



(TRANSLATION)

AUDITOR'S REPORT

To the Bank of Thailand Board

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, 2020, the statement of income and 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 above mentioned financial statements present fairly, in all material respects, the financial position of the Bank of Thailand as at December 31, 2020, 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 State Audit Office of the Kingdom of Thailand's 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 Thailand Federation of Accounting Professions's Code of Ethics for Professional Accountants that are relevant to the 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 to 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 in 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 29.1.2 regarding Financial Risk Management of International Reserves. The Bank of Thailand has disclosed information to be in conformity with specific practices for central bank business. 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. The other information comprises the information included in the annual report, but does not include the financial statements and the auditor's report in the annual report. Management will provide the annual report to the State Audit Office of the Kingdom of Thailand after the date of this auditor's report.

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 matters related to going concern as applicable, and using the going concern basis of accounting unless management either intends to liquidate 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 of the State Audit Office of the Kingdom of Thailand 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 if the State Audit Office of the Kingdom of Thailand identifies during the audit.

(Signed)

(Mr. Prajuck Boonyoung)

Auditor General

(Signed)

(Ms. Wilaiwan Promyue)

Director of Financial and Procurement Audit Office No. 5

Bank of Thailand
Statement of Financial Position
As at December 31, 2020

	Note	2020	2019
Unit : THB			
ASSETS			
Cash and Deposits	6	643,891,334,685	450,322,072,959
Reserve Tranche and Special Drawing Rights Holdings	7	80,887,520,182	66,948,623,946
Investment in Securities	8	4,507,868,474,021	4,088,396,717,200
Loans	9	118,759,624,055	768,689,082
Premises and Equipment	10	5,702,376,484	6,029,744,026
Other Assets	11	470,134,366,383	408,465,497,679
Total Assets		5,827,243,695,810	5,020,931,344,892
LIABILITIES AND EQUITY			
Deposits	13	693,671,840,657	494,872,734,055
Special Drawing Rights Allocations	14	42,038,542,806	40,498,638,655
Securities Sold under Repurchase Agreements	15	648,996,780,242	551,855,000,000
Debt Securities Issued by the Bank of Thailand	16	5,216,468,486,098	5,022,215,126,931
Other Liabilities	17	428,317,311,713	382,764,556,136
Total Liabilities		7,029,492,961,516	6,492,206,055,777

The accompanying notes form part of these financial statements.

Bank of Thailand
Statement of Financial Position (Continued)
As at December 31, 2020

			Unit : THB
	Note	2020	2019
LIABILITIES AND EQUITY (Continued)			
Equity			
Initial Capital		20,000,000	20,000,000
Statutory Appropriation	18	27,307,931,128	27,307,931,128
Reserve for Stabilization of Profit Payable to the Government	19	624,075,747	624,075,747
Assets and Liabilities Revaluation Reserve	20	(136,977,579,442)	(429,860,471,164)
Accumulated Losses	21	(1,093,223,693,139)	(1,069,366,246,596)
Total Equity		<u>(1,202,249,265,706)</u>	<u>(1,471,274,710,885)</u>
Total Liabilities and Equity		<u><u>5,827,243,695,810</u></u>	<u><u>5,020,931,344,892</u></u>

The accompanying notes form part of these financial statements.

(Mr. Sethaput Suthiwartnarueput)

Governor

(Mrs. Rinwalai Pattarathienchai)

Director, Finance and Accounting Department

Bank of Thailand
Statement of Income
For the Year Ended December 31, 2020

	Note	2020	2019
Unit : THB			
Income			
Interest Income	22	80,879,921,698	106,777,243,892
Net Gains on Sale of Investments	23	18,451,421,666	30,636,778,504
Fee Income		492,133,533	576,140,514
Other Income		9,111,649,833	4,038,252,587
Total Income		<u>108,935,126,730</u>	<u>142,028,415,497</u>
Expenses			
Interest Expense		55,261,590,494	92,196,956,659
Net Losses on Foreign Exchange		64,027,697,861	152,542,376,496
Personnel Expenses		5,755,073,172	5,304,657,689
Other Expenses	24	3,570,980,010	3,826,923,764
Total Expenses		<u>128,615,341,537</u>	<u>253,870,914,608</u>
Net Loss		<u>(19,680,214,807)</u>	<u>(111,842,499,111)</u>

The accompanying notes form part of these financial statements.

Bank of Thailand
Statement of Comprehensive Income
For the Year Ended December 31, 2020

	Note	2020	2019
			Unit : THB
Net Loss		(19,680,214,807)	(111,842,499,111)
Other Comprehensive Income (Loss)			
Items that might be reclassified subsequently			
to Profit or Loss			
Change in Assets and Liabilities Revaluation Reserve		290,617,507,541	(188,766,647,928)
Items that will not be reclassified subsequently			
to Profit or Loss			
Change in Assets and Liabilities Revaluation Reserve		2,265,384,181	-
Actuarial Loss		(4,177,231,736)	(244,874,098)
Total Other Comprehensive Income (Loss)		288,705,659,986	(189,011,522,026)
Total Comprehensive Income (Loss)		269,025,445,179	(300,854,021,137)

The accompanying notes form part of these financial statements.

Bank of Thailand
Statement of Changes in Equity
For the Year Ended December 31, 2020

	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, 2019	20,000,000	27,307,931,128	624,075,747	(241,093,823,236)	(957,278,873,387)	(1,170,420,689,748)
Net Loss	-	-	-	-	(111,842,499,111)	(111,842,499,111)
Other Comprehensive Loss	-	-	-	(188,766,647,928)	(244,874,098)	(189,011,522,026)
Balance as at December 31, 2019	20,000,000	27,307,931,128	624,075,747	(429,860,471,164)	(1,069,366,246,596)	(1,471,274,710,885)
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	20,000,000	27,307,931,128	624,075,747	(136,977,579,442)	(1,093,223,693,139)	(1,202,249,265,706)

The accompanying notes form part of these financial statements.

Bank of Thailand
Statement of Cash Flows
For the Year Ended December 31, 2020

	Unit : THB	
	2020	2019
Cash Flows from Operating Activities		
Net Loss	(19,680,214,807)	(111,842,499,111)
Adjustments to Reconcile Net Loss to Net Cash		
Provided by (Used in) Operating Activities:		
Depreciation and Amortization Expenses	765,917,269	739,790,718
(Gain) Loss on Disposal of Premises and Equipment	(2,362,930)	1,327,183
Write Off of Work in Progress	19,385,625	3,171,406
Expected Credit Losses	28,488,035	-
Gain on Disposal of Investments	(18,451,421,666)	(30,636,778,504)
Interest Income	(80,879,921,698)	(106,777,243,892)
Interest Expense	55,261,590,494	92,196,956,659
(Gain) Loss from Non-cash Foreign Assets and Liabilities Cost Averaging	54,588,590,839	(132,460,363,412)
Gain on Forward Contracts under Resale Agreements	(3,963,824)	(9,558,832)
Net (Increase) Decrease in Accrued Revenues	6,467,807	(661,799,049)
Net Increase in Accrued Expenses	738,957,461	62,799,574
Net (Increase) Decrease in Prepaid Expenses	(62,957,360)	22,320,328
	(7,671,444,755)	(289,361,876,932)
Cash Received on Interest Income	93,315,230,360	98,120,837,923
Cash Paid on Interest Expense	(39,868,708,372)	(57,236,997,146)
Net Gain (Loss) from Operation before Changing in Operating Assets and Liabilities	45,775,077,233	(248,478,036,155)

The accompanying notes form part of these financial statements.

Bank of Thailand
Statement of Cash Flows (Continued)
For the Year Ended December 31, 2020

	Note	2020	2019
			Unit : THB
(Increase) Decrease in Operating Assets			
Foreign Currency Deposits		(66,783,748,527)	96,255,557,699
Reserve Tranche and Special Drawing Rights Holdings		(11,612,995,697)	(141,255,806)
Loans		(117,963,357,623)	585,391,986
Other Assets		112,523,159,073	6,281,176,776
Increase (Decrease) in Operating Liabilities			
Deposits		198,795,948,952	(60,739,149,191)
Securities Sold under Repurchase Agreements		97,226,658,563	(27,055,000,000)
Debt Securities Issued by the Bank of Thailand		116,668,135,340	389,852,890,661
Other Liabilities		(133,944,453,959)	(9,653,590,303)
Net Cash Flows from Operating Activities		<u>240,684,423,355</u>	<u>146,907,985,667</u>
Cash Flow from Investing Activities			
Purchase of Domestic Securities		(105,504,395,767)	(37,649,559,502)
Proceeds from Disposal of Domestic Securities		37,467,000,000	80,180,000,000
Purchase of Foreign Currency Securities		(4,724,734,276,526)	(5,179,001,213,502)
Proceeds from Disposal of Foreign Currency Securities		4,671,477,603,423	4,987,271,469,129
Purchase of Premises and Equipment		(385,598,721)	(464,436,259)
Proceeds from Disposal of Premises and Equipment		2,700,613	818,383
Purchase of Intangible Assets		(4,746,937)	(4,952,459)
Net Cash Flows from Investing Activities		<u>(121,681,713,915)</u>	<u>(149,667,874,210)</u>
Assets and Liabilities Revaluation Reserve on Cash and Expected Credit Losses on Cash		<u>8,782,833,385</u>	<u>(2,685,550,467)</u>
Net Increase (Decrease) in Cash and Cash Equivalents		127,785,542,825	(5,445,439,010)
Cash and Cash Equivalents at the Beginning of the Year		317,865,688,080	323,311,127,090
Cash and Cash Equivalents at the End of the Year	6	<u><u>445,651,230,905</u></u>	<u><u>317,865,688,080</u></u>

The accompanying notes form part of these financial statements.

Bank of Thailand
Notes to Financial Statements
For the Year Ended December 31, 2020

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 revenue is recognized on a time proportion basis using effective yield method unless otherwise disclosed. Other revenues are 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 during the day, the cost of such foreign currency is 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, right exercised, contracts 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

The BOT conducts repurchase and reverse repurchase transactions 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.

Revenue or expenses from these transactions are recognized in the statement of income. The notional amounts of transactions are disclosed in the Notes to financial statement.

3.7 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. If the securities are sold, the realized gains or losses will be recognized in the statement of income.

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.

3.8 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.

3.9 Loans

Loans are stated at amortized cost. The accrued interests are included in “Other Assets”. Expected credit losses are recognized in the statement of income (if any).

3.10 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.

3.11 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.

3.12 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.

3.13 Securities Borrowing Facility

The BOT borrows debt securities from specialized financial institutions and/ or juristic persons, as prescribed by the BOT, and issues the BOT debt securities as collateral. The main purpose of securities borrowing facility is to enhance the efficiency of monetary policy implementation and support 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. The borrowing amount is disclosed in “Commitments”.

3.14 Post-employment Benefits

3.14.1 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.

3.14.2 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. Changes in Accounting Policies

4.1 Thai Financial Reporting Standards No. 9 (IFRS 9) Financial Instruments

The BOT has adopted IFRS 9, which was effective for periods beginning on or after 1 January 2020. The adoption has resulted in changes of classification, measurement of financial assets and financial liabilities, and impairment of financial assets.

The BOT recognized the impact of initial application by adjusting the opening balance of the equity section, which resulted in an increase of equity as at January 1, 2020 by THB2,006 million.

4. Changes in Accounting Policies (continued)

4.1 Thai Financial Reporting Standards No. 9 (TFRS 9) Financial Instruments (continued)

The new classification of financial assets and financial liabilities on January 1, 2020 are as follows:

Unit : Million THB

Instruments	Previous Classification		New Classification	
	Classification	Carrying Amount	Classification	Carrying Amount
Financial Assets				
Cash and Deposits	Amortized cost	450,322	Amortized cost	380,094
			Fair value through other comprehensive income	70,238
Reserve Tranche and Special Drawing Rights Holdings	Amortized cost	66,949	Amortized cost	66,949
Investment in Securities	Amortized cost	361,002	Amortized cost	361,002
	Fair value	3,727,395	Fair value through profit or loss	295,524
			Fair value through other comprehensive income	3,431,871
Loans	Amortized cost	768	Amortized cost	768
Other Assets	Amortized cost	391,752	Amortized cost	390,377
			Fair value through other comprehensive income	3,371
	Fair value	15,929	Fair value through profit or loss	15,929
Financial Liabilities				
Deposits	Amortized cost	494,873	Amortized cost	494,873
Special Drawing Rights Allocations	Amortized cost	40,499	Amortized cost	40,499
Securities Sold under Repurchase Agreements	Amortized cost	551,855	Amortized cost	551,855
Debt Securities Issued by the Bank of Thailand	Amortized cost	5,022,215	Amortized cost	5,022,215
Other Liabilities	Amortized cost	365,411	Amortized cost	365,411
	Fair value	9,334	Fair value through profit or loss	9,334

4. Changes in Accounting Policies (continued)

4.1 Thai Financial Reporting Standards No. 9 (TFRS 9) Financial Instruments (continued)

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.

4.2 Thai Financial Reporting Standards No. 16 (TFRS 16) Leases

The BOT has adopted TFRS 16, which was effective for periods beginning on or after 1 January 2020. The adoption has resulted in changes in accounting policies for leases. The BOT as a lessee recognize high-value leases of over one year in the statement of financial position for both assets (right-of-use) and liabilities (lease liabilities) and recognize related expenses in the statement of income.

As permitted by the standard, the BOT applied the TFRS 16 by using the modified retrospective approach which has no impact on retained earnings.

5. Classification and Measurement of Financial Assets and Financial Liabilities

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
Financial Assets					
Cash and Deposits		65,791		578,100	643,891
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		3,755	445,087	469,317

5. 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
Financial Liabilities					
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			397,698	416,268

6. Cash and Deposits

Unit : Million THB

	2020	2019
Cash and cash equivalents		
Cash	95,035	49,946
Demand deposits	12	14
Foreign currency demand deposits	<u>350,604</u>	<u>267,906</u>
Total cash and cash equivalents	445,651	317,866
Foreign currency time and special deposits	<u>198,240</u>	<u>132,456</u>
Total	<u>643,891</u>	<u>450,322</u>

Foreign currency time deposits as at December 31, 2020 amounting to THB197,964 million are held for international reserve management purposes, not for meeting short-term obligations.

7. Reserve Tranche and Special Drawing Rights Holdings

	Unit : Million THB	
	2020	2019
Reserve tranche		
Quota subscribed in International Monetary Fund (IMF)	139,162	134,064
<u>Less:</u> IMF current account no. 1	(741)	(4,875)
Promissory notes payable to IMF	<u>(100,435)</u>	<u>(103,489)</u>
	37,986	25,700
Special Drawing Rights Holdings	<u>42,902</u>	<u>41,249</u>
Total	<u>80,888</u>	<u>66,949</u>

8. Investment in Securities

	Unit : Million THB	
	2020	2019
Domestic securities - amortized cost		
Government and state enterprise bonds	<u>424,990</u>	<u>361,002</u>
Total securities invested in Thailand	<u>424,990</u>	<u>361,002</u>
Foreign currency securities - fair value		
Treasury bills and short-term debt securities	324,921	374,035
Treasury bonds and long-term debt securities	3,253,183	3,057,836
Other investments	<u>503,774</u>	<u>295,524</u>
Total foreign currency securities	<u>4,081,878</u>	<u>3,727,395</u>
Investment in BSF - fair value	<u>1,000</u>	<u>-</u>
Total	<u>4,507,868</u>	<u>4,088,397</u>

Fair value of securities invested locally stated at amortized cost as at December 31, 2020 amounted to THB446,760 million.

9. Loans

	Unit : Million THB	
	2020	2019
Soft loans to financial institutions, lending to Small and Medium-sized Enterprises (SMEs) affected by the COVID-19	118,127	-
Loans to the IMF under the NAB	<u>633</u>	<u>769</u>
Total	<u>118,760</u>	<u>769</u>

9. Loans (continued)

The soft loans to financial institutions, lending to SMEs 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).

The loans to the IMF under the New Arrangements to Borrow (NAB) are the commitment with the IMF as mentioned in Note 27.3.1.

10. Premises and Equipment

Unit : Million THB

	2020								
	Cost				Accumulated Depreciation				Net
	Opening Balance	Increases	Decreases	Closing Balance	Opening Balance	Increases	Decreases	Closing Balance	
Land	2,193	-	-	2,193	-	-	-	-	2,193
Buildings	5,593	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>
Total	<u>12,848</u>	<u>606</u>	<u>422</u>	<u>13,032</u>	<u>6,775</u>	<u>636</u>	<u>81</u>	<u>7,330</u>	<u>5,702</u>

Unit : Million THB

	2019								
	Cost				Accumulated Depreciation				Net
	Opening Balance	Increases	Decreases	Closing Balance	Opening Balance	Increases	Decreases	Closing Balance	
Land	2,193	-	-	2,193	-	-	-	-	2,193
Buildings	5,561	32	38	5,555	3,429	201	36	3,594	1,961
Equipment	4,959	203	206	4,956	2,951	435	205	3,181	1,775
Work in progress	<u>189</u>	<u>445</u>	<u>533</u>	<u>101</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>101</u>
Total	<u>12,902</u>	<u>680</u>	<u>777</u>	<u>12,805</u>	<u>6,380</u>	<u>636</u>	<u>241</u>	<u>6,775</u>	<u>6,030</u>

Depreciation expenses for the year 2020 and 2019 were THB636 million each.

Premises and equipment as at December 31, 2020, included right-of-use assets amounted to THB43 million, depreciation amounted to THB21 million and accumulated depreciation of right-of-use assets amounted to THB21 million.

11. Other Assets

	Unit : Million THB	
	2020	2019
Receivables for unsettled sales of securities	269,704	127,271
Claim on debt securities under repurchase agreement	-	114,589
Quota subscribed in the IMF - THB	101,176	108,364
Others	<u>99,254</u>	<u>58,241</u>
Total	<u>470,134</u>	<u>408,465</u>

The item “Others” as at December 31, 2020 and 2019 amounted to THB99,254 million and THB58,241 million, respectively. They included the net balances of intangible assets (computer software and systems) of THB408 million¹ and THB433 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.

12. 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, 2020, the amount of provision for expected credit losses was immaterial.

13. Deposits

	Unit : Million THB	
	2020	2019
Non interest-bearing deposits		
Government	499,361	338,847
Financial institutions	157,597	135,154
Others	<u>8,114</u>	<u>3,447</u>
Total non interest-bearing deposits	665,072	477,448
Interest-bearing deposits	<u>28,600</u>	<u>17,425</u>
Total	<u>693,672</u>	<u>494,873</u>

¹ The beginning balance in 2020 amounted to THB2,049 million; during the year there was addition of THB105 million, and deduction for accumulated amortization of THB1,746 million. Amortization expenses for the year 2020 were THB130 million.

13. Deposits (continued)

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.

14. 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, 2020 and 2019, the BOT was allocated the balance of SDR970 million, which was equivalent to THB42,039 million and THB40,499 million, respectively.

15. Securities Sold under Repurchase Agreements

The outstanding balances of the securities sold under repurchase agreements as at December 31, 2020 and 2019 were THB648,997 million and THB551,855 million, respectively. In 2020, the balances of transactions for the purpose of liquidity management and international reserve management amounted to THB619,187 million and TH29,810 million, respectively.

Securities are held as collateral under repurchase agreements, as at December 31, 2020, stated at book value of THB525,564 million or calculated at fair value of THB547,355 million.

16. Debt Securities Issued by the Bank of Thailand

	Unit : Million THB	
	2020	2019
Bank of Thailand bonds		
Remaining maturity:		
- 1 year or less	2,544,939	2,867,098
- over 1 year	878,179	902,017
<u>Less: held by the BOT</u>	<u>(80,550)</u>	<u>(83,500)</u>
Total Bank of Thailand bonds	3,342,568	3,685,615
Other BOT debt securities	<u>1,873,900</u>	<u>1,336,600</u>
(Remaining maturity less than 1 year)		
Total	<u>5,216,468</u>	<u>5,022,215</u>

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 2020, the interest paid on BOT bonds and other BOT debt securities amounted to THB38,883 million and THB11,627 million, respectively. The interest paid is presented as part of interest expense.

16. Debt Securities Issued by the Bank of Thailand (continued)

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, 2020 amounted to THB5,227,112 million.

17. Other Liabilities

	Unit : Million THB	
	2020	2019
IMF current accounts no. 1 and 2	741	4,875
Promissory notes payable to the IMF	100,435	103,489
Payables for unsettled purchases of securities	257,289	118,138
Obligations to return debt securities	-	114,589
Net liabilities from foreign exchange swaps	27,871	15,473
Employee benefit obligations	11,656	7,778
Others	<u>30,325</u>	<u>18,422</u>
Total	<u>428,317</u>	<u>382,764</u>

Employee benefit obligations as at December 31, 2020 included the obligation from pension plan amounted to THB6,176 million and the obligation from post-employment medical plan amounted to THB5,480 million. Changes in the present value of the employee benefit obligations are presented as follows:

	Unit : Million THB	
	2020	2019
Employee benefit obligations as at January 1	7,778	7,832
Current service cost	282	126
Interest cost	106	174
Benefit paid and transferred during the year	(687)	(599)
Actuarial loss	<u>4,177</u>	<u>245</u>
Employee benefit obligations as at December 31	<u>11,656</u>	<u>7,778</u>

17. Other Liabilities (continued)

The significant actuarial assumptions

	2020	2019
Discount rate	1.14% - 5.04%	2.40% - 7.41%
Average rate of increase in salaries	6.00%	6.50%
Medical cost trend growth rate	8.00%	2.00%
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, 2020 and 2019 is as follows:

	Unit : Million THB	
	2020	2019
Discount rate		
Increase of 1%	(1,261)	(740)
Decrease of 1%	1,527	868

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	
	2020	2019
Amount expected to be paid within 1 year	574	515
Amount expected to be paid between 1 to 5 years	2,608	2,343
Amount expected to be paid between 5 to 10 years	3,726	3,477

18. 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.

19. Reserve for Stabilization of Profit Payable to the Government

As at December 31, 2020, 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.

20. Assets and Liabilities Revaluation Reserve

	Unit : Million THB	
	2020	2019
Unrealized losses from foreign exchange revaluation of assets and liabilities	(335,054)	(514,757)
Unrealized gains from price revaluation of investments		
Foreign currency securities - treasury bills, treasury bonds, and debt securities	77,461	41,287
Foreign currency securities - other investments	116,507	37,048
Unrealized gains from revaluation of derivatives	1,777	6,562
Unrealized gains (losses) from revaluation of subscription in other organizations and others	<u>2,331</u>	<u>(1)</u>
Total	<u>(136,978)</u>	<u>(429,861)</u>

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.

21. Accumulated Losses

As at December 31, 2020 and 2019, the outstanding balances of accumulated losses were THB1,093,224 million and THB1,069,366 million, respectively. Changes to the accumulated losses are set out in the statement of change in equity.

For the year 2020, the losses were due to foreign exchange losses and interest payments on liquidity-absorption monetary operations which were conducted in accordance with the roles and responsibilities of the BOT to maintain economic stability. The accumulated loss has no impact on the operation of the BOT.

22. Interest Income

	Unit : Million THB	
	2020	2019
Interest income from domestic securities	9,564	10,177
Interest income from foreign currency securities	65,574	80,925
Other interest income	<u>5,742</u>	<u>15,675</u>
Total	<u>80,880</u>	<u>106,777</u>

23. Net Gains on Sale of Investments

	Unit : Million THB	
	2020	2019
Gain on sale of foreign currency securities – treasury bills, treasury bonds, and debt securities	19,586	30,485
Gain (Loss) on sale of foreign currency securities – other investments	<u>(1,135)</u>	<u>152</u>
Total	<u>18,451</u>	<u>30,637</u>

24. Other Expenses

	Unit : Million THB	
	2020	2019
Losses from derivatives	-	605
Depreciation and amortization	766	740
External fund manager management fees	1,069	821
Others	<u>1,736</u>	<u>1,661</u>
Total	<u>3,571</u>	<u>3,827</u>

25. 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 2020 and 2019, total remuneration paid to key management personnel were THB68 million and THB65 million, respectively.

26. Notional amount of derivatives

The notional amount of outstanding derivatives as at December 31, 2020 was as follows:

26.1 Foreign Exchange Forward Contracts

The notional amount of foreign exchange forward contracts was equivalent to USD18,103 million, which will be due in 2021.

26.2 Foreign Exchange Swap Contracts

The notional amount of foreign exchange swap contracts was equivalent to USD41,375 million, which will be due in 2021.

26.3 Interest Rate Swap Contracts

The notional amount of interest rate swap contracts was equivalent to USD195 million, which will be due in 2025 - 2030.

26.4 Foreign Exchange Option Contracts

The notional amount of foreign exchange option contracts was equivalent to USD8,129 million, which will be due in 2021.

26.5 Futures Contracts

The notional amount of buy and sell futures contracts including security futures, index futures and other futures was equivalent to USD2,522 million, which will be due in 2021.

26.6 Mortgage Backed Securities (To Be Announced - TBA)

The notional amount of mortgage backed securities (TBA) was equivalent to USD1,129 million, which will be due in 2021.

27. Commitments

As at December 31, 2020, the outstanding commitments of the BOT were as follows:

27.1 Securities Borrowing Facility

The BOT had outstanding obligations to return the borrowed debt securities amounting to THB109,895 million, which will be due in 2021 - 2032. The fair value of the borrowed debt securities sold under repurchase agreements as at December 31, 2020 amounted to THB107,581 million.

27.2 Other Agreements with Central Banks

27.2.1 The BOT has been part of the ASEAN Swap Arrangement (ASA), which provides liquidity support among ASEAN member countries since 1977. Under the ASA, the BOT is obliged to contribute up to USD300 million and may request up to 2 times of its contribution, or USD600 million. In 2019, the BOT renewed the ASA for two years, which will remain in effect until November 16, 2021. In 2020, neither the BOT nor its counterparties activated the arrangement.

27. Commitments (continued)

27.2 Other Agreements with Central Banks (continued)

27.2.2 Since March 24, 2010, the BOT, together with the Ministry of Finance of Thailand, have participated in the Chiang Mai Initiative Multilateralisation (CMIM) Agreement, which provides liquidity support to ASEAN member countries, China, Japan and South Korea. The Agreement was first amended on July 17, 2014 and then again on June 23, 2020 to enhance the effectiveness of its financing mechanisms. Should a CMIM party faces potential or actual financial difficulties, the BOT is obliged to contribute up to USD9,104 million. In case the BOT needs liquidity support, the BOT may request up to 2.5 times of its contribution, or USD22,760 million. In 2020, neither the BOT nor its counterparties activated the facilities under the agreement.

27.2.3 The BOT and the Bank of Japan (BOJ), acting as agent for the Ministry of Finance of Japan, signed the Amendment and Restatement Agreement of the fourth Bilateral Swap Arrangement (BSA) with an aim to provide financial support of up to USD3,000 million when a country experiences actual or potential financial difficulties. It also strengthens bilateral cooperation in reinforcing financial market stability, and further facilitates growing economic and trade relations between the two countries. Under this BSA, the BOT and the BOJ can conduct swap transactions using their local currencies (i.e. Thai Baht and Japanese Yen, respectively) for the provision of US Dollar. Under the latest amendment, the BOT is also able to swap its local currency for the Japanese Yen. This BSA is effective as from July 23, 2018 for a period of three years. In 2020, neither the BOT nor the counterparty activated this arrangement.

27.2.4 The BOT signed a Bilateral Local Currency Swap Arrangement (BSA) with the Bank of Japan (BOJ), with the objective to enhance financial stability of the two countries and further promote the usage of local currencies. The agreement allows each central bank to draw local currency in exchange of her own local currencies to another local currency in an amount up to THB240,000 million or JPY800,000 million, enabling both central banks to provide Thai Baht or Japanese Yen liquidity to eligible financial institutions in support of their cross-border operations. This BSA is effective as from March 31, 2020 for a period of three years. In 2020, neither the BOT nor the BOJ activated this arrangement.

27.2.5 The BOT renewed the Chinese Yuan/Thai Baht Bilateral Currency Swap Arrangement (BSA) with the People's Bank of China (PBC). The objective of the BSA is to promote the usage of local currencies in trade and direct investment settlement between the two countries in an amount of CNY70,000 million, or equivalent to THB370,000 million. This BSA is effective as from December 22, 2020 for a period of five years. In 2020, neither the BOT nor the counterparty activated the arrangement and none of the financial institutions in Thailand has applied for the swap line usage.

27. Commitments (continued)

27.3 Commitments with the International Monetary Fund (IMF)

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

27.3.1 Credit line to the IMF under the New Arrangements to Borrow (NAB) amounted up to SDR340 million (equivalent to USD480 million), which will expire on November 16, 2022. In 2020, the arrangement was amended to double the size of total NAB credit arrangement, leading to an increase in Thailand contribution from SDR340 million to SDR680 million (equivalent to USD960 million). The proposed amendments took effect on January 1, 2021.

27.3.2 Credit line to the IMF under the 2016 Borrowing Agreements in the form of Note Purchase Agreement amounted up to USD4,000 million, which expired on December 31, 2020. In this regard, the BOT agreed to participate in the 2020 Borrowing Agreements, which became effective on January 1, 2021 - December 31, 2024. The agreed credit line is reduced to USD1,723 million.

28. Contingent Liabilities

As at December 31, 2020, the BOT was involved in certain legal actions and claims arising from the ordinary course of business amounting to THB410 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.

29. Risk Management at the Bank of Thailand

Risk management process at the BOT follows appropriate governance structure by having a number of committees to oversee and manage the risk management process. The Risk Management Committee (RMC) and the Financial Risk Management Sub-Committee (FRMC) are executive governing bodies that supervise internal risk management processes. At the Board level, the Risk Oversight Committee (ROC) is a non-executive governing body appointed by the BOT Board to oversee the BOT's overall risk management policy. Its members are drawn from non-executive directors of the BOT Board as well as external experts. The ROC assists the BOT Board in overseeing key risks that may have significant impact on the BOT.

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

29. Risk Management at the Bank of Thailand (continued)

29.1 Financial Risk Management

29.1.1 The BOT's Financial Risks

The key financial risks for the BOT are as follows:

29.1.1.1 Foreign exchange rate risk arises from BOT's assets being mostly denominated in foreign currencies as a result of monetary and exchange rate policy implementation to ensure a stable economic and financial environment. The BOT's liabilities, on the other hand, are mostly denominated in Thai Baht.

29.1.1.2 Interest rate risk emerges when domestic interest rate paid by the BOT in the conduct of monetary policy differs from interest rate in foreign markets where the BOT invests.

29.1.2 Financial Risk Management of International Reserves

Management of international reserves takes into consideration safety, liquidity, return, and risk management. Investment in the international reserves is exposed to financial risks, namely market risk, credit risk, and liquidity risk.

The main objectives of financial risk management of international reserves consist of:

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

Financial risks of the international reserves are managed in accordance with the following approaches:

29.1.2.1 Market risk is the risk of loss due to changes in the market value of assets or currencies. Risk factors that lead to market risk are interest rate risk incurred from investment in fixed-income securities, foreign exchange rate risk incurred from investment in foreign currencies, and equity price risk incurred from investment in equities.

The BOT manages market risk by setting the benchmark investment portfolios, in which asset and currency allocations are set in accordance with optimal risk/return trade-off, according to each portfolio's objectives, and within the BOT Board's risk tolerance limit. Tracking error limits are used to ensure that risks from active management are within an acceptable level.

29. Risk Management at the Bank of Thailand (continued)

29.1 Financial Risk Management (continued)

29.1.2 Financial Risk Management of International Reserves (continued)

The benchmark investment portfolio is constructed by using international standard methodology, to obtain optimal asset and currency compositions which yield the highest return at a given total risk level. The BOT performs risk analysis by carrying out stress-tests to estimate potential impacts of various market scenarios on the reserves and also monitors value-at-risk to specify the maximum loss given a specific time horizon.

29.1.2.2 Credit risk is the risk that the BOT's counterparties or the issuers of the securities held by the BOT may default or may be unable to fulfill their financial obligations to the BOT. It includes the risk of deterioration in the value of securities resulted from the credit rating downgrade of issues or issuers. The BOT measures credit risk through the calculation of expected credit loss and controls credit risk by setting minimum credit rating, exposure limits, and employing standard agreements with counterparties as follows:

(1) Minimum Credit Rating, which is set for counterparties and issuers to limit the credit value-at-risk to a low level.

(2) Aggregate Credit Exposure Limits, which are set for counterparties and issuers in the form of deposit-equivalent exposure in aggregate.

(3) Individual Credit Exposure Limit, which is set for each counterparty based on its credit rating. The limit may also be reduced based on indicators of potential credit downgrading.

(4) Sovereign Credit Limits, based on country credit ratings, are also used as constraints in portfolio benchmark construction.

(5) Credit Asset Limit is set to limit the exposure of the international reserves that possess credit risk.

(6) The BOT utilizes international standard agreements for OTC transactions and margin requirements to help reduce counterparty risk.

29.1.2.3 Liquidity risk is the risk of loss arising from the inability to liquidate assets at a reasonable price within the specified period.

In managing liquidity risk, BOT ensures that investments in highly liquid assets is adequate for liquidity need that may arise from its duty in foreign exchange rate policy. BOT also sets appropriate levels for illiquid assets based on the cost-benefit comparisons between the returns from liquidity premiums and the costs of liquidation.

29. Risk Management at the Bank of Thailand (continued)

29.2 Integrated Operational Risk Management

The Enterprise Risk Management Department (ERMD) is responsible for the development of operational risk management framework, tools, and procedures in line with international standards. Enterprise Risk Management Policy has been instituted to ensure that overall risk management of the BOT continues to keep pace with the fast-changing environment. Key areas of risk management policy include:

(1) Information Technology Risk Management: The BOT identifies, analyzes, and monitors key IT risks as well as ensure compliance with IT-related regulations and standards following its IT Risk Management Framework. Given the increasing importance and challenge of IT risk management, in 2020, the BOT has established the IT Risk Management Sub-Committee to assist the Risk Management Committee in monitoring and approving IT risk management policies and associated practices, as well as monitor and control risk at the appropriate level. Also, in response to the rising magnitude and complexity of cyber threats, the BOT has continued to enhance its cyber resilience capabilities including putting in place secure Work from Home (WFH) platform, enhancing Advance Threat Protection systems, automating security incident detection and response mechanism, as well as performing regular red teaming exercise. On the people aspect, the BOT has enhanced its employee's digital mindset and capabilities through increasing cyber risk awareness and having Cyber Security Incident Response exercise for both operational level and executive level, as well as expanding collaboration network in order to exchange cyber threat intelligence with relevant organizations.

(2) Compliance Risk Management: The BOT developed a database on BOT-related legislations for risk monitoring and assessment as well as mechanism for monitoring, testing, and surveillance of operational compliance. ERMD developed the Data Protection Risk Management Framework to ensure effective data protection in compliance with Thailand's Personal Data Protection Act B.E. 2562 (2019). Furthermore, ERMD has a plan to evaluate this framework to be equivalent to international standards such as GDPR and ISO 27701.

29. Risk Management at the Bank of Thailand (continued)

29.2 Integrated Operational Risk Management (continued)

(3) Business Continuity Management: The BOT keeps improving its business continuity management capabilities. In 2020, the BOT was certified to comply with ISO 22301: 2012 Business Continuity Management Systems for the critical payment systems operated by the BOT (BAHTNET and ICAS). In this regard, the BOT established the Business Continuity Management Policy which describes objectives and framework for Business Continuity Management System (BCMS) within the BOT. In 2020, the BOT has activated its business continuity plan in response to the COVID-19 pandemic. The BOT has closely monitored the situations, set up response processes, allocated budget and resources, especially IT resources, to ensure employees' health and safety, and support those working from home. Furthermore, to ensure continuity of all critical operations, the BOT has implemented split operations and established alternative sites adhering to safe workplace guidelines and recommendations issued by the Ministry of Public Health. In addition, the BOT has implemented various prevention, detection, and mitigation measures to reduce risks arising from COVID-19. As a result, all critical operations have been operated without interruption and more importantly, all BOT employees are safe from COVID-19 infection.

In order to effectively monitor and report key risks, BOT deploys the following risk management tools:

(1) Control Self-Assessment (CSA): The BOT requires all departments to annually conduct the CSA in order to identify, assess, and analyze risks associated with their business operations and strategic initiatives. These risk assessment results, in turn, are used to develop risk mitigation measures, thereby help improve the efficiency and effectiveness of work processes.

(2) Key Risk Indicators (KRIs): The tools are employed to monitor the BOT's material risk exposures. Key risk results together with the respective outlooks are reported to RMC on a quarterly basis, in order to establish corrective or preventive controls correspondingly.

(3) Operational Risk Incident Reporting: The BOT requires any department incurring the loss and the responsible departments to report a loss incident or a near-miss event through the in-house Risk Management System (RMS). The RMS serves as a database for risk events which will be used for analyzing and identifying appropriate controls to prevent future occurrences.

30. Fair Values of Financial Assets and Liabilities

30.1 Fair Values Hierarchy of Financial Assets and Liabilities

As at December 31, 2020 and 2019, the financial assets and liabilities measured at fair values are presented as follows:

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
Derivative assets	<u>162</u>	<u>20,313</u>	<u>-</u>	<u>20,475</u>
Total	<u>3,793,313</u>	<u>375,831</u>	<u>3,755</u>	<u>4,172,899</u>
Financial liabilities				
Derivative liabilities	<u>28</u>	<u>18,542</u>	<u>-</u>	<u>18,570</u>
Total	<u>28</u>	<u>18,542</u>	<u>-</u>	<u>18,570</u>

Unit : Million THB

	2019			
	Level 1	Level 2	Level 3	Total
Financial assets				
Foreign securities	3,465,736	261,659	-	3,727,395
Derivative assets	<u>9</u>	<u>15,920</u>	<u>-</u>	<u>15,929</u>
Total	<u>3,465,745</u>	<u>277,579</u>	<u>-</u>	<u>3,743,324</u>
Financial liabilities				
Derivative liabilities	4	9,326	-	9,330
Resale liabilities	<u>-</u>	<u>4</u>	<u>-</u>	<u>4</u>
Total	<u>4</u>	<u>9,330</u>	<u>-</u>	<u>9,334</u>

30.2 Fair Values Hierarchy

Level 1 – quoted prices (unadjusted) 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.

30. Fair Values of Financial Assets and Liabilities (continued)

30.3 Valuation Methods and Techniques used in Fair Value Measurement

Fair values of foreign securities 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 pricing model with market prices input from comparable assets or liabilities.

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.

31. Reclassification

There were reclassified items in the statement of financial position as at December 31, 2019 and the statement of income for the year ended December 31, 2019 for consistency purposes. The reclassifications had no effect on the previously reported statements. The reclassifications were shown as follows:

	Unit : Million THB		
	Before Reclassified	Amount Reclassified	After Reclassified
Loans	-	769	769
Other assets	408,026	439	408,465
Other liabilities	381,556	1,208	382,764
Interest income	106,733	44	106,777
Other revenue	4,082	(44)	4,038

32. Approval of the Financial Statements

On March 24, 2021, the BOT Board authorized the issuance of these financial statements.
