



CAPITAL ADEQUACY RATIO DISCLOSURE

30 June 2020

Contents	Page
Scope of CAR calculation	1
Owner's equity structure	1
Capital adequacy ratio	2
CAR calculation process	2
Capital planning	2
Credit risk	2
Credit risk management policy	2
List of external credit rating agencies used for CAR calculation	5
List of collateral and third-party guarantees, on-balance sheet netting and credit derivatives eligible for credit risk mitigation	5
Claims s and their respective risk weights corresponding to their credit rating, and total risk-weighted assets by each selected credit rating agency	6
Credit risk-weighted assets	7
Risk-weighted assets for counterparty credit risk	8
Credit risk-weighted assets by industry	9
Credit risk mitigation	11
Operational risk	13
Operational risk management policy	13
Business Continuity Plan	13
Operational risk capital requirement	16
Market risk	17
Market risk management policy	17
Market risk management strategy	17

Trading strategy	21
Trading book portfolio	23
Market risk capital requirement	24

Tables	Page
Table 1 – Single and consolidated owner's equity	1
Table 2 – CAR, risk-weighted assets, capital requirements for different types of risk	2
Table 3 - Claims and their respective risk weights corresponding to their credit rating, and total risk-weighted assets by each selected credit rating agency	6
Table 4 – Credit Risk-weighted assets	7
Table 5 – Risk-weighted assets by counterparty risk	8
Table 6 – Credit risk-weighted assets by industry	9
Table 7 – Counterparty credit risk-weighted assets by industry	10
Table 8 – Risk-weighted assets (on-balance sheet and off-balance sheet) eligible for credit risk mitigation (single)	11
Table 9 – Risk-weighted assets (on-balance sheet and off-balance sheet) eligible for credit risk mitigation (consolidated)	12
Table 10 – Operational risk capital requirement, business indicators and components of business indicators	16
Table 11 – Trading book portfolio	23
Table 12 - Market risk capital requirement	24

1. Scope of CAR calculation

As at 30/06/2020, the Bank has three (03) subsidiaries as follows:

- TechcomSecurities (main business: securities investment)
- AMC – Techcombank (main business: debt and asset management)
- TechcomCapital (main business: fund management)
- When calculating the consolidated CAR as at 30/06/2020, 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 – Available capital

Unit: million VND

Item	30/06/2020	
	Single	Consolidated
Tier 1 capital	62,541,565	67,053,678
Tier 2 capital	1,402,514	1,791,185
Deduction from capital	1,050,765	-
Available capital	62,893,314	68,844,863

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	30/06/2020	
	Single	Consolidated
1 Credit risk weighted assets	332,369,646	340,222,634
2 Counterparty risk weighted assets	3,706,999	3,706,999
3 Capital requirement for operational risk	3,641,921	3,949,504
4 Capital requirement for market risk	1,190,812	1,190,812
5 Total risk-weighted assets	396,485,806	408,183,588
Capital ratios		
6 Tier-1 capital ratio	15.77%	16.43%
7 CAR	15.86%	16.87%

4. Credit risk:

4.1 Credit risk management policy

4.1.1 Credit risk management strategy:

Pursuant to SBV's and other legal regulations, especially Circular 13/2018/TT-NHNN and Circular 40/2018/TT-NHNN that amends and supplements Circular 13, and to meet internal governance requirements, Techcombank has developed and deployed a comprehensive risk management framework, with credit risk being one of the material risks that the Bank focuses on. Within the overall Risk Management Framework and Risk Management Policy, regulations on credit risk management (including 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 guided by the following principles: high-level oversight of the BOD and BOM; comprehensive credit risk management; all credit activities are conducted within the Credit Risk Management Regulation, Credit Orientation and Credit Granting Process; Develop systems to measure and control credit risk; Develop credit risk management strategy in compliance with SBV's and other regulatory requirements; Control conflicts of interests in credit granting activities.

Techcombank's credit risk management structure consists of three main components:

- (i) BOD's oversight on credit risk management via the role of the Audit and Risk Committee (ARCO) and Risk Appetite: ARCO, a supporting committee to the BOD, is set up to carry out several functional roles and responsibilities assigned by the BOD on such domains as auditing, whole-bank risk management and monitoring. Risk appetite is the foundation for the Bank's risk management and the guideline for its activities, reflecting the risk tolerance that Techcombank is willing to accept to archive its strategic goals and business targets
- (ii) (ii) Risk management tools and methods, including organizational structure – to ensure effective deployment of risk management activities such as Risk Committee, Credit Committee and levels of credit underwriting, other committees having the function of credit risk management and making decisions on credit risk management, and Risk Management Division) and other functions in charge of credit risk management; and other risk management tools and methods like polices, regulations, processes, models and tools of credit risk management etc.
- (iii) (iii) Risk Culture emphasizes that all employees have the rights and responsibilities in risk management, focusing on 03 core values "Customer Centricity", "Innovation", and "Compliance Culture".

In addition, credit risk management policy also specifies details of the credit risk process, from risk identification, measurement, and acceptance, from debt classification, risk provisioning and mitigation, to risk monitoring and controlling, helping 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 risk management, as well as customer experience journey. The Bank is especially keen on developing techniques and methods to measure and quantify risks and conducting credit risk stress tests 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 9, Basel II, Basel III,

Techcombank's credit risk management regulation also establishes requirements on controls of thresholds and limits in the Bank's credit activities, ensuring strict compliance with the Law on Credit Institutions 47/2010/QH12 and its amendments, and with Circular 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 customer's ability to repay based on qualitative and quantitative assessments of customer's financial standing, business performance, personal information, corporate governance, and reputation. This process aims to rate the customer's credit worthiness and ensuring accuracy of such assessment. Each credit rating must reflect a specific level of risk of the customer or of the particular credit.

Techcombank's internal credit rating system is based on customers' data and information collected over at least one year preceding the development of internal credit rating system.

At least once a year, Techcombank reviews and updates its internal credit rating system based on customers' data collected over the year.

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 audit/inspection purposes.

4.1.3 Measuring, monitoring and controlling credit risks

Techcombank measures credit risk by using its internal rating system. Techcombank is currently adopting and improving its internal rating system (under the FIRB approach) with risk quantification model PD/LGD/EAD and managing credit risk by calculating and managing Expected Loss.

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

At Techcombank, Risk Division takes the lead role in credit risk management, responsible for leading the development, monitoring, supervising credit limits and giving early warnings of potential breaches. Business units are responsible for controlling information on credit obligations of customers and their related persons in credit appraisal process, and monitoring and managing credit limits when they are being used by customers.

4.1.4 Credit risk policies and management process

Techcombank has developed an end-to-end document system, from customer appraisal to settlement of the credit facility, specifying the roles and responsibilities of individuals, teams and units involved in the control of credit risk. Specifically:

- Credit granting process for each customer segment: procedures for granting credit to customers, including guidance on how to analyze, assess and evaluate credit risk of customers.
- Post-disbursement control process/debt management process for each customer segment: procedures, contents, principles and responsibilities of units in the monitoring and controlling each credit facility once they are disbursed. The processes specify the frequency of credit risk control, 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. In addition to the business units that are directly responsible for post-disbursement control and early warning signals, Techcombank also establishes other units responsible for independent controls, thereby detecting problems early and deploy necessary and timely measures 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:

Requirements for credit appraisal at Techcombank are detailed in the Credit Process for each customer segment, with clear explanation of tasks to be done during the customer appraisal process:

- Appraise the contents in accordance with Techcombank's Credit Regulation (incorporating related regulations of the SBV) and existing guidance of each credit product.
- Appraise customer's business plan, investment projects, macroeconomic conditions and business environment that may affect the customer's ability to repay (except consumer loans).
- Collect information of related customers of the customer, calculate total credit exposure of the customer and its related persons, ensuring that the granting of credit to customer does not lead to breaches of Techcombank's and SBV's regulations on credit limits.
- Rate the customer on Techcombank's internal credit rating system.
- Appraise collateral: check documents and actual status of the collateral, conduct the valuation directly or work with a professional agency to conduct valuation of the collateral. Regarding collateral of a third party, Techcombank requires the appraisal of the third party's (guarantor's) ability to perform its obligation.

- Collect and appraise customer's information from different sources: business partner, competitors, mass media, CIC reports, industry reports ...
- Propose the value of credit facility to be granted to the customer, method of granting credit, and suitable credit product for the customer based on customer's financial standing, business plan, investment projects and the need to use the credit.
- Depending on the value of the credit and some other conditions, the credit facility at the business unit can be re-appraised at the Credit Appraisal Team at Risk Division and approved centrally at Risk Division or by the Credit Committee.

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, Fitch)	Credit rating (Moody)	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%	1,909	1,909
	A+, A, A-	A1, A2, A3	50%	6,281,753	6,281,753
	BBB+, BBB, BBB-	Baa1, Baa2, Baa3	50%	2,254,240	2,254,240
	BB+, BB, BB-, B+, B, B-	Ba1, Ba2, Ba3, B1, B2, B3	100%	-	-
	Under B- or un-rated	Under B3 or un-rated	150%	7,921,013	7,921,013
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%	-	-
	B+, B, B-	B1, B2, B3	100%	4,859,358	4,859,358
	Under B- or un-rated	Under B3 or un-rated	150%	876,422	876,422
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%	-	-
	B+, B, B-	B1, B2, B3	50%	6,622,724	6,622,724
	Under B- or un-rated	Under B3 or un-rated	70%	1,271,485	1,452,988
Total				30,088,903	30,270,407

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	628,749	628,749
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	30,088,903	30,270,407
1	Foreign financial institutions and Vietnam branches of foreign banks	16,458,915	16,458,915
2	Local credit institutions	13,629,989	13,811,492
VIII	Financial lease	-	-
IX	Non-performing loans	2,405,588	2,405,588
X	Loans for securities trading	815,129	4,688,576
XI	Loans secured by real estate	96,624,141	96,624,141
1	Loans secured by real estate for trading purpose	70,433,924	70,433,924
2	Loans secured by real estate not for trading purpose	26,190,217	26,190,217
3	Loans secured by mixed real estate	-	-
XII	Claims on SMEs	40,011,481	40,011,481
XIII	Specialized lending	23,503,912	23,503,912
XIV	Other claims on enterprises	102,791,171	105,264,077
1	Enterprises with financial statements	100,995,019	103,467,924
2	Enterprises without financial statements	1,542,674	1,542,674
3	Enterprises of less than 1 year old	253,478	253,478
XV	Mortgage loans	6,087,817	6,087,817
XVI	Retail credit portfolio	14,470,834	14,470,834
XVII	Receivables from sale of non-performing loans	749,000	749,000
XVIII	Equity instruments, share purchased from enterprises	633,334	1,001,623
XIX	Purchases of accounts receivable of finance companies and financial leasing companies	-	-
XX	Other assets	13,559,586	14,516,429
	Total	332,369,646	340,222,634

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	1,756,510	1,756,510
1	Foreign financial institutions and Vietnam branches of foreign banks	538,889	538,889
2	Local credit institutions	1,217,621	1,217,621
VIII	Financial lease	-	-
IX	Non-performing loans	-	-
X	Loans for securities trading	-	-
XI	Loans secured by real estate	-	-
1	Loans secured by real estate for trading purpose	-	-
2	Loans secured by real estate not for trading purpose	-	-
3	Loans secured by mixed real estate	-	-
XII	Claims on SMEs	5,413	5,413
XIII	Specialized lending	-	-
XIV	Other claims on enterprises	1,945,075	1,945,075
1	Enterprises with financial statements	1,681,595	1,681,595
2	Enterprises without financial statements	263,327	263,327
3	Enterprises of less than 1 year old	153	153
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		3,706,999	3,706,999

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	69,021,184	72,894,631
II Economic entities	249,702,731	253,340,429
1 Agriculture, forestry and fishery	1,677	1,677
2 Mining	1,243,296	1,649,998
3 Manufacturing and processing	31,449,813	32,368,680
4 Production and distribution of electricity, gas, hot water, steam and air conditioners	4,367,545	4,616,517
5 Water supply; management and treatment of waste water and solid waste	16,240	16,240
6 Construction	10,097,790	10,097,790
7 Wholesale and retail; repairing automobiles, motorbikes and other powered vehicles	36,386,359	36,386,359
8 Logistics (transportation and warehousing)	9,673,545	9,673,545
9 Accommodation and restaurants	570,990	956,448
10 Information and communication	755,086	755,086
11 Finance, business and insurance	30,973,546	30,856,151
12 Real estate	122,252,231	122,603,952
13 Professional activities, science and technology	294,046	631,703
14 Financial services and support services	703,706	703,706
15 Activities of the Communist Party, civil society, regulators, public security and national defense, compulsory social assurance	628,749	628,749
16 Education and training	116,033	116,033
17 Health care and social safety net	51,131	51,131
18 Art and entertainment	7,913	10,751
19 Other services	112,603	232,191
20 Informal domestic workers in households activities	432	432
21 Activities of international organizations	-	-
III Other unclassified assets	13,645,730	14,970,863
Total	332,369,646	340,222,634

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

Industry	Single	Consolidated
I Individuals and household businesses	-	-
II Economic entities	3,706,999	3,706,999
1 Agriculture, forestry and fishery	-	-
2 Mining	122	122
3 Manufacturing and processing	913,054	913,054
4 Production and distribution of electricity, gas, hot water, steam and air conditioners	-	-
5 Water supply; management and treatment of waste water and solid waste	-	-
6 Construction	194	194
7 Wholesale and retail; repairing automobiles, motorbikes and other powered vehicles	68,610	68,610
8 Logistics (transportation and warehousing)	1,592	1,592
9 Accommodation and restaurants	-	-
10 Information and communication	91	91
11 Finance, business and insurance	1,818,206	1,818,206
12 Real estate	359,514	359,514
13 Professional activities, science and technology	-	-
14 Financial services and support services	132	132
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	545,483	545,483
18 Art and entertainment	-	-
19 Other services	-	-
20 Informal domestic workers in households activities	-	-
21 Activities of international organizations	-	-
III Other unclassified assets	-	-
Total	3,706,999	3,706,999

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 risk-weighted assets before risk mitigation	Collateral	On-balance sheet netting	Guarantee	Credit derivatives	Total risk-weighted assets after risk mitigation
Claims on government	628,749	276	-	-	-	628,749
Claims on financial institutions	30,088,903	-	-	-	-	30,088,903
Claims on Corporates	173,573,715	6,350,961	-	-	-	167,102,069
Loans secured by real estate	96,700,910	113,248	-	-	-	96,624,141
Mortgage loans	6,195,564	55,058	-	-	-	6,087,817
Retail claims	18,441,172	2,273,564	-	-	-	15,786,648
NPL	2,410,898	3,676	-	-	-	2,405,588
Other assets	13,645,730	-	-	-	-	13,645,730
Total	341,685,643	8,796,782	-	-	-	332,369,646

Table 9 – Risk-weighted assets (on-balance sheet and off-balance sheet) for credit risk mitigation (consolidated)*Unit: million VND*

Classification	Total risk-weighted assets before risk mitigation	Collateral	On balance sheet netting	Guarantee	Credit derivatives	Total risk-weighted assets after risk mitigation
Claims on the government	628,749	276	-	-	-	628,749
Claims on financial institutions	30,270,407	-	-	-	-	30,270,407
Claims on Corporates	176,046,620	6,350,961	-	-	-	169,574,974
Loans secured by real estate	96,700,910	113,248	-	-	-	96,624,141
Mortgage loans	6,195,564	55,058	-	-	-	6,087,817
Retail claims	22,314,619	2,273,564	-	-	-	19,660,095
NPL	2,410,898	3,676	-	-	-	2,405,588
Other assets	14,970,863	-	-	-	-	14,970,863
Total	349,538,631	8,796,782	-	-	-	340,222,634

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: Potential risk caused by illegal access, usage, revelation, disruption and amendment to information;
- Process management and execution: Potential risk caused by failure in implementing processes established or due to a weakness of the process designing;
- Model risk: Potential risk caused by significant gaps between the outputs of risk measurement model and actual situation.

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.

The Board of Directors is the highest-level authority accountable to operational risk management.

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.

5.4 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		
		01/07/2019 to 30/06/2020	01/07/2018 to 30/06/2019	01/07/2017 to 30/06/2018	01/07/2019 to 30/06/2020	01/07/2018 to 30/06/2019	01/07/2017 to 30/06/2018
 Interest and similar income – Interest and similar expenses 	IC	15,449,319	12,380,196	9,476,527	15,904,328	12,559,410	9,574,937
Interest and similar income	IC1	26,223,720	22,923,116	18,558,698	26,766,300	23,120,874	18,655,129
Interest and similar expenses	IC2	10,774,401	10,542,920	9,082,171	10,861,972	10,561,464	9,080,192
Fees and commission income + Fees and commission expenses + Income from other activities + Expense of other activities	SC	13,042,164	11,040,325	7,264,269	15,272,612	12,756,318	8,031,711
Fees and commission income	SC1	3,483,800	3,303,171	4,092,611	5,650,900	4,987,459	4,701,032
Fees and commission expenses	SC2	1,738,295	1,134,736	780,667	1,807,520	1,175,480	826,937
Income from other activities	SC3	4,756,204	4,296,385	1,916,351	4,761,952	4,307,805	2,023,039
Expense of other activities	SC4	3,063,865	2,306,033	474,641	3,052,240	2,285,574	480,704
 Net gain/loss from forex trading + Net gain/loss from securities held-for-trading + Net gain/loss from investment securities 	FC	1,928,881	750,099	1,506,632	2,369,523	643,361	1,877,882
Net gain/loss from forex trading	FC1	74,003	155,574	357,584	74,003	155,574	357,646
Net gain/loss from securities held-for-trading	FC2	409,977	323,964	115,385	409,699	323,866	115,535
Net gain/loss from investment securities	FC3	1,444,900	270,561	1,033,662	1,885,821	163,921	1,404,700
Business Indicator	BI	30,420,363	24,170,620	18,247,428	33,546,463	25,959,089	19,484,530
Operational risk capital requirement	Kor		3,641,921			3,949,504	
Total assets by operational risk	12.5 * Kor		45,524,007			49,368,801	

6. Market risk

6.1 Market risk management policy

The structure of Market Risk Management

- Board of Directors/ Audit and Risk Committee:
 - + Board of Directors: is the highest authority managing Market Risk of the system.
 - + Audit and 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 completed the project of validating Market Risk Model and Pricing Model for Markets' products in March 2020. After that, Techcombank has developed Regulation on management of market risk and liquidity risk models, specifying requirements in model management, model management framework, basic requirements in model cycle. Together with the development of regulations on management of market risk and liquidity risk models, Techcombank shall enhance the quality of model development by regularly monitoring these models. Guidelines and processes on the model cycle will be developed in the time to come after basically completing the model management framework.
- 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
		Other transactions	Banking Book
7.	Gold	Trading purpose with holding duration of less than a year	Trading Book
		Other transactions	Banking Book
8.	Commodities derivatives	To meet customers' and counterparties' needs and counter transactions of the above	Trading Book
9.	Other derivatives 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
		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	1,059,487	13,243,589
Equity risk	-	-
FX risk	131,325	1,641,565
Commodities risk	-	-
Option risk	-	-
Total	1,190,812	14,885,154

Abbreviations

BOD	Board of Directors
BOM	Board of Management
CAR	Capital Adequacy Ratio
CCF	Credit Conversion Ratio
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
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