



CAPITAL ADEQUACY RATIO DISCLOSURE

30 June 2021

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1. Scope of CAR calculation

As at 30/06/2021, the Bank has three (03) subsidiaries as follows:

- Techcom Securities Joint Stock Company (main business: securities investment)
- AMC – Techcombank (main business: debt and asset management)
- Techcom Capital Joint Stock Company (main business: fund management)
- When calculating the consolidated CAR as at 30/06/2021, the Bank uses the data in its consolidated financial statement (the Bank and its three subsidiaries as mentioned above).

At the time of this report, the Bank does not have a subsidiary in insurance business (not included in the consolidated CAR calculation).

2. Owner's equity structure:

Techcombank's owner's equity includes:

Main components of tier-1 capital:

- Charter capital (contributed capital)
- Reserves for increasing charter capital
- Reserves for professional development
- Financial reserves
- Retained earnings
- Share premium

Main components of tier-2 capital:

- 80% general provision in accordance with SBV's regulations on the classification of assets, provision level, risk provisioning method, and use of provisions by credit institutions and branches of foreign banks.
- Subordinated debts issued by the bank with tenor of 7 years and meet SBV's conditions on subordinated debts shall be included in tier-2 capital.
- Minorities interests
- Deductibles from tier-2 capital include: purchases of and investments in subordinated debts issued by other credit institutions and branches of foreign banks that fully meet SBV's conditions to be included in tier-2 capital of such foreign banks (excluding subordinated debts accepted as collateral, discounting, re-discounting of the customer).

Table 1 – Capital

Unit: million VND

Item	30/06/2021	
	Single	Consolidated
Tier 1 capital	76,427,623	83,242,223
Tier 2 capital	1,658,864	2,364,786
Deduction from capital	1,052,209	-
Capital	77,034,277	85,607,009

3. Capital Adequacy Ratio:

3.1 CAR calculation process

Techcombank has developed an automated program for CAR calculation on a monthly basis. In addition, Techcombank has issued a Regulation on CAR management and a CAR calculation process in compliance with Circular 41/2016/TT-NHNN, which provides for detailed responsibilities and mandates of stakeholders in the inputting of data, calculation, review and reporting on CAR as well as early warning thresholds in CAR management.

3.2 Capital planning

Techcombank proactively manages its CAR in compliance with SBV's regulatory requirements while maintaining its competitive advantage in its business operations. This is achieved by considering and adopting suitable measures to stabilize and grow owner's equity, such as retaining earnings to increase its tier-1 capital.

Table 2 – CAR, risk-weighted assets, required capital by types of risk

Unit: million VND, %

Item	30/06/2021	
	Single	Consolidated
1 Credit risk weighted assets	453,325,361	472,161,774
2 Counterparty risk weighted assets	3,651,687	3,651,687
3 Capital requirement for operational risk	4,652,061	5,097,205
4 Capital requirement for market risk	1,838,926	1,838,926
5 Total risk-weighted assets	538,114,386	562,515,094
Capital ratios		
6 Tier-1 capital ratio	14.20%	14.80%
7 CAR	14.32%	15.22%

4. Credit risk:

4.1 Credit risk management policy

4.1.1 Credit risk management strategy:

Pursuant to regulations and guidances of Laws and State Bank of Vietnam, especially Circular No.13/2018/TT-NHNN and Circular No.40/2018/TT-NHNN that amends and supplements some contents of Circular No.13, Techcombank has developed, improved, and implemented a comprehensive risk management framework, with credit risk being one of the material risks that the Bank focuses on. Based on the bank-wide Risk Management Policy, regulations on credit risk management (including credit counterparty risk) have been established, ensuring that credit risk is identified, assessed, measured, monitored and controlled effectively, enabling Techcombank to achieve its plans and objectives while complying with regulatory requirements.

Credit risk management at Techcombank is performed based on the orientation of principles: High-level supervision of the BOD and BOM; Comprehensive credit risk management; All credit activities are conducted within the scope of internal document system on Credit Risk Management Regulation, Credit Orientation and Credit Granting Process for each customer segment; Develop, improve systems to measure and control credit risk; Develop credit risk management strategy in compliance with regulations of Laws and SBV; Control conflicts of interests in credit granting activities.

Related to Techcombank's credit risk management structure, credit risk management policy stipulates three main components: (i) The BOD is the highest-level authority in credit risk management, through the advisory and consulting role of the Board Risk Committee (BRC) and supervision on the basis of Risk Appetite; (ii) Risk management tools and methods, including organizational structure – to ensure effective deployment of risk management activities (such as Executive Risk Committee, Credit Committees and levels of credit approvers, other committees having the function of credit risk management and making decisions on credit risk management, Risk Management Division) and other tools and methods; (iii) Risk Management Culture emphasizes that all employees have the rights and responsibilities in risk management.

In addition, credit risk management policy also specifies details of the credit risk process, from risk identification, measurement, acceptance, debt classification, risk provisioning and mitigation, to risk monitoring and controlling, which helps to lay out the direction and guidance in credit risk management across the Bank, ensuring close alignment with Techcombank's process on credit granting and debt management. The Bank is especially keen on developing and improving techniques and methods to measure and quantify risks as well as credit risk stress testing to ensure compliance with not only SBV's regulatory requirements but also to be on par with international best practices and standards such as IFRS, Basel II, Basel III, All of these contents have been documented in Techcombank's policies and regulations on credit risk management, especially the Appendix on Credit risk measurement models governance, under the Regulation on Credit Risk Management, has established minimum principles and standards in the development, validation, implementation, application and review of credit risk measurement models.

The Regulation on Credit risk management at Techcombank also establishes requirements on controls of limits and prudential ratios in bank's credit activities, ensuring the compliance with the Law on Credit Institutions No.47/2010/QH12 and its amendments, and with Circular No.22/2019/TT-NHNN which specifies prudential ratios and limits in the operations of banks and branches of foreign banks.

4.1.2 Internal credit rating system:

The internal rating system consists of financial and non-financial indicators used to measure the risk and the customer's ability not to repay debt as agreement based on qualitative and quantitative assessments. From that, the rating results will be used to support the making-decision process for credit granting, pricing, analyzing for ratings movement and reduction of credit quality ...

The rating process is developed to ensure the compliance with regulations on the credit risk measurement models governance stipulated at the Regulation on Credit risk management, establishing the implementation orders and procedures as well as responsibilities of relevant units in customer credit rating at Techcombank. In which, Business Units are mainly responsible for collecting customer information and inputting data into the system, ensuring the accuracy and authenticity of customer information, Risk Management Division is responsible for assessing customer information and proof documents, approving ratings/ requesting re-ratings/ adjusting customer ratings according to the regulated authority.

Information of Techcombank's internal credit rating system is always available and can be provided upon request by Internal audit, external audit and other regulatory agencies for independent audit/inspection purposes.

4.1.3 Measuring, monitoring and controlling credit risks

Techcombank measures credit risk through risk measurement models such as Credit rating/Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EAD), Expected Loss (EL) and Expected Credit Loss (ECL). These models are built, developed and validated according to the credit risk measurement models governance under the Regulation on Credit risk management, at the same

time, close to the good international standards like IFRS, Basel II, Basel III...

Regarding debt classification and credit risk provisioning, Techcombank has automatic debt classification on Globus T24 software, and uses the debt classification results as basis for credit risk provisioning, which fully meets the related requirements of the SBV.

4.1.4 Credit risk policies and management process

The Bank has built a system of documents and processes throughout the customer's journey, from identifying, proposing to grant credit, appraising, approving credit and debt management until customer's debt settlement at Techcombank. From the high-level documents issued by the Board of Directors, CEO and Divisions have issued subordinate documents to concretize and guide in more details on the roles and responsibilities of individuals, divisions and units involved in credit risk controlling. Specifically:

- Regulation on standards for credit activities: Set out the minimum principles and requirements that need to be ensured when designing, issuing and implementing detailed contents of credit activities at Techcombank. The regulation is the basis for issuing credit granting processes as well as developing credit solutions/products for customers.
- Credit granting process for each customer segment: procedures for granting credit to customers, including detailed guidance on how to analyze, assess and appraise credit risk of customers.
- Post-disbursement control process/Debt management process for each customer segment: procedures, contents, principles and responsibilities of units in monitoring and controlling each credit facility after they are disbursed. These processes specify the frequency of credit risk controlling, minimum frequency of on-site examinations on the customers to collect information for effective risk control. Through such post-disbursement checks and controls, Techcombank can quickly identify and detect warning signals of deteriorating credit quality that may negatively affect customer's ability to perform its credit obligations to Techcombank, then timely implement solutions to mitigate credit risks for the Bank.
- Collateral valuation process: in addition to the guidance on collateral valuation, the documents also specify when to conduct periodic collateral re-valuation to ensure that the collateral value is not falling compared to the original valuation, and necessary measures to be taken of the collateral falls in value.

4.1.5 Credit appraisal:

Credit risk management regulations have stipulated high-level requirements and principles for credit granting appraisal, helping to fully convey the provisions of the Laws, SBV, especially at least the following contents:

- Identify the related person of customers, total outstanding of credit granting to customers, customers and his/her related person;
- Base on results of the customer's credit rating (if any), also including credit ratings from other credit institutions and foreign banks' branches;
- Asses the completeness of documents, legal status and recoverability of collateral in case of credit granting with collateral;
- Appraise the ability to fulfill obligations and commitments of the guarantor in the case of credit extension with guarantee from a third party.

More detailed standards, requirements and guidelines for credit appraisal are also issued by Techcombank to ensure the effective operations of the above contents and requirements.

After the appraisal process, Techcombank proposes suitable credit granting to customers based on their financial capacity, business plans, investment projects and capital usage to submit to the competent authorities for approval according to regulations.

4.1.6 Collateral management

Techcombank has developed a document system on collateral management, including Regulation on Accepting Collateral at Techcombank, Collateral Valuation Process, Guidance on accepting and managing each type of collateral to ensure strict compliance with regulatory and SBV's requirements, while mitigating risks that may adversely impact the business. Specifically:

- Regulation on Accepting Collateral at Techcombank: types of collateral that can be accepted, in line with relevant laws and regulations.
- Valuation process: methods to determine market value, valuation value, recovery value and time to handle each type of collateral, timeline for re-valuation of collateral.
- Guidance on accepting and managing each type of collateral: steps to accept and manage each type of collateral.

4.2 List of independent credit rating agencies to be used when calculating CAR

In the CAR calculation, Techcombank is using the credit rating provided by the following agencies: Moody's, Standard & Poor, and Fitch Rating. These are accepted by the SBV in accordance with Circular 41/2016/TT-NHNN.

4.3 List of collateral, third-party guarantee, netting on-balance sheet balance and credit derivative products eligible for mitigating credit risk

At the moment, the Bank has not applied the following credit risk mitigation techniques: on-balance sheet balance netting, third-party guarantee, and credit derivatives.

Where collateral is used as a means of mitigating credit risk, the collateral must belong to the following list:

- Cash, valuable papers, passbook issued by credit institutions or branches of foreign banks;
- Gold (standard gold, physical gold, jewelry gold convertible to 99.99 gold);
- Valuable papers issued by or guaranteed by Vietnamese Government or the SBV;
- Debt securities issued by foreign governments, public entities of foreign governments that are rated BB- or above by independent credit rating agencies;
- Debt securities issued by corporations rated BBB- or above by independent credit rating agencies;
- Shares listed on HCM or Hanoi Stock Exchange;

The mitigation of credit risk by using collateral is conducted in accordance with Techcombank's Regulation on CAR and Process for CAR calculation from time to time.

4.4 Claims, risk weights corresponding to credit ratings and total risk-weighted assets by each selected credit rating agency

Table 3 – Claims, risk weights corresponding to credit ratings and risk-weighted assets by selected credit rating agency

Unit: million VND

	Credit rating (S&P's, Fitch)	Credit rating (Moody's)	RW	Single	Consolidated
Claims from governments and central banks, PSE, municipal governments	AAA, AA+, AA, AA-	Aaa, Aa1, Aa2, Aa3	0%	-	-
	A+, A, A-	A1, A2, A3	20%	-	-
	BBB+, BBB, BBB-	Baa1, Baa2, Baa3	50%	-	-
	BB+, BB, BB-, B+, B, B-	Ba1, Ba2, Ba3, B1, B2, B3	100%	-	-
	Under B- or un-rated	Under B3 or un-rated	150%	-	-
Claims from foreign finance institutions or Vietnam branches of foreign banks	AAA, AA+, AA, AA-	Aaa, Aa1, Aa2, Aa3	20%	167,265	167,265
	A+, A, A-	A1, A2, A3	50%	2,913,511	2,913,685
	BBB+, BBB, BBB-	Baa1, Baa2, Baa3	50%	2,903,114	2,903,114
	BB+, BB, BB-, B+, B, B-	Ba1, Ba2, Ba3, B1, B2, B3	100%	1,782,327	1,782,327
	Under B- or un-rated	Under B3 or un-rated	150%	1,622,186	1,622,186
Claims from local credit institutions (original tenor of 3 months or more)	AAA, AA+, AA, AA-	Aaa, Aa1, Aa2, Aa3	20%	-	-
	A+, A, A-	A1, A2, A3	50%	-	-
	BBB+, BBB, BBB-	Baa1, Baa2, Baa3	50%	-	-
	BB+, BB, BB-	Ba1, Ba2, Ba3	80%	2,297,256	2,297,256
	B+, B, B-	B1, B2, B3	100%	10,502,676	10,502,676
	Under B- or un-rated	Under B3 or un-rated	150%	3,096,226	3,519,204
Claims from local credit institutions (original tenor of less than 3 months)	AAA, AA+, AA, AA-	Aaa, Aa1, Aa2, Aa3	10%	-	-
	A+, A, A-	A1, A2, A3	20%	-	-
	BBB+, BBB, BBB-	Baa1, Baa2, Baa3	20%	-	-
	BB+, BB, BB-	Ba1, Ba2, Ba3	40%	3,108,059	3,176,625
	B+, B, B-	B1, B2, B3	50%	4,455,923	4,455,945
	Under B- or un-rated	Under B3 or un-rated	70%	585,995	588,650
Total				33,434,536	33,928,932

4.5 Credit risk-weighted assets

Table 4 – Credit risk-weighted assets

Unit: million VND

	Risk-weighted assets	Single	Consolidated
I	Cash, gold, equivalents	-	-
II	Claims on VN government, SBV, State Treasury, Central Cities' People's Committees, Bank of Social Policy	-	-
III	Claims on DATC and VAMC	630,178	630,178
IV	Claims on international financial institutions	-	-
V	Claims on foreign governments and central banks	-	-
VI	Claims on foreign PSEs, local governments	-	-
VII	Claims on financial institutions	33,434,536	33,928,932
1	Foreign financial institutions and Vietnam branches of foreign banks	9,388,403	9,388,577
2	Local credit institutions	24,046,133	24,540,356
VIII	Financial lease	-	-
IX	Non-performing loans	1,086,687	1,086,687
X	Loans for securities trading	2,785,802	15,720,808
XI	Loans secured by real estate	102,990,854	102,990,854
1	Loans secured by commercial real estate	75,094,428	75,094,428
2	Loans secured by non-commercial real estate	27,896,425	27,896,425
3	Loans secured by mixed real estate	-	-
XII	Claims on SMEs	72,113,764	72,113,764
XIII	Specialized lending	50,694,441	51,995,582
XIV	Claims on corporates	148,965,240	151,349,199
1	Corporates with financial statements	129,505,715	131,889,675
2	Corporates without financial statements	15,805,715	15,805,715
3	Corporates of less than 1 year old	3,653,809	3,653,809
XV	Mortgage loans	7,191,549	7,191,549
XVI	Retail credit portfolio	17,894,574	17,894,574
XVII	Receivables from sale of non-performing loans	269,964	269,964
XVIII	Equity instruments, share purchased from enterprises	615,826	1,323,303
XIX	Purchases of accounts receivable of finance companies and financial leasing companies	-	-
XX	Other assets	14,651,947	15,666,381
	Total	453,325,361	472,161,774

4.6 Risk-weighted assets for counterparty credit risk

Table 5 – Risk-weighted assets for counterparty credit risk

Unit: million VND

	Risk-weighted assets	Single	Consolidated
I	Cash, gold, equivalents	-	-
II	Claims on VN government, SBV, State Treasury, Central Cities' People's Committees, Bank of Social Policy	-	-
III	Claims on DATC and VAMC	-	-
IV	Claims on international financial institutions	-	-
V	Claims on foreign governments and central banks	-	-
VI	Claims on foreign PSEs, local governments	-	-
VII	Claims on financial institutions	1,717,471	1,717,471
1	Foreign financial institutions and Vietnam branches of foreign banks	483,961	483,961
2	Local credit institutions	1,233,510	1,233,510
VIII	Financial lease	-	-
IX	Non-performing loans	-	-
X	Loans for securities trading	-	-
XI	Loans secured by real estate	-	-
1	Loans secured by commercial real estate	-	-
2	Loans secured by non-commercial real estate	-	-
3	Loans secured by mixed real estate	-	-
XII	Claims on SMEs	3,150	3,150
XIII	Specialized lending	-	-
XIV	Claims on corporates	1,931,067	1,931,067
1	Corporates with financial statements	1,652,433	1,652,433
2	Corporates without financial statements	278,145	278,145
3	Corporates of less than 1 year old	489	489
XV	Mortgage loans	-	-
XVI	Retail credit portfolio	-	-
XVII	Receivable from sale of non-performing loans	-	-
XVIII	Equity instruments, share purchased from enterprises	-	-
XIX	Purchases of accounts receivable of finance companies and financial leasing companies	-	-
XX	Other assets	-	-
	Total	3,651,687	3,651,687

4.7 Credit risk-weighted assets by industry

Table 6 – Credit risk-weighted assets by industry

Unit: million VND

	Industry	Single	Consolidated
I	Individuals and household businesses	88,139,033	101,074,039
II	Economic entities	353,843,364	358,022,860
1	Agriculture, forestry and fishery	727,258	727,258
2	Mining	1,192,271	1,361,270
3	Manufacturing and processing	50,094,696	50,439,941
4	Production and distribution of electricity, gas, hot water, steam and air conditioners	7,520,848	7,692,166
5	Water supply; management and treatment of waste water and solid waste	124,025	124,025
6	Construction	16,370,506	16,370,506
7	Wholesale and retail; repairing automobiles, motorbikes and other powered vehicles	50,469,396	50,469,396
8	Logistics (transportation and warehousing)	11,250,803	11,254,675
9	Accommodation and restaurants	5,663,823	5,677,573
10	Information and communication	680,251	680,251
11	Finance, business and insurance	37,250,338	37,584,688
12	Real estate	169,629,244	172,101,092
13	Professional activities, science and technology	589,103	1,209,175
14	Financial services and support services	514,136	514,136
15	Activities of the Communist Party, civil society, regulators, public security and national defense, compulsory social assurance	630,178	630,178
16	Education and training	140,986	191,028
17	Health care and social safety net	53,440	53,440
18	Art and entertainment	7,003	7,003
19	Other services	930,558	930,558
20	Informal domestic workers in households activities	4,500	4,500
21	Activities of international organizations	-	-
III	Other assets	11,342,964	13,064,875
	Total	453,325,361	472,161,774

Table 7 – Counterparty credit risk-weighted assets by industry*Unit: million VND*

	Industry	Single	Consolidated
I	Individuals and household businesses	-	-
II	Economic entities	3,651,687	3,651,687
1	Agriculture, forestry and fishery	-	-
2	Mining	-	-
3	Manufacturing and processing	788,944	788,944
4	Production and distribution of electricity, gas, hot water, steam and air conditioners	61	61
5	Water supply; management and treatment of waste water and solid waste	-	-
6	Construction	2,227	2,227
7	Wholesale and retail; repairing automobiles, motorbikes and other powered vehicles	176,038	176,038
8	Logistics (transportation and warehousing)	2,232	2,232
9	Accommodation and restaurants	-	-
10	Information and communication	796	796
11	Finance, business and insurance	1,817,033	1,817,033
12	Real estate	453,409	453,409
13	Professional activities, science and technology	-	-
14	Financial services and support services	-	-
15	Activities of the Communist Party, civil society, regulators, public security and national defense, compulsory social assurance	-	-
16	Education and training	-	-
17	Health care and social safety net	410,947	410,947
18	Art and entertainment	-	-
19	Other services	-	-
20	Informal domestic workers in households activities	-	-
21	Activities of international organizations	-	-
III	Other assets	-	-
	Total	3,651,687	3,651,687

4.8 Credit risk mitigation

Table 8 – Risk-weighted assets (on-balance sheet and off-balance sheet) eligible for credit risk mitigation (single)

Unit: million VND

	Classification	Total RWA before risk mitigation	Collateral	On-balance sheet netting	Guarantee	Credit derivatives	Total RWA after risk mitigation
1	Claims on government	630,178	3,484	-	-	-	630,178
2	Claims on financial institutions	33,434,536	-	-	-	-	33,434,536
3	Claims on Corporates	290,368,702	13,378,331	-	-	-	274,554,033
4	Loans secured by real estate	103,152,148	173,759	-	-	-	102,990,854
5	Mortgage loans	7,203,583	19,138	-	-	-	7,191,549
6	Individuals	23,279,585	1,043,832	-	-	-	22,094,559
7	NPL	1,089,968	2,201	-	-	-	1,086,687
8	Other assets	11,342,964	-	-	-	-	11,342,964
	Total	470,501,664	14,620,745	-	-	-	453,325,361

Table 9 – Risk-weighted assets (on-balance sheet and off-balance sheet) for credit risk mitigation (consolidated)

Unit: million VND

	Classification	Total RWA before risk mitigation	Collateral	On balance sheet netting	Guarantee	Credit derivatives	Total RWA after risk mitigation
1	Claims on the government	630,178	3,484	-	-	-	630,178
2	Claims on financial institutions	33,928,932	-	-	-	-	33,928,932
3	Claims on Corporates	294,053,802	13,378,331	-	-	-	278,239,133
4	Loans secured by real estate	103,152,148	173,759	-	-	-	102,990,854
5	Mortgage loans	7,203,583	19,138	-	-	-	7,191,549
6	Individuals	36,214,591	1,043,832	-	-	-	35,029,565
7	NPL	1,089,968	2,201	-	-	-	1,086,687
8	Other assets	13,064,875	-	-	-	-	13,064,875
	Total	489,338,077	14,620,745	-	-	-	472,161,774

5. Operational risk:

5.1 Operational risk management policy

According to the Bank's risk management policy, operational risk is among material risks. In operational risk management, Techcombank manages 10 types of operational risk together with reputation risk and strategy risk. 10 types of operational risk include the followings:

- External rules and regulations: Potential risk caused by non-compliance with governing laws or regulations or changes to governing laws or regulations or changes to the interpretation or application of governing laws;
- Legal liability: Potential risk or penalty following a lawful request for compensation to any unit or individual in the Bank;
- Legal enforceability: Potential risk caused by failure to protect legitimate interests of the Bank or difficulties when exercising the rights of the Bank;
- Damage to asset: Potential risk or damage to physical assets and other assets due to natural disasters and other events;
- Safety and security: Potential risk or damage to the health or safety of employees, customers or third parties that arises from internal misconducts or external events
- Internal fraud or deceitfulness: Potential risk caused by employee action aiming at deceiving, misappropriation of assets or violation of governing laws or the Bank's policy;
- External fraud: Potential risk caused by external criminal act such as fraud, thief and other crimes;
- Information security & technology risk: Potential loss due to the application of technology in banking operations or from unauthorized access, use, disclosure, interruption, modification of information;
- Execution, delivery, and process management: Potential loss resulting from failure in implementing an established process or weaknesses in process design;
- Model & data risk: Potential loss due to significant differences between the outputs of risk measurement models and actual experience, or omissions in data collection, analysis, and management.

The strategy and basic principles adopted by the Bank in managing operational risk are:

- The BOD is the highest-level authority accountable to developing "top-down messages" to promote the risk management culture.
- The BOD and BOM establish corporate culture based on consistent and strong operational risk management culture and ensure that operational risk management culture is fostered and maintained in all activities of the Bank.
- All units and individuals in the system have rights and obligations to manage risk, therefore, they are obliged to giving account, reporting and controlling risk in their operations.
- The Bank develops, executes and maintains a consistent operational risk management structure which is fully translated to its general risk management processes.

All operational risk management activities of the Bank is based on the operational risk appetite indicators and limits approved by the BOD. Such operational risk appetite indicators and limits must be well aligned with the Bank's risk appetite and reviewed on a yearly basis. The BOD approves and

reviews operational risk appetite indicators and limits to ensure alignment with the nature and level of operational risk acceptable to the Bank.

The execution of operational risk management policy is translated to the governance and structure and implementation of operational risk management:

- Establish and operate Operational Risk Management subcommittee under Risk Committee, which is in charge of managing and governing all matters relating to operational risk in the system to ensure that operational risks are identified, assessed and mitigated in a timely and consistent manner in accordance with the Bank's Risk management policy, governing laws and such operational risk is managed by decisions/ approval.
- Articulating and completing the 03-line-of-defense model against operational risk:
- + **First line of defense:** All employees of Techcombank are responsible for identifying, evaluating, mitigating, managing, handling and reporting risks in their operations. The Head of Unit is the first person who is fully liable to operational risk control at the unit, following the approved operational risk limit;
- + **Second line of defense:** Operational Risk Management – Risk Management Division and other units independently managing and supervising operational risk management shall develop the Risk Management Policy, internal regulations on risk management, risk measurement tools and systems, collaborating with the first line of defense in identifying, controlling and mitigating risk and complying with governing laws;
- + **Third line of defense:** Internal Audit shall review, evaluate independently and objectively the completeness, alignment, effectiveness of internal control system of the bank as per regulations on the operations of audit and risk management.

5.2 Business Continuity Plan

Every 6 months, BOD and BOM meetings will be held for reporting crisis management plans, including business continuity plan. The Bank must hold rehearsal sessions for different scenarios. BOD and BOM shall also participate in such sessions.

This plans include business continuity plan, disaster recovery plan, data recovery plan as well as fire prevention and fighting plan...

The Bank adopts the high-level Policy on Business Continuity Management with all units and individuals. The business continuity plan shall be tested on a regular basis and Business Continuity Management shall analyze the result and report to the Board of Management.

The Business Impact Analysis shall be carried out annually. Based on this analysis, material units/ activities are identified, for which, back-up plans are established.

Back-up premise shall be tested every 06 months by evacuating staffs from Head Office to the back-up premise. So far, all of the test conducted at the back-up premise have been successful.

All departments at Head Office and branches have their contact tree established in the business continuity plan and each employees is informed of the people they need to contact. The testing of contact tree shall be carried out every 06 months and the Bank has achieved 80-90% of its plan for contact tree, evacuation and back-up premise. Currently, the Bank is testing the contact format using SMS and auto call in case of emergency to enhance the effectiveness of its contact tree.

The Bank developed its crisis management plan, describing severe crisis incidents which may have impacts on Techcombank's operations, in which, threats to safety of employees, assets and business continuity, customer's faith and reputation of the Bank must all be controlled effectively.

Crisis Management Plan (CMP) is the combination of the following materials:

- Business Continuity Plan which is assessed and developed for the following incidents:
 - + Environment: natural disaster (flood/ Earthquake/ storm/ epidemic ...) and severe disruption to infrastructures (electricity/ telecommunication...)
 - + Political and social events: war/ terrorism/ riot ...
 - + Criminal: kidnapping/ blackmailing/ murder/ explosion or fire
- Liquidity provision plan which is assessed and developed for business incidents: strike/ liquidity issues/ reputation issues/ loss of important materials, information or data
- IT disaster recovery plan and reaction plan for information security incidents which is assessed and developed for IT incidents such as: loss of connection/ inactivity of material systems, cyber-attacks to data and IT.

5.3 Operational risk capital requirement
Table 10 - Operational risk capital requirement, Business indicators and components of business indicators
(Unit: million VND)

Items on Income Statement	Item	Single			Consolidated		
		01/07/2020 to 30/06/2021	01/07/2019 to 30/06/2020	01/07/2018 to 30/06/2019	01/07/2020 to 30/06/2021	01/07/2019 to 30/06/2020	01/07/2018 to 30/06/2019
 Interest and similar income – Interest and similar expenses 	IC	22,651,725	15,321,694	12,789,037	23,314,941	15,776,703	12,968,250
Interest and similar income	IC1	31,430,879	26,100,292	23,331,957	32,239,438	26,642,872	23,529,714
Interest and similar expenses	IC2	8,779,154	10,778,597	10,542,920	8,924,497	10,866,168	10,561,464
Fees and commission income + Fees and commission expenses + Income from other activities + Expense of other activities	SC	14,449,173	13,235,739	10,423,770	16,878,410	15,405,065	12,139,763
Fees and commission income	SC1	4,395,584	3,629,236	2,894,330	6,838,561	5,765,775	4,578,618
Fees and commission expenses	SC2	1,895,714	1,611,631	1,119,635	1,984,022	1,650,295	1,160,379
Income from other activities	SC3	5,305,908	4,890,859	4,143,919	5,317,757	4,896,607	4,155,338
Expense of other activities	SC4	2,851,966	3,104,012	2,265,885	2,738,069	3,092,388	2,245,427
 Net gain/loss from forex trading + Net gain/loss from securities held-for-trading + Net gain/loss from investment securities 	FC	1,491,104	1,928,881	750,099	2,448,077	2,369,519	643,365
Net gain/loss from forex trading	FC1	225,137	74,003	155,574	225,137	74,003	155,574
Net gain/loss from securities held-for-trading	FC2	352,120	409,977	323,964	352,131	409,699	323,866
Net gain/loss from investment securities	FC3	913,847	1,444,900	270,561	1,870,809	1,885,817	163,926
Business Indicator	BI	38,592,002	30,486,314	23,962,905	42,641,427	33,551,287	25,751,378
Operational risk capital requirement	Kor	4,652,061			5,097,205		
Total assets by operational risk	12.5 * Kor	58,150,763			63,715,058		

6. Market risk

6.1 Market risk management policy

The structure of Market Risk Management

- Board of Directors/ Board Risk Committee:
 - + Board of Directors: is the highest authority managing Market Risk of the system.
 - + Board Risk Committee: oversee Market Risk Management and makes approval of risk acceptance decisions before proposing to the BOD for approval and issuance.
- Market Risk Committee: manages and executes market risk management activities under the Risk Management Policy, Market Risk Management regulation and approved market risk appetite; endorses market risk limit before submitting to the Chief Executive Officer for approval and issuance.
- Risk Management Division:
 - + The Chief Risk Officer is responsible for managing market risk in line with the Risk appetite and market risk limit and performs the functions and missions assigned.
 - + Market Risk Management: is independent from business units with objective to identify, measure, control, analyze, make forecast and report market risk, develop the regulations and makes proposal on market risk management tools.
- Business units: perform daily business operations and ensure such activities comply with regulations on risk management approved by competent authority.
- Internal Audit: carries out independent and objective assessment of market risk management bank-wide; recommends resolutions for misconducts, violations and monitors the execution of recommended resolutions.

6.2 Market risk management strategy

6.2.1 *Market risk prevention for the market risk exposure of the Trading book*

- Regarding the Trading book, business units shall only conduct transactions under the trading book and maintain market risk exposure within the approved market risk limit.
- The market risk limits are developed in compliance with the Bank's market risk appetite (if any) and material risk limits. The control of limit compliance must be carried out independently by Market Risk Management - Risk Management Division or another independent unit which is not under Global Transaction Banking Services Division.

Techcombank has developed limits as follows:

- i. Interest rate limit for transaction product, trader limit, stop loss limit, limit on total interest rate risk exposure on the trading book
- ii. Forex risk limits include total foreign currency long and short positions, gold position, limit on each type of currency, trader limit, stop loss limit;
- iii. Equity price trading risk limit (not incurring);
- iv. Commodity price risk limit for the trading product portfolio; trader limit; stop loss limit (not incurring).

6.2.2 **Principles of market risk management**

- i. In normal market conditions:
 - The review of annual limits is conducted at least once a year or at any time during the year where necessary. In the event of changing limits, the new limits shall be adopted upon approval.
 - Traders shall conduct transactions within the approved market risk limits.
- ii. In markets with high volatility in securities, commodities prices, exchange rates and interest rates: GTS Division and Risk Division shall collaborate in reviewing market risk positions and agree on what needs to be done to mitigate risks for the portfolio. When necessary, Risk Division shall conduct a stress test based on sensitivity test and scenario test.

6.2.3 **Principles in market risk prevention**

- Regarding prevention of market risk on the same financial instrument, the business unit under GTS Division shall proactively take necessary measures within the approved market risk limit.
- Where the market risk prevention instrument for the portfolio is another financial instrument, the business unit under GTS Division can only take the measure after having written agreement with Market Risk and TFC (Treasury Finance Control) on the measurement method and tracking mechanism for the risk.
- Measures to prevent market risk can only be adopted upon approval of the Head of GTS, Head of Market Risk and Head of TFC (Treasury Finance Control).

6.2.4 **Market Risk Limit**

Techcombank has developed market risk limits as follows:

- Market risk limits include three types of limits: recurrent limit, temporary limit and one-off limit.
- The limits are applicable by end of transaction day.
- The control of limits is conducted every day.
- Limits include two types: quantitative limits: VaR, PV01, NOP, Stop loss ..., and qualitative limits: limits for products, currency, or holding duration ...

The Bank has established a system for managing market risk limits at the portfolio level. VaR limit has been developed for such trading portfolios as valuable papers, foreign currencies and gold, interest rate trading, credit sales and trading. Market risk limits at portfolio level include: VaR, PV01, Stop loss, NOP, and book size. Specifically:

- i. Interest rate risk limit: includes interest rate risk limit for each product portfolio and total interest risk exposure on the trading book.
- ii. Foreign exchange risk limit: includes total foreign currency long and short positions for the foreign currency portfolio, including long and short positions for G4, gold position; and Stop loss threshold.
- iii. Equity price trading risk limit for securities firm being the Bank's subsidiary: no limit applied since no trading.
- iv. Commodity risk limit: no limit applied since no trading.
- v. The bank has also developed the Stoploss limit as parameter of the cumulative losses of the portfolio within a certain level.

- vi. Concentration risk includes: limit of the total portfolio of government bonds, and investment limit for one issuer of corporate bonds. In addition, the Unit has also developed concentration risk on the trading book for transaction counterparties, transaction products, and currency types via the development and measuring concentration risk by (i) counterparty: Expected loss of the portfolio / Total owner's equity, EL of each customer / EL of total portfolio; (ii) transaction products: VaR or biggest loss (VaR equivalent) of the product portfolio / Total owner's equity; (iii) currency types: foreign currency net position / Owner's equity.
- vii. Trader's limit is determined by the highest value of a transaction conducted by the individual traders.

Breach of market risk limits

- Regulation of market risk management also specifies cases of breach, including: (i) breach of limit due to a new trade; (ii) breach of limit due to operational error; and (iii) breach of limit due to market movement, which is beyond the Bank's control.
- Breach of limit due to new trade or operational error shall be subject to disciplinary measures as per Techcombank's regulation.

Method of development and approval of market risk limits

- The method of developing market risk limits must comply with the risk appetite (if any), material risk limit and regulatory requirements (if any).
- Limit approval:
 - + Approval principles: ensure compliance with the approval process from low to high level. A limit proposal can only be escalated to a higher level for approval if it is rejected by the lower level.
 - + The limit approval process includes three steps:
 - i. Limit proposal: drafted by the trading unit.
 - ii. Risk Division shall review the proposal independently and give inputs (in favor or against the proposal) and submit it to the approval level for decision making.
 - iii. The limit is approved by authorized level. Upon such approval, related units shall be notified, and Risk Division shall update the limit on the bank's system for control purpose.

6.2.5 Measuring, monitoring and controlling market risk

- Techcombank adopts a segregated system of market risk management, where Market Risk unit is independent of the business unit. It is responsible for identifying, measuring, monitoring, controlling and reporting on market risk. It is also responsible for developing market risk management model.
- Techcombank ensures that its market risk management system uses widely-accepted tools and practices such as VaR, NOP, Stoploss, trader limits, PV01, Duration and stress tests.
- The selection of method and tools for measuring market risks should be based on the complexity of the products as well as Techcombank's IT system, database and infrastructure used for such measuring and monitoring.
- Currently, Techcombank's risk management methods and models have been customized for each financial instrument, where data are collected from independent sources as agreed by Market Risk, GTS and Finance Divisions.

- Techcombank has applied the VaR model in periodic risk measurement for the trading book. The application of the aggregate VaR model in risk measurement is more accurate.

Besides, Techcombank has built and implemented the Stress VaR model towards the application of market risk appetite based on Internal Model Approach approach according to Basel II standards.

These models are developed and review according to the model management principles under the Regulation on Market risk management, at the same time, close to the international standards like Basel II, Basel III,...

In addition, Techcombank has implemented the information technology system to model performance monitoring through the upgrading Treasury system project. Market risk models assessment implement every 6 months.

- Techcombank's regulations on market risk monitoring and control:

Controlling limits and giving warnings on breach of limits:

- + The control of market risk limits is implemented every day on an independent basis by Market Risk Management. New limits are controlled from the effective date.
- + Limit control reports must be sent to the Head of Business Unit and the CRO.
- + Risk reports are maintained for periodic reviews and assessment.
- + In order to support the management of risk limits, Risk Division needs to give warnings to the business unit when market risk exposure reaches 80% of the approved limit.
- + There are periodic reports on market risk limits and breaches of limits.
- + Positions and limits are reported daily as part of the market risk report, including breaches of limits and early warnings (if any).
- + Profits (or loss) under marked-to-market of the trading transactions as provided by Finance Division.
- + In the event of breach of limits, within 24 hours from the notification of breach, the violating business unit must provide a written explanation/email and propose solutions to bring the positions within the approved limits.
- + Due to limited liquidity, the Stop loss threshold is established as a soft limit. Where the limit is breached, the business units using such limit shall propose a risk mitigation plan to the Head of Business Unit for approval, and notify the CRO.

6.2.6 Internal reporting on market risks

Techcombank has strict requirements on internal market risk reporting on:

- Accuracy
- Adequacy
- Clarity and usefulness
- Frequency

Recipients of reports: Techcombank has clear regulations on internal reporting on market risks with different frequencies: daily, monthly, quarterly, semiannual and ad-hoc upon request. Specifically:

- Daily risk report includes information on market risk position, use of limits, early warnings and breaches of limits (if any), profit and loss reports in accordance with VAS and marked-to-market valuation.
- Monthly portfolio report, including comprehensive information on compliance with market risk positions, market risk exposure of different portfolio in the month and on the report date, movements of risk exposures, changes in market conditions; observations and findings on different portfolios in the month; exceptional cases of VaR in the month, breaches of limits, recommendations on risk management; and results of implementing recommendations from internal audit and regulatory agencies.
- Quarterly and semiannual reports shall include, in addition to the above contents, a stress test, actual profit/loss and forecast of profit/loss as per marked-to-market valuation of the trading transactions.

6.3 Trading strategy

Techcombank has a conservative trading strategy for financial instruments exposed to market risks, where market risks of the products are assessed and subject to risk limits before being traded.

6.3.1 FX and gold trading

- FX and gold trading is based on the bid-ask spread of permitted currency pairs, trading of SJC gold plates on the interbank market in order to optimize profits for Techcombank within the approved limits in line with Techcombank's risk appetite from time to time.
- Products: USD, VND, convertible currencies, standard SJC gold plates.
- Types of transaction: spot, forward, swap.
- Transaction channel: direct trading on electronic system, chat room on Eikon Messenger (Reuters), recorded telephone messages, email...

6.3.2 Trading of valuable papers

- Trading of bonds and futures contracts of government bonds is based on the bid-ask spread of bonds of different maturities in order to optimize profit for Techcombank within the approved limits.
- Act as market maker by listing two-way prices for the bonds in the portfolio and list the buying price for bonds not in Techcombank's portfolio.
- Bond maturity: as per maturities in the market.
- Types of bonds: government bonds, government-guaranteed bonds, municipal bonds.
- Transaction channel: existing channels, market chat room (VBMA, listed price on the interbank market), skype, reuters, email or another official transaction channel.

6.3.3 Rates trading

- Rates trading conducts trading transactions related to short-term interest rates on the interbank money market such as interbank deposits/lending, short-term money market swaps, investments of CDs/short-term valuable papers and other money market instruments as permitted by regulator from time to time in order to optimize revenues for the Bank within the approved limits.
- Rates trading is the unit representing the Bank to provide quotations on the interbank market and provide information on the interbank money market to other units across the Bank.

- Maturity: less than a year.
- Currencies: VND, USD and some other foreign currencies as permitted by the SBV.
- Transaction channels: existing electronic channels (Reuters Dealing, Reuters Messenger...), telephone, email or any other official transaction channels.

6.3.4 Interest rate derivatives trading

- Trading of interest rates derivatives, including interest rate swaps, cross currency swaps, accrual interest rate swaps Within the approved limits in order to optimize profit for the Bank and/or for hedging bank-wide balance sheet.
- Maturity: no restrictions
- Transaction currencies: VND, USD and some other currencies permitted by the SBV.
- Transaction channel: existing electronic transaction channels (Reuters Dealing, Reuters Messenger...), telephone, email or other official channels as permitted by regulators.

6.3.5 Debt trading

- Trading of bonds and other types of valuable papers issued by corporates/credit institutions in order to optimize profits for Techcombank within the approved limit.
- Maturity of bonds/valuable papers: as per the maturity of instruments in the market.
- Types of bonds/valuable papers: listed or unlisted bonds, CDs, bills and notes.
- Transaction channels: existing transaction channels, market chat rooms, skype, Reuters, email...

6.4 Trading book portfolio

Table 11 – Trading book portfolio

	Transaction/instrument	Purpose/instrument	Type of book
1.	Money market transaction	Repo, reverse repo	Banking Book
		Other transactions	Banking Book
2.	Debt securities – Government bonds	Trading purpose with holding duration of less than a year	Trading Book
		Other transactions	Banking Book
3.	Debt securities – Corporate bonds	Trading purpose with holding duration of less than a year	Trading Book
		Other transactions	Banking Book
4.	Equity securities	Trading purpose with holding duration of less than a year	Trading Book
		Other transactions	Banking Book
5.	Other valuable papers	Trading purpose with holding duration of less than a year	Trading Book
		Other transactions	Banking Book
6.	FX Transactions	Trading purpose with holding duration of less than a year	Trading Book
		To meet customers' and counterparties' needs and counter transactions of the above	Trading Book
7.	Gold	Other transactions	Banking Book
		Trading purpose with holding duration of less than a year	Trading Book
8.	Commodities derivatives	Other transactions	Banking Book
		Trading purpose with holding duration of less than a year	Trading Book
9.	Other derivatives transactions	To meet customers' and counterparties' needs and counter transactions of the above	Trading Book
		To hedge transactions on the Banking Book	Trading Book
		To hedge balance sheet items (including off-balance sheet items) of the Banking Book, except transactions to hedge the self-trading transactions mentioned above	Banking Book
		Other transactions	Banking Book
10.	Other transactions	Other transactions on market 1 (deposits and lending)	Banking Book

6.5 Capital requirement for market risk**Table 12 - Capital requirement for market risk***Unit: million VND*

Type of market risk	Capital requirement	Total risk-weighted assets
Interest rate risk	1,355,399	16,942,487
Equity risk	-	-
FX risk	483,527	6,044,088
Commodities risk	-	-
Option risk	-	-
Total	1,838,926	22,986,575

Abbreviations

BOD	Board of Directors
BOM	Board of Management
CAR	Capital Adequacy Ratio
CCF	Credit Conversion Factor
CMP	Crisis Management Plan
DATC	Vietnam Debt and Asset Trading Corporation
EAD	Exposure at Default
EL	Expected Loss
FIRB	Foundation Internal Rating-Based approach
FX	Foreign exchange
LGD	Loss given Default
NOP	Net Open Position
NPL	Non performing loan
PD	Probability of Default
PSEs	Non – central government Public Sector Entities
RW	Risk weight
RWA	Risk-weighted Assets
SBV	State Bank of Vietnam
Stop loss	Stop loss threshold
VAMC	Vietnam Asset Management Company
VaR	Value at Risk
VBMA	Vietnam Bond Market Association