Royal Bank of Canada

Pillar 3 Report

As at January 31, 2022

TABLE OF CONTENTS

Caution regarding forward-looking statements

From time to time, we make written or oral forward-looking statements within the meaning of certain securities laws, including the "safe harbour" provisions of the *United States Private Securities Litigation Reform Act of 1995* and any applicable Canadian securities legislation. We may make forward-looking statements in this Pillar 3 Report, our 2021 Annual Report, in other filings with Canadian regulators or the SEC, in other reports to shareholders including our Q1 2022 Report to Shareholders, and in other communications. Forward-looking statements are typically identified by words such as "believe", "expect", "foresee", "forecast", "anticipate", "intend", "estimate", "goal", "plan" and "project" and similar expressions of future or conditional verbs such as "will", "may", "should", "could" or "would". By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct and that our financial performance and management objectives, vision and strategic goals will not be achieved. We caution readers not to place undue reliance on these statements as a number of risk factors could cause our actual results to differ materially from the expectations expressed in such forward-looking statements. Additional information about certain risk factors can be found in the Caution regarding forward-looking statements and risk sections of our 2021 Annual Report and the Risk management section of our Q1 2022 Report to Shareholders. When relying on our forward-looking statements to make decisions with respect to us, investors and others should carefully consider these risk factors as well as other uncertainties and potential events. Except as required by law, we do not undertake to update any forward-looking statement, whether written or oral, that may be made from time to time by us or on our behalf.

About Royal Bank of Canada

Royal Bank of Canada is a global financial institution with a purpose-driven, principles-led approach to delivering leading performance. Our success comes from the 88,000+ employees who leverage their imaginations and insights to bring our vision, values and strategy to life so we can help our clients thrive and communities prosper. As Canada's biggest bank, and one of the largest in the world based on market capitalization, we have a diversified business model with a focus on innovation and providing exceptional experiences to our 17 million clients in Canada, the U.S. and 27 other countries. Learn more at rbc.com.

Our business segments include Personal & Commercial Banking, Wealth Management, Insurance, Investor & Treasury Services, and Capital Markets. Our business segments are supported by Corporate Support, which consists of Technology & Operations and Functions. Technology & Operations provides the technological and operational foundation required to effectively deliver products and services to our clients, while Functions includes our finance, human resources, risk management, internal audit and other functional groups, as well as our corporate treasury function.

Capital framework

Our consolidated regulatory capital requirements are determined by guidelines issued by the Office of the Superintendent of the Financial Institutions (OSFI), which are based on the Basel III framework adopted by the Basel Committee on Banking Supervision (BCBS).

The Basel III framework integrates three "Pillars" to establish a robust foundation for banking supervision and financial stability:

- Pillar 1 prescribes minimum capital requirements and addresses capital adequacy, including standards for calculating risk-weighted assets (RWA);
- Pillar 2 requires the establishment of internal assessment processes and supervisory review to evaluate the risk profile and capital adequacy of banks;
- Pillar 3 enhances the consistency and comparability of risk and capital profiles between banks and across jurisdictions for market participants through meaningful disclosures.

Under Basel III, banks use defined approaches to calculate their minimum regulatory capital required to support various risks and exposure types including credit risk, counterparty credit risk, market risk, operational risk, and securitizations exposures. Refer to the "Capital management" section of our 2021 Annual Report for further information on calculation approaches. Refer to the following sections in this report for further information on:

- Capital
- Credit Risk
- Counterparty Credit Risk
- Market Risk
- Operational Risk
- Securitization Exposures

Capital framework (continued)

In January 2015, the BCBS published the "*Revised Pillar 3 Disclosure Requirements*" (Revised Standards) to encourage market discipline through regulatory disclosure requirements. The Revised Standards require comprehensive disclosure of our risks and regulatory capital including our methodologies used in calculating capital requirements instituted under Pillar 1. Existing requirements in the areas of credit risk, counterparty credit risk and securitization activities were replaced by the Revised Standards. OSFI mandated the domestic implementation of the first phase of the Revised Standards for Canadian domestic systemically important banks (D-SIBs) for the reporting period ending October 31, 2018. This Pillar 3 report provides disclosures reflective of this first phase of the Revised Standards. In addition, this Pillar 3 report provides disclosure required under OSFI's May 2018 Capital Disclosure Requirements Guideline.

In March 2017, the BCBS issued its second phase of the Pillar 3 disclosure requirements entitled, "*Pillar 3 disclosure requirements – consolidated and enhanced framework*". The disclosure standard consolidates all existing Pillar 3 disclosure requirements of the Basel III framework, including the leverage and liquidity ratios disclosure templates.

In December 2018, the BCBS issued its third and final phase (phase three) of the Pillar 3 disclosure requirements, *Pillar 3 disclosure requirements – updated framework.* This phase incorporates revisions and additions to the Pillar 3 framework arising from the finalization of the Basel III reforms in December 2017, such as additional disclosure requirements comparing RWA as determined by banks' internal models against results based on the Standardized Approach, and new disclosure requirements on asset encumbrance and capital distribution constraints. The phase three requirements, together with the phase one and two disclosure requirements released in January 2015 and March 2017, respectively, complete the Pillar 3 framework. On March 27, 2020, OSFI announced that it would delay its implementation of the phase three BCBS Pillar 3 disclosure requirements to January 31, 2023. On March 11, 2021, OSFI released for public consultation its draft revised Pillar 3 guideline incorporating the domestic implementation of all three phases to be effective in fiscal 2023. This Pillar 3 guideline was finalized by OSFI on January 31, 2022 with an implementation date requirement of April 30, 2023. Our Pillar 3 disclosures will be updated to reflect this finalized OSFI disclosure guideline requirements. On November 11, 2021, BCBS finalized revisions to its market risk disclosures which we expect OSFI will also incorporate in due course into its disclosure requirements for market risk, the framework which is effective in Q1 2024.

Effective November 1, 2018, OSFI adopted the BCBS frameworks related to the Standardized Approach for measuring counterparty credit risk (SA-CCR), capital requirements for bank exposures to central counterparties (CCPs) and the revised securitization framework as incorporated in OSFI's Capital Adequacy Requirements (CAR) guideline.

On November 1, 2019, the impact of adoption of IFRS 16 *Leases*, and removal of allowed grandfathering and transitioning treatment for certain securitization and counterparty credit risk exposures was incorporated in our measurement of regulatory capital. In addition, we adopted, the Standardized Approach for consolidated regulatory reporting of operational risk as the use of the Advanced Measurement Approach was discontinued by OSFI. This Pillar 3 report reflects the CAR guideline requirements for all periods, including prior period comparatives.

To address the economic disruption caused by the COVID-19 pandemic in Q2 2020, OSFI announced a series of regulatory capital modifications which are described in more detail in our Capital management section of our 2021 Annual Report as updated by the Capital management section of our Q1 2022 Report to Shareholders. Announced changes included the reduction of the domestic stability buffer to 1% of total RWA while also providing transitional expected credit loss (ECL) modifications over 3 years and risk-weight exclusions for certain exposures. In addition, OSFI also allowed delaying for six months, from the date of deferral, the past due treatment of all loan deferrals requested by clients. On August 31, 2020, OSFI amended this deferral treatment allowing any deferrals issued on or after August 31 to September 30, 2020 to only be exempt from past due treatment for a period of 3 months. Therefore, any deferrals given to clients on or after October 1, 2020 must follow the past due treatment required under the CAR guidelines. Our reported figures reflect this guidance and further updated guidance from OSFI including the raising of the domestic stability buffer to 2.5% effective October 31, 2021, as fully described in our Capital management section of our 2021 Annual Report as updated by the Capital management section of our Q1 2022 Report to Shareholders.

Since Q2 2020, our disclosure for KM1: Key Capital and Leverage metrics template includes disclosure of our capital ratios assuming transitional ECL modifications had not been applied, as required by OSFI.

Refer to the Capital management section of our Q1 2022 Report to Shareholders for further information on upcoming regulatory reforms which were announced during the quarter.

Leverage framework

On October 30, 2014, OSFI issued its "Leverage Requirements (LR) Guideline", which reflected its adoption of the BCBS "Basel III leverage ratio framework and disclosure requirement" effective the first fiscal quarter of 2015. The LR guideline requires banks to disclose their leverage ratio and its underlying components. The leverage ratio is defined as the capital measure divided by the leverage exposure measure. The capital measure is defined as Tier 1 capital and the leverage exposure measure is the sum of (a) on-balance sheet exposures; (b) derivative exposures; (c) securities financing transaction (SFT) exposures and (d) off-balance sheet items.

Unmanaged leverage can lead to unwarranted corrective measures due to excessive exposure growth or capital reduction, causing detriment to the bank's balance sheet and overall shareholders wealth. Maintaining a prescribed minimum level of leverage helps neutralize leverage risk in the event of unexpected economic crises. OSFI requires maintenance of a minimum leverage ratio of 3% at all times.

On October 30, 2018, OSFI published its updated LR guideline, effective November 1, 2018. The revisions aligned the LR guideline with OSFI's adoption of the BCBS *"Standardized approach for measuring counterparty credit risk exposures"* and *Revisions to the securitization framework"*. On November 1, 2019, the impact of adoption of IFRS 16 *Leases*, was incorporated into our leverage ratio.

In addition to the pre-existing 3% leverage ratio minimum requirement, the BCBS introduced an additional leverage ratio buffer requirement for global systemically-important banks (G-SIB) as part of their Basel III reforms *"Basel III: Finalizing post-crisis reforms* (December 2017)*"*. The G-SIB leverage ratio must be met with Tier 1 capital and is set at 50% of a G-SIB's higher-loss absorbency risk-weighted requirement. On July 16, 2018 OSFI announced that all Canadian D-SIBs will be held to the 3.5% minimum leverage requirements including RBC which has been designated a G-SIB. This minimum leverage requirement has now been incorporated into the revised LR guideline effective Q2 2023 released by OSFI on January 31, 2022.

On November 20, 2018, OSFI updated its Leverage disclosure guidelines, which are based on BCBS phase two disclosure requirements, to reflect the revisions to the LR and CAR guidelines mentioned above. Refer to our Leverage disclosures included in this report, as required by OSFI.

To address the economic disruption caused by the COVID-19 pandemic in Q2 2020, OSFI announced two leverage ratio modifications. The first leverage ratio modification required the exclusion of central bank reserves and sovereign-issued securities that qualify as high quality liquid assets from our total leverage exposure amount for a period of one year ending April 30, 2021. The second modification required the exclusion of loans issued under the US Government Payment Protection Program (PPP) from our total leverage exposure amount. On Nov. 5, 2020, OSFI extended the allowed exclusion of central bank reserves and sovereign-issued securities another eight months to December 31, 2021. On Aug. 12, 2021 OSFI announced that sovereign-issued securities would no longer be eligible for exclusion effective Jan. 1, 2022 but that central bank reserves would continue to eligible for exclusion until further notice. Our reported leverage figures reflect this guidance as fully described in our Capital management section of our Q1 2022 Report to Shareholders.

Since Q2 2020, our disclosure of LR2: Leverage ratio common disclosure template includes disclosure of our leverage ratio assuming transitional ECL modification had not been applied, as required by OSFI.

TLAC framework

The Canadian Bail-in regime, including OSFI's Total Loss Absorbing Capacity (TLAC) Framework Guideline, came into effect on September 23, 2018. The purpose of the TLAC requirement is to address the sufficiency of a Canadian D-SIB's loss absorbing capacity in supporting its recapitalization in the event of its failure. TLAC is defined as the aggregate of Tier 1 capital, Tier 2 capital, and other TLAC instruments (senior bail-in debt), which includes senior unsecured debt with an original term to maturity of greater than 400 days and remaining term to maturity of greater than 365 days. Under the Bail-in regime, bail-in debt, which would ordinarily rank equally to Other Liabilities in liquidation, is subject to conversion under statutory resolution powers whereas Other Liabilities are not subject to such conversion.

TLAC requirements establish two minimum standards; which are required to be met effective November 1, 2021: the risk-based TLAC ratio, which builds on the risk-based capital ratios described in the CAR guideline, and the TLAC leverage ratio, which builds on the leverage ratio described in OSFI's Leverage Requirements guideline. The risk-based TLAC ratio is defined as TLAC divided by Total risk-weighted assets (RWA) while the TLAC leverage ratio is defined as TLAC divided by the Leverage ratio exposure. OSFI requires systemically important banks to maintain a minimum TLAC ratio of 22.5% (inclusive of the revised domestic stability buffer of 1.0% since Q2 2020) and a TLAC leverage ratio of 6.75%. The TLAC ratio requirements increased to 24% in Q4 2021 reflecting the 1.5% increase of the DSB effective October 31, 2021. We began issuing TLAC eligible debt in Q4 2018 and our TLAC ratio is expected to increase through normal course refinancing of maturing debt.

In May 2018, OSFI published its TLAC Disclosure Guideline for Canadian D-SIBs. The disclosure requirements reflect the BCBS TLAC disclosure requirements as outlined in the BCBS March 2017 phase two requirements mentioned above. Refer to our TLAC disclosures included in this report, as required by OSFI.

To reflect the transitional ECL modification provided by OSFI, as discussed in the Capital framework and Leverage framework sections above, since Q2 2020 our disclosure of KM2: Key metrics – TLAC requirements includes both our TLAC ratio and TLAC leverage ratio assuming the transitional ECL modification had not been applied, as required by OSFI.

DISCLOSURE MAP

Pillar 3 Requirement	Pillar 3 Requirement		2021 Annual Report section	Sub-section	2021 Annual Report Reference
Overview of key metrics, risk management and RWA	KM1				
	OVA	a) Business model and risk profile	Impact of COVID-19 pandemic	Impact of pandemic risk factor	18
			Top and emerging risks	Top and emerging risks	52-54
			Risk management overview	Risk management principles	55
				Risk drivers	55
			Enterprise risk management	Risk governance	56
				Risk appetite	57
				Risk measurement	57-58
				Risk control	58-59
		b) Risk governance structure	Enterprise risk management	Risk governance	56
				Risk control	58-59
		c) Communication and enforcement of risk culture within the bank	Enterprise risk management	Culture and conduct risk	59-60
		d) Scope and main features of risk measurement systems	Enterprise risk management	Risk measurement	57-58
		e) Risk information reporting	Enterprise risk management	Risk control - *Risk monitoring and reporting*	59
		f) Stress testing	Enterprise risk management	Risk measurement – *Stress testing*	58
			Market risk	Stress tests	73
			Systemic risk	Systemic risk	96
		g) Strategies and processes applied to manage, hedge and mitigate risks	Enterprise risk management	Risk appetite	57
				Risk measurement	57-58
				Risk control	58-59
			Credit risk	Overview	60-61
				Credit risk measurement	61
				Credit risk assessment	62-64
				Credit risk mitigation	64
				Credit risk approval	65
				Credit risk administration	65
			Market risk	Market risk controls – FVTPL positions	73
				Stress tests	73
				Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions	75
				IRRBB measurement	75
				Non-trading foreign exchange rate risk	76
			Liquidity and funding risk	Overview	78
				Risk control	79
				Risk measurement	79
				Funding	81-83
				Liquidity Coverage Ratio (LCR)	85-86
				Net Stable Funding Ratio (NSFR)	86-88
			Insurance risk	Insurance risk	91
			Operational risk	Overview	91
				Operational risk framework	91-92
			Regulatory compliance risk	Regulatory compliance risk	93
			Strategic risk	Strategic risk	93
			Reputation risk	Reputation risk	93-94
			Legal and regulatory environment risk	Legal and regulatory environment risk	94-95
			Competitive risk	Competitive risk	95
			Systemic risk	Systemic risk	96
			Environmental and social risk	Environmental and social risk	97-99
			Consolidated Financial Statements	Note 8 – Derivative financial instruments and hedging activities - *Derivatives issued for trading purposes*	182
				Note 8 – Derivative financial instruments and hedging activities - *Derivatives issued for other-than-trading purposes*	182-183
				Note 8 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	185-186
	OV1				

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2021 Annual Report section	Sub-section	2021 Annual Report Reference
Linkages between financial statements and regulatory exposures	LI1				
	LI2				
	LIA				
Composition of Capital	CC1				
	CC2				
	CCA [1]	Main features of regulatory capital instruments and of other TLAC-eligible instruments			
Macroprudential supervisory measures	GSIB 1 [2]	Disclosure of G-SIB indicators			
Credit risk	CRA	a) Translation of the business model into the components of the bank's credit risk profile	Credit risk	Overview	60-61
				Measurement of economic and regulatory capital - *Gross credit risk exposure*	62
		b) Criteria and approach used for defining credit risk management policy and for setting credit risk limits	Enterprise risk management	Risk governance	56
				Risk appetite	57
				Risk measurement	57-58
				Risk control - *Delegated authorities and risk limits*	59
			Credit risk	Overview	60-61
				Credit risk assessment	62-64
				Credit risk mitigation	64
				Credit risk approval	65
		c) Structure and organization of the credit risk management and control function	Enterprise risk management	Risk governance	56
				Risk control	58-59
		d) Interaction between the credit risk management, risk control, compliance and internal audit functions	Enterprise risk management	Risk governance	56
		e) Scope and content of the reporting on credit risk exposure to the executive management and to the board of directors	Enterprise risk management	Risk governance	56
				Risk control - *Risk monitoring and reporting*	59
	CR1				
	CR2 [3]				
	CRB	a) The scope and definitions of "past due" and "impaired" exposures used for accounting purposes and the differences, if any, between the definition of past due and default for accounting and regulatory purposes	Consolidated Financial Statements	Note 2 – Summary of significant accounting policies, estimates and judgments - Allowance for credit losses - *Definition of default* *Credit impaired financial assets (Stage 3)*	145
				Note 5 – Loans and allowance for credit losses - *Loans past due but not impaired*	177
		b) The extent of past-due exposures (more than 90 days) that are not considered to be impaired and the reasons for this	Consolidated Financial Statements	Note 5 – Loans and allowance for credit losses - *Loans past due but not impaired*	177
		c) Description of methods used for determining accounting provisions for credit losses	Consolidated Financial Statements	Note 2 – Summary of significant accounting policies, estimates and judgments - Allowance for credit losses	143-146
		Description of the categorization of ECL accounting provisions (general and specific) for standardized approach exposures	n/a	n/a – For regulatory calculations under both the Standardized and IRB approaches, the IFRS 9 stage 3 allowances are considered to be specific allowances and the IFRS 9 stage 1 and stage 2 allowances are considered to be general allowances	
		d) The bank's own definition of a restructured exposure	Consolidated Financial Statements	Note 2 – Summary of significant accounting policies, estimates and judgments - Allowance for credit losses - *Modifications*	146

[1] CCA is available at https://www.rbc.com/investor-relations/regulatory-information.html.
[2] G-SIB1 is provided on page 44 of our Q1 2022 Report to Shareholders available at https://www.rbc.com/investor-relations/regulatory-information.html.
[3] Requirement for disclosure of this table is only semi-annual.

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2021 Annual Report section	Sub-section	2021 Annual Report Reference
Credit risk (continued)	CRC	a) Core features of policies and processes for, and an indication of the extent to which the bank makes use of, on– and off–balance sheet netting	Credit risk	Credit risk assessment – *Counterparty credit risk*	63
			Consolidated Financial Statements	Note 8 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	185-186
				Note 29 – Offsetting financial assets and financial liabilities	221-222
		b) Core features of policies and processes for collateral evaluation and management	Credit risk	Credit risk mitigation - *Collateral*	64
		c) Information about market or credit risk concentrations under the credit risk mitigation instruments used	Credit risk	Credit risk mitigation	64
				Credit risk approval - *Credit risk limits*	65
			Consolidated Financial Statements	Note 8 – Derivative financial instruments and hedging activities	182-191
	CR3 [3]				
	CRD				
	CR4				
	CR5				
	CRE				
	CR6				
	CR7				
	CR8				
	CR9 [4]				
	CR10		n/a	n/a	n/a
Counterparty credit risk	CCRA	a) Risk management objectives and policies related to counterparty credit risk	Credit risk	Credit risk assessment – *Counterparty credit risk*	63
			Consolidated Financial Statements	Note 8 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	185-186
		b) The method used to assign the operating limits defined in terms of internal capital for counterparty credit exposures and for CCP exposures	Credit risk	Credit risk assessment – *Counterparty credit risk*	63
		c) Policies relating to guarantees and other risk mitigants and assessments concerning counterparty credit risk, including exposures towards CCPs	Credit risk	Credit risk assessment – *Counterparty credit risk*	63
			Consolidated Financial Statements	Note 8 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	185-186
			Consolidated Financial Statements	Note 29 – Offsetting financial assets and financial liabilities	221-222
		d) Policies with respect to wrong-way risk exposures	Credit risk	Credit risk assessment – *Wrong-way risk*	64
		e) The impact in terms of the amount of collateral that the bank would be required to provide given a credit rating downgrade	Liquidity and funding risk	Credit ratings	84
	CCR1				
	CCR2				
	CCR3				
	CCR4				
	CCR5 [3]				
	CCR6				
	CCR7		n/a	n/a	n/a
	CCR8	f) Exposures to central counterparties			

[3] Requirement for disclosure of this table is only semi-annual.

[4] Requirement for disclosure of this table is only annual.

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2021 Annual Report section	Sub-section	2021 Annual Report Reference
Securitization	SECA	a) Objectives in relation to securitization activities	Off-balance sheet arrangements	Off-balance sheet arrangements	50-52
			Consolidated Financial Statements	Note 6 – Derecognition of financial assets	177-178
			Consolidated Financial Statements	Note 7 – Structured entities	178-181
		b) List of SPEs where RBC is sponsor / provides implicit support	Consolidated Financial Statements	Note 7 – Structured entities	178-181
		c) Accounting policies for securitization	Consolidated Financial Statements	Note 2 – Summary of significant accounting policies, estimates and judgments – *Basis of consolidation*	138-139
				Note 2 – Summary of significant accounting policies, estimates and judgments – *Derecognition of financial assets*	146-147
			Critical accounting policies and estimates	Consolidation of structured entities	111
		d) the names of external credit assessment institution (ECAIs) used for securitizations and the types of securitization exposure for which each agency is used	Capital management (also refer to CRD in this document)	Regulatory capital approach for securitization exposures	108-109
		e) Use of Basel IAA for capital purposes	Credit risk	n/a	60-72
			Capital management	Regulatory capital approach for securitization exposures	108-109
		f) Use of other internal assessment for capital purposes	Credit risk	Credit risk assessment	62-64
	SEC1	Securitization exposures in the banking book			
	SEC2	Securitization activities in the trading book			
	SEC3	Securitization exposures in the banking book and associated regulatory capital requirements - bank acting as originator or as sponsor			
	SEC4	Securitization exposures in the banking book and associated capital requirements - bank acting as investor			
Market risk	MRA	a) Processes implemented to identify, measure, monitor and control the bank's market risks	Market risk	Market risk controls – FVTPL positions	73
				Stress tests	73
				Market risk measures – FVTPL positions	73-74
				Market risk measures for assets and liabilities of RBC Insurance	74
				Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions	75
				IRRBB measurement	75
				Market risk measures – IRRBB Sensitivities	75
				Market risk measures for other material non-trading portfolios	76
		Policies for hedging risk and strategies/processes for monitoring the continuing effectiveness of hedges	Consolidated Financial Statements	Note 2 – Summary of significant accounting policies, estimates and judgements – *Hedge accounting*	147-148
		b) Description of the market risk governance structure established to implement the strategies and processes of the bank	Enterprise risk management	Risk governance	56
				Risk appetite	57
				Risk measurement	57-58
				Risk control	58-59
				Risk measurement – *Stress testing*	58
				Culture and conduct risk	59-60

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2021 Annual Report section	Sub-section	2021 Annual Report Reference
Market risk (continued)	MRA (continued)	Description of the relationships and the communication mechanisms between the different parties involved in market risk management	Enterprise risk management	Risk governance	56
				Risk control	58-59
		c) Scope and nature of risk reporting and/or measurement systems	Enterprise risk management	Risk measurement	57-58
				Risk control	58-59
				Risk measurement – *Stress testing*	58
			Market risk	Market risk controls – FVTPL positions	73
				Stress tests	73
				Market risk measures – FVTPL positions	73-74
				Market risk measures for assets and liabilities of RBC Insurance	74
				Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions	75
				IRRBB measurement	75
				Market risk measures – IRRBB Sensitivities	75
				Market risk measures for other material non-trading portfolios	76
	MRB	c) General description of the models (VaR/stressed VaR)	Market risk	Market risk controls – FVTPL positions	73
		g) Description of stress testing applied to the modelling parameters	Market risk	Stress tests	73
	MR1				
	MR2				
	MR3				
	MR4 [3]				
Leverage	LR1				
	LR2				
Total loss absorbing capacity	KM2				
	TLAC1				
	TLAC2				
	TLAC3				
Operational Risk		a) Details of the approach for operational risk capital assessment for which the bank qualifies	Operational risk	Operational risk capital	92
		b) Description of the advanced measurement approaches for operational risk (AMA)[5]	n/a	n/a	n/a
		c) For banks using the AMA, a description of the use of insurance for the purpose of mitigating operational risk[5]	n/a	n/a	n/a
Interest rate risk in the banking book			Market risk	Market risk	72-78

[3] Requirement for disclosure of this table is only semi-annual.
[5] Effective November 1, 2019, OSFI discontinued the AMA approach.

OVERVIEW OF KEY METRICS, RISK MANAGEMENT AND RWA

KM1: Key Capital and Leverage metrics (at consolidated group level)

	(Millions of Canadian dollars)[1]	a January 31 2022	b October 31 2021	c January 31 2021	d Q o Q Change (a-b)
	Available capital (amounts)				
1	Common Equity Tier 1 (CET1)	77,080	75,583	69,555	1,497
1a	Common Equity Tier 1 with transitional arrangements for ECL provisioning not applied	76,885	75,163	68,579	1,722
2	Tier 1	84,493	82,246	76,733	2,247
2a	Tier 1 with transitional arrangements for ECL provisioning not applied	84,298	81,826	75,757	2,472
3	Total capital	94,502	92,026	86,543	2,476
3a	Total capital with transitional arrangements for ECL provisioning not applied	94,502	92,026	86,543	2,476
	Risk-weighted assets (amounts)				
4	Total risk-weighted assets (RWA)	569,285	552,541	557,519	16,744
	Risk-based capital ratios as a percentage of RWA				
5	Common Equity Tier 1 ratio	13.5%	13.7%	12.5%	(0.2)%
5a	Common Equity Tier 1 ratio with transitional arrangements for ECL provisioning not applied	13.5%	13.6%	12.3%	(0.1)%
6	Tier 1 ratio	14.8%	14.9%	13.8%	(0.1)%
6a	Tier 1 ratio with transitional arrangements for ECL provisioning not applied	14.8%	14.8%	13.6%	-
7	Total capital ratio	16.6%	16.7%	15.5%	(0.1)%
7a	Total capital ratio with transitional arrangements for ECL provisioning not applied	16.6%	16.7%	15.5%	(0.1)%
	Additional CET1 buffer requirements as a percentage of RWA				
8	Capital conservation buffer requirement	2.5%	2.5%	2.5%	-
9	Countercyclical buffer requirement[2]	0.0%	0.0%	0.0%	-
10	Bank G-SIB and/or D-SIB additional requirements	1.0%	1.0%	1.0%	-
11	Total of bank CET1 specific buffer requirements (row 8 + row 9 + row 10)	3.5%	3.5%	3.5%	-
12	CET1 available after meeting the bank's minimum capital requirements (row 5 - 8%)[3]	5.5%	5.7%	4.5%	(0.2)%
	Basel III leverage ratio				
13	Total Basel III leverage ratio exposure measure	1,760,629	1,662,044	1,585,334	98,585
14	Basel III leverage ratio (row 2 / row 13)	4.8%	4.9%	4.8%	(0.1)%
14a	Basel III leverage ratio (row 2a / row 13) with transitional arrangements for ECL provisioning not applied	4.8%	4.9%	4.8%	(0.1)%

[1] This table incorporates the impact of expected credit loss (ECL) accounting on regulatory capital including transitional ECL provisioning modification granted by OSFI on Mar. 27, 2020. This ECL provisioning modification reduced from a 75% after-tax exclusion rate for growth in Stage 1 and Stage 2 allowances allowed in 2020 to only a 25% after-tax exclusion rate allowed for 2022. This rate will cease after Q4 2022.

[2] Bank specific countercyclical buffer requirement for Q1 2022 was not material, the amount which is determined based on our private sector exposures in jurisdictions identified by BCBS.

[3] 8% reflects minimum capital requirements which includes D-SIB/G-SIB surcharge, and excludes the OSFI Domestic Stability Buffer of 2.5% effective October 2021. Refer to the Capital management section of our Q1 2022 Report to Shareholders.

Our CET1 ratio was 13.5%, down 20 bps from last quarter, mainly reflecting RWA growth (excluding FX) and share repurchases, partially offset by internal capital generation.

Our Tier 1 capital ratio of 14.8% was down 10 bps, reflecting the factors noted above under the CET1 ratio and a favourable impact from the issuance of preferred shares.

Our Total capital ratio of 16.6% was down 10 bps, reflecting the factors noted above under the Tier 1 capital ratio and a favourable impact of the issuance from subordinated debentures.

RWA increased by $17 billion, mainly reflecting business growth in wholesale lending, including loan underwriting commitments, market risk, and residential mortgages, partially offset by lower derivatives. The impact of foreign exchange translation also contributed to the increase. These factors were partially offset by net credit migration, mainly in our wholesale portfolios. The impact of foreign exchange translation on RWA is largely mitigated with economic hedges in our CET1 ratio.

Our Leverage ratio of 4.8% was down 10 bps, mainly due to the reversal of the regulatory modification for sovereign-issued securities qualifying as HQLA, as announced by OSFI. Business-driven growth in leverage exposures and share repurchases also contributed to the decrease. These factors were partially offset by internal capital generation and the issuance of preferred shares.

Leverage exposures increased by $99 billion, mainly driven by the reversal of the regulatory modification noted above, business growth in loans and securities, and the impact of foreign exchange translation.

OVA: Bank risk management approach

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

Pillar 3 disclosures requirement		RBC 2021 Annual Report section	Sub-section
a)	Business model and risk profile	Impact of COVID-19 pandemic	Impact of pandemic risk factor
		Top and emerging risks	Top and emerging risks
		Risk management Overview	Risk management principles
			Risk drivers
		Enterprise risk management	Risk governance
			Risk appetite
			Risk measurement
			Risk control
b)	Risk governance structure	Enterprise risk management	Risk governance
			Risk control
c)	Communication and enforcement of risk culture within the bank	Enterprise risk management	Culture and conduct risk
d)	Scope and main features of risk measurement systems	Enterprise risk management	Risk measurement
e)	Risk information reporting	Enterprise risk management	Risk control - *Risk monitoring and reporting*
f)	Stress testing	Enterprise risk management	Risk measurement - *Stress testing*
		Market risk	Stress tests
		Systemic risk	Systemic risk
g)	Strategies and processes applied to manage, hedge and mitigate risks	Enterprise risk management	Risk appetite
			Risk measurement
			Risk control
		Credit risk	Overview
			Credit risk measurement
			Credit risk assessment
			Credit risk mitigation
			Credit risk approval
			Credit risk administration
		Market risk	Market risk controls - FVTPL positions
			Stress tests
			Market risk controls - Interest Rate Risk in the Banking Book (IRRBB) positions
			IRRBB measurement
			Non-trading foreign exchange rate risk
		Liquidity and funding risk	Overview
			Risk control
			Risk measurement
			Funding
			Liquidity Coverage Ratio (LCR)
			Net Stable Funding Ratio (NSFR)

OVA: Bank risk management approach (continued)

Pillar 3 disclosures requirement		RBC 2021 Annual Report section	Sub-section
g)	Strategies and processes applied to manage, hedge and mitigate risks (continued)	Insurance risk	Insurance risk
		Operational risk	Overview
			Operational risk framework
		Regulatory compliance risk	Regulatory compliance risk
		Strategic risk	Strategic risk
		Reputation risk	Reputation risk
		Legal and regulatory environment risk	Legal and regulatory environment risk
		Competitive risk	Competitive risk
		Systemic risk	Systemic risk
		Environmental and social risk	Environmental and social risk
		Consolidated Financial Statements	Note 8 - Derivative financial instruments and hedging activities - *Derivatives issued for trading purposes*
			Note 8 - Derivative financial instruments and hedging activities - *Derivatives issued for other-than-trading purposes*
			Note 8 - Derivative financial instruments and hedging activities - *Derivative-related credit risk*

OV1: Overview of risk weighted assets (RWA)

The following table presents an overview of our RWA and the related minimum capital requirements by risk type.

		a	b	c	d	e
		RWA			Minimum capital requirement[1]	RWA
	(Millions of Canadian dollars)	January 31 2022	October 31 2021	January 31 2021	January 31 2022	Change (a-b)
1	**Credit risk (excluding counterparty credit risk)**	**366,916**	**354,442**	**368,824**	**29,353**	**12,474**
2	Of which Standardized approach (SA)	103,614	102,186	96,011	8,289	1,428
3	Of which Internal rating-based (IRB) approach	263,302	252,256	272,813	21,064	11,046
4	**Counterparty credit risk (CCR)**	**48,553**	**53,791**	**56,884**	**3,884**	**(5,238)**
4a	Of which other CCR	9,410	10,102	11,367	753	(692)
4b	Credit valuation adjustment (CVA)	15,854	18,104	18,412	1,268	(2,250)
5	Of which Standardised approach for counterparty credit risk (SA-CCR)[2]	23,289	25,585	27,105	1,863	(2,296)
6	Of which Internal model method (IMM)	-	-	-	-	-
7	Equity positions in banking book under market-based approach	2,890	2,814	2,626	231	76
8	Equity investments in funds – look-through approach	-	-	-	-	-
9	Equity investments in funds – mandate-based approach	3,099	2,944	2,846	248	155
10	Equity investments in funds – fall-back approach	35	45	4	3	(10)
11	Settlement risk	1,765	1,492	342	141	273
12	**Securitisation exposures in banking book**	**10,724**	**10,328**	**10,780**	**858**	**396**
12a	Of which transitional grandfathering adjustment	-	-	-	-	-
13	Of which IRB ratings-based approach (SEC-IRBA)	-	-	-	-	-
14	Of which External ratings-based approach (SEC-ERBA)	8,317	7,982	8,524	665	335
15	Of which Standardized approach (SEC-SA)	2,407	2,346	2,256	193	61
16	**Market risk**	**41,812**	**34,806**	**28,449**	**3,345**	**7,006**
17	Of which Standardized approach (SA)	15,392	13,330	12,532	1,231	2,062
18	Of which Internal model approaches (IMA)	26,420	21,476	15,917	2,114	4,944
19	**Operational risk**	**74,776**	**73,593**	**70,908**	**5,982**	**1,183**
20	Of which Basic Indicator Approach	-	-	-	-	-
21	Of which Standardized Approach	74,776	73,593	70,908	5,982	1,183
22	Of which Advanced Measurement Approach[3] (AMA)	-	-	-	-	-
23	Amounts below the thresholds for deduction (subject to 250% risk weight)	18,715	18,286	15,856	1,497	429
24	Floor adjustment	-	-	-	-	-
25	**Total (1+4+7+8+9+10+11+12+16+19+23+24)**	**569,285**	**552,541**	**557,519**	**45,542**	**16,744**

[1] The minimum capital requirements for each category can be calculated by multiplying the total RWA by 8% as per OSFI CAR guidelines.

[2] Includes RWA associated with CCP exposures, which EAD is calculated based on SA-CCR.

[3] Effective November 1, 2019, OSFI discontinued the AMA approach.

Total RWA increased by $16.7 billion or 3%, driven by the following:

Credit risk
RWA increased by $12.5 billion, mainly driven by business growth in wholesale lending, including loan underwriting commitments, and residential mortgages. The impact of foreign exchange translation also contributed to the increase. These factors were partially offset by net credit migration, mainly in our wholesale portfolios. The impact of foreign exchange translation on RWA is largely mitigated with economic hedges in our CET1 ratio.

Counterparty credit risk
RWA decreased by $5.2 billion, mainly due to client driven activity in our derivatives trading businesses.

Securitization exposures in banking book
RWA increased by $0.4 billion, mainly driven by client activity.

Market risk
RWA increased $7.0 billion, mainly driven by increased inventory and credit mix changes in our fixed income businesses.

Operational risk
RWA increased $1.2 billion, mainly driven by average revenue growth.

RWA: Risk-Weighted Assets by Regulatory Approach

The following table provides details of our risk-weighted assets by type of risk and regulatory approach.

TOTAL CAPITAL RISK-WEIGHTED ASSETS [1]	Q1/2022						Q1/2022	Risk-weighted assets All-in Basis			
	Risk-weighted assets All-in Basis						Capital requirements				
(Millions of Canadian dollars, except percentage and per share amounts)	Exposure [2]	Average of risk weights [3]	Standardized approach	IRB approach	Other	Total [4]	Total [4]	Q4/2021 Total [4]	Q3/2021 Total [4]	Q2/2021 Total [4]	Q1/2021 Total [4]
Credit risk [5]											
Lending-related and other											
Residential mortgages	336,736	8%	10,999	17,449	-	28,448	2,276	26,743	25,988	24,565	24,895
Other retail (Personal, Credit cards and Small business treated as retail)	365,149	20%	7,468	65,230	-	72,698	5,816	71,637	71,720	70,661	72,112
Business (Corporate, Commercial, Medium-sized enterprises											
and Non-bank financial institutions)	415,681	51%	59,682	150,409	-	210,091	16,807	200,553	197,356	210,611	210,677
Sovereign (Government)	337,483	4%	3,029	11,729	-	14,758	1,180	14,412	15,742	15,527	15,878
Bank	27,725	18%	1,531	3,581	-	5,112	409	4,756	4,413	4,758	5,739
Total lending-related and other	**1,482,774**	**22%**	**82,709**	**248,398**	**-**	**331,107**	**26,488**	**318,101**	**315,219**	**326,122**	**329,301**
Trading - related											
Repo-style transactions	974,434	1%	1	8,805	76	8,882	711	9,537	8,463	12,126	10,731
Derivatives - including CVA	107,565	35%	2,000	19,758	16,199	37,957	3,036	42,377	41,457	43,306	44,110
Total trading-related	**1,081,999**	**4%**	**2,001**	**28,563**	**16,275**	**46,839**	**3,747**	**51,914**	**49,920**	**55,432**	**54,841**
Total lending-related and other and trading-related	**2,564,773**	**15%**	**84,710**	**276,961**	**16,275**	**377,946**	**30,235**	**370,015**	**365,139**	**381,554**	**384,142**
Banking book equities [6]	4,117	138%	-	5,682	-	5,682	454	5,474	5,373	5,088	5,166
Securitization exposures	66,684	16%	5,178	5,546	-	10,724	858	10,328	10,640	10,424	10,780
Regulatory scaling factor [7]	n.a.	n.a.	n.a.	16,959	-	16,959	1,357	16,485	16,461	17,746	17,795
Other assets	28,878	143%	n.a.	n.a.	41,386	41,386	3,311	41,840	38,457	38,045	40,279
Total credit risk	**2,664,452**	**17%**	**89,888**	**305,148**	**57,661**	**452,697**	**36,215**	**444,142**	**436,070**	**452,857**	**458,162**
Market risk [8,9]											
Interest rate			2,654	16,522	-	19,176	1,534	14,380	13,047	10,063	8,126
Equity			2,439	2,230	-	4,669	374	4,178	5,179	4,814	4,073
Foreign exchange			3,198	957	-	4,155	332	3,083	3,210	2,748	2,601
Commodities			1,008	128	-	1,136	91	762	504	270	279
Specific risk			6,093	2,283	-	8,376	670	7,601	7,133	6,256	6,285
Incremental risk charge [10, 11]			-	4,300	-	4,300	344	4,802	5,076	6,466	7,085
Total market risk			**15,392**	**26,420**	**-**	**41,812**	**3,345**	**34,806**	**34,149**	**30,617**	**28,449**
Operational risk			**74,776**	**-**	**n.a.**	**74,776**	**5,982**	**73,593**	**72,828**	**72,133**	**70,908**
Total risk-weighted assets (RWA)	**2,664,452**		**180,056**	**331,568**	**57,661**	**569,285**	**45,542**	**552,541**	**543,047**	**555,607**	**557,519**

[1] Calculated using guidelines issued by OSFI under the Basel III All-in framework.

[2] Total exposure represents exposure at default (EAD) which is the expected gross exposure upon the default of an obligor. This amount excludes any allowance against impaired loans or partial write-offs and does not reflect the impact of credit risk mitigation. Exposures acquired through the Federal Reserve Paycheck Protection Program lending facility have been excluded, as required by OSFI.

[3] Represents the average of counterparty risk weights within a particular category.

[4] The minimum capital requirements for each category can be calculated by multiplying the total RWA by 8% as per OSFI CAR guidelines.

[5] For credit risk, a majority of our portfolios use the Internal Ratings Based (IRB) Approach and the remainder use the Standardized Approach.

[6] CAR guidelines define banking book equities based on the economic substance of the transaction rather than the legal form or accounting treatment associated with the financial instrument. As such, differences exist in the identification of equity securities held in the banking book and those reported in the financial statements. Banking book equities are financial instruments held for investment purposes and are not part of our trading book, consisting of publicly-traded and private equities, partnership units, venture capital and derivative instruments tied to equity interests.
As at Q1/22, the amount of publicly-traded equity exposures was $1,728 million and private equity exposures amounted to $2,389 million. Total exposure represents EAD, which is the expected gross exposure upon the default of an obligor.
Under OSFI guidelines, the Simple Risk Weight method under the Market-based Approach is being used to calculate RWA for direct equity exposures ($2,726 million). The calculation of RWA for Equity Investments in Funds ($2,956 million) uses the Mandate-based and Fall-Back Approaches.

[7] The scaling factor represents a calibration adjustment of 6% as prescribed by OSFI under the Basel III framework and is applied to RWA amounts for credit risk assessed under the IRB Approach.

[8] For market risk RWA measurement, we use an internal models approach where we have obtained regulatory approval, and a standardized approach for products yet to be approved. For standardized approach, we use internally validated models.

[9] Regulatory capital for our correlation trading portfolios is determined through the standardized approach as prescribed by OSFI. Therefore, we do not have a Comprehensive Risk Charge for these portfolios. Our securitization and resecuritization positions in our trading book also have capital requirements under the standardized approach. The changes in value due to market and credit risk in the securitization and resecuritization in the trading book are managed through the daily mark-to-market process. Furthermore, we employ market risk measures such as sensitivities to changes in option-adjusted spreads and underlying asset prices as well as value-at-risk (VaR) and stress testing measures.

[10] The incremental risk charge (IRC) was $286 million as at Q1/22. The average was $348 million, high was $437 million and low was $248 million for Q1/22. The IRC is measured over a one-year horizon at a 99.9% confidence level. We utilize a technique known as the Monte Carlo simulation process to generate a statistically relevant number of loss scenarios due to ratings migration and default in order to establish the losses at that confidence level. We also make certain assumptions about position liquidity (the length of time to close out a position) within the model that range from a floor of three months to maximum of one year. The determination of liquidity is based on issuer type and credit rating. Credit rating migration and default probabilities (PD) are based on historical data.

[11] The models are subject to the same internal independent vetting and validation procedures used for all regulatory capital models. Important assumptions are re-reviewed at least annually. Due to the long time horizon and high confidence level of the risk measure, we do not perform back-testing as we do for the VaR measure.

LINKAGES BETWEEN FINANCIAL STATEMENTS AND REGULATORY EXPOSURES

LI1: Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories

The following table provides the differences between carrying values presented in our financial statements prepared in accordance with International Financial Reporting Standards (IFRS) and our regulatory exposures. It further breaks down the amounts in our financial statements into regulatory risk categories.

As at January 31, 2022

	a	b	c	d	e	f	g
			Carrying values of items:[1]				
(Millions of Canadian dollars)	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Subject to credit risk framework	Subject to counterparty credit risk framework	Subject to the securitization framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets							
Cash and due from banks	131,163	131,163	131,163	-	-	-	-
Interest-bearing deposits with banks	63,420	63,420	63,420	-	-	-	-
Securities							
Trading	149,525	137,203	8,929	-	32	128,242	-
Investment, net of applicable allowance	153,570	150,442	139,160	-	11,309	-	(27)
	303,095	287,645	148,089	-	11,341	128,242	(27)
Assets purchased under reverse repurchase agreements and securities borrowed	312,126	312,126	-	312,127	-	-	(1)
Loans							
Retail	513,970	513,646	513,646	-	-	-	-
Wholesale[3]	230,108	227,769	207,326	2,759	8,658	6,553	2,473
	744,078	741,415	720,972	2,759	8,658	6,553	2,473
Allowance for loan losses	(4,047)	(4,047)	-	-	-	-	(4,047)
	740,031	737,368	720,972	2,759	8,658	6,553	(1,574)
Segregated fund net assets	2,730	-	-	-	-	-	-
Other							
Customers' liability under acceptances	18,876	18,876	18,959	-	-	-	(83)
Derivatives[2]	92,319	93,145	-	93,145	-	88,395	-
Premises and equipment, net	7,406	7,389	7,389	-	-	-	-
Goodwill	11,010	11,010	-	-	-	-	11,010
Other intangibles	4,459	4,334	-	-	-	-	4,334
Other assets	65,834	69,118	31,558	26,647	-	7,628	3,285
	199,904	203,872	57,906	119,792	-	96,023	18,546
Total assets[2]	**1,752,469**	**1,735,594**	**1,121,550**	**434,678**	**19,999**	**230,818**	**16,944**
Liabilities and equity							
Deposits							
Personal	375,606	375,606	-	-	-	-	375,606
Business and government	720,089	720,709	-	-	-	-	720,709
Bank	47,147	47,147	-	-	-	-	47,147
	1,142,842	1,143,462	-	-	-	-	1,143,462
Segregated fund net liabilities	2,730	-	-	-	-	-	-
Other							
Acceptances	18,959	18,959	-	-	-	-	18,959
Obligations related to securities sold short	41,544	41,544	-	-	-	-	41,544
Obligations related to assets sold under repurchase agreements and securities loaned	265,009	265,009	-	265,009	-	-	-
Derivatives[2]	88,102	88,102	-	88,102	-	85,775	-
Insurance claims and policy benefit liabilities	12,973	-	-	-	-	-	-
Other liabilities	67,741	65,698	-	-	-	-	65,698
	494,328	479,312	-	353,111	-	85,775	126,201
Subordinated debentures	10,561	10,561	-	-	-	-	10,561
Total liabilities[2]	1,650,461	1,633,335	-	353,111	-	85,775	1,280,224
Equity attributable to shareholders							
Preferred shares	7,441	7,441	-	-	-	-	7,441
Common shares	17,572	17,572	-	-	-	-	17,572
Retained earnings	73,542	73,516	-	-	-	-	73,516
Other components of equity	3,355	3,632	-	-	-	-	3,632
	101,910	102,161	-	-	-	-	102,161
Non-controlling interests	98	98	-	-	-	-	98
Total equity	102,008	102,259	-	-	-	-	102,259
Total liabilities and equity[2]	**1,752,469**	**1,735,594**	**-**	**353,111**	**-**	**85,775**	**1,382,483**

[1] Column c to g reflect a further breakout of column b by providing the respective CAR guideline frameworks utilized and OSFI COVID-19 guidance.

[2] Derivative assets and liabilities are subject to both counterparty credit risk and market risk framework – hence column b will not equal to the sum of column c to g.

[3] Amount includes exposure related to the US Government Paycheck Protection Program which are excluded from risk-weighting as per OSFI COVID-19 guidance.

LI2: Main sources of differences between regulatory exposure amounts and carrying values in financial statements

The following table provides the key differences between the exposure amounts for regulatory purposes and the accounting carrying values as presented in our financial statements that are within the scope of regulatory consolidation.

As at January 31, 2022

		a	b	c	d	e
			Items subject to:			
	(Millions of Canadian dollars)	Total	Credit risk framework	Securitization framework	Counterparty credit risk framework	Market risk framework
1	**Asset carrying value amount under scope of regulatory consolidation (as per template LI1)[1]**	**1,718,650**	**1,121,550**	**19,999**	**434,678**	**230,818**
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template LI1)[1]	353,111	-	-	353,111	85,775
3	Total net amount under regulatory scope of consolidation	1,365,539	1,121,550	19,999	81,567	145,043
4	Off-balance sheet amounts[2]	1,439,317	392,239	46,685	1,000,393	-
5	Differences due to Fair Value adjustment	375	335	-	39	-
6	Differences due to different netting rules, other than those already included in row 2	1,617	1,617	-	-	-
7	Differences due to consideration of provisions	-	-	-	-	-
8	Differences due to prudential filters	-	-	-	-	-
9	Difference due to accounting and risk treatment of securitizations and other items	29	29	-	-	-
10	**Exposure amounts considered for regulatory purposes**	**2,806,877**	**1,515,770**	**66,684**	**1,081,999**	**145,043**

[1] Amount reflects Table LI1 columns (c), (d), (e) and (f) from the previous page. Derivative assets and liabilities are subject to both counterparty credit risk and market risk framework – hence column a will not equal to the sum of column b to e.

[2] Off-balance sheet amounts reflect the application of credit conversion factors.

LIA: Explanations of differences between accounting and regulatory exposure amounts

Our consolidated balance sheet ("accounting balance sheet") is prepared in compliance with IFRS as issued by the International Accounting Standards Board. We leverage our accounting balance sheet to apply the required regulatory requirements prescribed by OSFI to determine our regulatory capital consolidated balance sheet.

In Template LI1: Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories, we identify the differences between our IFRS consolidated accounting balance sheet (column a in LI1) and our regulatory capital consolidated balance sheet (column b in LI1). Our regulatory capital consolidated balance sheet, on which capital adequacy requirements are determined, reflects all of our consolidated subsidiaries except for our insurance subsidiaries as prescribed by OSFI's CAR guidelines.

In Template LI2: Main sources of differences between regulatory exposure amounts and carrying values in financial statements, we quantify measurement differences other than regulatory consolidation.

Our banking book regulatory carrying values reflect our IFRS accounting balance sheet values except for our fair valued loans and debt securities carried at fair value through other comprehensive income (FVOCI), which under the Credit risk framework, are measured at amortized cost. Off-balance sheet regulatory asset values reflect prescribed conversion factors and undrawn amounts.

Regulatory carrying values for our Counterparty credit risk related to our derivative assets and liabilities, assets purchased under reverse repurchase agreements and securities borrowed and obligations related to assets sold under repurchase agreements and securities loaned are determined using OSFI's CAR guidelines Chapter 4 Settlement and Counterparty risk framework. On November 1, 2018, OSFI adopted the BCBS Standardized Approach for measuring Counterparty credit risk for derivative regulatory exposures and we have adopted this methodology for our derivative regulatory exposures. The main differences between the accounting and regulatory amounts for Counterparty credit risk relate to regulatory inclusion of potential future exposure amounts and differences in allowed IFRS and regulatory netting rules, and also application of financial collateral in the calculation of regulatory exposure amount.

The regulatory carrying value of exposures subject to the securitization framework includes our on-balance sheet third party securitization holdings as well as our securitized credit card exposures which meet the risk transference requirements under the CAR guidelines Chapter 7 but are not considered securitized for the purposes of our IFRS accounting balance sheet. Our regulatory carrying values are determined based on the BCBS revised securitization framework adopted by OSFI on November 1, 2018.

Our trading book regulatory carrying values are determined as prescribed under the CAR guidelines Chapter 9. We employ OSFI's prudent valuation guidance requirements, as stated in CAR Chapter 9 section 9.8 to our trading book. Refer to our 2021 Annual Report - Risk Management section which provides further insight into how we measure our market risk and the linkage of market risk to selected balance sheet items.

CAPITAL

CC1: Composition of Capital

The following table provides details of our regulatory capital and required regulatory adjustments under OSFI's CAR guidelines. Reconciliation references to CC2 of where these items are located on our IFRS and regulatory balance sheet are also included.

	Composition of Capital Template (Millions of Canadian dollars, except percentage and otherwise noted)	Cross Reference of Current Quarter to Regulatory Capital Balance Sheet (CC2)	Q1/22	Q4/21	Q3/21	Q2/21	Q1/21
Common Equity Tier 1 capital (CET1): Instruments and Reserves							
1	Directly issued qualifying common share capital (and equivalent for non-joint stock companies) plus related stock surplus	a+a'	17,817	17,887	17,885	17,927	17,883
2	Retained earnings	b+b'	73,297	71,563	68,722	65,925	62,506
3	Accumulated other comprehensive income (and other reserves)	c-c'	3,355	2,533	2,196	1,683	2,545
4	*Directly issued capital subject to phase out from CET1 (only applicable to non-joint stock companies)*		-	-	-	-	-
5	Common share capital issued by subsidiaries and held by third parties (amount allowed in group CET1)	d	10	11	11	11	12
6	**Common Equity Tier 1 capital before regulatory adjustments**		**94,479**	**91,994**	**88,814**	**85,546**	**82,946**
	Common Equity Tier 1 capital: Regulatory adjustments						
7	Prudential valuation adjustments		-	-	-	-	-
8	Goodwill (net of related tax liability)	e+e'+m'-t	10,884	10,734	10,791	10,686	10,984
9	Other intangibles other than mortgage-servicing rights (net of related tax liability)	f+f'-v	3,649	3,656	3,669	3,671	3,906
10	Deferred tax assets excluding those arising from temporary differences (net of related tax liability)	g	227	222	174	170	184
11	Cash flow hedge reserve	h	695	566	(300)	(205)	(907)
12	Shortfall of provisions to expected losses	i	-	-	-	-	-
13	Securitization gain on sale		-	-	-	-	-
14	Gains and losses due to changes in own credit risk on fair valued liabilities	j	(33)	(258)	(341)	(374)	(474)
15	Defined benefit pension fund net assets (net of related tax liability)	k-u	2,171	1,909	1,557	1,448	673
16	Investments in own shares (if not already netted off paid-in capital on reported balance sheet)		-	-	-	-	-
17	Reciprocal cross holdings in common equity		-	-	-	-	-
18	Non-significant investments in the capital of banking, financial and insurance entities, net of eligible short positions (amount above 10% threshold)		-	-	-	-	-
19	Significant investments in the common stock of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions (amount above 10% threshold)		-	-	-	-	-
20	Mortgage servicing rights (amount above 10% threshold)		-	-	-	-	-
21	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability)		-	-	-	-	-
22	Amount exceeding the 15% threshold		-	-	-	-	-
23	of which: significant investments in the common stock of financials	l	-	-	-	-	-
24	of which: mortgage servicing rights		-	-	-	-	-
25	of which: deferred tax assets arising from temporary differences	m	-	-	-	-	-
26	Other deductions or regulatory adjustments to CET1 as determined by OSFI		(194)	(418)	(558)	(820)	(975)
27	Regulatory adjustments applied to Common Equity Tier 1 due to insufficient Additional Tier 1 and Tier 2 to cover deductions		-	-	-	-	-
28	**Total regulatory adjustments to Common Equity Tier 1**		17,399	16,411	14,992	14,576	13,391
29	**Common Equity Tier 1 capital (CET1)**		**77,080**	**75,583**	**73,822**	**70,970**	**69,555**
29a	**Common Equity Tier 1 Capital (CET1)** with transitional arrangements for ECL provisioning not applied		76,885	75,163	73,264	70,150	68,579
Additional Tier 1 capital (AT1): Instruments							
30	Directly issued qualifying Additional Tier 1 instruments plus related stock surplus		7,411	6,661	7,393	7,167	7,175
31	of which: classified as equity under applicable accounting standards	n'+n''''	7,411	6,661	7,393	7,167	7,175
32	of which: classified as liabilities under applicable accounting standards		-	-	-	-	-

	Composition of Capital Template ***continued*** (Millions of Canadian dollars, except percentage and otherwise noted)	**Cross Reference of Current Quarter to Regulatory Capital Balance Sheet (CC2)**	**Q1/22**	**Q4/21**	**Q3/21**	**Q2/21**	**Q1/21**
33	*Directly issued capital instruments subject to phase out from Additional Tier 1*	**x+n"**	-	-	-	-	-
34	Additional Tier 1 instruments (and CET1 instruments not included in row 5) issued by subsidiaries and held by third parties (amount allowed in group AT1)	**o**	2	2	3	2	3
35	*of which: instruments issued by subsidiaries subject to phase out*		-	-	-	-	-
36	**Additional Tier 1 capital before regulatory adjustments**		7,413	6,663	7,396	7,169	7,178
	Additional Tier 1 capital: Regulatory adjustments						
37	Investments in own Additional Tier 1 instruments		-	-	-	-	-
38	Reciprocal cross holdings in Additional Tier 1 instruments		-	-	-	-	-
39	Non-significant investments in the capital of banking, financial and insurance entities, net of eligible short positions (amount above 10% threshold)		-	-	-	-	-
40	Significant investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions		-	-	-	-	-
41	Other deductions from Tier 1 capital as determined by OSFI		-	-	-	-	-
41a	of which: reverse mortgages		-	-	-	-	-
42	Regulatory adjustments applied to Additional Tier 1 due to insufficient Tier 2 to cover deductions		-	-	-	-	-
43	**Total regulatory adjustments to Additional Tier 1 capital**		-	-	-	-	-
44	**Additional Tier 1 Capital (AT1)**		**7,413**	**6,663**	**7,396**	**7,169**	**7,178**
45	**Tier 1 capital (T1 = CET1 + AT1)**		**84,493**	**82,246**	**81,218**	**78,139**	**76,733**
45a	**Tier 1 capital** with transitional arrangements for ECL provisioning not applied		84,298	81,826	80,659	77,319	75,757
Tier 2 Capital: Instruments and Provisions							
46	Directly issued qualifying Tier 2 instruments plus related stock surplus	**q"+q'''''**	9,009	8,443	7,890	7,866	8,005
47	*Directly issued capital instruments subject to phase out from Tier 2*	**q'''**	-	448	452	470	478
48	Tier 2 instruments (and CET1 and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties (amount allowed in group Tier 2)	**r+q''''**	3	26	27	27	28
49	*of which: instruments issued by subsidiaries subject to phase out*	**q''''**	-	*23*	*24*	*24*	*25*
50	Collective allowances	**s**	997	863	1,149	1,134	1,299
51	**Tier 2 capital before regulatory adjustments**		**10,009**	**9,780**	**9,518**	**9,497**	**9,810**
	Tier 2 Capital: Regulatory adjustments						
52	Investments in own Tier 2 instruments		-	-	-	-	-
53	Reciprocal cross holdings in Tier 2 instruments and Other TLAC-eligible Instruments		-	-	-	-	-
54	Non-significant investments in the capital of banking, financial and insurance entities, and Other TLAC-eligible instruments issued by G-SIBs and Canadian D-SIBs that are outside the scope of regulatory consolidation, where the institution does not own more than 10% of the issued common share capital of the entity (amount above 10% threshold)		-	-	-	-	-
54a	Non-significant investments in the other TLAC-eligible instruments issued by G-SIBs and Canadian D-SIBs, where the institution does not own more than 10% of the issued common share capital of the entity: amount previously designated for the 5% threshold but that no longer meets the conditions.		-	-	-	-	-
55	Significant investments in the capital of banking, financial and insurance entities and Other TLAC-eligible instuments issued by G-SIBs and Canadian D-SIBs that are outside the scope of regulatory consolidation		-	-	-	-	-
56	Other deductions from Tier 2 capital		-	-	-	-	-
57	**Total regulatory adjustments to Tier 2 capital**		-	-	-	-	-
58	**Tier 2 capital (T2)**		**10,009**	**9,780**	**9,518**	**9,497**	**9,810**
59	**Total capital (TC = T1 + T2)**		**94,502**	**92,026**	**90,736**	**87,636**	**86,543**
59a	**Total Capital** with transitional arrangements for ECL provisioning not applied		94,502	92,026	90,736	87,636	86,543
60	**Total risk-weighted assets**		**569,285**	**552,541**	**543,047**	**555,607**	**557,519**
60a	**Common Equity Tier 1 (CET1) Capital RWA**		**569,285**	**552,541**	**543,047**	**555,607**	**557,519**
60b	**Tier 1 Capital RWA**		**569,285**	**552,541**	**543,047**	**555,607**	**557,519**
60c	**Total Capital RWA**		**569,285**	**552,541**	**543,047**	**555,607**	**557,519**

Composition of Capital Template *continued* (Millions of Canadian dollars, except percentage and otherwise noted)		Cross Reference of Current Quarter to Regulatory Capital Balance Sheet (CC2)	Q1/22	Q4/21	Q3/21	Q2/21	Q1/21
Capital ratios							
61	Common Equity Tier 1 (as a percentage of risk-weighted assets)		13.5%	13.7%	13.6%	12.8%	12.5%
61a	CET1 Ratio with transitional arrangements for ECL provisioning not applied		13.5%	13.6%	13.5%	12.6%	12.3%
62	Tier 1 (as a percentage of risk-weighted assets)		14.8%	14.9%	15.0%	14.1%	13.8%
62a	Tier 1 Capital Ratio with transitional arrangements for ECL provisioning not applied		14.8%	14.8%	14.9%	13.9%	13.6%
63	Total capital (as a percentage of risk-weighted assets)		16.6%	16.7%	16.7%	15.8%	15.5%
63a	Total Capital Ratio with transitional arrangements for ECL provisioning not applied		16.6%	16.7%	16.7%	15.8%	15.5%
64	Buffer (minimum CET1 requirement plus capital conservation buffer plus G-SIB buffer requirement plus D-SIB buffer expressed as a percentage of risk-weighted assets)		8.0%	8.0%	8.0%	8.0%	8.0%
65	of which: capital conservation buffer		2.5%	2.5%	2.5%	2.5%	2.5%
66	of which: bank-specific countercyclical buffer		0.0%	0.0%	0.0%	0.0%	0.0%
67	of which: G-SIB buffer[1]		1.0%	1.0%	1.0%	1.0%	1.0%
67a	of which: D-SIB buffer		0.0%	0.0%	0.0%	0.0%	0.0%
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk-weighted assets)		13.5%	13.7%	13.6%	12.8%	12.5%
OSFI target (minimum + capital conservation buffer + D-SIB surcharge (if applicable))							
69	Common Equity Tier 1 target ratio		8.0%	8.0%	8.0%	8.0%	8.0%
70	Tier 1 capital target ratio		9.5%	9.5%	9.5%	9.5%	9.5%
71	Total capital target ratio		11.5%	11.5%	11.5%	11.5%	11.5%
Amounts below the thresholds for deduction (before risk-weighting)							
72	Non-significant investments in the capital and Other TLAC-eligible instruments of other financials entities		958	761	780	348	659
73	Significant investments in the common stock of financials		5,980	5,799	5,480	5,423	5,348
74	Mortgage servicing rights (net of related tax liability)		-	-	-	-	-
75	Deferred tax assets arising from temporary differences (net of related tax liability)		1,506	1,515	1,224	1,129	995
Applicable caps on the inclusion of allowances in Tier 2							
76	Allowances eligible for inclusion in Tier 2 in respect of exposures subject to standardized approach (prior to application of cap)		849	861	906	948	1,028
77	Cap on inclusion of allowances in Tier 2 under standardized approach		849	861	906	948	1,028
78	Allowances eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)		2,882	2,925	3,251	3,879	4,159
79	Cap on inclusion of allowances in Tier 2 under internal ratings-based approach		2,882	2,925	3,251	3,879	4,159
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)							
80	*Current cap on CET1 instruments subject to phase out arrangements*		-	-	-	-	-
81	*Amounts excluded from CET1 due to cap (excess over cap after redemptions and maturities)*		-	-	-	-	-
82	*Current cap on AT1 instruments subject to phase out arrangements*		-	739	739	739	739
83	*Amounts excluded from AT1 due to cap (excess over cap after redemptions and maturities)*		-	-	-	-	-
84	*Current cap on T2 instruments subject to phase out arrangements*		-	919	919	919	919
85	*Amounts excluded from T2 due to cap (excess over cap after redemptions and maturities)*		562	-	-	-	-

[1] Capital surcharge, equal to the higher of our D-SIB surcharge and the BCBS's G-SIB surcharge, is applicable to risk-weighted capital.

CC2: Regulatory capital balance sheet

The following table provides a reconciliation of our regulatory capital elements as reported in CC1 with our balance sheet prepared in accordance with IFRS and our regulatory balance sheet.

Regulatory capital balance sheet (Millions of Canadian dollars)	Cross Reference to Basel III Regulatory Capital Components (CC1)	Q1/22 Balance sheet as in Report to Shareholders	Q1/22 Under regulatory scope of consolidation
Assets			
Cash and due from banks		131,163	131,163
Interest-bearing deposits with banks		63,420	63,420
Securities, net of applicable allowance		303,095	287,645
Non-significant investments in capital of other financial institutions not exceeding regulatory thresholds			958
Other securities			286,687
Assets purchased under reverse repurchase agreements and securities borrowed		312,126	312,126
Loans			-
Retail		513,970	513,646
Wholesale		230,108	227,769
Allowance for loan losses		(4,047)	(4,047)
Collective allowance reflected in Tier 2 regulatory capital [1]	s		(997)
Shortfall of allowances to expected loss [2]	i		-
Allowances not reflected in regulatory capital			(3,050)
		740,031	737,368
Segregated fund net assets		2,730	-
Other			
Customers' liability under acceptances		18,876	18,876
Derivatives		92,319	93,145
Premises and equipment, net		7,406	7,389
Goodwill	e	11,010	11,010
Goodwill related to insurance and joint ventures	e'		-
Other intangibles	f	4,459	4,334
Other intangibles related to insurance and joint ventures	f'		125
Other		65,834	69,118
Significant investments in other financial institutions and insurance subsidiaries			5,980
of which: exceeding regulatory thresholds	l		-
of which: not exceeding regulatory thresholds			5,980
Defined - benefit pension fund net assets	k		2,934
Deferred tax assets			1,746
of which: deferred tax assets excluding those arising from temporary differences	g		227
of which: deferred tax assets arising from temporary differences exceeding regulatory thresholds	m		-
of which: deferred tax liabilities related to permitted tax netting			(1,617)
of which: deferred tax assets - other temporary differences			3,136
Other assets			58,458
of which: relates to assets of operations held for sale – Goodwill	m'		-
Total assets		**1,752,469**	**1,735,594**

[1] Collective allowance includes Stage 1 and Stage 2 ACL on financial assets.

[2] Expected loss as defined under the Basel III framework.

Regulatory capital balance sheet *continued* (Millions of Canadian dollars)	Cross Reference to Basel III Regulatory Capital Components (CC1)	Q1/22 Balance sheet as in Report to Shareholders	 Under regulatory scope of consolidation
Liabilities			
Deposits			
Personal		375,606	375,606
Business and government		720,089	720,709
Bank		47,147	47,147
		1,142,842	1,143,462
Segregated fund net liabilities		2,730	-
Other			
Acceptances		18,959	18,959
Obligations related to securities sold short		41,544	41,544
Obligations related to assets sold under repurchase agreements and securities loaned		265,009	265,009
Derivatives		88,102	88,102
Insurance claims and policy benefit liabilities		12,973	-
Other liabilities		67,741	65,698
Gains and losses due to changes in own credit risk on fair value liabilities	**j**		(33)
Deferred tax liabilities			76
of which: related to goodwill	**t**		126
of which: related to intangibles	**v**		810
of which: related to pensions	**u**		763
of which: relates to permitted tax netting			(1,623)
of which: other deferred tax liabilities			-
Other Liabilities			65,655
Subordinated debentures	**q**	10,561	10,561
Regulatory capital amortization of maturing debentures	**q'''''**		(763)
Subordinated debentures not allowed for regulatory capital	**q'**		1,552
Subordinated debentures used for regulatory capital:			9,772
of which: are qualifying	**q''**		9,772
of which: are subject to phase out directly issued capital:	**q'''**		-
of which: are subject to phase out issued by subsidiaries and held by 3rd party	**q''''**		-
Total liabilities		**1,650,461**	**1,633,335**
Equity attributable to shareholders		**101,910**	**102,161**
Common shares	**a**	17,572	17,572
of which are treasury - common shares			(79)
Retained earnings		73,542	73,516
of which relates to contributed surplus	**a'**		245
of which relates to retained earnings for capital purposes	**b**		73,271
of which relates to insurance and joint ventures	**b'**		26
Other components of equity	**c**	3,355	3,632
Gains and losses on derivatives designated as cash flow hedges	**h**		695
Unrealized foreign currency translation gains and losses, net of hedging activities			3,019
Other reserves allowed for regulatory capital			(82)
of which relates to Insurance	**c'**		277
Preferred shares and other equity instruments	**n**	7,441	7,441
of which: are qualifying	**n'**		7,450
of which: are subject to phase out	**n''**		-
of which portion are not allowed for regulatory capital			24
of which: are qualifying treasury - preferred shares	**n'''**		6
of which: are qualifying treasury - other	**n''''**		(39)
of which: are subject to phase out treasury - preferred shares			-

Regulatory capital balance sheet *continued* (Millions of Canadian dollars)	Cross Reference to Basel III Regulatory Capital Components (CC1)	Q1/22 Balance sheet as in Report to Shareholders	Q1/22 Under regulatory scope of consolidation
Non-controlling interests		**98**	**98**
of which: are qualifying			
portion allowed for inclusion into CET1	**d**		10
portion allowed for inclusion into Tier 1 capital	**o**		2
portion allowed for inclusion into Tier 2 capital	**r**		3
of which: are subject to phase out	**x**		-
of which: portion not allowed for regulatory capital			83
Total equity		**102,008**	**102,259**
Total liabilities and equity		**1,752,469**	**1,735,594**

Insurance subsidiaries [1]	Principal activities	Equity	Assets
Assured Assistance Inc.	Service provider for insurance claims	1	-
Royal Bank of Canada Insurance Company Limited	Life, annuity, trade credit, title and property reinsurance company provides coverage to international clients	-	-
RBC (Barbados) Services Comp	The company provides investment management, reinsurance transaction support and corporate services to Royal Bank of Canada Insurance Company Ltd.	2,268	1,018
RBC Insurance Agency Ltd.	Distribution of H&A products through AVIVA	45	51
RBC Insurance Company (Cayman) Limited	Life, annuity reinsurance company provides coverage to international clients	-	-
RBC Insurance Company of Canada	Property and casualty insurance company	120	138
RBC Insurance Holdings Inc.	Holding company	1	-
RBC Insurance Services Inc.	Service provider for insurance companies listed and the bank (creditor)	81	73
RBC Life Insurance Company	Life and health insurance company	2,984	21,095
		5,500	22,375

[1] The list of legal entities that are included within the accounting scope of consolidation but excluded from the regulatory scope of consolidation.

CREDIT RISK

CRA: General qualitative information about credit risk

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

<table>
<tr><th colspan="2">Pillar 3 disclosures requirement</th><th>RBC 2021 Annual Report section</th><th>Sub-section</th></tr>
<tr><td rowspan="2">a)</td><td rowspan="2">Translation of the business model into the components of the bank’s credit risk profile</td><td rowspan="2">Credit risk</td><td>Overview</td></tr>
<tr><td>Measurement of economic and regulatory capital - Gross credit risk exposure</td></tr>
<tr><td rowspan="8">b)</td><td rowspan="8">Criteria and approach used for defining credit risk management policy and for setting credit risk limits</td><td rowspan="4">Enterprise risk management</td><td>Risk governance</td></tr>
<tr><td>Risk appetite</td></tr>
<tr><td>Risk measurement</td></tr>
<tr><td>Risk control – Delegated authorities and risk limits</td></tr>
<tr><td rowspan="4">Credit risk</td><td>Overview</td></tr>
<tr><td>Credit risk assessment</td></tr>
<tr><td>Credit risk mitigation</td></tr>
<tr><td>Credit risk approval</td></tr>
<tr><td rowspan="2">c)</td><td rowspan="2">Structure and organization of the credit risk management and control function</td><td rowspan="2">Enterprise risk management</td><td>Risk governance</td></tr>
<tr><td>Risk control</td></tr>
<tr><td>d)</td><td>Interaction between the credit risk management, risk control, compliance and internal audit functions</td><td>Enterprise risk management</td><td>Risk governance</td></tr>
<tr><td rowspan="2">e)</td><td rowspan="2">Scope and content of the reporting on credit risk exposure to the executive management and to the board of directors</td><td rowspan="2">Enterprise risk management</td><td>Risk governance</td></tr>
<tr><td>Risk control – Risk monitoring and reporting</td></tr>
</table>

CR1: Credit quality of assets

The following table presents a comprehensive view of the credit quality of our on- and off-balance sheet assets.

As at January 31, 2022

		a	b	c	d	e	f	g
		Gross carrying values of		Allowances/ impairments[2]	Of which ECL accounting provisions on SA exposures		Of which ECL accounting provisions on IRB exposures	Net values (a+b-c)
	(Millions of Canadian dollars)	Defaulted exposures[1]	Non-defaulted exposures		Allocated in regulatory category of Specific[3]	Allocated in regulatory category of General[3]		
1	Loans	2,220	718,752	4,047	119	248	3,680	716,925
2	Debt Securities	-	148,089	26	-	-	26	148,063
3	Off-Balance Sheet exposures[4]	726	289,623	286	-	-	286	290,063
4	**Total**	**2,946**	**1,156,464**	**4,359**	**119**	**248**	**3,992**	**1,155,051**

[1] Definition of default as per the CAR guidelines and recent OSFI COVID-19 guidance.

[2] Reflects Stage 1, 2 and 3 allowances under IFRS 9, excluding ACL on fair value through OCI on financial instruments.

[3] Regulatory category of specific allowance reflects IFRS 9 Stage 3 allowances. Regulatory category of general allowances reflects Stage 1 & 2 allowances.

[4] Off balance sheet amounts are before the application of credit conversion factors and reflect guarantees given and irrevocable loan commitments. Revocable loan commitments are excluded as per BCBS requirements.

As at October 31, 2021

		a	b	c	d	e	f	g
		Gross carrying values of		Allowances/ impairments[2]	Of which ECL accounting provisions on SA exposures		Of which ECL accounting provisions on IRB exposures	Net values (a+b-c)
	(Millions of Canadian dollars)	Defaulted exposures[1]	Non-defaulted exposures		Allocated in regulatory category of Specific[3]	Allocated in regulatory category of General[3]		
1	Loans	2,209	697,309	4,089	75	853	3,161	695,429
2	Debt Securities	-	135,650	23	-	5	18	135,627
3	Off-Balance Sheet exposures[4]	819	282,298	277	-	2	275	282,840
4	**Total**	**3,028**	**1,115,257**	**4,389**	**75**	**860**	**3,454**	**1,113,896**

[1] Definition of default as per the CAR guidelines and recent OSFI COVID-19 guidance.

[2] Reflects Stage 1, 2 and 3 allowances under IFRS 9, excluding ACL on fair value through OCI on financial instruments.

[3] Regulatory category of specific allowance reflects IFRS 9 Stage 3 allowances. Regulatory category of general allowances reflects Stage 1 & 2 allowances.

[4] Off balance sheet amounts are before the application of credit conversion factors and reflect guarantees given and irrevocable loan commitments. Revocable loan commitments are excluded as per BCBS requirements.

CRB: Additional disclosure related to the credit quality of assets

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

Pillar 3 disclosures requirement		RBC 2021 Annual Report section	Sub-section
a)	Definitions of past due and impaired exposures	Consolidated Financial Statements	Note 2 - Summary of significant accounting policies, estimates and judgments Allowance for credit losses - Definition of default Credit impaired financial assets (Stage 3) Note 5 – Loans and allowances for credit losses Loans past due but not impaired
b)	Extent of past due exposures	Consolidated Financial Statements	Note 5 – Loans and allowances for credit losses Loans past due but not impaired
c)	Description of methods used for determining accounting provisions for credit losses	Consolidated Financial Statements	Note 2 - Summary of significant accounting policies, estimates and judgments Allowance for credit losses
	Description of the categorization of ECL accounting provisions (general and specific) for standardized approach exposures	n/a	n/a - For regulatory calculations under both the Standardized and IRB approaches, the IFRS 9 stage 3 allowances are considered to be specific allowances and the IFRS 9 stage 1 and stage 2 allowances are considered to be general allowances
d)	Definition of a restructured exposure	Consolidated Financial Statements	Note 2 - Summary of significant accounting policies, estimates and judgments Allowance for credit losses - Modifications

CRB: Additional disclosure related to the credit quality of assets (continued)

(e) Breakdown of exposures by geographical areas, industry and residual maturity

The following table provides a breakdown of our credit risk exposures by industry, geographical areas and residual maturity. Our classification below reflects the Basel regulatory defined exposure classes. Amounts shown below reflect Exposures at default (EAD), which is the amount expected to be owed by an obligor at the time of default.

As at January 31, 2022

	a	b	c	d	e
	Credit Risk[1,2]			Counterparty Credit Risk[5]	
	On-balance sheet amount	Off-balance sheet amount[3]		Repo-style Transaction	Derivatives
(Millions of Canadian dollars)		Undrawn	Other[4]		
Retail					
Residential secured[6]	371,037	99,634			
Qualifying revolving	29,394	92,475			
Other retail	89,251	19,896	139		
Total Retail	**489,682**	**212,005**	**139**		
Wholesale					
Agriculture	9,648	1,864	26	-	99
Automotive	7,360	8,839	574	-	1,058
Banking	57,940	4,946	766	118,805	31,892
Consumer Discretionary	15,795	9,490	559	-	701
Consumer Staples	6,133	6,684	170	-	1,096
Oil and Gas	5,835	11,390	1,480	-	7,102
Financial Services	35,771	20,906	3,312	70,146	18,685
Financing Products	2,861	2,098	498	371	727
Forest Products	1,132	969	199	-	32
Governments	291,980	4,714	1,411	25,975	5,804
Industrial Products	9,098	9,598	780	-	645
Information Technology	3,551	6,781	249	-	2,690
Investments	21,878	3,321	432	165	270
Mining and Metals	1,176	3,845	948	-	275
Public Works and Infrastructure	1,490	1,988	425	-	218
Real Estate and Related	78,144	14,911	1,560	-	1,046
Other Services	25,554	12,842	1,989	9	1,176
Telecommunication and Media	6,711	9,208	103	-	2,243
Transportation	6,135	6,239	864	-	1,410
Utilities	8,936	17,452	3,866	-	4,253
Other Sectors	4,027	1,372	8	6	7,415
Total Wholesale	**601,155**	**159,457**	**20,219**	**215,477**	**88,837**
Total Exposure[1]	**1,090,837**	**371,462**	**20,358**	**215,477**	**88,837**
By Geography[7]					
Canada	706,815	271,188	8,342	91,492	27,730
United States	251,635	71,705	8,080	54,685	25,095
Europe	76,089	22,637	2,435	43,320	27,753
Other International	56,298	5,932	1,501	25,980	8,259
Total Exposure[1,7]	**1,090,837**	**371,462**	**20,358**	**215,477**	**88,837**
By Maturity					
Unconditionally cancellable	69,996	241,242	-	-	-
Within 1 year	385,100	24,831	11,083	215,477	43,411
1 to 5 year	530,019	97,470	8,168	-	27,376
Over 5 years	105,722	7,919	1,107	-	18,050
Total Exposure[1]	**1,090,837**	**371,462**	**20,358**	**215,477**	**88,837**

[1] Excludes securitization, banking book equities and other assets not subject to standardized or IRB approach. Also excludes exposures acquired through the US Government Paycheck Protection Program (PPP).

[2] EAD for Standardized exposures are reported net of Stage 3 allowances and EAD for IRB exposures are reported gross of all allowances for credit loss and partial write-off as per regulatory definitions.

[3] EAD for Undrawn credit commitments and other off-balance sheet amounts are reported after the application of credit conversion factors.

[4] Includes other off-balance sheet exposures such as letters of credit & guarantees.

[5] Counterparty credit risk EAD reflects exposure amount after netting. Collateral is included in EAD for repo-style transactions to the extent allowed by regulatory guidelines. Exchange traded derivatives are included in Other Sectors.

[6] Includes residential mortgages and home equity lines of credit.

[7] Geographic profile is based on the country of residence of the borrower.

CRB: Additional disclosure related to the credit quality of assets (continued)

As at October 31, 2021

(Millions of Canadian dollars)	a	b	c	d	e
	Credit Risk[1,2]			Counterparty Credit Risk[5]	
	On-balance sheet amount	Off-balance sheet amount[3]		Repo-style Transaction	Derivatives
		Undrawn	Other[4]		
Retail					
Residential secured[6]	362,793	96,609			
Qualifying revolving	30,080	90,932			
Other retail	85,362	19,422	146		
Total Retail	**478,235**	**206,963**	**146**		
Wholesale					
Agriculture	9,400	1,756	30	-	84
Automotive	6,288	9,184	173	-	1,124
Banking[8]	45,906	4,545	765	117,996	30,888
Consumer Discretionary	14,792	9,380	573	-	698
Consumer Staples	6,254	6,949	180	-	1,058
Oil and Gas	5,678	10,328	1,474	-	7,493
Financial Services	32,977	19,252	2,623	64,593	16,262
Financing Products[8]	7,868	2,405	485	388	848
Forest Products	969	991	201	-	17
Governments[8]	287,806	4,794	1,533	23,536	5,692
Industrial Products	7,308	8,933	594	-	811
Information Technology	3,591	5,715	237	49	5,447
Investments	22,238	3,201	412	12	174
Mining and Metals	993	3,730	952	-	237
Public Works and Infrastructure	1,427	1,963	391	-	239
Real Estate and Related	76,141	14,223	1,568	-	1,176
Other Services	23,872	13,362	1,860	47	1,316
Telecommunication and Media	5,294	9,748	598	-	1,976
Transportation	6,151	6,832	1,319	-	1,426
Utilities	9,059	17,152	4,131	-	4,464
Other Sectors	3,084	1,139	7	7	6,960
Total Wholesale	**577,096**	**155,582**	**20,106**	**206,628**	**88,390**
Total Exposure[1]	**1,055,331**	**362,545**	**20,252**	**206,628**	**88,390**
By Geography[7]					
Canada	693,700	264,708	9,141	88,523	27,978
United States	245,929	69,295	7,866	54,617	27,270
Europe	62,509	22,667	1,991	42,483	25,757
Other International	53,193	5,875	1,254	21,005	7,385
Total Exposure[1,7]	**1,055,331**	**362,545**	**20,252**	**206,628**	**88,390**
By Maturity					
Unconditionally cancellable	70,446	233,713	138	-	-
Within 1 year	393,003	26,315	11,796	206,628	41,545
1 to 5 year	499,818	93,614	7,124	-	28,644
Over 5 years	92,064	8,903	1,194	-	18,201
Total Exposure[1]	**1,055,331**	**362,545**	**20,252**	**206,628**	**88,390**

1 Excludes securitization, banking book equities and other assets not subject to standardized or IRB approach. Also excludes exposures acquired through the US Government Paycheck Protection Program (PPP).

2 EAD for Standardized exposures are reported net of Stage 3 allowances and EAD for IRB exposures are reported gross of all allowances for credit loss and partial write-off as per regulatory definitions.

3 EAD for Undrawn credit commitments and other off-balance sheet amounts are reported after the application of credit conversion factors.

4 Includes other off-balance sheet exposures such as letters of credit & guarantees.

5 Counterparty credit risk EAD reflects exposure amount after netting. Collateral is included in EAD for repo-style transactions to the extent allowed by regulatory guidelines. Exchange traded derivatives are included in Other Sectors.

6 Includes residential mortgages and home equity lines of credit.

7 Geographic profile is based on the country of residence of the borrower.

8 October 31, 2021 figures for Banking, Financing Products and Governments sectors have been restated to align with current period sector classification.

CRB: Additional disclosure related to the credit quality of assets (continued)

(f) Amounts of impaired exposures (according to the definition used by the bank for accounting purposes) and related allowances and write-offs, broken down by geographical areas and industry

The following tables provide a breakdown of impaired exposures by geographical areas and industry.

As at January 31, 2022

Impaired exposures by geography[1] and portfolio (Millions of Canadian dollars)	Gross impaired exposures	Allowance[2]	Net impaired exposures
Canada			
Retail	694	153	541
Wholesale	497	203	294
Securities	-	-	-
Total - Canada	**1,191**	**356**	**835**
United States			
Retail	23	1	22
Wholesale	393	139	254
Securities	-	-	-
Total - United States	**416**	**140**	**276**
Other International			
Retail	209	105	104
Wholesale	325	124	201
Securities	153	(14)	167
Total - Other International	**687**	**215**	**472**
Total			
Retail	926	259	667
Wholesale	1,215	466	749
Securities	153	(14)	167
Total impaired exposures	**2,294**	**711**	**1,583**

[1] Geographic information is based on residence of borrower.

[2] Allowance reflects only Stage 3 IFRS 9 allowances and includes allowances on acquired credit-impaired loans and securities.

As at October 31, 2021

Impaired exposures by geography[1] and portfolio (Millions of Canadian dollars)	Gross impaired exposures	Allowance[2]	Net impaired exposures
Canada			
Retail	716	150	566
Wholesale	555	182	373
Securities	-	-	-
Total - Canada	**1,271**	**332**	**939**
United States			
Retail	23	3	20
Wholesale	412	126	286
Securities	-	-	-
Total - United States	**435**	**129**	**306**
Other International			
Retail	212	107	105
Wholesale	390	129	261
Securities	150	(12)	162
Total - Other International	**752**	**224**	**528**
Total			
Retail	951	260	691
Wholesale	1,357	437	920
Securities	150	(12)	162
Total impaired exposures	**2,458**	**685**	**1,773**

[1] Geographic information is based on residence of borrower.

[2] Allowance reflects only Stage 3 IFRS 9 allowances and includes allowances on acquired credit-impaired loans and securities.

CRB: Additional disclosure related to the credit quality of assets (continued)

Net write-offs by geography[1] and portfolio (Millions of Canadian dollars)	For the three months ended January 31, 2022	For the three months ended October 31, 2021
Canada		
Retail	132	129
Wholesale	6	20
Total Canada	**138**	**149**
United States[2]		
Retail	-	2
Wholesale	(8)	23
Total United States	**(8)**	**25**
Other International		
Retail	4	3
Wholesale[2]	8	19
Total Other International	**12**	**22**
Total		
Retail	136	134
Wholesale	6	62
Total net write-offs	**142**	**196**

[1] Geographic information is based on residence of borrower.

[2] Includes acquired credit-impaired loans related to the acquisition of City National.

CRB: Additional disclosure related to the credit quality of assets (continued)

As at January 31, 2022

Impaired exposures by portfolio and sector (Millions of Canadian dollars)	Gross impaired exposures	Allowance[1]	Net impaired exposures
Retail			
Residential mortgages	622	137	485
Personal	197	87	110
Small business	107	35	72
Total Retail	**926**	**259**	**667**
Wholesale			
Agriculture	13	2	11
Automotive	13	5	8
Banking	(1)	-	(1)
Consumer Discretionary	219	26	193
Consumer Staples	40	19	21
Oil and Gas	121	101	20
Financial Services	78	23	55
Financial Products	-	-	-
Forest Products	5	1	4
Governments	15	1	14
Industrial Products	31	14	17
Information Technology	7	1	6
Investments	7	1	6
Mining and Metals	3	1	2
Public Works and Infrastructure	5	3	2
Real Estate and Related	255	79	176
Other Services	221	137	84
Telecommunication and Media	5	4	1
Transportation	133	31	102
Utilities	-	-	-
Other	45	17	28
Total Wholesale	**1,215**	**466**	**749**
Total impaired loans and acceptances	**2,141**	**725**	**1,416**
Securities	153	(14)	167
Total impaired exposures	**2,294**	**711**	**1,583**

[1] Allowance reflects only Stage 3 IFRS 9 allowances and includes allowances on acquired credit-impaired loans and securities.

CRB: Additional disclosure related to the credit quality of assets (continued)

As at October 31, 2021

Impaired exposures by portfolio and sector (Millions of Canadian dollars)	Gross impaired exposures	Allowance[1]	Net impaired exposures
Retail			
Residential mortgages	645	138	507
Personal	197	88	109
Small business	109	34	75
Total Retail	**951**	**260**	**691**
Wholesale			
Agriculture	11	3	8
Automotive	8	2	6
Banking	-	-	-
Consumer Discretionary	274	37	237
Consumer Staples	32	8	24
Oil and Gas	131	91	40
Financial Services	77	22	55
Financial Products	-	-	-
Forest Products	4	1	3
Governments	25	3	22
Industrial Products	35	13	22
Information Technology	5	1	4
Investments	31	-	31
Mining and Metals	3	1	2
Public Works and Infrastructure	6	2	4
Real Estate and Related	314	72	242
Other Services	220	116	104
Telecommunication and Media	6	9	(3)
Transportation	137	42	95
Utilities	-	-	-
Other	38	14	24
Total Wholesale	**1,357**	**437**	**920**
Total impaired loans and acceptances	**2,308**	**697**	**1,611**
Securities	150	(12)	162
Total impaired exposures	**2,458**	**685**	**1,773**

[1] Allowance reflects only Stage 3 IFRS 9 allowances and includes allowances on acquired credit-impaired loans and securities.

CRB: Additional disclosure related to the credit quality of assets (continued)

(g) Ageing analysis of accounting past-due exposures

The following table provides the ageing of our retail and wholesale past due exposures. Amounts presented may include loans past due as a result of administrative processes, such as mortgage loans on which payments are restrained pending payout due to sale or refinance, which can fluctuate based on business volumes. Past due loans arising from administrative processes are not representative of the borrowers' ability to meet their payment obligations. The table excludes loans less than 30 days past due as they are not generally representative of the borrowers' ability to meet their payment obligations.

As at January 31, 2022

(Millions of Canadian dollars)	30 to 89 days	90 days and greater	Total
Retail	$1,130	$160	1,290
Wholesale	$983	$2	985
Total	**2,113**	**162**	**2,275**

As at October 31, 2021

(Millions of Canadian dollars)	30 to 89 days	90 days and greater	Total
Retail	1,105	137	1,242
Wholesale	1,230	-	1,230
Total	**2,335**	**137**	**2,472**

(h) Breakdown of restructured exposures between impaired and not impaired exposures

Restructured exposures actively benefitting from modified contractual terms as at January 31, 2022 are not material (October 31, 2021 – not material).

CRC: Qualitative disclosure requirements related to credit risk mitigation techniques

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

Pillar 3 disclosures requirement		RBC 2021 Annual Report section	Sub-section
a)	Core features of policies and processes for, and an indication of the extent to which the bank makes use of, on- and off-balance sheet netting	Credit risk	Credit risk assessment – *Counterparty credit risk*
		Consolidated Financial Statements	Note 8 - Derivative financial instruments and hedging activities – *Derivative-related credit risk*
			Note 29 - Offsetting financial assets and financial liabilities
b)	Core features of policies and processes for collateral evaluation and management	Credit risk	Credit risk mitigation – *Collateral*
c)	Information about market or credit risk concentrations under the credit risk mitigation instruments used	Credit risk	Credit risk mitigation
			Credit risk approval – *Credit risk limits*
		Consolidated Financial Statements	Note 8 - Derivative financial instruments and hedging activities

CRD: Qualitative disclosures on banks' use of external credit ratings under the standardized approach for credit risk

As detailed in section CR4, certain of our portfolios RWA amounts are calculated as per OSFI's CAR Guideline Standardized Approach requirements. OSFI's Standardized Approach methodology allows for the reliance on the external credit ratings of counterparties, issued by independent rating agencies, for the determination of RWA. Five external rating agencies ratings, namely, Standard & Poor's (S&P), Moody's Investors Service, Fitch Rating Services, DBRS and Kroll Bond Rating Agency, Inc. have been approved by OSFI. Currently, external ratings are used to determine the RWA amounts associated with our wholesale exposures under the asset classes of corporate, sovereign, public sector entities, multilateral development banks, banks and securities firms. As well, external ratings are used for determining the risk weighting for certain of our securitizations exposures.

External ratings utilized from the above-mentioned rating agencies are either an issuer rating or an issue-specific rating. We rely on an issue-specific rating if it is available for the purposes of determining RWA for the exposure we hold. We utilize the issuer rating only for our exposures which rank pari-passu with senior claims of the issuer.

Our supervisor, OSFI specifies in its CAR guideline the required standard mapping of long term external ratings of the above rating agencies to an equivalent risk weight. We rely on OSFI's mapping to determine the appropriate risk buckets for our Standardized Approach portfolios under the guideline. OSFI's current mapping of external rating agencies rating is reflected in the table below:

Long-term rating					
Standardized Risk Weight Category	**S&P**	**Moody's**	**Fitch**	**DBRS**	**Kroll**
Long Term					
(AAA to AA-)	AAA to AA-	Aaa to Aa3	AAA to AA-	AAA to AA (low)	AAA to AA-
(A+ to A-)	A+ to A-	A1 to A3	A+ to A-	A(high) to A(low)	A+ to A-
(BBB+ to BBB-)	BBB+ to BBB-	Baa1 to Baa3	BBB+ to BBB-	BBB(high) to BBB(low)	BBB+ to BBB-
(BB+ to BB-)	BB+ to BB-	Ba1 to Ba3	BB+ to BB-	BB(high) to BB(low)	BB+ to BB-
(B+ to B-)	B+ to B-	B1 to B3	B+ to B-	B(high) to B(low)	B+ to B-
(Below B-)	Below B-	Below B3	Below B-	CCC or lower	Below B-

We understand that OSFI reviews the list of acceptable rating agencies and will reflect any changes in allowed rating agencies in its revisions to the CAR guidelines.

CR4: Standardized approach – credit risk exposure and credit risk mitigation (CRM) effects

The following table provides the effect of CRM on the calculation of capital requirements under the standardized approach. It presents on-balance sheet and off-balance sheet exposures before and after credit conversion factors (CCF) and CRM as well as associated RWA and RWA density by asset classes. As noted in CRD, the external ratings of the counterparty is relied on to determine the prescribed regulatory risk weight to be assigned.

As at January 31, 2022

		a	b	c	d	e	f
	(Millions of Canadian dollars, except as otherwise noted)	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
	Asset Classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
1	Sovereigns and their central banks[1]	34,996	201	51,498	17	72	0.1%
2	Non-central government public sector entities	15,658	384	15,658	188	2,953	18.6%
3	Multilateral development banks	3,865	-	3,865	-	-	-
4	Banks	3,330	433	3,330	192	944	26.8%
5	Securities firms[1]	2,043	2,191	3,205	1,031	1,313	31.0%
6	Corporates[1]	62,392	41,552	51,468	8,776	58,404	96.9%
7	Regulatory retail portfolios	8,995	5,158	8,995	449	7,326	77.6%
8	Secured by residential property[1]	45,415	20	27,753	-	10,401	37.5%
9	Secured by commercial real estate	-	-	-	-	-	-
10	Equity	-	-	-	-	-	-
11	Past-due loans	451	33	451	2	588	129.8%
12	Higher-risk categories	352	255	353	119	708	150.0%
13	Other assets	20,609	-	20,609	-	20,905	101.4%
14	**Total**	**198,106**	**50,227**	**187,185**	**10,774**	**103,614**	**52.3%**

[1] When CRM is available in the form of an eligible guarantee, the portion that is covered by the guarantee will attract the risk weight of the protection provider and will be reflected in the protection provider's asset class in column c and d. Exposures acquired through the US Government Paycheck Protection Program have been excluded, as required by OSFI.

As at October 31, 2021

		a	b	c	d	e	f
	(Millions of Canadian dollars, except as otherwise noted)	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
	Asset Classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
1	Sovereigns and their central banks[1]	34,966	357	51,819	9	635	1.2%
2	Non-central government public sector entities	17,233	373	17,259	183	3,001	17.2%
3	Multilateral development banks	2,168	-	2,168	-	-	-
4	Banks	4,113	398	4,114	194	1,070	24.8%
5	Securities firms[1]	2,774	1,626	3,953	750	1,396	29.7%
6	Corporates[1]	60,055	38,062	49,796	7,741	56,593	98.4%
7	Regulatory retail portfolios	8,004	5,054	8,004	291	6,480	78.1%
8	Secured by residential property[1]	42,903	-	24,946	-	9,477	38.0%
9	Secured by commercial real estate	-	-	-	-	-	-
10	Equity	-	-	-	-	-	-
11	Past-due loans	460	-	457	-	668	146.2%
12	Higher-risk categories	309	769	309	227	804	150.0%
13	Other assets	21,500	-	21,500	-	22,062	102.6%
14	**Total**	**194,485**	**46,639**	**184,325**	**9,395**	**102,186**	**52.7%**

[1] When CRM is available in the form of an eligible guarantee, the portion that is covered by the guarantee will attract the risk weight of the protection provider and will be reflected in the protection provider's asset class in column c and d. Exposures acquired through the US Government Paycheck Protection Program have been excluded, as required by OSFI.

CR5: Standardized approach – exposures by asset classes and risk weights

The following table presents the breakdown of credit risk exposures under the standardized approach by asset classes and risk weight.

As at January 31, 2022

		a	b	c	d	e	f	g	h	i	j
	Risk weight / Asset Classes (Millions of Canadian dollars)	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount (post CCF and post-CRM)
1	Sovereigns and their central banks	51,443	-	-	-	-	-	72	-	-	51,515
2	Non-central government public sector entities	1,246	-	14,557	-	2	-	41	-	-	15,846
3	Multilateral development banks	3,865	-	-	-	-	-	-	-	-	3,865
4	Banks	-	-	3,222	-	1	-	299	-	-	3,522
5	Securities firms	-	-	3,185	-	750	-	301	-	-	4,236
6	Corporates	-	-	1,074	1,505	5	-	57,660	-	-	60,244
7	Regulatory retail portfolios	-	-	-	-	-	8,472	972	-	-	9,444
8	Secured by residential property	-	-	-	26,033	-	1,720	-	-	-	27,753
9	Secured by commercial real estate	-	-	-	-	-	-	-	-	-	-
10	Equity	-	-	-	-	-	-	-	-	-	-
11	Past-due loans	-	-	-	-	-	-	183	270	-	453
12	Higher-risk categories	-	-	-	-	-	-	-	472	-	472
13	Other assets	3,358	-	-	-	-	-	16,933	-	318	20,609
14	**Total**	**59,912**	**-**	**22,038**	**27,538**	**758**	**10,192**	**76,461**	**742**	**318**	**197,959**

As at October 31, 2021

		a	b	c	d	e	f	g	h	i	j
	Risk weight / Asset Classes (Millions of Canadian dollars)	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount (post CCF and post-CRM)
1	Sovereigns and their central banks	51,285	-	-	-	-	-	543	-	-	51,828
2	Non-central government public sector entities	2,438	-	14,887	-	3	-	114	-	-	17,442
3	Multilateral development banks	2,168	-	-	-	-	-	-	-	-	2,168
4	Banks	-	-	3,846	-	322	-	140	-	-	4,308
5	Securities firms	-	-	3,653	-	771	-	280	-	-	4,704
6	Corporates	-	-	89	1,322	24	-	56,101	-	-	57,537
7	Regulatory retail portfolios	-	-	-	-	-	7,259	1,035	-	-	8,294
8	Secured by residential property	-	-	-	23,082	-	1,864	-	-	-	24,946
9	Secured by commercial real estate	-	-	-	-	-	-	-	-	-	-
10	Equity	-	-	-	-	-	-	-	-	-	-
11	Past-due loans	1	-	-	-	-	-	35	422	-	457
12	Higher-risk categories	-	-	-	-	-	-	-	536	-	536
13	Other assets	3,031	-	-	-	-	-	18,157	-	312	21,500
14	**Total**	**58,923**	**-**	**22,475**	**24,404**	**1,120**	**9,123**	**76,405**	**958**	**312**	**193,720**

CRE: Qualitative disclosures related to internal risk-based (IRB) models

In measuring credit risk to determine regulatory capital, two principal approaches applied are: the Internal Ratings Based (IRB) approach and the Standardized approach. The majority of our credit risk exposures are reported under the IRB approach, as approved by OSFI. The remainder of our portfolios are reported under the Standardized approach. The Standardized approach uses risk weights prescribed by OSFI to calculate RWA for credit risk exposures.

Under the IRB approach, we determine our own estimates for Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD). They are the key credit parameters that form the basis of our credit risk measures. Internal ratings for borrower facilities and their corresponding estimates are used for credit approval, risk management, internal capital allocations, and corporate governance functions. In addition, the IRB parameter estimates are critical inputs for enterprise and regulatory stress-testing.

In accordance with the IRB approach for credit risk, models are designed for wholesale and retail portfolios. For Wholesale portfolios, a PD is estimated for each internal borrower grade and LGD and EAD parameters are estimated for each credit facility. For Retail portfolios, borrowers are risk rated using internal credit scoring models. Credit scores are one of the key drivers for segmentation of the portfolios into pools. Retail PD, EAD and LGD parameters are estimated at the pool level. All IRB approach regulatory capital models for wholesale and retail credit risk are subject to approval by the Office of the Superintendent of Financial Institutions (OSFI).

Credit parameter estimates are based on our internal historical default and loan loss experience and are augmented by external data where appropriate. We employ a two-dimensional risk rating system for the majority of our credit portfolios. The first dimension is oriented to the risk of borrower default and quantified through the PD assigned to the borrower. The second dimension captures transaction-specific factors such as collateral, product type, and seniority, and is quantified by LGD and EAD estimates that apply at the credit facility level.

PD is an estimated percentage that represents the likelihood of default of an obligor within a given time period for a specific rating grade or for a particular pool of exposure. Each wholesale obligor is assigned a Borrower Risk Rating (BRR), reflecting an assessment of the credit quality of the obligor and each BRR has a PD calibrated against it. The assignment of BRRs is based on the evaluation of the obligor's business risk and financial risk and is based on fundamental credit analysis, as well as data-driven modelling. PD estimates are designed to be a long-run average of our experience across the economic cycle with margins of conservatism related to the likely range of errors. The BRR differentiates the riskiness of obligors and represents our evaluation of the obligors' ability and willingness to meet their contractual obligations on time over a three-year time horizon.

EAD is an amount expected to be owed by an obligor at the time of default. EAD is estimated based on the current exposure to the obligor and the possible future changes in that exposure driven by factors such as the nature of the credit commitment. Rates are estimated to reflect an economic downturn, with added conservatism to reflect data and statistical uncertainties identified in the modelling process.

LGD is an estimated percentage of EAD that is not expected to be recovered during the collection and recovery process. Each credit facility is assigned an LGD rate reflective of the extent of losses anticipated in the event the obligor defaults. Factors used in estimating LGD include seniority of debt, collateral security, and the industry sector in which the obligor operates. Estimated LGD rates draw primarily on internal loss experience and appropriate external data is used to supplement the estimation process when necessary. LGD rates are estimated to reflect conditions that might be expected to prevail in an economic downturn, with additional conservatism added to reflect data limitations and statistical uncertainties identified in the estimation process.

Estimates of PD, LGD and EAD are reviewed, validated and back-tested by an independent validation team within the bank on an annual basis. In addition, quarterly monitoring and back-testing procedures are performed.

CRE: Qualitative disclosures related to internal risk-based (IRB) models (continued)

EAD Covered by the Various Approaches

The following table outlines the percentage of our EAD covered by the IRB and Standardized approaches for each of our portfolios. The Foundation Internal Ratings Based (FIRB) approach is currently not applied. This table reflects the methodology outlined by OSFI for IRB banks to determine whether they are meeting the 80% threshold calculation minimum requirement.

As at January 31, 2022

	EAD covered by the various approaches[2]		
EAD (in %)	Standardized Approach[1]	IRB Approach	Other
Retail			
Residential secured	14%	86%	-
Qualifying revolving	-	100%	-
Other retail	4%	96%	-
Wholesale	-	-	-
Corporate	17%	83%	-
Sovereign	16%	84%	-
Bank	23%	77%	-
Equity	-	100%	-
Total credit risk	13%	87%	-
Counterparty credit risk	-	85%	15%
Securitization	38%	62%	-
Other assets not subject to Standardized or IRB Approaches	-	-	100%
Total[3]	9%	91%	-

[1] Standardized Approach includes assumptions and waivers granted by OSFI based on an OSFI approved rollout plan.

[2] Effective Q1 2022, counterparty credit risk is separately categorized from wholesale exposures. Prior quarter percentages have been revised from those previously presented to conform to the current period presentation.

[3] The total for this table is calculated using OSFI's guidance on what exposures are included in the 80% Threshold Calculation for IRB banks.

As at October 31, 2021

	EAD covered by the various approaches[2]		
EAD (in %)	Standardized Approach[1]	IRB Approach	Other
Retail			
Residential secured	13%	87%	-
Qualifying revolving	-	100%	-
Other retail	4%	96%	-
Wholesale	-	-	-
Corporate	17%	83%	-
Sovereign	17%	83%	-
Bank	28%	72%	-
Equity	-	100%	-
Total credit risk	13%	87%	-
Counterparty credit risk	1%	86%	13%
Securitization	38%	62%	-
Other assets not subject to Standardized or IRB Approaches	-	-	100%
Total	9%	91%	-

[1] Standardized Approach includes assumptions and waivers granted by OSFI based on an OSFI approved rollout plan.

[2] October 31, 2021 percentages have been revised from those previously presented to conform to the current period presentation.

CRE: Qualitative disclosures related to internal risk-based (IRB) models (continued)

Parameters Governance

The techniques used to develop models are in accordance with banking industry standards and regulatory requirements. We calibrate our models to ensure that variations of default rates through an economic cycle are included in the underlying data. We also build conservatism into our model development process to reflect statistical uncertainties.

Our models have Model Development Owners (MDO) who are accountable for the development and performance of models within the framework set by our policies, standards and procedures. MDOs are responsible for collecting, defining and documenting model requirements, collecting and reviewing data, testing and evaluating, designing model performance monitoring, and documenting.

Our models are required to be independently reviewed and comprehensively evaluated by the Enterprise Model Risk Management (EMRM) team. EMRM is responsible for the review and challenge of the methodology underpinning the estimation of the parameters. EMRM issues a report at the end of each validation exercise that documents the scope, approach and findings of the review. The parameters reviewed by EMRM are presented to the Credit Models Governance Committee and approved by RBC's senior risk management committee.

Back-testing of Parameters and Model Performance

The IRB credit risk parameters are reviewed, at a minimum, annually and more frequently if deemed necessary. In order to ensure that any material events are identified in a timely fashion, we engage in regular monitoring of realized results against established estimates. In cases where the actual results exceed predefined thresholds, a review of the results will be conducted and documented which may lead to a re-calibration of the parameters. Any recommended changes to the parameters would be approved by the Credit Models Governance Committee, and OSFI as applicable.

CR6: IRB – Credit risk exposures by portfolio and PD range

The following table provides the key parameters used for the calculation of capital requirements for credit risk exposures under the IRB approach, broken down by asset class and PD range.

As at January 31, 2022

			a	b	c	d	e	f	g	h	i	j	k	l
	(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF	Average CCF (%)	EAD post CRM and post-CCF	Average PD (%)	Number of obligors[2]	Average LGD (%)	Average maturity (in years)	RWA	RWA density (%)	EL	Provisions[3]
	Asset Classes													
1	**Sovereigns**													
		0.00 to < 0.15	269,374	23,155	53.61	362,181	0.02	1,477	16.79	1.80	12,287	3.4	12	
		0.15 to < 0.25	191	74	56.74	234	0.24	85	23.35	1.78	55	23.6	-	
		0.25 to < 0.50	489	13	50.52	494	0.49	467	26.38	2.82	225	45.6	1	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	109	91	47.14	114	1.14	64	33.41	3.25	92	80.4	-	
		2.50 to < 10.00	7	13	54.41	14	3.61	11	46.10	1.71	19	135.8	-	
		10.00 to < 100.00	1	4	53.09	2	18.51	7	42.68	1.11	5	221.2	-	
		100.00 (default)	72	1	6.75	72	100.00	6	59.94	2.50	1	0.9	63	
	Total Sovereigns		**270,243**	**23,351**	**53.59**	**363,111**	**0.04**	**2,117**	**16.82**	**1.81**	**12,684**	**3.5**	**76**	**66**
2	**Banks**													
		0.00 to < 0.15	19,235	2,372	50.44	29,059	0.06	248	34.26	2.11	4,985	17.2	4	
		0.15 to < 0.25	189	80	52.68	248	0.24	24	39.58	2.22	108	43.7	-	
		0.25 to < 0.50	222	118	35.94	266	0.49	31	40.94	1.02	140	52.6	1	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	282	201	51.02	382	1.18	37	41.93	1.42	326	85.3	2	
		2.50 to < 10.00	52	75	41.97	83	2.75	9	39.87	3.03	107	129.3	1	
		10.00 to < 100.00	10	-	-	10	18.81	3	45.00	1.00	28	264.1	1	
		100.00 (default)	-	-	-	-	100.00	2	45.00	2.50	-	596.3	-	
	Total Banks		**19,990**	**2,846**	**49.72**	**30,048**	**0.09**	**354**	**34.48**	**2.10**	**5,694**	**18.9**	**9**	**2**
3	**Corporates**													
		0.00 to < 0.15	62,893	180,801	52.02	155,230	0.08	23,164	40.10	2.34	38,959	25.1	49	
		0.15 to < 0.25	24,442	25,661	49.76	35,218	0.24	8,116	35.60	2.30	13,530	38.4	30	
		0.25 to < 0.50	26,262	22,475	49.89	35,177	0.49	7,460	33.70	2.74	18,962	53.9	57	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	60,136	56,498	47.83	77,668	1.36	20,853	34.82	2.31	58,912	75.9	366	
		2.50 to < 10.00	12,208	21,167	45.87	18,719	3.68	6,869	36.92	2.97	21,772	116.3	248	
		10.00 to < 100.00	1,160	692	53.71	1,361	27.20	1,272	37.21	1.91	2,583	189.7	138	
		100.00 (default)	968	768	36.47	1,072	100.00	1,245	35.78	2.06	2,567	239.5	230	
	Total Corporates		**188,069**	**308,062**	**50.45**	**324,445**	**1.10**	**68,979**	**37.44**	**2.40**	**157,285**	**48.5**	**1,118**	**1,528**
4	**Total Wholesale**		**478,302**	**334,259**	**50.67**	**717,604**	**0.52**	**71,450**	**26.88**	**2.09**	**175,663**	**24.5**	**1,203**	**1,596**

[1] Refer to "Internal ratings map" under the Credit Risk Assessment section in our 2021 Annual Report MD&A.
[2] Number of obligors is defined as the number of borrowers in each PD band. For Retail exposures, a borrower can appear in multiple PD bands if the borrower has more than one type of product with the bank. In addition, Retail obligors include borrowers where the portion of the exposure has been securitized given CAR guideline requirements related to retained interests. Wholesale obligors are reflected as unique borrowers. For example, sovereign obligors include central banks or agencies, public sector entities and multilateral development banks which are each reflected as unique borrowers in the sovereign asset class. Retail borrowers with both Visa and Mastercard are counted as one borrower in the asset class qualifying revolving retail.
[3] Effective Q1 2022, provisions reflect IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

As at January 31, 2022

			a	b	c	d	e	f	g	h	i	j	k	l
	(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF	Average CCF (%)	EAD post CRM and post-CCF	Average PD (%)	Number of obligors[2]	Average LGD (%)	Average maturity (in years)	RWA	RWA density (%)	EL	Provisions[3]
	Asset Classes													
5	**Retail insured exposure secured by real estate**													
		0.00 to < 0.15	16,289			1,284	0.14	109,523	16.51		69	5.4	-	
		0.15 to < 0.25	-			-	-	-	-		-	-	-	
		0.25 to < 0.50	43,983			1,816	0.32	186,668	19.31		211	11.6	1	
		0.50 to < 0.75	-			-	-	-	-		-	-	-	
		0.75 to < 2.50	6,751			158	1.25	32,225	13.40		32	20.3	-	
		2.50 to < 10.00	2,897			2	4.88	17,242	13.89		1	46.7	-	
		10.00 to < 100.00	458			1	31.52	2,469	13.96		1	82.2	-	
		100.00 (default)	205			2	100.00	1,306	12.37		4	163.0	-	
	Total Retail insured exposure secured by real estate		**70,583**			**3,263**	**0.38**	**349,433**	**17.95**		**318**	**9.7**	**1**	**8**
6	**Uninsured residential mortgages**													
		0.00 to < 0.15	195,352	245	100.00	195,597	0.12	703,379	17.60		10,410	5.3	44	
		0.15 to < 0.25	174	43	100.00	217	0.22	112	72.24		71	32.9	-	
		0.25 to < 0.50	25	190	100.00	215	0.34	206	16.97		25	11.7	-	
		0.50 to < 0.75	-	-	-	-	-	-	-		-	-	-	
		0.75 to < 2.50	19,179	210	100.00	19,389	0.90	56,774	18.90		4,562	23.5	33	
		2.50 to < 10.00	4,162	13	100.00	4,176	4.06	17,802	17.93		2,322	55.6	31	
		10.00 to < 100.00	775	1	100.00	775	22.97	3,462	16.94		730	94.2	30	
		100.00 (default)	190	-	-	190	100.00	968	17.46		58	30.5	31	
	Total Uninsured residential mortgages		**219,857**	**702**	**100.00**	**220,559**	**0.42**	**782,703**	**17.77**		**18,178**	**8.2**	**169**	**138**

[1] Refer to "Internal ratings map" under the Credit Risk Assessment section in our 2021 Annual Report MD&A.
[2] Number of obligors is defined as the number of borrowers in each PD band. For Retail exposures, a borrower can appear in multiple PD bands if the borrower has more than one type of product with the bank. In addition, Retail obligors include borrowers where the portion of the exposure has been securitized given CAR guideline requirements related to retained interests. Wholesale obligors are reflected as unique borrowers. For example, sovereign obligors include central banks or agencies, public sector entities and multilateral development banks which are each reflected as unique borrowers in the sovereign asset class. Retail borrowers with both Visa and Mastercard are counted as one borrower in the asset class qualifying revolving retail.
[3] Effective Q1 2022, provisions reflect IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

As at January 31, 2022

			a	b	c	d	e	f	g	h	i	j	k	l
	(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF	Average CCF (%)	EAD post CRM and post-CCF	Average PD (%)	Number of obligors[2]	Average LGD (%)	Average maturity (in years)	RWA	RWA density (%)	EL	Provisions[3]
	Asset Classes													
7	**HELOCs**													
		0.00 to < 0.15	31,741	106,318	91.47	128,986	0.08	806,638	24.45		6,813	5.3	26	
		0.15 to < 0.25	-	-	-	-	-	-	-		-	-	-	
		0.25 to < 0.50	-	-	-	-	-	-	-		-	-	-	
		0.50 to < 0.75	2,234	1,559	92.03	3,669	0.71	42,688	25.08		971	26.5	7	
		0.75 to < 2.50	-	-	-	-	-	-	-		-	-	-	
		2.50 to < 10.00	926	268	91.61	1,172	4.29	13,797	25.11		910	77.6	13	
		10.00 to < 100.00	81	8	90.40	89	36.26	704	24.71		129	144.6	8	
		100.00 (default)	65	2	-	65	100.00	578	24.89		33	51.6	17	
	Total HELOCs		**35,047**	**108,155**	**91.47**	**133,980**	**0.21**	**864,405**	**24.47**		**8,856**	**6.6**	**70**	**64**
8	**Qualifying revolving retail**													
		0.00 to < 0.15	6,695	54,149	77.25	48,525	0.12	4,783,532	93.95		3,276	6.8	53	
		0.15 to < 0.25	8,723	41,104	84.12	43,300	0.18	3,290,615	88.13		4,007	9.3	70	
		0.25 to < 0.50	927	5,859	96.86	6,602	0.39	3,718,272	88.08		1,127	17.1	23	
		0.50 to < 0.75	21	118	94.19	132	0.59	7,978	100.58		36	27.2	1	
		0.75 to < 2.50	7,956	9,585	82.22	15,837	1.29	2,377,187	91.18		6,995	44.2	186	
		2.50 to < 10.00	4,212	2,845	78.50	6,445	3.74	1,433,229	90.50		6,054	93.9	216	
		10.00 to < 100.00	814	365	45.64	981	29.21	454,582	91.45		2,636	268.8	262	
		100.00 (default)	46	-	-	46	100.00	28,567	87.08		134	292.1	30	
	Total Qualifying revolving retail		**29,394**	**114,026**	**81.10**	**121,869**	**0.77**	**16,093,962**	**91.01**		**24,265**	**19.9**	**840**	**1,272**
9	**Other retail**													
		0.00 to < 0.15	40,067	3,755	85.05	43,221	0.11	151,951	27.75		3,518	8.1	14	
		0.15 to < 0.25	3,406	8,384	85.99	10,616	0.21	136,714	80.58		3,694	34.8	17	
		0.25 to < 0.50	10,305	2,447	106.72	12,728	0.32	531,682	67.07		5,024	39.5	28	
		0.50 to < 0.75	1,877	719	91.25	1,941	0.59	104,198	81.63		1,316	67.8	9	
		0.75 to < 2.50	16,317	4,312	94.77	19,629	1.18	568,719	59.12		13,299	67.8	144	
		2.50 to < 10.00	6,232	1,706	89.20	7,067	3.94	245,222	62.14		6,643	94.0	171	
		10.00 to < 100.00	1,771	318	95.98	1,809	24.54	39,961	64.41		2,373	131.2	348	
		100.00 (default)	176	1	-	96	100.00	4,965	66.84		155	161.6	55	
	Total Other retail		**80,151**	**21,642**	**90.49**	**97,107**	**1.21**	**1,783,412**	**49.32**		**36,022**	**37.1**	**786**	**610**
10	**Total retail**		**435,032**	**244,525**	**77.98**	**576,778**	**0.81**	**19,873,915**	**49.89**	**-**	**87,639**	**15.2**	**1,866**	**2,092**
	Total		**913,334**	**578,784**	**62.21**	**1,294,382**	**0.70**	**19,945,365**	**40.89**	**2.09**	**263,302**	**20.0**	**3,069**	**3,688**

[1] Refer to "Internal ratings map" under the Credit Risk Assessment section in our 2021 Annual Report MD&A.
[2] Number of obligors is defined as the number of borrowers in each PD band. For Retail exposures, a borrower can appear in multiple PD bands if the borrower has more than one type of product with the bank. In addition, Retail obligors include borrowers where the portion of the exposure has been securitized given CAR guideline requirements related to retained interests. Wholesale obligors are reflected as unique borrowers. For example, sovereign obligors include central banks or agencies, public sector entities and multilateral development banks which are each reflected as unique borrowers in the sovereign asset class. Retail borrowers with both Visa and Mastercard are counted as one borrower in the asset class qualifying revolving retail.
[3] Effective Q1 2022, provisions reflect IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

As at October 31, 2021

			a	b	c	d	e	f	g	h	i	j	k	l
	(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF	Average CCF (%)	EAD post CRM and post-CCF	Average PD (%)	Number of obligors[2]	Average LGD (%)	Average maturity (in years)	RWA	RWA density (%)	EL	Provisions[3]
	Asset Classes													
1	**Sovereigns**													
		0.00 to < 0.15	258,126	23,262	53.72	351,513	0.01	1,553	17.84	1.27	11,332	3.0	11	
		0.15 to < 0.25	191	83	55.38	238	0.24	77	25.39	1.68	62	26.0	-	
		0.25 to < 0.50	357	11	49.06	362	0.49	424	26.31	2.74	162	45.0	-	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	112	28	21.88	118	1.12	62	34.23	3.17	98	83.0	-	
		2.50 to < 10.00	11	8	58.68	16	2.78	10	38.68	2.19	17	109.0	-	
		10.00 to < 100.00	1	-	91.93	-	20.37	5	44.74	1.06	1	233.0	-	
		100.00 (default)	72	1	6.70	72	100.00	2	44.97	2.50	-	1.0	40	
	Total Sovereigns		**258,870**	**23,393**	**53.69**	**352,319**	**0.04**	**2,133**	**17.87**	**1.27**	**11,672**	**3.0**	**51**	**40**
2	**Banks**													
		0.00 to < 0.15	16,706	2,557	46.07	27,114	0.05	238	33.23	2.10	4,814	18.0	4	
		0.15 to < 0.25	136	50	54.11	184	0.24	23	37.29	2.85	83	45.0	-	
		0.25 to < 0.50	257	116	36.51	301	0.49	26	41.46	1.08	170	56.0	1	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	98	320	51.16	261	1.28	33	43.33	1.75	251	96.0	1	
		2.50 to < 10.00	59	7	50.39	63	3.07	9	39.25	1.94	78	123.0	1	
		10.00 to < 100.00	-	-	-	-	29.65	3	45.00	1.00	1	276.0	-	
		100.00 (default)	-	-	-	-	100.00	-	60.00	2.50	-	795.0	-	
	Total Banks		**17,256**	**3,050**	**46.37**	**27,923**	**0.07**	**332**	**33.46**	**2.09**	**5,397**	**19.0**	**7**	**-**
3	**Corporates**													
		0.00 to < 0.15	59,999	176,131	51.41	149,581	0.10	20,537	39.66	2.25	36,329	24.3	57	
		0.15 to < 0.25	23,858	28,325	50.30	35,842	0.24	7,625	36.48	2.32	14,195	39.6	32	
		0.25 to < 0.50	23,742	22,011	50.67	32,975	0.49	7,107	33.94	2.78	17,965	54.5	56	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	57,881	55,622	48.77	74,751	1.37	20,629	34.76	2.29	56,423	75.5	356	
		2.50 to < 10.00	11,239	18,842	47.65	17,021	3.97	7,709	35.64	2.65	18,555	109.0	238	
		10.00 to < 100.00	1,171	464	51.43	1,273	26.88	1,262	36.15	2.06	2,334	183.3	124	
		100.00 (default)	1,080	863	26.96	1,112	100.00	1,129	37.15	2.10	2,617	235.3	295	
	Total Corporates		**178,970**	**302,258**	**50.49**	**312,555**	**1.14**	**65,998**	**37.28**	**2.35**	**148,418**	**47.5**	**1,158**	**463**
4	**Total Wholesale**		**455,096**	**328,701**	**50.68**	**692,797**	**0.54**	**68,463**	**27.26**	**1.79**	**165,487**	**24.0**	**1,216**	**503**

[1] Refer to "Internal ratings map" under the Credit Risk Assessment section in our 2020 Annual Report MD&A.
[2] Number of obligors is defined as the number of borrowers in each PD band. For Retail exposures, a borrower can appear in multiple PD bands if the borrower has more than one type of product with the bank. In addition, Retail obligors include borrowers where the portion of the exposure has been securitized given CAR guideline requirements related to retained interests. Wholesale obligors are reflected as unique borrowers. For example, sovereign obligors include central banks or agencies, public sector entities and multilateral development banks which are each reflected as unique borrowers in the sovereign asset class. Retail borrowers with both Visa and Mastercard are counted as one borrower in the asset class qualifying revolving retail.
[3] Provisions reflect only IFRS 9 Stage 3 allowances under the IRB portfolio.

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

As at October 31, 2021

	(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	a Original on-balance sheet gross exposure	b Off-balance sheet exposures pre CCF	c Average CCF (%)	d EAD post CRM and post-CCF	e Average PD (%)	f Number of obligors[2]	g Average LGD (%)	h Average maturity (in years)	i RWA	j RWA density (%)	k EL	l Provisions[3]
	Asset Classes													
5	**Retail insured exposure secured by real estate[4]**													
		0.00 to < 0.15	17,220			1,341	0.14	113,998	16.50		72	5.0	-	
		0.15 to < 0.25	-			-	-	-	-		-	-	-	
		0.25 to < 0.50	44,115			1,749	0.32	187,421	18.66		196	11.0	1	
		0.50 to < 0.75	530			-	-	-	-		-	-	-	
		0.75 to < 2.50	7,782			167	1.24	34,094	13.39		34	20.0	-	
		2.50 to < 10.00	3,733			-	4.65	18,184	10.48		-	16.0	-	
		10.00 to < 100.00	719			-	-	2,495	-		-	-	-	
		100.00 (default)	277			-	-	1,301	-		-	-	-	
	Total Retail insured exposure secured by real estate		**74,376**			**3,257**	**0.29**	**357,493**	**17.50**		**302**	**9.0**	**1**	**2**
6	**Uninsured residential mortgages**													
		0.00 to < 0.15	189,083	343	100.00	189,426	0.13	688,126	17.22		9,860	5.0	41	
		0.15 to < 0.25	140	63	100.00	203	0.22	104	72.24		67	33.0	-	
		0.25 to < 0.50	63	291	100.00	354	0.33	218	15.43		37	10.0	-	
		0.50 to < 0.75	-	-	-	-	-	-	-		-	-	-	
		0.75 to < 2.50	18,412	282	100.00	18,694	0.91	58,207	18.70		4,353	23.0	32	
		2.50 to < 10.00	4,278	26	100.00	4,304	4.07	18,434	17.71		2,364	55.0	31	
		10.00 to < 100.00	774	1	100.00	775	22.68	3,424	17.04		732	94.0	30	
		100.00 (default)	199	-	-	199	100.00	984	17.15		60	30.0	32	
	Total Uninsured residential mortgages		**212,949**	**1,006**	**100.00**	**213,955**	**0.45**	**769,497**	**17.41**		**17,473**	**8.0**	**166**	**34**

[1] Refer to "Internal ratings map" under the Credit Risk Assessment section in our 2020 Annual Report MD&A.
[2] Number of obligors is defined as the number of borrowers in each PD band. For Retail exposures, a borrower can appear in multiple PD bands if the borrower has more than one type of product with the bank. In addition, Retail obligors include borrowers where the portion of the exposure has been securitized given CAR guideline requirements related to retained interests. Wholesale obligors are reflected as unique borrowers. For example, sovereign obligors include central banks or agencies, public sector entities and multilateral development banks which are each reflected as unique borrowers in the sovereign asset class. Retail borrowers with both Visa and Mastercard are counted as one borrower in the asset class qualifying revolving retail.
[3] Provisions reflect only IFRS 9 Stage 3 allowances under the IRB portfolio.
[4] Retail insured exposures secured by real estate includes residential mortgages and other retail. Residential mortgages reflect 98% of this category. Exposures are insured with government and/or private insurance providers.

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

As at October 31, 2021

			a	b	c	d	e	f	g	h	i	j	k	l
	(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF	Average CCF (%)	EAD post CRM and post-CCF	Average PD (%)	Number of obligors[2]	Average LGD (%)	Average maturity (in years)	RWA	RWA density (%)	EL	Provisions[3]
	Asset Classes													
7	**HELOCs**													
		0.00 to < 0.15	31,651	102,670	91.51	125,606	0.08	794,695	24.45		6,634	5.0	25	
		0.15 to < 0.25	-	-	-	-	-	-	-		-	-	-	
		0.25 to < 0.50	-	-	-	-	-	-	-		-	-	-	
		0.50 to < 0.75	2,267	1,483	92.72	3,643	0.71	43,338	24.99		961	26.0	6	
		0.75 to < 2.50	-	-	-	-	-	-	-		-	-	-	
		2.50 to < 10.00	952	276	95.97	1,217	4.34	14,320	24.77		935	77.0	13	
		10.00 to < 100.00	89	7	109.88	97	36.09	804	25.28		144	148.0	9	
		100.00 (default)	63	1	-	63	100.00	557	25.35		34	54.0	16	
	Total HELOCs		**35,022**	**104,437**	**91.54**	**130,626**	**0.21**	**853,714**	**24.47**		**8,708**	**7.0**	**69**	**16**
8	**Qualifying revolving retail**													
		0.00 to < 0.15	7,114	52,729	77.12	47,777	0.12	4,720,066	93.95		3,224	7.0	52	
		0.15 to < 0.25	8,848	40,575	84.10	42,973	0.18	3,258,722	88.12		3,976	9.0	69	
		0.25 to < 0.50	922	5,783	96.78	6,519	0.39	3,673,085	88.14		1,113	17.0	22	
		0.50 to < 0.75	22	115	94.03	130	0.59	7,876	100.49		35	27.0	1	
		0.75 to < 2.50	8,004	9,617	82.99	15,985	1.29	2,387,159	91.15		7,071	44.0	188	
		2.50 to < 10.00	4,355	2,854	80.27	6,646	3.75	1,453,481	90.53		6,252	94.0	224	
		10.00 to < 100.00	773	304	55.09	940	29.35	422,099	91.76		2,537	270.0	253	
		100.00 (default)	41	4	-	41	100.00	26,559	87.09		117	284.0	27	
	Total Qualifying revolving retail		**30,079**	**111,981**	**81.20**	**121,011**	**0.77**	**15,949,047**	**91.00**		**24,325**	**20.0**	**836**	**27**
9	**Other retail**													
		0.00 to < 0.15	37,615	3,595	86.00	40,716	0.12	148,897	28.00		3,288	8.1	13	
		0.15 to < 0.25	3,085	8,063	86.00	10,037	0.21	132,435	80.00		3,490	34.8	16	
		0.25 to < 0.50	9,749	2,278	107.00	12,187	0.32	512,731	67.00		4,809	39.5	27	
		0.50 to < 0.75	1,170	732	96.00	1,874	0.59	103,184	84.00		1,302	69.5	9	
		0.75 to < 2.50	15,953	4,379	95.00	20,124	1.19	586,117	60.00		13,743	68.3	150	
		2.50 to < 10.00	5,722	1,770	91.00	7,327	3.94	251,224	62.00		6,907	94.3	178	
		10.00 to < 100.00	1,441	308	99.00	1,747	23.80	39,221	64.00		2,275	130.2	324	
		100.00 (default)	88	2	-	88	100.00	3,747	66.00		147	167.0	50	
	Total Other retail		**74,823**	**21,127**	**91.00**	**94,100**	**1.22**	**1,777,556**	**50.00**		**35,961**	**38.2**	**767**	**48**
10	**Total retail**		**427,249**	**238,551**	**91.91**	**562,949**	**0.59**	**19,707,307**	**40.32**	**-**	**86,769**	**15.4**	**1,839**	**127**
	Total		**882,345**	**567,252**	**68.02**	**1,255,746**	**0.56**	**19,775,770**	**33.11**	**1.79**	**252,256**	**20.0**	**3,055**	**630**

[1] Refer to "Internal ratings map" under the Credit Risk Assessment section in our 2020 Annual Report MD&A.
[2] Number of obligors is defined as the number of borrowers in each PD band. For Retail exposures, a borrower can appear in multiple PD bands if the borrower has more than one type of product with the bank. In addition, Retail obligors include borrowers where the portion of the exposure has been securitized given CAR guideline requirements related to retained interests. Wholesale obligors are reflected as unique borrowers. For example, sovereign obligors include central banks or agencies, public sector entities and multilateral development banks which are each reflected as unique borrowers in the sovereign asset class. Retail borrowers with both Visa and Mastercard are counted as one borrower in the asset class qualifying revolving retail.
[3] Provisions reflect only IFRS 9 Stage 3 allowances under the IRB portfolio.

CR7: IRB – Effect on RWA of credit derivatives used as CRM techniques

The following table provides the effect of credit derivatives used as mitigation techniques in determining RWA amounts.

As at January 31, 2022

		a	b
	(Millions of Canadian dollars)	**Pre-credit derivatives RWA**	**Actual RWA**
2	Sovereign - AIRB	-	-
4	Banks - AIRB	-	-
6	Corporate - AIRB	-	-
8	Specialised lending - AIRB	-	-
9	Retail - qualifying revolving (QRRE)	-	-
10	Retail - residential mortgage exposures	-	-
11	Retail - SME	-	-
12	Other retail exposures	-	-
14	Equity - AIRB	-	-
16	Purchased receivables - AIRB	-	-
17	**Total**	**-**	**-**

As at October 31, 2021

		a	b
	(Millions of Canadian dollars)	**Pre-credit derivatives RWA**	**Actual RWA**
2	Sovereign - AIRB	-	-
4	Banks - AIRB	-	-
6	Corporate - AIRB	-	-
8	Specialised lending - AIRB	-	-
9	Retail - qualifying revolving (QRRE)	-	-
10	Retail - residential mortgage exposures	-	-
11	Retail - SME	-	-
12	Other retail exposures	-	-
14	Equity - AIRB	-	-
16	Purchased receivables - AIRB	-	-
17	**Total**	**-**	**-**

CR8: RWA flow statements of credit risk exposures

The following table presents the changes in Standardized and IRB RWA amounts over the reporting period for the key drivers of credit risk.

		RWA amounts[1]	
	(Millions of Canadian dollars)	**As at January 31, 2022**	**As at October 31, 2021**
1	**RWA as at end of previous reporting period**	**390,350**	**384,396**
2	Asset size[2]	11,949	10,006
3	Asset quality[3]	(1,625)	(2,043)
4	Model updates[4]	-	(445)
5	Methodology and policy[5]	-	-
6	Acquisitions and disposals	-	-
7	Foreign exchange movements	3,723	(1,641)
8	Other	(281)	77
9	**RWA as at end of reporting period**	**404,116**	**390,350**

[1] RWA flow amounts include both IRB and Standardized Approach figures reflecting our approved roll-out plan for transition to IRB.

[2] Organic changes in portfolio size and composition (including new business and maturing loans).

[3] Quality of book changes caused by experience such as underlying customer behaviour or demographics and credit mitigation.

[4] Updates to the model to reflect recent experience, model implementation, change in model scope or any change to address model malfunctions including changes through model calibrations/realignments.

[5] Methodology changes to the calculations driven by regulatory policy changes.

COUNTERPARTY CREDIT RISK

CCRA: Qualitative disclosure related to counterparty credit risk

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

	Pillar 3 disclosures requirement	RBC 2021 Annual Report section	Sub-section
a)	Risk management objectives and policies related to counterparty credit risk	Credit risk	Credit risk assessment – *Counterparty credit risk*
		Consolidated Financial Statements	Note 8 - Derivative financial instruments and hedging activities – *Derivative-related credit risk*
b)	The method used to assign the operating limits defined in terms of internal capital for counterparty credit exposures and for CCP exposures	Credit risk	Credit risk assessment – *Counterparty credit risk*
c)	Policies relating to guarantees and other risk mitigants and assessments concerning counterparty credit risk, including exposures towards CCPs	Credit risk	Credit risk assessment – *Counterparty credit risk*
		Consolidated Financial Statements	Note 8 - Derivative financial instruments and hedging activities – *Derivative-related credit risk*
			Note 29 - Offsetting financial assets and financial liabilities
d)	Policies with respect to wrong-way risk exposures	Credit risk	Credit risk assessment – *Wrong-way risk*
e)	The impact in terms of the amount of collateral that the bank would be required to provide given a credit rating downgrade	Liquidity and funding risk	Credit ratings

CCR1: Analysis of counterparty credit risk (CCR) exposure by approach

The following table provides a comprehensive view of the methods used to calculate counterparty credit risk exposures and the main parameters used within each method, if applicable. Refer to CCR 8 for our central counterparty clearing house exposures. Figures below reflect both house and client trades.

As at January 31, 2022

		a	b	c	d	e	f
	(Millions of Canadian dollars, except as otherwise noted)	Replacement Cost	Potential future exposure	EEPE	Alpha used for computing regulatory EAD	EAD post-CRM[1]	RWA[2]
1	SA-CCR (for derivatives)[1,2]	16,389	38,068		1.4	75,994	22,943
1a	Current Exposure Method (CEM - for derivatives)						
2	Internal Model Method (for derivatives and SFTs)						
3	Simple Approach for credit risk mitigation (for SFTs)						
4	Comprehensive Approach for credit risk mitigation (for SFTs)					211,675	9,335
5	VaR for SFTs						
6	**Total**						**32,278**

[1] Effective Q1 2020, specific wrong way risk is reflected as per OSFI SA-CCR guideline requirement.

[2] RWA includes a calibration adjustment of 1.06% as prescribed by OSFI under the Basel III framework.

As at October 31, 2021

		a	b	c	d	e	f
	(Millions of Canadian dollars, except as otherwise noted)	Replacement Cost	Potential future exposure	EEPE	Alpha used for computing regulatory EAD	EAD post-CRM[1]	RWA[2]
1	SA-CCR (for derivatives)[1,2]	17,888	36,392		1.4	75,763	25,244
1a	Current Exposure Method (CEM - for derivatives)						
2	Internal Model Method (for derivatives and SFTs)						
3	Simple Approach for credit risk mitigation (for SFTs)						
4	Comprehensive Approach for credit risk mitigation (for SFTs)					203,223	10,033
5	VaR for SFTs						
6	**Total**						**35,277**

[1] Effective Q1 2020, specific wrong way risk is reflected as per OSFI SA-CCR guideline requirement.

[2] RWA includes a calibration adjustment of 1.06% as prescribed by OSFI under the Basel III framework.

CCR2: Credit valuation adjustment (CVA) capital charge

The following table presents a breakdown of the CVA capital charge by advanced and standardized approaches.

As at January 31, 2022

		a	b
	(Millions of Canadian dollars)	EAD post-CRM[1]	RWA[1]
	Total portfolios subject to the Advanced CVA capital charge		
1	(i) VaR component (including the 3x multiplier)		
2	(ii) Stressed VaR component (including the 3x multiplier)		
3	All portfolios subject to the Standardized CVA capital Charge	76,239	15,854
4	**Total subject to the CVA capital charge**	**76,239**	**15,854**

[1] Effective Q1 2019, OSFI has allowed a 0.7 scalar to be applied to the exposure amount determined under SA-CCR for the purpose of determining CVA.

As at October 31, 2021

		a	b
	(Millions of Canadian dollars)	EAD post-CRM[1]	RWA[1]
	Total portfolios subject to the Advanced CVA capital charge		
1	(i) VaR component (including the 3x multiplier)		
2	(ii) Stressed VaR component (including the 3x multiplier)		
3	All portfolios subject to the Standardized CVA capital Charge	75,991	18,104
4	**Total subject to the CVA capital charge**	**75,991**	**18,104**

[1] Effective Q1 2019, OSFI has allowed a 0.7 scalar to be applied to the exposure amount determined under SA-CCR for the purpose of determining CVA.

CCR3: Standardized approach – CCR exposures by regulatory portfolio and risk weights

The following table presents a breakdown of counterparty credit risk exposures calculated according to the standardized approach by portfolio and risk weight.

As at January 31, 2022

	a	b	c	d	e	f	g	h	i
Risk weight / Regulatory portfolio (Millions of Canadian dollars)	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Sovereigns	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	-	-	-	-	-	1	-	-	1
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-
Banks	-	-	-	-	-	102	-	-	102
Securities firms	-	-	-	-	-	101	-	-	101
Corporates	-	-	6	-	-	1,796	-	-	1,802
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-
Other assets	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**6**	**-**	**-**	**2,000**	**-**	**-**	**2,006**

As at October 31, 2021

	a	b	c	d	e	f	g	h	i
Risk weight / Regulatory portfolio (Millions of Canadian dollars)	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Sovereigns	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-
Banks	-	-	6	-	-	106	-	-	112
Securities firms	-	-	126	-	-	95	-	-	221
Corporates	-	-	139	-	-	1,848	-	-	1,987
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-
Other assets	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**271**	**-**	**-**	**2,049**	**-**	**-**	**2,320**

CCR4: IRB – CCR exposures by portfolio and PD scale

The following table presents a detailed view of CCR exposures subject to IRB approach by asset classes and PD scale.

As at January 31, 2022

		a	b	c	d	e	f	g
(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	EAD post-CRM	Average PD (%)	Number of obligors	Average LGD (%)	Average maturity (in years)	RWA	RWA density (%)
Asset classes								
Sovereigns	0.00 to < 0.15	42,838	0.04	329	13.48	1.07	1,593	4
	0.15 to < 0.25	75	0.24	9	43.25	1.37	28	37
	0.25 to < 0.50	13	0.50	5	35.81	3.51	11	83
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	4	0.98	5	45.00	4.23	5	123
	2.50 to < 10.00	-	2.74	1	45.00	3.89	-	151
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (default)	-	-	-	-	-	-	-
Total sovereigns		**42,930**	**0.04**	**349**	**13.54**	**1.07**	**1,637**	**4**
Banks								
	0.00 to < 0.15	126,895	0.06	297	12.88	0.69	6,779	5
	0.15 to < 0.25	328	0.24	21	30.44	1.11	110	34
	0.25 to < 0.50	2,036	0.50	18	4.91	0.55	137	7
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	1,622	0.95	31	5.57	0.57	163	10
	2.50 to < 10.00	22	2.74	4	45.00	1.31	26	118
	10.00 to < 100.00	2	31.52	1	45.00	1.00	6	250
	100.00 (default)	-	-	-	-	-	-	-
Total banks		**130,905**	**0.08**	**372**	**12.71**	**0.69**	**7,221**	**6**
Corporates								
	0.00 to < 0.15	97,680	0.06	8,172	34.96	0.74	12,440	13
	0.15 to < 0.25	2,625	0.24	509	40.82	1.34	1,121	43
	0.25 to < 0.50	3,443	0.50	282	34.47	1.45	1,686	49
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	7,038	1.45	651	30.46	1.62	4,900	70
	2.50 to < 10.00	1,017	3.16	206	39.82	2.24	1,220	120
	10.00 to < 100.00	14	28.67	12	30.60	1.94	24	168
	100.00 (default)	10	100.00	3	22.01	1.00	29	292
Total corporates		**111,827**	**0.21**	**9,835**	**34.84**	**0.85**	**21,420**	**19**
Total		**285,662**	**0.07**	**10,556**	**21.50**	**0.81**	**30,278**	**11**

[1] Refer to "Internal ratings map" in the Credit risk assessment section in our 2021 Annual Report MD&A.

CCR4: IRB – CCR exposures by portfolio and PD scale (continued)

As at October 31, 2021

		a	b	c	d	e	f	g
(Millions of Canadian dollars, except as otherwise noted)	PD scale[1]	EAD post-CRM	Average PD (%)	Number of obligors	Average LGD (%)	Average maturity (in years)	RWA	RWA density (%)
Asset classes								
Sovereigns	0.00 to < 0.15	35,218	0.04	326	12.21	1.30	1,583	5
	0.15 to < 0.25	103	0.24	8	43.61	1.28	38	37
	0.25 to < 0.50	21	0.50	6	35.60	3.94	19	89
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	9	1.06	4	44.99	2.71	9	109
	2.50 to < 10.00	-	2.74	1	45.00	4.07	-	154
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (default)	-	-	-	-	-	-	-
Total sovereigns		**35,351**	**0.04**	**345**	**12.33**	**1.30**	**1,649**	**5**
Banks								
	0.00 to < 0.15	125,741	0.07	302	12.48	0.69	6,556	5
	0.15 to < 0.25	359	0.24	23	32.98	1.02	123	34
	0.25 to < 0.50	2,145	0.50	19	5.74	0.54	165	8
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	1,412	0.94	31	4.66	0.59	127	9
	2.50 to < 10.00	37	2.74	5	45.00	1.13	43	115
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (default)	-	-	-	-	-	-	-
Total banks		**129,694**	**0.08**	**380**	**12.35**	**0.69**	**7,014**	**5**
Corporates								
	0.00 to < 0.15	93,393	0.06	7,518	34.35	0.75	11,932	13
	0.15 to < 0.25	2,781	0.24	539	42.02	1.53	1,265	45
	0.25 to < 0.50	5,299	0.50	277	42.17	1.73	3,231	61
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	8,680	1.39	643	31.72	1.56	6,174	71
	2.50 to < 10.00	1,437	3.19	217	41.54	2.33	1,818	126
	10.00 to < 100.00	23	29.14	9	29.88	1.77	38	164
	100.00 (default)	14	100.00	2	30.00	1.00	55	398
Total corporates		**111,627**	**0.25**	**9,205**	**34.80**	**0.90**	**24,513**	**22**
Total		**276,672**	**0.07**	**9,930**	**21.41**	**0.85**	**33,176**	**12**

[1] Refer to “Internal ratings map” in the Credit risk assessment section in our 2021 Annual Report MD&A.

CCR6: Credit derivatives exposures

The following table presents credit derivatives bought or sold by notional and fair values.

As at January 31, 2022

	a	b
(Millions of Canadian dollars)	Protection bought	Protection sold
Notionals		
Single-name credit default swaps	6,339	7,912
Index credit default swaps	14,327	6,801
Total return swaps	-	-
Credit options	3,939	-
Other credit derivatives	-	-
Total notionals	**24,605**	**14,713**
Fair values		
Positive fair value (asset)	22	60
Negative fair value (liability)	45	55

As at October 31, 2021

	a	b
(Millions of Canadian dollars)	Protection bought	Protection sold
Notionals		
Single-name credit default swaps	7,611	10,624
Index credit default swaps	15,318	6,324
Total return swaps	-	-
Credit options	2,910	124
Other credit derivatives	-	-
Total notionals	**25,839**	**17,072**
Fair values		
Positive fair value (asset)	14	20
Negative fair value (liability)	29	91

CCR7: RWA flow statements of CCR exposures under the Internal Model Method (IMM)

We currently do not apply the IMM to our counterparty credit risk exposures.

CCR8: Exposures to central counterparties

The following table presents a comprehensive view of our exposures to central counterparty clearing houses (CCPs), including due to operations, margins and contributions to default funds, and related RWA.

As at January 31, 2022

		a	b
(Millions of Canadian dollars)		EAD (post-CRM)	RWA
1	**Exposures to QCCPs (total)**	**35,373**	**421**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	16,645	391
3	(i) OTC derivatives	6,234	183
4	(ii) Exchange-traded derivatives	6,609	132
5	(iii) Securities financing transactions	3,802	76
6	(iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated initial margin	6,907	
8	Non-segregated initial margin	5,498	-
9	Pre-funded default fund contributions	1,368	30
10	Unfunded default fund contributions[1]	4,955	-
11	**Exposures to non-QCCPs (total)**		
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which		
13	(i) OTC derivatives		
14	(ii) Exchange-traded derivatives		
15	(iii) Securities financing transactions		
16	(iv) Netting sets where cross-product netting has been approved		
17	Segregated initial margin		
18	Non-segregated initial margin		
19	Pre-funded default fund contributions		
20	Unfunded default fund contributions		

[1] Unfunded default fund contributions are risk weighted at 0%.

CCR8: Exposures to central counterparties (continued)

As at October 31, 2021

(Millions of Canadian dollars)		a EAD (post-CRM)	b RWA
1	**Exposures to QCCPs (total)**	**32,166**	**410**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	16,033	383
3	(i) OTC derivatives	6,410	190
4	(ii) Exchange-traded derivatives	6,218	125
5	(iii) Securities financing transactions	3,405	68
6	(iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated initial margin	5,225	
8	Non-segregated initial margin	4,737	-
9	Pre-funded default fund contributions	1,259	27
10	Unfunded default fund contributions[1]	4,912	-
11	**Exposures to non-QCCPs (total)**		
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which		
13	(i) OTC derivatives		
14	(ii) Exchange-traded derivatives		
15	(iii) Securities financing transactions		
16	(iv) Netting sets where cross-product netting has been approved		
17	Segregated initial margin		
18	Non-segregated initial margin		
19	Pre-funded default fund contributions		
20	Unfunded default fund contributions		

[1] Unfunded default fund contributions are risk weighted at 0%.

SECURITIZATION

SECA: Qualitative disclosure requirements related to securitization exposures

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

Pillar 3 disclosures requirement		RBC 2021 Annual Report section	Sub-section
a)	Objectives in relation to securitization activities	Off-balance sheet arrangements	Off-balance sheet arrangements
		Consolidated Financial Statements	Note 6 - Derecognition of financial assets
		Consolidated Financial Statements	Note 7 - Structured entities
b)	List of SPEs where RBC is sponsor / provides implicit support	Consolidated Financial Statements	Note 7 - Structured entities
c)	Accounting policies for securitization	Consolidated Financial Statements	Note 2 - Summary of significant accounting policies, estimates and judgments - Basis of consolidation - Derecognition of financial assets
		Critical accounting policies and estimates	Consolidation of structured entities
d)	The names of external credit assessment institution (ECAIs) used for securitizations and the types of securitization exposure for which each agency is used	Capital management (also refer to CRD in this document)	Regulatory capital approach for securitization exposures
e)	Use of Basel IAA for capital purposes	Credit risk	n/a
		Capital management	Regulatory capital approach for securitization exposures
f)	Use of other internal assessment for capital purposes	Credit risk	Credit risk assessment

SEC1: IRB – Securitization exposures in the banking book

The following table presents the breakdown of our balance sheet banking book carrying values by our role and type.

As at January 31, 2022

		a	b	c	e	f	g	i	j	k
		Bank acts as originator[1]			Bank acts as sponsor[2]			Bank acts as investor[3]		
(Millions of Canadian dollars)		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**39,826**	**-**	**39,826**	**319**	**-**	**319**
2	residential mortgage	-	-	-	2,406	-	2,406	5	-	5
3	credit card	-	-	-	7,246	-	7,246	-	-	-
4	other retail exposures	-	-	-	30,174	-	30,174	314	-	314
4a	of which student loans	-	-	-	2,838	-	2,838	314	-	314
4b	of which auto loans and leases	-	-	-	21,053	-	21,053	-	-	-
4c	of which consumer loans	-	-	-	6,283	-	6,283	-	-	-
4d	of which other retail	-	-	-	-	-	-	-	-	-
5	re-securitization	-	-	-	-	-	-	-	-	-
6	**Wholesale (total) – of which**	**-**	**-**	**-**	**15,519**	**-**	**15,519**	**11,020**	**-**	**11,020**
7	loans to corporates	-	-	-	2,522	-	2,522	9,617	-	9,617
8	commercial mortgage	-	-	-	-	-	-	139	-	139
9	lease and receivables	-	-	-	-	-	-	-	-	-
10	other wholesale	-	-	-	12,997	-	12,997	1,264	-	1,264
10a	of which dealer floor plan receivable	-	-	-	1,801	-	1,801	-	-	-
10b	of which equipment receivable	-	-	-	3,953	-	3,953	-	-	-
10c	of which trade receivable	-	-	-	218	-	218	-	-	-
10d	of which other wholesale	-	-	-	7,025	-	7,025	1,264	-	1,264
11	re-securitization	-	-	-	-	-	-	-	-	-

[1] Bank acts as originator reflects securitization activities in which we securitize our own assets (e.g. Golden credit card securitization).

[2] Bank acts as sponsor reflects securitization activities in which RBC works with its client to originate securitization transactions. RBC provides the liquidity and credit enhancement facilities to the SPE.

[3] Bank acts as investor reflects purchases of securitization assets from the market.

SEC1: IRB – Securitization exposures in the banking book (continued)

As at October 31, 2021

		a	b	c	e	f	g	i	j	k
		Bank acts as originator[1]			Bank acts as sponsor[2]			Bank acts as investor[3]		
(Millions of Canadian dollars)		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**38,040**	**-**	**38,040**	**740**	**-**	**740**
2	residential mortgage	-	-	-	1,383	-	1,383	7	-	7
3	credit card	-	-	-	7,100	-	7,100	370	-	370
4	other retail exposures	-	-	-	29,557	-	29,557	363	-	363
4a	of which student loans	-	-	-	2,499	-	2,499	77	-	77
4b	of which auto loans and leases	-	-	-	21,178	-	21,178	286	-	286
4c	of which consumer loans	-	-	-	5,878	-	5,878	-	-	-
4d	of which other retail	-	-	-	2	-	2	-	-	-
5	re-securitization	-	-	-	-	-	-	-	-	-
6	**Wholesale (total) – of which**	**-**	**-**	**-**	**14,460**	**-**	**14,460**	**10,377**	**-**	**10,377**
7	loans to corporates	-	-	-	2,155	-	2,155	9,734	-	9,734
8	commercial mortgage	-	-	-	-	-	-	230	-	230
9	lease and receivables	-	-	-	-	-	-	-	-	-
10	other wholesale	-	-	-	12,305	-	12,305	413	-	413
10a	of which dealer floor plan receivable	-	-	-	1,981	-	1,981	-	-	-
10b	of which equipment receivable	-	-	-	3,824	-	3,824	-	-	-
10c	of which trade receivable	-	-	-	216	-	216	-	-	-
10d	of which other wholesale	-	-	-	6,284	-	6,284	413	-	413
11	re-securitization	-	-	-	-	-	-	-	-	-

[1] Bank acts as originator reflects securitization activities in which we securitize our own assets (e.g. Golden credit card securitization).

[2] Bank acts as sponsor reflects securitization activities in which RBC works with its client to originate securitization transactions. RBC provides the liquidity and credit enhancement facilities to the SPE.

[3] Bank acts as investor reflects purchases of securitization assets from the market.

SEC2: IRB – Securitization exposures in the trading book

The following table presents the breakdown of our balance sheet trading book carrying values by our role and type.

As at January 31, 2022

		a	b	c	e	f	g	i	j	k
		Bank acts as originator[1]			Bank acts as sponsor[2]			Bank acts as investor[3]		
	(Millions of Canadian dollars)	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**306**	**-**	**306**
2	residential mortgages	-	-	-	-	-	-	4	-	4
3	credit cards	-	-	-	-	-	-	(12)	-	(12)
4	other retail exposures	-	-	-	-	-	-	314	-	314
4a	of which student loans	-	-	-	-	-	-	91	-	91
4b	of which auto loans and leases	-	-	-	-	-	-	223	-	223
4c	of which consumer loans	-	-	-	-	-	-	-	-	-
4d	of which other retail	-	-	-	-	-	-	-	-	-
5	re-securitization	-	-	-	-	-	-	-	-	-
6	**Wholesale (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**5,477**	**-**	**5,477**
7	loans to corporates	-	-	-	-	-	-	154	-	154
8	commercial mortgages	-	-	-	-	-	-	4,262	-	4,262
9	leases and receivables	-	-	-	-	-	-	-	-	-
10	other wholesale exposures	-	-	-	-	-	-	1,061	-	1,061
10a	of which dealer floor plan receivables	-	-	-	-	-	-	-	-	-
10b	of which equipment receivables	-	-	-	-	-	-	31	-	31
10c	of which trade receivables	-	-	-	-	-	-	-	-	-
10d	of which other wholesale	-	-	-	-	-	-	1,030	-	1,030
11	re-securitization	-	-	-	-	-	-	-	-	-

[1] Bank acts as originator reflects securitization activities in which we securitize our own assets.

[2] Bank acts as sponsor reflects securitization activities in which RBC works with its client to originate securitization transactions. RBC provides the liquidity and credit enhancement facilities to the SPE.

[3] Bank acts as investor reflects purchases of securitization assets from the market.

SEC2: IRB – Securitization exposures in the trading book (continued)

As at October 31, 2021

		a	b	c	e	f	g	i	j	k
		Bank acts as originator[1]			Bank acts as sponsor[2]			Bank acts as investor[3]		
	(Millions of Canadian dollars)	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**398**	**-**	**398**
2	residential mortgages	-	-	-	-	-	-	19	-	19
3	credit cards	-	-	-	-	-	-	35	-	35
4	other retail exposures	-	-	-	-	-	-	344	-	344
4a	of which student loans	-	-	-	-	-	-	74	-	74
4b	of which auto loans and leases	-	-	-	-	-	-	249	-	249
4c	of which consumer loans	-	-	-	-	-	-	10	-	10
4d	of which other retail	-	-	-	-	-	-	11	-	11
5	re-securitization	-	-	-	-	-	-	-	-	-
6	**Wholesale (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**6,018**	**-**	**6,018**
7	loans to corporates	-	-	-	-	-	-	170	-	170
8	commercial mortgages	-	-	-	-	-	-	4,722	-	4,722
9	leases and receivables	-	-	-	-	-	-	-	-	-
10	other wholesale exposures	-	-	-	-	-	-	1,126	-	1,126
10a	of which dealer floor plan receivables	-	-	-	-	-	-	24	-	24
10b	of which equipment receivables	-	-	-	-	-	-	11	-	11
10c	of which trade receivables	-	-	-	-	-	-	-	-	-
10d	of which other wholesale	-	-	-	-	-	-	1,091	-	1,091
11	re-securitization	-	-	-	-	-	-	-	-	-

[1] Bank acts as originator reflects securitization activities in which we securitize our own assets.

[2] Bank acts as sponsor reflects securitization activities in which RBC works with its client to originate securitization transactions. RBC provides the liquidity and credit enhancement facilities to the SPE.

[3] Bank acts as investor reflects purchases of securitization assets from the market.

SEC3: Securitization exposures in the banking book and associated regulatory capital requirements – bank acting as originator or as sponsor

The following table presents a breakdown of securitization exposures in the banking book by risk weight and by regulatory approach when we act as originator or sponsor, and the associated capital requirements.

As at January 31, 2022

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA[3] (by regulatory approach)				Capital charge after cap (by regulatory approach)			
	(Millions of Canadian dollars)	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%
1	**Total exposures**	**49,905**	**3,708**	**1,427**	**305**	**-**	**-**	**45,372**	**9,973**	**-**	**-**	**6,031**	**2,407**	**-**	**-**	**482**	**193**	**-**
2	Traditional securitization	49,905	3,708	1,427	305	-	-	45,372	9,973	-	-	6,031	2,407	-	-	482	193	-
3	Of which securitization	49,905	3,708	1,427	305	-	-	45,372	9,973	-	-	6,031	2,407	-	-	482	193	-
4	Of which retail underlying	37,287	2,168	199	171	-	-	35,090	4,735	-	-	4,430	711	-	-	354	57	-
5	Of which wholesale	12,618	1,540	1,228	134	-	-	10,282	5,238	-	-	1,601	1,696	-	-	128	136	-
6	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[1] OSFI adopted BCBS Revised Securitization Framework in Q1 2019. Effective Q1 2020, transitional grandfathering is no longer allowed.

[2] As per disclosure requirements Internal assessment approach (IAA) exposures have been included with securitization external rating based approach.

[3] Under the revised securitization framework, OSFI has removed the 1.06% IRB scalar for securitization exposures not risk weighted at 1250%.

[4] SEC-IRBA exposures reflect exposures where we have underlying IRB approval currently.

As at October 31, 2021

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA[3] (by regulatory approach)				Capital charge after cap (by regulatory approach)			
(Millions of Canadian dollars)		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC – IRBA [1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%
1	**Total exposures**	**46,753**	**4,155**	**1,298**	**294**	**-**	**-**	**42,951**	**9,549**	**-**	**-**	**5,730**	**2,346**	**-**	**-**	**459**	**187**	**-**
2	Traditional securitization	46,753	4,155	1,298	294	-	-	42,951	9,549	-	-	5,730	2,346	-	-	459	187	-
3	Of which securitization	46,753	4,155	1,298	294	-	-	42,951	9,549	-	-	5,730	2,346	-	-	459	187	-
4	Of which retail underlying	35,516	2,145	154	225	-	-	32,950	5,090	-	-	4,171	791	-	-	334	63	-
5	Of which wholesale	11,237	2,010	1,144	69	-	-	10,001	4,459	-	-	1,559	1,555	-	-	125	124	-
6	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[1] OSFI adopted BCBS Revised Securitization Framework in Q1 2019. Effective Q1 2020, transitional grandfathering is no longer allowed.

[2] As per disclosure requirements Internal assessment approach (IAA) exposures have been included with securitization external rating based approach.

[3] Under the revised securitization framework, OSFI has removed the 1.06% IRB scalar for securitization exposures not risk weighted at 1250%.

[4] SEC-IRBA exposures reflect exposures where we have underlying IRB approval currently.

SEC4: Securitization exposures in the banking book and associated capital requirements – bank acting as investor

The following table presents a breakdown of securitization exposures in the banking book by risk weight and by regulatory approach when we act as investor, and the associated capital requirements.

As at January 31, 2022

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA[3] (by regulatory approach)				Capital charge after cap (by regulatory approach)			
(Millions of Canadian dollars)		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%
1	**Total exposures**	**11,193**	**127**	**17**	**2**	**-**	**-**	**11,339**	**-**	**-**	**-**	**2,286**	**-**	**-**	**-**	**183**	**-**	**-**
2	Traditional securitization	11,193	127	17	2	-	-	11,339	-	-	-	2,286	-	-	-	183	-	-
3	Of which securitization	11,193	127	17	2	-	-	11,339	-	-	-	2,286	-	-	-	183	-	-
4	Of which retail underlying	288	29	-	2	-	-	319	-	-	-	70	-	-	-	6	-	-
5	Of which wholesale	10,905	98	17	-	-	-	11,020	-	-	-	2,216	-	-	-	177	-	-
6	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[1] OSFI adopted BCBS Revised Securitization Framework in Q1 2019. Effective Q1 2020, transitional grandfathering is no longer allowed.

[2] As per disclosure requirements Internal assessment approach (IAA) exposures have been included with securitization external rating based approach.

[3] Under the revised securitization framework, OSFI has removed the 1.06% IRB scalar for securitization exposures not risk weighted at 1,250%.

[4] SEC-IRBA exposures reflect exposures where we have underlying IRB approval currently.

As at October 31, 2021

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA[3] (by regulatory approach)				Capital charge after cap (by regulatory approach)			
(Millions of Canadian dollars)		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%	SEC – IRBA[1,4]	SEC – ERBA[1,2]	SEC – SA[1]	1250%
1	**Total exposures**	**10,940**	**113**	**62**	**2**	**-**	**-**	**11,117**	**-**	**-**	**-**	**2,252**	**-**	**-**	**-**	**180**	**-**	**-**
2	Traditional securitization	10,940	113	62	2	-	-	11,117	-	-	-	2,252	-	-	-	180	-	-
3	Of which securitization	10,940	113	62	2	-	-	11,117	-	-	-	2,252	-	-	-	180	-	-
4	Of which retail underlying	731	-	7	2	-	-	739	-	-	-	139	-	-	-	11	-	-
5	Of which wholesale	10,209	113	55	-	-	-	10,378	-	-	-	2,113	-	-	-	169	-	-
6	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[1] OSFI adopted BCBS Revised Securitization Framework in Q1 2019. Effective Q1 2020, transitional grandfathering is no longer allowed.
[2] As per disclosure requirements Internal assessment approach (IAA) exposures have been included with securitization external rating based approach.
[3] Under the revised securitization framework, OSFI has removed the 1.06% IRB scalar for securitization exposures not risk weighted at 1,250%.
[4] SEC-IRBA exposures reflect exposures where we have underlying IRB approval currently.

MARKET RISK

MRA: Qualitative disclosure requirements related to market risk

Market risk management strategies and processes

Market risk arises from our trading and non-trading portfolios. The primary objective of trading is to generate an optimal return on our capital while ensuring that risks remain within our risk appetite. Trading activities involve market making, facilitating client transactions and hedging risks generated from these activities.

Market risk also arises from our non-trading portfolio as a result of: managing interest rate risk from client-originating banking products (such as loans and deposits) and related hedge transactions, portfolios used for asset-liability management and liquidity management, exposures designated as FVOCI, and exposures from our insurance operations.

To ensure that market risk remains within our risk appetite, we hedge our market risk exposures where appropriate. We use cash and derivative financial instruments, as permitted by regulatory and jurisdictional requirements, to manage the market risk related to our trading and non-trading activities.

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

Pillar 3 disclosures requirement		RBC 2021 Annual Report section	Sub-Section
a)	Processes implemented to identify, measure, monitor and control the bank's market risks	Market Risk	Market risk controls – FVTPL positions
			Stress tests
			Market risk measures – FVTPL positions
			Market risk measures for assets and liabilities of RBC Insurance
			Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions
			IRRBB measurement
			Market risk measures – IRRBB Sensitivities
			Market risk measures for other material non-trading portfolios
	Policies for hedging risk and strategies/processes for monitoring the continuing effectiveness of hedges	Consolidated Financial Statements	Note 2 - Summary of significant accounting policies, estimates and judgements – Hedge accounting

MRA: Qualitative disclosure requirements related to market risk (continued)

Market risk management structure and organization

The Enterprise Market Risk Management Framework is the governance and control framework for the management of market risk within the bank. The market risk management structure is designed to ensure strong corporate governance over all market risk in the context of each business considering operating environment, industry best practices, and regulatory requirements. Drivers of market risk are considered in the bank's policies, practices and standards which are continuously updated given dynamic market and regulatory conditions.

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<table>
<tr><th colspan="2">Pillar 3 disclosures requirement</th><th>RBC 2021 Annual Report section</th><th>Sub-Section</th></tr>
<tr><td rowspan="8">b)</td><td rowspan="6">Description of the market risk governance structure established to implement the strategies and processes of the bank</td><td rowspan="6">Enterprise Risk Management</td><td>Risk governance</td></tr>
<tr><td>Risk appetite</td></tr>
<tr><td>Risk measurement</td></tr>
<tr><td>Risk control</td></tr>
<tr><td>Risk measurement - Stress testing</td></tr>
<tr><td>Culture and conduct risk</td></tr>
<tr><td rowspan="2">Description of the relationships and the communication mechanisms between the different parties involved in market risk management</td><td rowspan="2">Enterprise Risk Management</td><td>Risk governance</td></tr>
<tr><td>Risk control</td></tr>
</table>

Scope and nature of risk reporting and/or measurement systems

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

<table>
<tr><th colspan="2">Pillar 3 disclosures requirement</th><th>RBC 2021 Annual Report section</th><th>Sub-Section</th></tr>
<tr><td rowspan="11">c)</td><td rowspan="11">Scope and nature of risk reporting and/or measurement systems</td><td rowspan="3">Enterprise Risk Management</td><td>Risk measurement</td></tr>
<tr><td>Risk control</td></tr>
<tr><td>Risk measurement – Stress testing</td></tr>
<tr><td rowspan="8">Market Risk</td><td>Market risk controls – FVTPL positions</td></tr>
<tr><td>Stress tests</td></tr>
<tr><td>Market risk measures – FVTPL positions</td></tr>
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<tr><td>Market risk measures for other material non-trading portfolios</td></tr>
</table>

MRB: Qualitative disclosures for banks using the Internal Models Approach (IMA)

Internal models used for measuring Market Risk

Measure	Description	Percentage of market risk regulatory capital[1]
Regulatory Value at Risk (VaR)	VaR is a statistical measure of potential loss for a financial portfolio computed at a given level of confidence and over a defined holding period. We measure VaR at the 99th percentile confidence level and for regulatory capital measurement we take the more conservative of the one-day holding period scaled up to a ten-day holding period or the direct ten-day holding period. The measure is computed daily, using a full-revaluation approach to generate potential profit or loss values arising from historically observed daily market movements. The historical period used to compute VaR is comprised of the recent two years of equally weighted market data, and is rolled forward on a weekly basis. A mix of absolute and relative returns are used in generating the historical market changes.	26%
Stressed VaR (SVaR)	SVaR is calculated daily in a similar manner as VaR, but based on a ten-day holding period directly and using a one year period of heightened volatility. We currently use the historical period between 2019 and 2020 covering the market volatility observed during Q2 2020. This historical period chosen reflects the one year period of greatest potential loss for our portfolio.	27%
Incremental Risk Charge (IRC)	IRC captures the risk of losses under default or rating changes for issuers of traded instruments. IRC is measured over a one-year horizon at a 99.9% confidence level, and captures different liquidity horizons for instruments and concentrations in issuers under a constant level of risk assumption.	10%

[1] As at January 31, 2022.

VaR and SVaR

The VaR and SVaR models are used for computing regulatory capital for trading book positions across the enterprise, where we have obtained approval from our regulator. We model a general market risk measure, a debt specific risk measure, and an equity total risk measure; along with a total correlated risk measure which combines the above distributions. For portions of our portfolio for which we do not have regulatory approval for models based capital, we use the Standardized Approach to compute regulatory capital.

For management purposes, VaR and SVaR are both computed with one-day holding periods and are applied to all positions that impact the bank’s revenue across the trading book and non-trading book. A sensitivity-ladder interpolation approach is applied for some positions instead of full-revaluation, and inactive non-trading book positions are refreshed monthly.

MRB: Qualitative disclosures for banks using the Internal Models Approach (continued)

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

Pillar 3 disclosures requirement		RBC 2021 Annual Report section	Sub-Section
c)	General description of the models (VaR/stressed VaR)	Market Risk	Market Risk Controls – FVTPL positions
g)	Description of stress testing applied to the modelling parameters	Market Risk	Stress tests

The VaR and SVaR models are governed by our model risk governance framework, which requires that models are validated on a regular basis by a model validation group that is independent of the model developers. The VaR and SVaR models are also subject to ongoing model performance monitoring. The VaR model is back tested by comparing marked-to-market revenue to the computed VaR on a daily basis, in order to ensure that actual outcomes in trading revenue do not exceed the VaR projections beyond the expectations of the applied confidence interval. Backtesting is also performed using a hypothetical profit and loss calculation which allows for comparisons to the total correlated VaR, the general market risk VaR, and asset class VaR measures separately.

While the majority of market risks are reflected in our VaR models, there is the potential for certain risks to be inadequately captured. This can occur due to infrastructure limitations, lack of historical market data or missing risk factors within our VaR models. These Risks Not in VaR (RNIV) are identified through backtesting and other model monitoring processes, and are incorporated into the VaR models, where possible. An assessment of residual RNIV materiality is reviewed and monitored against thresholds at least quarterly.

Incremental Risk Charge

Our IRC model is applied to debt instruments, credit products, and credit derivatives within our trading portfolios. A probability modelling technique known as the Monte Carlo simulation process is used to generate a statistically relevant number of loss scenarios due to issuer ratings migration and default in order to establish the losses at that confidence level. These scenarios are determined using a transition probability matrix which is calibrated using recent 20 years of historical issuer ratings migration and default observations. Correlations between issuer regions and sectors are calibrated using eight years of historical equity time series data. For the Monte Carlo process, each position is assigned a liquidity horizon (the length of time to close out a position) of three months, six months, or one year, depending on its issuer type, credit rating, and maturity profile.

The IRC model is also subject to the same independent vetting, validation procedures and model risk governance framework as the VaR and SVaR models. Model performance monitoring includes reviews and stress testing of model assumptions, which includes stress testing the historical correlation and liquidity assumptions. Due to the long time horizon and high confidence level of the risk measure, we do not perform backtesting of the IRC model as we do for the VaR measure.

MR1: Market risk under standardized approach

The following table presents the components of the capital requirement under the standardized approach for market risk.

		RWA	
	(Millions of Canadian dollars)	As at January 31, 2022	As at October 31, 2021
	Outright products		
1	Interest rate risk (general and specific)	4,702	4,594
2	Equity risk (general and specific)	698	162
3	Foreign exchange risk	2,698	2,363
4	Commodity risk	1,004	689
	Options		
5	Simplified approach	-	-
6	Delta-plus method	-	-
7	Scenario approach	4,948	4,101
8	**Securitization**	1,342	1,421
9	**Total**	**15,392**	**13,330**

MR2: RWA flow statements of market risk exposures under the Internal Models Approach (IMA)

The following table presents variations in the Market RWA determined under the Internal Models Approach.

As at January 31, 2022

		a	b	c	d	e	f
	(Millions of Canadian dollars)	VaR	Stressed VaR	IRC	CRM	Other	Total RWA
1	**RWA at previous quarter end**	**8,200**	**8,474**	**4,802**	**-**	**-**	**21,476**
2	Movement in risk levels[1]	2,461	2,491	(617)	-	-	4,335
3	Model updates/changes[2]	376	118	-	-	-	494
4	Methodology and policy[3]	-	-	-	-	-	-
5	Acquisitions and disposals	-	-	-	-	-	-
6	Foreign exchange movements[4]	-	-	115	-	-	115
7	Other	-	-	-	-	-	-
8	**RWA at end of Reporting Period**	**11,037**	**11,083**	**4,300**	**-**	**-**	**26,420**

[1] Change in risk due to position changes and averaging in of prior quarter model updates.

[2] Updates to the model to reflect recent market volatility, model implementation, change in model scope or any change to address model malfunctions including changes through model calibrations/realignments.

[3] Methodology changes to the calculations driven by regulatory policy changes. Please note that these changes may be temporary.

[4] Foreign exchange movements for VaR and Stressed VaR are embedded within movement in risk levels.

As at October 31, 2021

		a	b	c	d	e	f
	(Millions of Canadian dollars)	VaR	Stressed VaR	IRC	CRM	Other	Total RWA
1	**RWA at previous quarter end**	**8,476**	**9,225**	**5,076**	**-**	**-**	**22,777**
2	Movement in risk levels[1]	(231)	(758)	(41)	-	-	(1,030)
3	Model updates/changes[2]	(45)	7	(271)	-	-	(309)
4	Methodology and policy[3]	-	-	-	-	-	-
5	Acquisitions and disposals	-	-	-	-	-	-
6	Foreign exchange movements[4]	-	-	38	-	-	38
7	Other	-	-	-	-	-	-
8	**RWA at end of Reporting Period**	**8,200**	**8,474**	**4,802**	**-**	**-**	**21,476**

[1] Change in risk due to position changes and averaging in of prior quarter model updates.

[2] Updates to the model to reflect recent market volatility, model implementation, change in model scope or any change to address model malfunctions including changes through model calibrations/realignments.

[3] Methodology changes to the calculations driven by regulatory policy changes. Please note that these changes may be temporary.

[4] Foreign exchange movements for VaR and Stressed VaR are embedded within movement in risk levels.

MR3: IMA values for trading portfolios

The following table presents minimum, maximum, average and period-end regulatory 10 day VaR, regulatory 10 day stressed VaR, incremental risk charge and comprehensive risk capital charge. These measures are based on the scope of the global trading book with internal models approach (IMA) approval from OSFI for calculating regulatory market risk capital.

(Millions of Canadian dollars)		Value	
VaR (10 day 99%)[1,2]		As at January 31, 2022	As at October 31, 2021
1	Maximum value	430	362
2	Average value	295	214
3	Minimum value	149	99
4	Period end	343	260
Stressed VaR (10 day 99%)[1]			
5	Maximum value	386	346
6	Average value	298	217
7	Minimum value	174	107
8	Period end	347	302
Incremental Risk Charge (99.9%)			
9	Maximum value	437	469
10	Average value	348	383
11	Minimum value	248	295
12	Period end	286	384
Comprehensive Risk capital charge (99.9%)			
13	Maximum value	-	-
14	Average value	-	-
15	Minimum value	-	-
16	Period end	-	-
17	Floor (standardized measurement method)	-	-

[1] The portfolio included in regulatory VaR and SVaR represents a subset of the portfolio captured in management VaR and SVaR reported in the Market Risk section of the 2021 Annual Report.

[2] VaR shown this quarter reflects the more conservative of either a one-day holding period scaled up to a ten-day holding period or the direct ten-day holding period.

Average VaR of $295 million and average SVaR of $298 million both increased $81 million due to elevated inventories in certain fixed income portfolios.

Average IRC of $348 million decreased $35 million due to lower inventories in other fixed income portfolios.

LEVERAGE

LR1: Summary comparison of accounting assets vs leverage ratio exposure measure

The following table presents a reconciliation of our total assets per our published financial statements to our leverage ratio exposure measure.

	LEVERAGE RATIO[1] Summary comparison of accounting assets vs. leverage ratio exposure measure (Millions of Canadian dollars)	Q1/2022	Q4/2021	Q3/2021	Q2/2021	Q1/2021
1	**Total consolidated assets as per published financial statements**	**$1,752,469**	**1,706,323**	**1,693,540**	**1,615,316**	**1,671,151**
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(17,701)	(17,206)	(16,852)	(15,879)	(16,464)
3	Adjustment for securitized exposures that meet the operational requirements for the recognition of risk transfer[2]	-	-	-	-	-
4	Adjustment for fiduciary assets recognized on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure	-	-	-	-	-
5	Adjustments for derivative financial instruments	(246)	(4,765)	(15,322)	(12,741)	(28,579)
6	Adjustment for securities financing transactions (SFT) (i.e. repo assets and similar secured lending)	16,430	13,907	12,044	19,095	14,314
7	Adjustments for off-balance sheet items (i.e., credit equivalent amounts of off-balance sheet exposures)	228,707	222,658	218,889	213,097	210,955
8	Other adjustments[3]	(219,030)	(258,873)	(259,066)	(242,611)	(266,043)
9	**Leverage Ratio Exposure**	**$1,760,629**	**1,662,044**	**1,633,233**	**1,576,277**	**1,585,334**

[1] Based on OSFI's Leverage Requirements Guideline issued in October 2018.

[2] OSFI's October 2018 Leverage Requirements Guideline allows for the exclusion of securitized exposures that meet the operational requirements for risk transference. In Q1/2021 transitional methodology changes under the securitization framework did not allow us to recognize risk transference as further explained in SEC 1.

[3] Includes OSFI permitted exclusion of central bank reserves and sovereign-issued securities that qualify as high quality liquid assets and exposures related to the US Government Payment Protection Program (PPP).

LR2: Leverage ratio common disclosure template

The following table presents a detailed breakdown of the components of our leverage ratio. Maintaining a prescribed minimum level of leverage helps neutralizes leverage risk in the event of unexpected economic crises. OSFI requires maintenance of a minimum leverage ratio of 3% at all times.

	LEVERAGE RATIO COMMON DISCLOSURE TEMPLATE[1] (Millions of Canadian dollars, except percentages)	Q1/2022	Q4/2021	Q3/2021	Q2/2021	Q1/2021
	On-balance sheet exposures					
1	On-balance sheet items (excluding derivatives, SFTs and grandfathered securitization exposures, but including collateral)	1,141,785	1,057,130	1,025,819	982,497	996,797
2	Gross-up for derivatives collateral provided where deducted from balance sheet assets pursuant to the operative accounting framework (IFRS)	-	-	-	-	-
3	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(15,829)	(16,317)	(16,569)	(16,858)	(16,328)
4	(Asset amounts deducted in determining Basel III Tier 1 capital)	(17,627)	(17,088)	(15,890)	(15,771)	(14,840)
5	**Total on-balance sheet exposure (excluding derivatives and SFTs) (sum of lines 1 and 4)**	**1,108,329**	**1,023,725**	**993,360**	**949,868**	**965,629**
	Derivatives exposures					
6	Replacement cost associated with all derivatives transactions (i.e., net of eligible cash variation margin)	27,241	29,322	28,820	26,967	25,968
7	Add-on amounts for potential future exposure (PFE) associated with all derivatives transactions	64,451	61,188	57,623	57,189	55,546
8	(Exempted central counterparty (CCP)-leg of client-cleared trade exposures)	-	-	-	-	-
9	Adjusted effective notional amount of written credit derivatives	381	266	268	339	824
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-	-	-	-	-
11	**Total derivative exposures (sum of lines 6 to 10)**	**92,073**	**90,776**	**86,711**	**84,495**	**82,338**
	Securities financing transaction exposures					
12	Gross SFT assets recognized for accounting purposes (with no recognition of netting), after adjusting for sale accounting transactions	399,556	388,006	388,202	369,353	357,257
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(84,466)	(77,028)	(65,973)	(59,631)	(45,160)
14	Counterparty credit risk (CCR) exposure for SFTs	16,430	13,907	12,044	19,095	14,314
15	Agent transaction exposures	-	-	-	-	-
16	**Total securities financing transaction exposures (sum of lines 12 to 15)**	**331,520**	**324,885**	**334,273**	**328,817**	**326,411**
	Other off-balance sheet exposures					
17	Off-balance sheet exposures at gross notional amount	676,761	660,224	656,218	634,002	626,427
18	(Adjustments for conversion to credit equivalent amounts)	(448,054)	(437,566)	(437,329)	(420,905)	(415,471)
19	**Off-balance sheet items (sum of lines 17 and 18)**	**228,707**	**222,658**	**218,889**	**213,097**	**210,956**
	Capital and Total Exposures					
20	**Tier 1 capital**	**84,493**	**82,246**	**81,218**	**78,139**	**76,733**
20a	**Tier 1 capital with transitional arrangements for ECL provisioning not applied**	**84,298**	**81,826**	**80,659**	**77,319**	**75,757**
21	**Total Exposures (sum of lines 3,11,16 and 19)**	**1,760,629**	**1,662,044**	**1,633,233**	**1,576,277**	**1,585,334**
	Leverage ratio					
22	**Basel III leverage ratio**	**4.8%**	**4.9%**	**5.0%**	**5.0%**	**4.8%**
22a	**Basel III leverage ratio with transitional arrangements for ECL provisioning not applied**	**4.8%**	**4.9%**	**4.9%**	**4.9%**	**4.8%**

[1] Based on OSFI's Leverage Requirements Guideline issued October 2018.

Our Leverage ratio of 4.8% was down 10 bps, mainly due to the reversal of the regulatory modification for sovereign-issued securities qualifying as HQLA, as announced by OSFI. Business-driven growth in leverage exposures and share repurchases also contributed to the decrease. These factors were partially offset by internal capital generation and the issuance of preferred shares.

Leverage exposures increased by $99 billion, mainly driven by the reversal of the regulatory modification noted above, business growth in loans and securities, and the impact of foreign exchange translation.

TOTAL LOSS ABSORBING CAPACITY (TLAC) DISCLOSURE REQUIREMENTS

KM2: Key metrics – TLAC requirements (at resolution group level)

The following summary table provides information about our total loss-absorbing capacity (TLAC) available, and TLAC requirements applied, at the resolution group level under a Single Point of Entry. TLAC requirements establish two minimum standards, which are required to be met effective November 1, 2021: the risk-based TLAC ratio, which builds on the risk-based capital ratios described in the CAR guideline, and the TLAC leverage ratio, which builds on the leverage ratio described in OSFI's Leverage Requirements guideline. The risk-based TLAC ratio is defined as TLAC divided by total risk-weighted assets (RWA) while the TLAC leverage ratio is defined as TLAC divided by the Leverage ratio exposure. OSFI has provided notification requiring systemically important banks to maintain a minimum TLAC ratio of 22.5% (inclusive of the revised domestic stability buffer of 1% in Q2 2020) and a TLAC leverage ratio of 6.75%. The TLAC ratio requirements increased to 24% in Q4 2021 reflecting the 1.5% increase of the DSB effective October 31, 2021. We began issuing TLAC eligible debt in Q4 2018 and our TLAC ratio is expected to increase through normal course refinancing of maturing debt.

		a	b	c	d	e	f
(Millions of Canadian dollars, except as otherwise noted)		January 31 2022	October 31 2021	July 31 2021	April 30 2021	January 31 2021	Change (a) - (b)
Resolution group[1]							
1	Total loss-absorbing capacity (TLAC) available	150,136	142,202	135,029	126,594	125,619	7,934
1a	Total loss-absorbing capacity (TLAC) available with transitional arrangements for ECL provisioning not applied	150,136	142,202	135,029	126,594	125,619	7,934
2	Total RWA at the level of the resolution group	569,285	552,541	543,047	555,607	557,519	16,744
3	TLAC ratio: TLAC as a percentage of RWA (row 1/row 2) (%)	26.4%	25.7%	24.9%	22.8%	22.5%	0.7%
3a	TLAC ratio: TLAC as a percentage of RWA (row 1a / row 2) (%) available with transitional arrangements for ECL provisioning not applied	26.4%	25.7%	24.9%	22.8%	22.5%	0.7%
4	Leverage ratio exposure measure at the level of the resolution group	1,760,629	1,662,044	1,633,233	1,576,277	1,585,334	98,585
5	TLAC Leverage Ratio: TLAC as a percentage of leverage ratio exposure measure (row 1/row 4) (%)	8.5%	8.6%	8.3%	8.0%	7.9%	(0.1)%
5a	TLAC Leverage Ratio: TLAC as a percentage of leverage ratio exposure measure (row 1a/row 4) (%) with transitional arrangements for ECL provisioning not applied	8.5%	8.6%	8.3%	8.0%	7.9%	(0.1)%
6a	Does the subordination exemption in the antepenultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	Yes	Yes	Yes	Yes	Yes	-
6b	Does the subordination exemption in the penultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	No	No	No	No	No	-
6c	If the capped subordination exemption applies, the amount of funding issued that ranks pari passu with Excluded Liabilities and that is recognized as external TLAC, divided by funding issued that ranks pari passu with Excluded Liabilities and that would recognized as external TLAC if no cap was applied (%)	N/A	N/A	N/A	N/A	N/A	-

[1] Lines 1, 3 and 5 incorporate expected credit loss (ECL) transitional modification provided by OSFI as announced on March 27, 2020. Lines 1a, 3a and 5a represent TLAC available with transitional arrangements for ECL provisioning not applied.

Our TLAC ratio of 26.4% was up by 70 bps quarter-over-quarter, reflecting the increase in available TLAC from net bail-in debt issuance and internal capital generation, partly offset by share buybacks and higher RWA, as noted in KM1.

Our TLAC leverage ratio of 8.5% was down 10 bps quarter-over-quarter, reflecting higher leverage exposure as noted in LR1 and share buybacks, partly offset by net bail-in issuances and internal capital generation.

TLAC1: TLAC composition (at resolution group level)

The following table presents details of the composition of our TLAC.

As at January 31, 2022

(Millions of Canadian dollars, except as otherwise noted)		Amount
	Regulatory capital elements of TLAC and adjustments	
1	Common Equity Tier 1 capital (CET1)	77,080
2	Additional Tier 1 capital (AT1) before TLAC adjustments	7,413
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties	-
4	Other adjustments	-
5	AT1 instruments eligible under the TLAC framework	7,413
6	Tier 2 capital (T2) before TLAC adjustments	10,009
7	Amortised portion of T2 instruments where remaining maturity > 1 year	762
8	T2 capital ineligible as TLAC as issued out of subsidiaries to third parties	-
9	Other adjustments	-
10	T2 instruments eligible under the TLAC framework	10,771
11	TLAC arising from regulatory capital	95,264
	Non-regulatory capital elements of TLAC	
12	External TLAC instruments issued directly by the bank and subordinated to excluded liabilities	-
13	External TLAC instruments issued directly by the bank which are not subordinated to excluded liabilities but meet all other TLAC term sheet requirements	55,093
14	Of which: amount eligible as TLAC after application of the caps	55,093
15	External TLAC instruments issued by funding vehicles prior to January 1, 2022	-
16	Eligible ex ante commitments to recapitalise a G-SIB in resolution	-
17	TLAC arising from non-regulatory capital instruments before adjustments	55,093
	Non-regulatory capital elements of TLAC: adjustments	
18	TLAC before deductions	150,357
19	Deductions of exposures between MPE resolution groups that correspond to items eligible for TLAC (not applicable to SPE G-SIBs and D-SIBs)	-
20	Deduction of investments in own other TLAC liabilities	(221)
21	Other adjustments to TLAC	-
22	TLAC available after deductions	150,136
	Risk-weighted assets and leverage exposure measure for TLAC purposes	
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	569,285
24	Leverage exposure measure	1,760,629
	TLAC ratios and buffers	
25	TLAC Ratio (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime, row 22 / row 23)	26.4%
26	TLAC Leverage Ratio (as a percentage of leverage exposure)	8.5%
27	CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	8.4%
28	Institution-specific buffer (capital conservation buffer plus countercyclical buffer plus higher loss absorbency, expressed as a percentage of risk-weighted assets)	3.5%
29	Of which: capital conservation buffer	2.5%
30	Of which: bank specific countercyclical buffer	0.0%
31	Of which: higher loss absorbency	1.0%

TLAC1: TLAC composition (at resolution group level) (continued)

As at October 31, 2021

	(Millions of Canadian dollars, except as otherwise noted)	Amount
	Regulatory capital elements of TLAC and adjustments	
1	Common Equity Tier 1 capital (CET1)	75,583
2	Additional Tier 1 capital (AT1) before TLAC adjustments	6,663
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties	-
4	Other adjustments	-
5	AT1 instruments eligible under the TLAC framework	6,663
6	Tier 2 capital (T2) before TLAC adjustments	9,780
7	Amortised portion of T2 instruments where remaining maturity > 1 year	459
8	T2 capital ineligible as TLAC as issued out of subsidiaries to third parties	-
9	Other adjustments	-
10	T2 instruments eligible under the TLAC framework	10,239
11	TLAC arising from regulatory capital	92,485
	Non-regulatory capital elements of TLAC	
12	External TLAC instruments issued directly by the bank and subordinated to excluded liabilities	-
13	External TLAC instruments issued directly by the bank which are not subordinated to excluded liabilities but meet all other TLAC term sheet requirements	49,878
14	Of which: amount eligible as TLAC after application of the caps	49,878
15	External TLAC instruments issued by funding vehicles prior to January 1, 2022	-
16	Eligible ex ante commitments to recapitalise a G-SIB in resolution	-
17	TLAC arising from non-regulatory capital instruments before adjustments	49,878
	Non-regulatory capital elements of TLAC: adjustments	
18	TLAC before deductions	142,363
19	Deductions of exposures between MPE resolution groups that correspond to items eligible for TLAC (not applicable to SPE G-SIBs and D-SIBs)	-
20	Deduction of investments in own other TLAC liabilities	(161)
21	Other adjustments to TLAC	-
22	TLAC available after deductions	142,202
	Risk-weighted assets and leverage exposure measure for TLAC purposes	
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	552,541
24	Leverage exposure measure	1,662,044
	TLAC ratios and buffers	
25	TLAC Ratio (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime, row 22 / row 23)	25.7%
26	TLAC Leverage Ratio (as a percentage of leverage exposure)	8.6%
27	CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	N/A
28	Institution-specific buffer (capital conservation buffer plus countercyclical buffer plus higher loss absorbency, expressed as a percentage of risk-weighted assets)	3.5%
29	Of which: capital conservation buffer	2.5%
30	Of which: bank specific countercyclical buffer	0.0%
31	Of which: higher loss absorbency	1.0%

TLAC2: Material subgroup entity – creditor ranking at legal entity level (G-SIBs only)

TLAC 2 is a G-SIB disclosure requirement to provide the ranking of the liability structure of all our material subsidiaries in foreign jurisdictions as defined by the FSB TLAC term sheet. RBC US Group Holdings LLC ("RBC IHC") is a material subsidiary entity for which TLAC 2 disclosure would be required. Effective January 1, 2021, RBC IHC must comply with the Federal Reserve TLAC rules which require reporting of TLAC ratios for calendar quarters commencing June 2021. OSFI has advised RBC it can align its IHC TLAC 2 disclosure requirements to similarly commence in Q3 2021 and will require only disclosure of IHC calendar quarter TLAC ratios. OSFI does require us to disclose TLAC 2 for any other material subsidiary identified, however, at this time RBC IHC is our only material subsidiary.

As at January 31, 2022

	(Millions of Canadian dollars, except as otherwise noted) Based on US GAAP	Creditor ranking					
		1	2	3	4	5	Sum
		(most junior)					
1	Is the resolution entity the creditor/investor? (yes or no)	yes	-	no	yes	-	-
2	Description of creditor ranking	Common shares	Preferred shares and Limited Recourse Capital Notes	Subordinated Debt [3]	Bail-in Debt[1]	Other Liabilities excluding Bail-in Debt and Subordinated Debt[2]	
3	Total capital and liabilities net of credit risk mitigation	21,838	-	191	14,036	-	36,065
4	Subset of row 3 that are excluded liabilities	-	-	191	-	-	191
5	Total capital and liabilities less excluded liabilities (row 3 minus row 4)	21,838	-	-	14,036	-	35,874
6	Subset of row 5 that are eligible as TLAC	21,838	-	-	14,036	-	35,874
7	Subset of row 6 with 1 year ≤ residual maturity < 2 years			-	-	-	-
8	Subset of row 6 with 2 years ≤ residual maturity < 5 years			-	7,896	-	7,896
9	Subset of row 6 with 5 years ≤ residual maturity < 10 years			-	6,140	-	6,140
10	Subset of row 6 with residual maturity ≥ 10 years, but excluded perpetual securities			-	-	-	-
11	Subset of row 6 that is perpetual securities	21,838	-	-	-	-	21,838

[1] Under the Bail-in Regime, Bail-in Debt which would ordinarily rank equally to Other Liabilities in liquidation, is subject to conversion under statutory resolution powers whereas Other Liabilities are not subject to such conversion.Bail-in-Debt represents TLAC Eligible Long-Term Debt based on U.S. TLAC Rules.

[2] Completion of this column is not required by OSFI at this time.

[3] Subordinated debt was issued by City National Bank before being acquired by RBC, it will mature in July 2022.

TLAC2: Material subgroup entity – creditor ranking at legal entity level (G-SIBs only) (continued)

As at October 31, 2021

(Millions of Canadian dollars, except as otherwise noted) Based on US GAAP		Creditor ranking					
		1	2	3	4	5	Sum
		(most junior)					
1	Is the resolution entity the creditor/investor? (yes or no)	yes	-	no	yes	-	-
2	Description of creditor ranking	Common shares	Preferred shares and Limited Recourse Capital Notes	Subordinated Debt [3]	Bail-in Debt[1]	Other Liabilities excluding Bail-in Debt and Subordinated Debt[2]	
3	Total capital and liabilities net of credit risk mitigation	22,056	-	192	12,467	-	34,715
4	Subset of row 3 that are excluded liabilities	-	-	192	-	-	192
5	Total capital and liabilities less excluded liabilities (row 3 minus row 4)	22,056	-	-	12,467	-	34,523
6	Subset of row 5 that are eligible as TLAC	22,056	-	-	12,467	-	34,523
7	Subset of row 6 with 1 year ≤ residual maturity < 2 years			-	-	-	-
8	Subset of row 6 with 2 years ≤ residual maturity < 5 years			-	5,053	-	5,053
9	Subset of row 6 with 5 years ≤ residual maturity < 10 years			-	7,414	-	7,414
10	Subset of row 6 with residual maturity ≥ 10 years, but excluded perpetual securities			-	-	-	-
11	Subset of row 6 that is perpetual securities	22,056	-	-	-	-	22,056

[1] Under the Bail-in Regime, Bail-in Debt which would ordinarily rank equally to Other Liabilities in liquidation, is subject to conversion under statutory resolution powers whereas Other Liabilities are not subject to such conversion.Bail-in-Debt represents TLAC Eligible Long-Term Debt based on U.S. TLAC Rules.

[2] Completion of this column is not required by OSFI at this time.

[3] Subordinated debt was issued by City National Bank before being acquired by RBC, it will mature in July 2022.

TLAC3: Resolution entity – creditor ranking at legal entity level

The following table provides information regarding the ranking of our unsecured liabilities structure at the resolution entity level.

As at January 31, 2022

		Creditor ranking					
		1	2	3	4	5	Sum
(Millions of Canadian dollars, except as otherwise noted)		(most junior)					
1	Description of creditor ranking	Common shares	Preferred shares and Limited Recourse Capital Notes	Subordinated Debt	Bail-in Debt[1]	Other Liabilities excluding Bail-in Debt and Subordinated Debt[2]	
2	Total capital and liabilities net of credit risk mitigation	17,651	7,473	10,708	59,505	-	95,337
3	Subset of row 2 that are excluded liabilities	79	39	59	5,107	-	5,284
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	17,572	7,434	10,649	54,398	-	90,053
5	Subset of row 4 that are *potentially* eligible as TLAC	17,572	7,434	10,402	54,398	-	89,806
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years			110	11,102	-	11,212
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years			1,906	34,407	-	36,313
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years			5,982	3,702	-	9,684
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities			2,404	5,187	-	7,591
10	Subset of row 5 that is perpetual securities	17,572	7,434	-	-	-	25,006

[1] Under the Bail-in Regime, Bail-in Debt which would ordinarily rank equally to Other Liabilities in liquidation, is subject to conversion under statutory resolution powers whereas Other Liabilities are not subject to such conversion.

[2] Completion of this column is not required by OSFI at this time.

TLAC3: Resolution entity – creditor ranking at legal entity level (continued)

As at October 31, 2021

	(Millions of Canadian dollars, except as otherwise noted)	Creditor ranking					
		1	2	3	4	5	Sum
		(most junior)					
1	Description of creditor ranking	Common shares	Preferred shares and Limited Recourse Capital Notes	Subordinated Debt	Bail-in Debt[1]	Other Liabilities excluding Bail-in Debt and Subordinated Debt[2]	
2	Total capital and liabilities net of credit risk mitigation	17,728	6,723	9,647	52,838	-	86,936
3	Subset of row 2 that are excluded liabilities	73	39	30	2,960	-	3,102
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	17,655	6,684	9,617	49,878	-	83,834
5	Subset of row 4 that are *potentially* eligible as TLAC	17,655	6,661	9,377	49,878	-	83,571
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years			110	11,157	-	11,267
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years			1,857	27,897	-	29,754
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years			4,231	5,530	-	9,761
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities			3,179	5,294	-	8,473
10	Subset of row 5 that is perpetual securities	17,655	6,661	-	-	-	24,316

[1] Under the Bail-in Regime, Bail-in Debt which would ordinarily rank equally to Other Liabilities in liquidation, is subject to conversion under statutory resolution powers whereas Other Liabilities are not subject to such conversion.

[2] Completion of this column is not required by OSFI at this time.

OPERATIONAL RISK

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

	Pillar 3 disclosures requirement	RBC 2021 Annual Report section	Sub-section
a)	Details of the approach for operational risk capital assessment for which the bank qualifies	Operational risk	Operational risk capital
b)	Description of the advanced measurement approaches for operational risk (AMA)[1]	n/a	n/a
c)	For banks using the AMA, a description of the use of insurance for the purpose of mitigating operational risk[1]	n/a	n/a

[1] Effective November 1, 2019, OSFI discontinued the AMA approach.

INTEREST RATE RISK IN THE BANKING BOOK

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2021 Annual Report and incorporated by reference into this Pillar 3 report. Our 2021 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations

Pillar 3 disclosures requirement	RBC 2021 Annual Report section	Sub-section
Interest rate risk in the banking book	Market Risk	Market Risk