liabilities				
Other liabilities	<u>277</u>	<u>24,000</u>	<u>-</u>	<u>24,277</u>
<b>Total</b>	<b><u>277</u></b>	<b><u>24,000</u></b>	<b><u>-</u></b>	<b><u>24,277</u></b>

Unit : Million THB				
2020				
	Level 1	Level 2	Level 3	Total
Financial assets				
Deposits and investment in securities	3,793,151	355,518	-	4,148,669
Subscription in other organizations	-	-	3,755	3,755
Other assets	<u>18,273</u>	<u>20,906</u>	<u>-</u>	<u>39,179</u>
<b>Total</b>	<b><u>3,811,424</u></b>	<b><u>376,424</u></b>	<b><u>3,755</u></b>	<b><u>4,191,603</u></b>
Financial liabilities				
Other liabilities	<u>28</u>	<u>18,542</u>	<u>-</u>	<u>18,570</u>
<b>Total</b>	<b><u>28</u></b>	<b><u>18,542</u></b>	<b><u>-</u></b>	<b><u>18,570</u></b>

## 29. Fair Values of Financial Assets and Liabilities (continued)

### 29.2 Fair Values Hierarchy

Level 1 – quoted prices in the active markets for identical assets and liabilities that the BOT can access at the measurement date.

Level 2 – prices that do not have a quoted market price and calculated by using inputs which are observable from for the assets or liabilities, either directly or indirectly.

Level 3 – prices calculated by pricing models, as no data can be observed from the market.

### 29.3 Valuation Methods and Techniques used in Fair Value Measurement

Fair values of foreign securities and gold are based on market prices published by widely recognized market price providers. Normally, the price providers take into account liquidity of the securities as well as liquidity of the securities markets in determining the valuation methods. For fair values of liquid securities, providers will directly use the prices quoted by groups of designated dealers. For fair values of illiquid securities or illiquid markets, in absence of credible market quotes, providers will carry out calculation using a generally adopted pricing model with market prices input from comparable assets.

For derivatives instruments, fair values are measured by using valuation techniques such as cash flow discounting and models generally adopted in the market. Observed market data such as interest rate and exchange rate are used in the calculation.

## 30. Reclassification

There were reclassified items in the statement of financial position as at December 31, 2020 for consistency purposes. The reclassifications had no effect on the previously reported statements. The reclassifications were shown as follows:

	Unit : Million THB		
	Before	Amount	After
	Reclassified	Reclassified	Reclassified
Cash and Deposits	643,891	2,648	646,539
Other assets	470,134	(2,648)	467,486

## 31. Approval of the Financial Statements

On March 23, 2022, the BOT Board authorized the issuance of these financial statements.

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