



**TECHCOMBANK** 

# CAPITAL ADEQUACY RATIO DISCLOSURES

**31 December 2019**

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## 1. Scope of CAR calculation

As at 31/12/2019, the Bank has three (03) subsidiaries as follows:

- Techcom Securities (main business: securities investment)
- AMC – Techcombank (main business: debt and asset management)
- Techcom Capital (main business: fund management)
- When calculating the consolidated CAR as at 31/12/2019, 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
- Shares 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 – Single and consolidated owner's capital**

Item	31/12/2019	
	Single	Consolidated
<b>Tier-1 capital</b>	57,954,497	61,782,043
<b>Tier-2 capital</b>	1,092,494	1,391,499
<b>Deductibles in owner's capital calculation</b>	1,050,765	-
<b>Owner's capital</b>	<b>57,996,226</b>	<b>63,173,543</b>

*Unit: million VND*

### 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	31/12/2019	
	Single	Consolidated
1 Credit risk weighted assets	334,411,532	340,248,930
2 Counterparty risk weighted assets	2,496,471	2,496,471
3 Capital requirement for operational risk	3,201,845	3,473,604
4 Capital requirement for market risk	1,693,184	1,693,184
5 Total risk-weighted assets	398,095,860	407,330,250
<b>Capital ratios</b>		
6 Tier-1 capital ratio	14.56%	15.17%
7 CAR	14.57%	15.51%

### 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, 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 all credit risks are 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; (ii) Risk management tools and methods, including organizational structure – to ensure effective deployment of risk management activities (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 credit risk management tools and methods; (iii) Risk Culture that 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 and detection to risk assessment and acceptance, from debt classification to risk provisioning and mitigation, 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. 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 international best practice and standards such as IFRS 9, Basel II, Basel III, ... All of these have been institutionalized and documented in Techcombank's credit risk management policy and regulation.

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, and 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, managing credit limits when they are being used by customers.

### 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.
- 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.

#### **4.1.4 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.

#### **4.1.5 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 credit rating evaluated by the following agencies: Moody's, Standard & Poor, and Fitch Rating. These agencies 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 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)	Risk weight	Single	Consolidated
<b>Claims from governments and central banks, public entities, municipal governments</b>				
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%	-	-
<b>Total</b>			-	-
<b>Claims from foreign finance institutions or Vietnam branches of foreign banks</b>				
AAA, AA+, AA, AA-	Aaa, Aa1, Aa2, Aa3	20%	21,198	21,198
A+, A, A-	A1, A2, A3	50%	2,947,244	2,947,244
BBB+, BBB, BBB-	Baa1, Baa2, Baa3	50%	1,312,828	1,312,828
BB+, BB, BB-, B+, B, B-	Ba1, Ba2, Ba3, B1, B2, B3	100%	3,302	3,302
Under B- or un-rated	Under B3 or un-rated	150%	2,500,596	2,500,596
<b>Total</b>			<b>6,785,168</b>	<b>6,785,168</b>
<b>Claims from local credit institutions (original tenor of 3 months or more)</b>				
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%	4,254,415	4,254,415
Under B- or un-rated	Under B3 or un-rated	150%	1,282,149	1,282,149
<b>Total</b>			<b>5,536,564</b>	<b>5,536,564</b>
<b>Claims from local credit institutions (original tenor of less than 3 months)</b>				
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%	12,306,490	12,306,490
Under B- or un-rated	Under B3 or un-rated	70%	2,737,909	2,931,657
<b>Total</b>			<b>15,044,399</b>	<b>15,238,147</b>

## 4.5 Risk-weighted assets

Table 4 – 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	628,035	628,035
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	27,366,131	27,559,879
1	Foreign financial institutions and Vietnam branches of foreign banks	6,785,168	6,785,168
2	Local credit institutions	20,580,963	20,774,711
VIII	Financial lease	-	-
IX	Non-performing loans	2,393,316	2,393,316
X	Loans for securities trading	3,607,967	6,298,785
XI	Loans secured by real estate	62,691,230	62,691,230
1	Loans secured by real estate for trading purpose	34,165,231	34,165,231
2	Loans secured by real estate not for trading purpose	28,526,000	28,526,000
3	Loans secured by mixed real estate	-	-
XII	Claims on SMEs	51,151,120	51,151,120
XIII	Specialized lending	44,963,610	44,963,610
XIV	Other claims on enterprises	110,075,873	111,592,027
1	Enterprises with financial statements	90,904,011	92,420,165
2	Enterprises without financial statements	3,279,985	3,279,985
3	Enterprises of less than 1 year old	15,891,876	15,891,876
XV	Mortgage loans	5,608,463	5,608,463
XVI	Retail credit portfolio	14,526,067	14,526,067
XVII	Receivables from sale of non-performing loans	941,848	941,848
XVIII	Equity instruments, share purchased from enterprises	633,334	1,001,620
XIX	Purchases of accounts receivable of finance companies and financial leasing companies	-	-
XX	Other assets	9,824,538	10,892,930

## 4.6 Counterparty credit risk

**Table 5 – Risk-weighted assets by counterparty risk***(unit: million VND)*

	<b>Risk-weighted assets</b>	<b>Single</b>	<b>Consolidated</b>
<b>I</b>	Cash, gold, equivalents	-	-
<b>II</b>	Claims on VN government, SBV, State Treasury, Central Cities' People's Committees, Bank of Social Policy	-	-
<b>III</b>	Claims on DATC and VAMC	-	-
<b>IV</b>	Claims on international financial institutions	-	-
<b>V</b>	Claims on foreign governments and central banks	-	-
<b>VI</b>	Claims on foreign PSEs, local governments	-	-
<b>VII</b>	Claims on financial institutions	1,577,333	1,577,333
<b>1</b>	Foreign financial institutions and Vietnam branches of foreign banks	387,351	387,351
<b>2</b>	Local credit institutions	1,189,982	1,189,982
<b>VIII</b>	Financial lease	-	-
<b>IX</b>	Non-performing loans	-	-
<b>X</b>	Loans for securities trading	-	-
<b>XI</b>	Loans secured by real estate	-	-
<b>1</b>	Loans secured by real estate for trading purpose	-	-
<b>2</b>	Loans secured by real estate not for trading purpose	-	-
<b>3</b>	Loans secured by mixed real estate	-	-
<b>XII</b>	Claims on SMEs	10,216	10,216
<b>XIII</b>	Specialized lending	-	-
<b>XIV</b>	Other claims on enterprises	908,922	908,922
<b>1</b>	Enterprises with financial statements	775,163	775,163
<b>2</b>	Enterprises without financial statements	133,376	133,376
<b>3</b>	Enterprises of less than 1 year old	384	384
<b>XV</b>	Mortgage loans	-	-
<b>XVI</b>	Retail credit portfolio	-	-
<b>XVII</b>	Receivables from sale of non-performing loans	-	-
<b>XVIII</b>	Equity instruments, share purchased from enterprises	-	-
<b>XIX</b>	Purchases of accounts receivable of finance companies and financial leasing companies	-	-
<b>XX</b>	Other assets	-	-

## 4.7 Risk-weighted assets by industry

Table 6 – Risk-weighted assets by industry

*(unit: million VND)*

Industry	Single	Consolidated
<b>I Individuals and household businesses</b>	<b>72,422,542</b>	<b>75,113,361</b>
<b>II Economic entities</b>	<b>252,411,170</b>	<b>255,104,357</b>
1 Agriculture, forestry and fishery	49,511	49,511
2 Mining	1,753,027	2,104,398
3 Manufacturing and processing	35,756,649	35,902,539
4 Production and distribution of electricity, gas, hot water, steam and air conditioners	3,304,791	3,362,936
5 Water supply; management and treatment of waste water and solid waste	40,712	40,712
6 Construction	11,208,628	11,208,628
7 Wholesale and retail; repairing automobiles, motorbikes and other powered vehicles	42,970,672	42,970,672
8 Logistics (transportation and warehousing)	6,192,002	6,192,002
9 Accommodation and restaurants	2,963,351	3,345,288
10 Information and communication	1,068,001	1,068,001
11 Finance, business and insurance	28,650,632	28,917,848
12 Real estate	93,344,764	93,258,875
13 Professional activities, science and technology	1,500,787	1,673,282
14 Financial services and support services	1,301,318	1,301,318
15 Activities of the Communist Party, civil society, regulators, public security and national defense, compulsory social assurance	641,446	641,446
16 Education and training	435,077	435,077
17 Health care and social safety net	49,466	49,466
18 Art and entertainment	6,479,432	6,489,173
19 Other services	14,542,073	15,934,354
20 Informal domestic workers in households activities	158,830	158,830
21 Activities of international organizations	-	-
<b>III Other unclassified assets</b>	<b>9,577,820</b>	<b>10,031,212</b>
<b>Total</b>	<b>334,411,532</b>	<b>340,248,930</b>

## 4.8 Mitigating credit risk

Table 7 – Risk-weighted assets (on-balance sheet and off-balance sheet) eligible for 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	628,035	104	-	-	-	628,035
Claims on financial institutions	27,366,131	-	-	-	-	27,366,131
Claims on SMEs	266,698	-	-	-	-	266,698
Claims on enterprises	210,187,769	2,481,723	-	-	-	207,662,766
Loans secured by real estate	62,866,918	1,372	-	-	-	62,691,230
Mortgage loans	5,608,463	-	-	-	-	5,608,463
Retail claims	18,277,367	42,281	-	-	-	18,217,073
NPL	2,393,316	-	-	-	-	2,393,316
Other assets	8,635,972	-	-	-	-	9,577,820
<b>Total</b>	<b>336,230,669</b>	<b>2,525,480</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>334,411,532</b>

**Table 8 – Risk-weighted assets (on-balance sheet and off-balance sheet) eligible for risk mitigation (consolidated)***(unit: million VND)*

<b>Classification</b>	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	628,035	104	-	-	-	628,035
Claims on financial institutions	27,559,879	-	-	-	-	27,559,879
Claims on SMEs	266,698	-	-	-	-	266,698
Claims on enterprises	211,703,923	2,481,723	-	-	-	209,178,920
Loans secured by real estate	62,866,918	1,372	-	-	-	62,691,230
Mortgage loans	5,608,463	-	-	-	-	5,608,463
Retail claims	20,968,186	42,281	-	-	-	20,907,891
NPL	2,393,316	-	-	-	-	2,393,316
Other assets	10,072,649	-	-	-	-	11,014,498
<b>Total</b>	<b>342,068,067</b>	<b>2,525,480</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>340,248,930</b>

## 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 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.

These 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 9 - Operational risk capital requirement, Business indicators and components of business indicators***(Unit: million VND)*

Items on Income Statement	Item	Single			Consolidated		
		01/01/2019 to 31/12/2019	01/01/2018 to 31/12/2018	01/01/2017 to 31/12/2017	01/01/2019 to 31/12/2019	01/01/2018 to 31/12/2018	01/01/2017 to 31/12/2017
<b>  Interest and similar income – Interest and similar expenses  </b>	<b>IC</b>	<b>14,002,548</b>	<b>11,286,784</b>	<b>8,828,697</b>	<b>14,257,844</b>	<b>11,389,940</b>	<b>8,930,412</b>
Interest and similar income	IC1	24,727,342	21,292,547	17,521,176	25,016,341	21,413,626	17,594,503
Interest and similar expenses	IC2	10,724,794	10,005,763	8,692,479	10,758,497	10,023,687	8,664,092
<b>Fees and commission income + Fees and commission expenses + Income from other activities + Expense of other activities</b>	<b>SC</b>	<b>11,934,054</b>	<b>8,092,258</b>	<b>6,701,500</b>	<b>13,504,694</b>	<b>9,634,510</b>	<b>7,318,835</b>
Fees and commission income	SC1	3,361,680	2,757,424	4,012,138	4,884,408	4,188,317	4,519,684
Fees and commission expenses	SC2	1,580,949	858,815	575,745	1,631,055	915,756	593,601
Income from other activities	SC3	4,386,382	3,075,685	1,861,297	4,393,650	3,136,486	1,957,808
Expense of other activities	SC4	2,605,043	1,400,334	252,320	2,595,581	1,393,951	247,741
<b>  Net gain/loss from forex trading   +   Net gain/loss from securities held-for-trading   +   Net gain/loss from investment securities  </b>	<b>FC</b>	<b>1,247,906</b>	<b>856,479</b>	<b>1,086,671</b>	<b>1,746,005</b>	<b>1,158,770</b>	<b>1,531,075</b>
Net gain/loss from forex trading	FC1	104,581	233,751	278,523	104,581	233,751	278,585
Net gain/loss from securities held-for-trading	FC2	397,932	168,381	396,783	397,664	168,434	396,730
Net gain/loss from investment securities	FC3	745,394	454,347	411,365	1,243,760	756,586	855,760
<b>Business Indicator</b>	<b>BI</b>	<b>27,184,508</b>	<b>20,235,521</b>	<b>16,616,868</b>	<b>29,508,544</b>	<b>22,183,220</b>	<b>17,780,321</b>
<b>Operational risk capital requirement</b>	<b>Kor</b>		<b>3,201,845</b>			<b>3,473,604</b>	
<b>Total assets by operational risk</b>	<b>12.5 * Kor</b>		<b>40,023,060</b>			<b>43,420,053</b>	

## 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: monitors 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 regulations and approved market risk appetite; ratifies 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 approved and must perform the functions and missions assigned.
  - + Market Risk Management: is independent from business units with objective to identify, measure, control, analyze, forecast and report market risk, develop the regulations and make 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 limit is developed in compliance with the Bank's market risk appetite. 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;
- iv. Commodity price risk limit for the trading product portfolio; trader limit; stop loss limit.

### 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, Stoploss..., 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 some portfolios with regular transactions and clear reference prices. Market risk limits at portfolio level include: VaR, PV01, Stoploss, 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 portfolio, gold position; and Stoploss 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 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, 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 counterparts 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. However, the Bank needs to improve its market risk management model by documenting measuring methods, periodically assess the risk of such models, validating the models, reviewing the suitability and relevance of input data... Techcombank is planning to engage a consulting firm to support the Bank in this regard.
- 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 Stoploss 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 10 – 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
	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
9. Other derivatives transactions	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
	Other transactions on market 1 (deposits and lending)	Banking Book

**6.5 Capital requirement for market risk****Table 11 - Capital requirement for market risk***Unit: VND million*

Type of market risk	Capital requirement	Total risk-weighted assets
Interest rate risk	1,376,990	17,212,373
Equity risk	-	-
FX risk	316,194	3,952,424
Commodities risk	-	-
Option risk	-	-
<b>Total</b>	<b>1,693,184</b>	<b>21,164,796</b>

**Abbreviations**

BOD	Board of Directors
BOM	Board of Management
CAR	Capital Adequacy Ratio
CCF	Credit Conversion Ratio
CMP	Crisis Management Plan
EAD	Exposure at Default
EL	Expected Loss
FIRB	Foundation Internal Rating-Based approach
LGD	Loss given Default
NOP	Net Open Position
PD	Probability of Default
RW	Risk weight
RWA	Risk-weighted Assets
SBV	State Bank of Vietnam
Stop loss	Stop loss threshold
VaR	Value at Risk
VBMA	Vietnam Bond Market Association