Royal Bank of Canada

Pillar 3 Report

As at October 31, 2023

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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 2023 Annual Report, in other filings with Canadian regulators or the SEC, in other reports to shareholders, and in other communications. In addition, our representatives may communicate forward-looking statements orally to analysts, investors, the media and others. Forward-looking statements are typically identified by words such as "believe", "expect", "suggest", "seek", "foresee", "forecast", "schedule", "anticipate", "intend", "estimate", "goal", "commit", "target", "objective", "plan", "outlook", "timeline", and "project" and similar expressions of future or conditional verbs such as "will", "may", "might", "should", "could", "can" or "would" or negative or grammatical variations thereof. By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, both general and specific in nature, 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 that our financial performance objectives, vision and strategic goals will not be achieved and that our actual results may differ materially from such predictions, forecasts, projections, expectations or conclusions. We caution readers not to place undue reliance on our forward-looking 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 2023 Annual Report, as may be updated by subsequent quarterly reports. When relying on our forward-looking statements to make decisions with respect to us, investors and others should carefully consider such risk factors and other uncertainties and potential events, as well as the inherent uncertainty of forward-looking statements. 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 94,000+ 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 more than 17 million clients in Canada, the U.S. and 27 other countries. Learn more at rbc.com.

Effective the first quarter of 2023, we simplified our reporting structure by eliminating the Investor & Treasury Services segment and moving its former businesses to existing segments. We moved our Investor Services business to our Wealth Management segment, and our Treasury Services and Transaction Banking businesses to our Capital Markets segment. Effective the fourth quarter of 2023, we moved the Investor Services lending business from our Wealth Management segment to our Capital Markets segment. From a reporting perspective, there were no changes to our Personal & Commercial Banking and Insurance segments. 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 (inclusive of the 2017 Basel III reforms) 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; and
- 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 2023 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 December 2018, the BCBS issued its consolidated Pillar 3 disclosure requirements, *Pillar 3 disclosure requirements – updated framework.* The finalized requirements incorporated 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 (SA), and new disclosure requirements on operational risk. On January 31, 2022, OSFI finalized its revised Pillar 3 guideline with an implementation date requirement of April 30, 2023. Beginning Q2 2023, our Pillar 3 disclosures reflect the finalized OSFI disclosure guideline requirements. On November 11, 2021, BCBS finalized revisions to its market risk disclosures. On April 28, 2023, OSFI released for consultation a revised Pillar 3 guideline incorporating market risk and credit valuation adjustment risk (CVA) disclosure requirements which were subsequently finalized on November 14, 2023. We will incorporate these updated disclosure requirements in our Q1 2024 Pillar 3 Report.

To address the economic disruption caused by the COVID-19 pandemic in Q2 2020, OSFI announced a series of regulatory capital modifications as described in the Capital management section of our 2020 Annual Report and further updated as described in the Capital management section of our 2021, 2022 and 2023 Annual Reports. 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. 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, with a further increase to 3% announced on December 8, 2022 effective February 1, 2023, as fully described in the Capital management section of our 2023 Annual Report. On June 20, 2023, OSFI announced an additional increase to the domestic stability buffer of 50 bps to 3.5% of RWA effective November 1, 2023.

On February 1, 2023 (Q2 2023), we adopted OSFI's revised capital and disclosure guidelines incorporating and implementing OSFI's first phase of the adoption of the final BCBS Basel III reforms. The second phase of OSFI's implementation relating to the revised CVA and market risk chapters of the Capital Adequacy Requirements (CAR) guideline will be effective for us in Q1 2024. The revised CAR guidelines implemented in the beginning of Q2 2023 included the following notable changes:

- For IRB portfolios, elimination of a 6% regulatory scaling factor applied to RWA generated by internal models and introduction of prescribed supervisory parameters applicable to certain asset classes within our wholesale portfolio.
- Adoption of a new Operational risk Standardized Approach framework based on a bank's 3 years of average income and 10 years of historical losses.
- Adoption of a new Credit Risk Standardized Approach framework enhancing risk sensitivity.
- Prescribed revisions to the existing regulatory capital floor from 70% to 65% requiring a transition to a new regulatory capital floor of 72.5% of RWA under the SA by 2026. This new regulatory floor will be transitioned over three years, reflecting a regulatory capital floor requirement of 67.5%, 70% and 72.5% in, fiscal 2024, 2025 and 2026, respectively.

Given substantial changes to credit risk and operational risk frameworks, OSFI requires only prospective disclosures under the Pillar 3 guidelines. As such, our comparative figures for Q1 2023 and earlier quarters reflect our capital position under the earlier OSFI CAR guidelines.

Our disclosure for fiscal 2022 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. This transitional ECL modification is no longer applicable in fiscal 2023.

Refer to the Capital management section of our 2023 Annual Report for further information on upcoming regulatory developments which were announced during the quarter.

Leverage framework

OSFI's Leverage Requirements (LR) guideline requires banks to disclose their leverage ratio and its underlying components as well as maintain a minimum leverage ratio of 3.5% for domestic systemically important banks (D-SIBs). 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.

The BCBS introduced an additional leverage ratio buffer requirement for global systemically important banks (G-SIB) as part of the Basel III reforms. A G-SIB's 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. This minimum leverage requirement has now been incorporated into OSFI's LR guideline as part of the 3.5% D-SIB requirement.

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 from our total leverage exposure amount. On November 5, 2020, OSFI extended the allowed exclusion of central bank reserves and sovereign-issued securities another eight months to December 31, 2021. On August 12, 2021, OSFI announced that sovereign-issued securities would no longer be eligible for exclusion effective January 1, 2022, but that central bank reserves would continue to be eligible for exclusion until further notice. On September 13, 2022, OSFI announced that central bank reserves would no longer be eligible for exclusion starting April 1, 2023. Our reported leverage figures reflect this guidance.

Our disclosure for fiscal 2022 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. This transitional ECL modification is no longer applicable in fiscal 2023.

On February 1, 2023, we adopted OSFI's revised LR guideline which incorporates the internationally agreed BCBS leverage reforms with certain jurisdictional amendments. Our leverage calculations reflect the changes prescribed by OSFI. Disclosure requirements for LR were not affected by OSFI's updated Pillar 3 disclosure requirements. Refer to our Leverage disclosures included in this report, as required by OSFI.

TLAC framework

The Canadian Bail-in regime, including OSFI's Total Loss Absorbing Capacity (TLAC) 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, claims of some creditors whose claims otherwise rank equally with those of the holders holding bail-inable notes would be excluded from a bail-in conversion and thus the holders and beneficial owners of bail-inable notes will have to absorb losses ahead of these other creditors as a result of the bail-in conversion.

TLAC requirements establish two minimum standards, which were 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 LR guideline. The risk-based TLAC ratio is defined as TLAC divided by Total risk-weighted assets while the TLAC leverage ratio is defined as TLAC divided by the Leverage ratio exposure. OSFI required D-SIBs to maintain a minimum TLAC ratio of 24% (inclusive of the domestic stability buffer (DSB) of 2.5%) and a TLAC leverage ratio of 6.75%. On December 8, 2022, OSFI announced the DSB would further increase to 3% of RWA effective February 1, 2023. Thus, our TLAC ratio minimum requirement beginning Q2 2023 was 24.5%, before considering the countercyclical capital buffer. The TLAC ratio minimum requirement increased to 25% effective November 1, 2023, reflecting OSFI's additional 50 bps increase discussed in the Capital framework section above, before considering the countercyclical capital buffer. Our TLAC leverage ratio minimum requirement beginning Q2 2023 was 7.25% reflecting the incorporation of the 50 bps leverage buffer discussed in the Leverage framework section above.

We began issuing TLAC eligible debt in Q4 2018 and our TLAC ratio is expected to increase through normal course refinancing of maturing debt. More details on our TLAC issuance is available in our Capital management section of our 2023 Annual Report.

In May 2018, OSFI published its TLAC Disclosure guideline for Canadian D-SIBs. The disclosure requirements reflect the BCBS TLAC disclosure requirements. 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. This transitional ECL modification is no longer applicable in fiscal 2023.

DISCLOSURE MAP

Pillar 3 Requirement	Pillar 3 Requirement		2023 Annual Report section	Sub-section	2023 Annual Report Reference
Overview of key metrics, risk management and RWA	KM1				
		a) Business model and risk profile	Top and emerging risks	Top and emerging risks	63-65
			Risk management overview	Risk management principles	65
				Risk drivers	66
			Enterprise risk management	Risk governance	66-67
				Risk appetite	68
				Risk measurement	68-69
				Risk control	69-70
		b) Risk governance structure	Enterprise risk management	Risk governance	66-67
				Risk control	69-70
		c) Communication and enforcement of risk culture within the bank	Operational risk	Culture and conduct risk	102
		d) Scope and main features of risk measurement systems	Enterprise risk management	Risk measurement	68-69
		e) Risk information reporting	Enterprise risk management	Risk control - *Risk monitoring and reporting*	70
		f) Stress testing	Enterprise risk management	Risk measurement – *Stress testing*	69
			Market risk	Stress tests	81
			Systemic risk	Systemic risk	105-106
		g) Strategies and processes applied to manage, hedge and mitigate risks	Enterprise risk management	Risk appetite	68
				Risk measurement	68-69
				Risk control	69-70
			Credit risk	Overview	71
				Credit risk measurement	71-72
				Credit risk assessment	72-74
				Credit risk mitigation	74
				Credit risk approval	75
				Credit risk administration	75
			Market risk	Market risk controls – FVTPL positions, including trading portfolios	81
				Stress tests	81
				Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions	83
				IRRBB measurement	83
				Non-trading foreign exchange rate risk	84
			Liquidity and funding risk	Overview	86
				Governance of liquidity risk	86-87
				Liquidity risk mitigation strategies and techniques	87
				Risk measurement and internal liquidity reporting	87-88
				Contingency liquidity risk management and funding plans	88
				Funding	90-92
				Liquidity Coverage Ratio (LCR)	94-95
				Net Stable Funding Ratio (NSFR)	95-97
			Insurance risk	Insurance risk	100
			Operational risk	Overview	100
				Operational risk framework	100-101
			Regulatory compliance risk	Regulatory compliance risk	102-103
			Strategic risk	Strategic risk	103
			Reputation risk	Reputation risk	103-104
			Legal and regulatory environment risk	Legal and regulatory environment risk	104-105
			Competitive risk	Competitive risk	105
			Systemic risk	Systemic risk	105-106
			Environmental and social risk	Environmental and social risk (including climate change)	107-109

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2023 Annual Report section	Sub-section	2023 Annual Report Reference
Overview of key metrics, risk management and RWA (continued)		g) Strategies and processes applied to manage, hedge and mitigate risks (continued)	Consolidated Financial Statements	Note 9 – Derivative financial instruments and hedging activities - *Derivatives issued for trading purposes*	191
				Note 9 – Derivative financial instruments and hedging activities - *Derivatives issued for other-than-trading purposes*	191
				Note 9 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	193-194
	OV1				
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 [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	71
				Measurement of economic and regulatory capital - *Gross credit risk exposure*	72
		b) Criteria and approach used for defining credit risk management policy and for setting credit risk limits	Enterprise risk management	Risk governance	66-67
				Risk appetite	68
				Risk measurement	68-69
				Risk control - *Risk appetite, risk approval authorities and risk limits*	70
			Credit risk	Overview	71
				Credit risk assessment	72-74
				Credit risk mitigation	74
				Credit risk approval	75
		c) Structure and organization of the credit risk management and control function	Enterprise risk management	Risk governance	66-67
				Risk control	69-70
		d) Interaction between the credit risk management, risk control, compliance and internal audit functions	Enterprise risk management	Risk governance	66-67
		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	66-67
				Risk control - *Risk monitoring and reporting*	70
	CR1				
	CR2				
	CRB	a) Definitions of past due	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)*	151
				Note 5 – Loans and allowance for credit losses - *Loans past due but not impaired*	185
		b) Extent of past due exposures	Consolidated Financial Statements	Note 5 – Loans and allowance for credit losses - *Loans past due but not impaired*	185

[1] CCA is available at https://www.rbc.com/investor-relations/regulatory-information.html.
[2] G-SIB is provided on page 42 of our Q1 2023 Report to Shareholders available at https://www.rbc.com/investor-relations/regulatory-information.html.

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2023 Annual Report section	Sub-section	2023 Annual Report Reference
Credit risk (continued)	CRB (continued)	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	149
		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*	151-152
		e) Breakdown of exposures by geographical areas, industry and residual maturity			
		f) Amounts of impaired exposures (according to the definition by the bank for accounting purposes) and related allowances and write-offs, broken down by geographical areas and industry			
		g) Ageing analysis of accounting past-due exposures			
		h) Breakdown of restructured exposures between impaired and not impaired exposures			
	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*	73
			Consolidated Financial Statements	Note 9 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	193-194
				Note 30 – Offsetting financial assets and financial liabilities	229-230
		b) Core features of policies and processes for collateral evaluation and management	Credit risk	Credit risk mitigation - *Collateral*	74
		c) Information about market or credit risk concentrations under the credit risk mitigation instruments used	Credit risk	Credit risk mitigation	74
				Credit risk approval - *Credit risk limits*	75
			Consolidated Financial Statements	Note 9 – Derivative financial instruments and hedging activities	190-199
	CR3				
	CRD				
	CR4				
	CR5				
	CRE				
	CR6				
	CR7				
	CR8				
	CR9 [3]				
	CR10		n/a	n/a	n/a

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

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2023 Annual Report section	Sub-section	2023 Annual Report Reference
Counterparty credit risk	CCRA	a) Risk management objectives and policies related to counterparty credit risk	Credit risk	Credit risk assessment – *Counterparty credit risk*	73
			Consolidated Financial Statements	Note 9 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	193-194
		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*	73
		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*	73
			Consolidated Financial Statements	Note 9 – Derivative financial instruments and hedging activities - *Derivative-related credit risk*	193-194
			Consolidated Financial Statements	Note 30 – Offsetting financial assets and financial liabilities	229-230
		d) Policies with respect to wrong-way risk exposures	Credit risk	Credit risk assessment – *Wrong-way risk*	74
		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	93
Counterparty credit risk (continued)	CCR1				
	CCR2				
	CCR3				
	CCR4				
	CCR5				
	CCR6				
	CCR7		n/a	n/a	n/a
	CCR8	f) Exposures to central counterparties			
Securitization	SECA	a) Objectives in relation to securitization activities	Off-balance sheet arrangements	Off-balance sheet arrangements	60-63
			Consolidated Financial Statements	Note 7 – Derecognition of financial assets	185-186
			Consolidated Financial Statements	Note 8 – Structured entities	186-190
		b) List of SPEs where RBC is sponsor / provides implicit support	Consolidated Financial Statements	Note 8 – Structured entities	186-190
		c) Accounting policies for securitization	Consolidated Financial Statements	Note 2 – Summary of significant accounting policies, estimates and judgments – *Basis of consolidation*	145-146
			Consolidated Financial Statements	Note 2 – Summary of significant accounting policies, estimates and judgments – *Derecognition of financial assets*	152
			Critical accounting policies and estimates	Consolidation of structured entities	120
		d) the names of external credit assessment institutions (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	117-118
		e) Use of Basel IAA for capital purposes	Credit risk	n/a	71-81
			Capital management	Regulatory capital approach for securitization exposures	117-118
		f) Use of other internal assessment for capital purposes	Credit risk	Credit risk assessment	72-74

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2023 Annual Report section	Sub-section	2023 Annual Report Reference
Securitization (continued)	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, including trading portfolios	81
				Stress tests	81
				Market risk measures – FVTPL positions	82-83
				Market risk measures for assets and liabilities of RBC Insurance	83
				Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions	83
				IRRBB measurement	83
				Market risk measures – IRRBB Sensitivities	83-84
				Market risk measures for other material non-trading portfolios	84
		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*	153-154
		b) Description of the market risk governance structure established to implement the strategies and processes of the bank	Enterprise risk management	Risk governance	66-67
				Risk appetite	68
				Risk measurement	68-69
				Risk control	69-70
				Risk measurement – *Stress testing*	69
			Operational risk	Culture and conduct risk	102
		Description of the relationships and the communication mechanisms between the different parties involved in market risk management	Enterprise risk management	Risk governance	66-67
				Risk control	69-70
		c) Scope and nature of risk reporting and/or measurement systems	Enterprise risk management	Risk measurement	68-69
				Risk control	69-70
				Risk measurement – *Stress testing*	69
			Market risk	Market risk controls – FVTPL positions, including trading portfolios	81
				Stress tests	81
				Market risk measures – FVTPL positions	82-83
				Market risk measures for assets and liabilities of RBC Insurance	83
				Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions	83
				IRRBB measurement	83
				Market risk measures – IRRBB Sensitivities	83-84
				Market risk measures for other material non-trading portfolios	84

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2023 Annual Report section	Sub-section	2023 Annual Report Reference
Market risk (continued)	MRB	c) General description of the models (VaR/stressed VaR)	Market risk	Market risk controls – FVTPL positions, including trading portfolios	81
		g) Description of stress testing applied to the modelling parameters	Market risk	Stress tests	81
	MR1				
	MR2				
	MR3				
	MR4 [4]				
Prudential valuation adjustments	PV1 [3]	Prudential valuation adjustments made for assets valued at fair value			
Operational Risk	ORA	a) Policies, frameworks and guidelines for the management of operational risk	Operational risk	Overview	100
				Operational risk framework	100-101
		b) The structure and organisation of their operational risk management and control function	Operational risk	Overview	100
				Operational risk framework	100-101
		(c) Operational risk measurement system	Operational risk	Operational risk framework	100-101
				Operational risk capital	102
		(d) The scope and main context of the reporting framework on operational risk to executive management and to the board of directors	Operational risk	Operational risk framework	100-101
				Culture and conduct risk	102
		(e) The risk mitigation and risk transfer used in the management of operational risk including mitigation by policy, divesting from high-risk businesses, and by the establishment of controls	Operational risk	Operational risk framework	100-101
	OR1 [3]				
	OR2 [3]				
	OR3 [3]				

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

DISCLOSURE MAP (continued)

Pillar 3 Requirement	Pillar 3 Requirement		2023 Annual Report section	Sub-section	2023 Annual Report Reference
Standardized Risk Weighted Comparison	CMS1	Comparison of modelled and standardised RWA at risk level			
	CMS2	Comparison of modelled and standardised RWA for credit risk at asset class level			
Countercyclical Capital Buffer	CCyB	Geographical distribution of credit exposures used in the countercyclical buffer			
Leverage	LR1				
	LR2				
Total loss absorbing capacity	KM2				
	TLAC1				
	TLAC2				
	TLAC3				
Liquidity	LIQA	Liquidity and Funding Risk Management	Liquidity and Funding Risk		86-99
	LIQ1	Liquidity Coverage Ratio (LCR)		Liquidity Coverage Ratio (LCR)	94-95
	LIQ2	Net Stable Funding Ratio (NSFR)		Net Stable Funding Ratio (NSFR)	95-97
	ENC	Asset Encumbrance		Asset Encumbrance	90
Remuneration	REMA [5]	Remuneration policy			
	REM1 [5]	Remuneration awarded during the financial year			
	REM2 [5]	Special payments			
	REM3 [5]	Deferred remuneration			
Interest rate risk in the banking book			Market risk	Market risk	81-86

[5] Remuneration related disclosures are included in our Management Proxy Circular which is available at https://www.rbc.com/investor-relations/_assets-custom/pdf/2023englishproxy.pdf.

OVERVIEW OF KEY METRICS, RISK MANAGEMENT AND RWA

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

	(Millions of Canadian dollars)[1]	a October 31 2023	b July 31 2023	c April 30 2023	d January 31 2023	e October 31 2022	f YoY Change (a-e)
	Available capital (amounts)						
1	Common Equity Tier 1 (CET1)	86,611	82,892	81,103	78,055	76,945	9,666
1a	Common Equity Tier 1 with transitional arrangements for ECL provisioning not applied					76,774	n.a.
2	Tier 1	93,904	90,193	88,400	85,357	84,242	9,662
2a	Tier 1 with transitional arrangements for ECL provisioning not applied					84,071	n.a.
3	Total capital	104,952	101,072	99,540	96,438	93,850	11,102
3a	Total capital with transitional arrangements for ECL provisioning not applied					93,850	n.a.
	Risk-weighted assets (amounts)						
4	Total risk-weighted assets (RWA)	596,223	585,899	593,533	614,250	609,879	(13,656)
4a	Total risk-weighted assets (pre-floor)	596,223	585,899	593,533	614,250	609,879	(13,656)
	Risk-based capital ratios as a percentage of RWA						
5	Common Equity Tier 1 ratio (%)	14.5%	14.1%	13.7%	12.7%	12.6%	1.9%
5a	CET1 ratio with transitional arrangements for ECL provisioning not applied (%)					12.6%	n.a.
5b	CET1 ratio (%) (pre-floor ratio)	14.5%	14.1%	13.7%	12.7%	12.6%	1.9%
6	Tier 1 ratio (%)	15.7%	15.4%	14.9%	13.9%	13.8%	1.9%
6a	Tier 1 ratio with transitional arrangements for ECL provisioning not applied (%)					13.8%	n.a.
6b	Tier 1 ratio (%) (pre-floor ratio)	15.7%	15.4%	14.9%	13.9%	13.8%	1.9%
7	Total capital ratio (%)	17.6%	17.3%	16.8%	15.7%	15.4%	2.2%
7a	Total capital ratio with transitional arrangements for ECL provisioning not applied (%)					15.4%	n.a.
7b	Total capital ratio (%) (pre-floor ratio)	17.6%	17.3%	16.8%	15.7%	15.4%	2.2%
	Additional CET1 buffer requirements as a percentage of RWA						
8	Capital conservation buffer requirement (%)	2.5%	2.5%	2.5%	2.5%	2.5%	-
9	Countercyclical buffer requirement (%)[2]	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
10	Bank G-SIB and/or D-SIB additional requirements (%)	1.0%	1.0%	1.0%	1.0%	1.0%	-
11	Total of bank CET1 specific buffer requirements (%) (row 8 + row 9 + row 10)	3.6%	3.6%	3.5%	3.5%	3.5%	0.1%
12	CET1 available after meeting the bank's minimum capital requirements (row 5 - 8%) (%)[3]	6.4%	6.1%	5.7%	4.7%	4.6%	1.8%
	Basel III leverage ratio						
13	Total Basel III leverage ratio exposure measure	2,179,590	2,142,032	2,116,380	1,921,310	1,898,179	281,411
14	Basel III leverage ratio (row 2 / row 13)	4.3%	4.2%	4.2%	4.4%	4.4%	(0.1)%
14a	Basel III leverage ratio (row 2a / row 13) with transitional arrangements for ECL provisioning not applied					4.4%	n.a.

[1] No ECL modification is allowed in fiscal 2023. For fiscal 2022 quarters the 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 allowed reduced from a 75% after-tax exclusion rate for growth in Stage 1 and Stage 2 allowances in 2020 to a 50% after-tax exclusion rate in 2021 and a 25% after-tax exclusion rate in 2022.

[2] Bank specific countercyclical buffer requirement is the amount which is determined based on our weighted average private sector exposures in jurisdictions identified by the BCBS (Q4/23 0.06%, Q3/23 0.06%, Q2/23 0.04%, Q1/23 0.03%, Q4/22 0.01%).

[3] 8% reflects minimum capital requirements which includes D-SIB/G-SIB surcharge, and excludes the OSFI Domestic Stability Buffer of 3% effective February 1, 2023 (2.5% previously effective October 31, 2021). The DSB increased to 3.5% effective Nov. 1, 2023. Refer to the Capital management section of our 2023 Annual Report.

2023 vs. 2022

Our CET1 ratio was 14.5%, up 190 bps from last year, mainly reflecting net internal capital generation, the favourable impact of the Basel III reforms and share issuances under the Dividend reinvestment plan (DRIP). These factors were partially offset by RWA growth (excluding FX) and the impact of the Canada Recovery Dividend (CRD) and other tax related adjustments. Refer to the Financial performance section of our 2023 Annual Report.

Our Tier 1 capital ratio of 15.7% was up 190 bps, mainly reflecting the factors noted above under the CET1 ratio.

Our Total capital ratio of 17.6% was up 220 bps, mainly reflecting the factors noted above under the Tier 1 capital ratio and a favourable impact from the net issuance of subordinated debentures.

Total RWA was down $14 billion from last year, mainly reflecting the favourable impact of the Basel III reforms. This was partially offset by the net impact of business growth, primarily in personal and commercial lending in Canada that was partly offset by lower corporate lending and trading related activities. The impact of foreign exchange translation and net credit migration, primarily in our wholesale portfolios, also partially offset the impact from the Basel III reforms. In our CET1 ratio, the impact of foreign exchange translation on RWA is largely mitigated with economic hedges.

Our Leverage ratio of 4.3% was down 10 bps, mainly due to the reversal of the regulatory modification for central bank reserves qualifying as high-quality liquid assets (HQLA), business-driven growth in leverage exposures and the impact of the CRD and other tax related adjustments. These factors were partially offset by net internal capital generation and the impacts of share issuances under the DRIP, the partial sale of RBC Investor Services operations and the Basel III reforms.

Leverage exposures increased by $281.4 billion, mainly driven by the reversal of the regulatory modification noted above, business growth primarily in securities, personal and commercial lending in Canada, repo-style transactions and undrawn commitments, partially offset by lower interest-bearing deposits with banks and cash. The impact of foreign exchange translation also contributed to the increase. These factors were partially offset by the impact of the partial sale of RBC Investor Services operations and the Basel III reforms.

OVA: Bank risk management approach

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations.

Pillar 3 disclosures requirement		2023 Annual Report section	Sub-section
a)	Business model and risk profile	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	Operational risk	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, including trading portfolios
			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
			Governance of liquidity risk
			Liquidity risk mitigation strategies and techniques
			Risk measurement and internal liquidity reporting
			Contingency liquidity risk management and funding plans
			Funding
			Liquidity Coverage Ratio (LCR)
			Net Stable Funding Ratio (NSFR)

OVA: Bank risk management approach (continued)

Pillar 3 disclosures requirement		2023 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 (including climate change)	Environmental and social risk (including climate change)
		Consolidated Financial Statements	Note 9 - Derivative financial instruments and hedging activities - *Derivatives issued for trading purposes*
			Note 9 - Derivative financial instruments and hedging activities - *Derivatives issued for other-than-trading purposes*
			Note 9 - 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	b1	b2	b3	c	d
		RWA					Minimum capital requirement[1]	RWA
	(Millions of Canadian dollars)	October 31 2023	July 31 2023	April 30 2023	January 31 2023	October 31 2022	October 31 2023	YoY Change (a-b3)
1	**Credit risk (excluding counterparty credit risk)**	**397,899**	**395,790**	**398,949**	**413,636**	**406,601**	**31,832**	**(8,702)**
2	Of which: standardized approach (SA)	112,195	115,776	122,325	121,940	121,839	8,976	(9,644)
3	Of which: foundation internal ratings-based (F-IRB) approach	83,853	85,638	90,478			6,708	83,853
4	Of which: supervisory slotting approach							
5	Of which: advanced internal rating-based (A-IRB) approach	201,851	194,376	186,146	291,696	284,762	16,148	(82,911)
6	**Counterparty credit risk (CCR)**	**27,912**	**25,966**	**28,678**	**31,667**	**34,931**	**2,233**	**(7,019)**
7	Of which: standardized approach for counterparty credit risk (SA-CCR)[2]	20,120	18,786	21,709	21,898	25,749	1,610	(5,629)
8	Of which: internal model method (IMM)							
9	Of which: other CCR	7,792	7,180	6,969	9,769	9,182	623	(1,390)
10	**Credit valuation adjustment (CVA)**	**12,875**	**12,855**	**14,085**	**13,469**	**15,682**	**1,030**	**(2,807)**
	Equity positions in banking book[3]				2,790	2,561		n.a.
11	**Equity investments in funds – look-through approach**							
12	**Equity investments in funds – mandate-based approach**	**4,540**	**4,412**	**4,757**	**3,811**	**3,419**	**363**	**1,121**
	Equity investments in funds – fall-back approach				48	43		n.a.
13	**Settlement risk**	**109**	**149**	**94**	**3,503**	**978**	**9**	**(869)**
14	**Securitization exposures in banking book**	**11,510**	**11,371**	**11,417**	**13,209**	**12,543**	**921**	**(1,033)**
15	Of which: securitization IRB approach (SEC-IRBA)	183	174	174	-	-	15	183
16	Of which: securitization external ratings-based approach (SEC-ERBA), including internal assessment approach (IAA)	8,819	8,640	8,662	10,109	9,572	706	(753)
17	Of which: securitization standardized approach (SEC-SA)	2,508	2,557	2,581	3,100	2,971	201	(463)
18	**Market risk**	**40,498**	**37,426**	**37,685**	**32,635**	**35,342**	**3,240**	**5,156**
19	Of which: standardized approach (SA)	18,081	17,828	20,120	16,149	17,253	1,446	828
20	Of which: internal model approaches (IMA)	22,417	19,598	17,565	16,486	18,089	1,793	4,328
21	**Capital charge for switch between trading book and banking book**							
22	**Operational risk**	**79,883**	**77,741**	**75,895**	**78,808**	**77,639**	**6,391**	**2,244**
23	**Amounts below the thresholds for deduction (subject to 250% risk weight)**	**20,997**	**20,189**	**21,973**	**20,674**	**20,140**	**1,680**	**857**
24	Output floor applied[4]	65%	65%	65%				
25	Floor adjustment (before application of transitional cap)	-	-	-	-	-	-	-
26	**Floor adjustment (after application of transitional cap)**	-	-	-			-	-
27	**Total (1 + 6 + 10 + 11 + 12 + 13 + 14 + 18 + 21 + 22 + 23 + 26)**	**596,223**	**585,899**	**593,533**	**614,250**	**609,879**	**47,698**	**(13,656)**

[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 Exposure at Default (EAD) is calculated based on SA-CCR.
[3] Equity exposures are now included in the Standardized Approach as per OSFI CAR guidelines, refer to CR 4 and CR 5.
[4] The regulatory output floor is 65% for fiscal 2023 and will be transitioned over three years, reflecting a regulatory capital floor requirement of 67.5%, 70% and 72.5% in, fiscal 2024, 2025 and 2026 respectively.

2023 vs. 2022

Total RWA decreased by $14 billion or 2.2%, driven by the following:

Credit risk
RWA decreased by $8.7 billion, mainly reflecting the favourable impact of Basel III reforms, partially offset by the net impact of business growth, primarily in personal and commercial lending in Canada that was partly offset by lower corporate lending. The impact of foreign exchange translation and net credit migration, primarily in our wholesale portfolios, also partially offset the impact from the Basel III reforms. The impact of foreign exchange translation on RWA is largely mitigated with economic hedges in our CET1 ratio.

Counterparty credit risk
RWA decreased by $7 billion, mainly due to client driven activity and Basel III reforms.

Securitization exposures in banking book
RWA decreased $1 billion, mainly due to client driven activity.

Market risk
RWA increased $5.2 billion, mainly driven by higher exposures in our fixed income portfolios.

Operational risk
RWA increased $2.2 billion, mainly driven by business growth under the new Standardized Approach partly offset by the impact of the Basel III reforms.

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]	Q4/2023							Q4/2023				
	Risk-weighted assets All-in Basis							Capital requirements	Risk-weighted assets All-in Basis			
(Millions of Canadian dollars, except percentage and per share amounts)	Exposure [2]	Average of risk weights [3]	Standardized Approach	Advanced Approach (A-IRB)	Foundation Approach (F-IRB)	Other	Total	Total [4]	Q3/2023 Total	Q2/2023 Total	Q1/2023 Total	Q4/2022 Total
Credit risk [5]												
Lending-related and other												
Residential mortgages	566,257	8%	3,817	41,047		-	44,864	3,589	45,152	47,607	41,491	41,662
Other retail (Personal, Credit cards and Small business treated as retail)	215,682	29%	5,369	56,345		-	61,714	4,937	60,468	59,454	65,735	65,506
Business (Corporate, Commercial, Medium-sized enterprises and Non-bank financial institutions)	493,178	48%	70,130	93,208	75,227	-	238,565	19,085	238,193	239,031	244,620	238,823
Sovereign (Government)	348,790	4%	2,767	11,251		-	14,018	1,121	12,857	13,408	16,489	15,910
Bank	35,751	40%	5,713	-	8,626	-	14,339	1,147	13,949	14,157	5,566	5,483
Total lending-related and other	**1,659,658**	**23%**	**87,796**	**201,851**	**83,853**	**-**	**373,500**	**29,879**	**370,619**	**373,657**	**373,901**	**367,384**
Trading - related												
Repo-style transactions	1,153,730	1%	107	222	7,367	96	7,792	623	7,180	6,969	9,225	8,668
Derivatives - including CVA	129,288	26%	568	3,040	15,730	13,657	32,995	2,640	31,641	35,793	34,255	40,138
Total trading-related	**1,283,018**	**3%**	**675**	**3,262**	**23,097**	**13,753**	**40,787**	**3,263**	**38,821**	**42,762**	**43,480**	**48,806**
Total lending-related and other and trading-related	**2,942,676**	**14%**	**88,471**	**205,113**	**106,950**	**13,753**	**414,287**	**33,142**	**409,440**	**416,419**	**417,381**	**416,190**
Banking book equities [6]	4,896	206%	10,074	-		-	10,074	806	9,904	10,197	6,273	5,682
Securitization exposures	69,736	17%	5,332	6,178		-	11,510	921	11,371	11,417	13,209	12,543
Regulatory scaling factor [7]											18,544	18,267
Other assets	32,681	122%				39,971	39,971	3,198	40,017	41,920	47,400	44,216
Total credit risk	**3,049,989**	**16%**	**103,877**	**211,291**	**106,950**	**53,724**	**475,842**	**38,067**	**470,732**	**479,953**	**502,807**	**496,898**
Market risk [8,9]												
Interest rate			3,575	12,831		-	16,406	1,312	14,617	15,510	11,825	13,256
Equity			2,534	1,125		-	3,659	293	2,271	4,067	3,523	4,001
Foreign exchange			2,641	1,024		-	3,665	293	3,759	3,964	3,642	3,735
Commodities			1,055	102		-	1,157	93	1,340	1,159	1,392	1,750
Specific risk			8,276	1,583		-	9,859	789	10,445	9,272	8,401	8,411
Incremental risk charge [10, 11]			-	5,752		-	5,752	460	4,994	3,713	3,852	4,189
Total market risk			**18,081**	**22,417**		**-**	**40,498**	**3,240**	**37,426**	**37,685**	**32,635**	**35,342**
Operational risk			**79,883**				**79,883**	**6,391**	**77,741**	**75,895**	**78,808**	**77,639**
Total risk-weighted assets (RWA)	**3,049,989**		**201,841**	**233,708**	**106,950**	**53,724**	**596,223**	**47,698**	**585,899**	**593,533**	**614,250**	**609,879**

[1] Calculated using OSFI CAR guidelines incorporating Basel III reforms.

[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.

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

[4] The minimum capital requirements, before countercyclical capital buffer 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 portfolio use the A-IRB and F-IRB approaches under 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 Q4/23, the amount of publicly-traded equity exposures was $2,094 million and private equity exposures amounted to $2,805 million. Direct Equity exposure was risk weighted using a 250% rate as prescribed under section 4.1.8 ($5,534 million RWA) of the CAR guideline and Equity Investments in Funds was risk weighted under section 4.1.22 of the CAR guideline using Mandate Based Approach ($4,540 million RWA).

[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. This scaling factor is no longer applicable after Q1 2023 on adoption of the Basel III Reforms by OSFI.

[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 $460 million as at Q4/23. The average was $409 million, high was $516 million and low was $315 million for Q4/23. 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.

RWA1: Exposure at Default and Risk-Weighted Assets by Regulatory Approach

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

As at October 31, 2023

(Millions of Canadian dollars, except percentage and per share amounts)	Exposure at default (Post CRM)[1]					Risk-weighted assets[1]					Standardized Approach RWA Density	Internal Ratings Based RWA Density	Internal Ratings Based % (EAD)
	Standardized Approach		Internal Ratings Based			Standardized Approach		Internal Ratings Based					
	On-B/S	Off-B/S	On-B/S	Off-B/S	Total	On-B/S	Off-B/S	On-B/S	Off-B/S	Total			
Risk-weighted assets													
Credit risk													
Lending-related and other													
Wholesale													
Sovereign	67,390	371	335,407	22,438	425,606	2,669	99	9,582	1,668	14,018	4%	3%	84%
Bank	7,988	809	27,423	8,246	44,466	4,949	764	6,292	2,334	14,339	65%	24%	80%
Corporate	67,729	10,778	225,495	154,059	458,061	59,744	10,386	110,675	57,760	238,565	89%	44%	83%
Total wholesale	**143,107**	**11,958**	**588,325**	**184,743**	**928,133**	**67,362**	**11,249**	**126,549**	**61,762**	**266,922**	51%	24%	
Retail													
Residential Mortgages	6,977	5	380,236	114,607	501,825	3,814	3	33,442	7,605	44,864	55%	8%	99%
Qualifying Revolving Retail Exposures (QRRE)	427	1,139	35,664	109,333	146,563	255	351	13,015	14,743	28,364	39%	19%	99%
Other Retail	6,040	282	39,631	20,658	66,611	4,548	215	20,079	8,508	33,350	75%	47%	91%
Total retail	**13,444**	**1,426**	**455,531**	**244,598**	**714,999**	**8,617**	**569**	**66,536**	**30,856**	**106,578**	62%	14%	
Total lending-related and other	**156,551**	**13,384**	**1,043,856**	**429,341**	**1,643,132**	**75,979**	**11,818**	**193,085**	**92,618**	**373,500**	52%	19%	
Counterparty credit risk													
Derivatives					212,286					32,995			
Repo-style transactions					196,842					7,792			
Total counterparty credit risk					**409,128**					**40,787**			
Securitizations					69,736					11,510			
Subordinated-debt and Equities[2]					4,899					10,077			
Other Assets					32,681					39,968			
Total credit risk[3]					**2,159,576**					**475,842**			
Market risk[4]					**n.a.**					**40,498**			
Operational risk[4]					**n.a.**					**79,883**			
Total risk-weighted assets (RWA)					**2,159,576**					**596,223**			

[1] Calculated using OSFI CAR guidelines incorporating Basel III reforms.

[2] Sub-Debt and Equities risk-weighting is determined as specified in CAR Chapter 4: Credit Risk Standardized Approach.

[3] For credit risk, a majority of our portfolio use the A-IRB and F-IRB approaches under the Internal Ratings Based (IRB) Approach and the remainder use the Standardized Approach.

[4] n.a. – not applicable based on regulatory capital methodology.

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 October 31, 2023

	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	61,989	61,989	61,472	-	-	-	517
Interest-bearing deposits with banks	71,086	71,086	71,086	-	-	-	-
Securities							
Trading	190,151	179,000	5,499	-	59	173,436	6
Investment, net of applicable allowance	219,579	216,227	204,213	-	12,037	-	(23)
	409,730	395,227	209,712	-	12,096	173,436	(17)
Assets purchased under reverse repurchase agreements and securities borrowed	340,191	340,191	-	340,192	-	-	(1)
Loans							
Retail	569,951	569,464	569,464	-	-	-	-
Wholesale	287,826	285,588	268,902	1,729	10,552	2,287	2,118
	857,777	855,052	838,366	1,729	10,552	2,287	2,118
Allowance for loan losses	(5,004)	(5,004)	-	-	-	-	(5,004)
	852,773	850,048	838,366	1,729	10,552	2,287	(2,886)
Segregated fund net assets	2,760	-	-	-	-	-	-
Other							
Customers' liability under acceptances	21,695	21,695	21,745	-	-	-	(50)
Derivatives[2]	142,450	141,894	-	141,894	-	128,618	-
Premises and equipment, net	6,749	6,736	6,736	-	-	-	-
Goodwill	12,594	12,594	-	-	-	-	12,594
Other intangibles	5,907	5,754	-	-	-	-	5,754
Other assets	77,068	81,142	38,914	29,359	-	9,654	3,215
	266,463	269,815	67,395	171,253	-	138,272	21,513
Total assets[2]	**2,004,992**	**1,988,356**	**1,248,031**	**513,174**	**22,648**	**313,995**	**19,126**
Liabilities and equity							
Deposits							
Personal	441,946	441,946	-	-	-	-	441,946
Business and government	745,075	745,747	-	-	-	-	745,747
Bank	44,666	44,666	-	-	-	-	44,666
	1,231,687	1,232,359	-	-	-	-	1,232,359
Segregated fund net liabilities	2,760	-	-	-	-	-	-
Other							
Acceptances	21,745	21,745	-	-	-	-	21,745
Obligations related to securities sold short	33,651	33,651	-	-	-	-	33,651
Obligations related to assets sold under repurchase agreements and securities loaned	335,238	334,804	-	334,804	-	-	-
Derivatives[2]	142,629	142,629	-	142,629	-	132,155	-
Insurance claims and policy benefit liabilities	11,966	-	-	-	-	-	-
Other liabilities	96,170	93,282	-	-	-	-	93,282
	641,399	626,111	-	477,433	-	132,155	148,678
Subordinated debentures	11,386	11,386	-	-	-	-	11,386
Total liabilities[2]	1,887,232	1,869,856	-	477,433	-	132,155	1,392,423
Equity attributable to shareholders							
Preferred shares	7,314	7,314	-	-	-	-	7,314
Common shares	19,167	19,167	-	-	-	-	19,167
Retained earnings	84,328	84,285	-	-	-	-	84,285
Other components of equity	6,852	7,635	-	-	-	-	7,635
	117,661	118,401	-	-	-	-	118,401
Non-controlling interests	99	99	-	-	-	-	99
Total equity	117,760	118,500	-	-	-	-	118,500
Total liabilities and equity[2]	**2,004,992**	**1,988,356**	**-**	**477,433**	**-**	**132,155**	**1,510,923**

[1] Column c to g reflect a further breakout of column b by providing the respective CAR guideline frameworks utilized.

[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.

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 October 31, 2023

		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]**	**1,969,230**	**1,248,031**	**22,648**	**513,174**	**313,995**
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template LI1)[1]	477,433	-	-	477,433	132,155
3	Total net amount under regulatory scope of consolidation	1,491,797	1,248,031	22,648	35,741	181,840
4	Off-balance sheet amounts[2]	1,738,253	445,098	45,868	1,247,287	-
5	Differences due to Fair Value adjustment	1,923	1,932	-	(10)	-
6	Differences due to different netting rules, other than those already included in row 2	1,533	1,533	-	-	-
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	1,863	643	1,220	-	-
10	**Exposure amounts considered for regulatory purposes**	**3,235,369**	**1,697,237**	**69,736**	**1,283,018**	**181,840**

[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 OSFI's 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 7 Settlement and Counterparty risk framework. On November 1, 2018, OSFI adopted the BCBS Standardized Approach for measuring Counterparty credit risk (SA-CCR) for derivative regulatory exposures and we adopted this methodology for our derivative regulatory exposures. OSFI further updated SA-CCR for the Basel III reforms as released by OSFI on January 31, 2022, and further updated on October 20, 2023. 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 the 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 6 Securitization 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, and further updated for the Basel III reforms as released by OSFI on January 31, 2022, and further updated on October 20, 2023.

Our trading book regulatory carrying values are determined as prescribed under the CAR guideline's Chapter 9 Market Risk. We employ OSFI's prudent valuation guidance requirements, as stated in the CAR guideline's Chapter 9 Market Risk to our trading book and banking book and as disclosed annually in table PV1 included in this report. Refer to our 2023 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)	Q4/23	Q3/23	Q2/23	Q1/23	Q4/22
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'	19,365	18,721	18,068	17,141	17,162
2	Retained earnings	b+b'	84,130	81,802	80,115	78,182	77,859
3	Accumulated other comprehensive income (and other reserves)	c-c'	6,852	4,481	5,755	5,040	5,725
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	11	10	11	10	11
6	**Common Equity Tier 1 capital before regulatory adjustments**		**110,358**	**105,014**	**103,949**	**100,373**	**100,757**
	Common Equity Tier 1 capital: Regulatory adjustments						
7	Prudential valuation adjustments		184	29	26	-	-
8	Goodwill (net of related tax liability)	e+e'-t+e''	12,448	12,161	12,359	12,096	12,135
9	Other intangibles other than mortgage-servicing rights (net of related tax liability)	f+f'-v+f''	4,855	4,737	4,927	4,858	4,887
10	Deferred tax assets excluding those arising from temporary differences (net of related tax liability)	g	244	228	227	254	278
11	Cash flow hedge reserve	h	2,756	1,891	1,889	1,998	2,394
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	1,251	822	1,262	879	1,893
15	Defined benefit pension fund net assets (net of related tax liability)	k-u	1,991	2,226	2,119	2,233	2,395
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		18	28	37	-	(170)
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**		23,747	22,122	22,846	22,318	23,812
29	**Common Equity Tier 1 capital (CET1)**		**86,611**	**82,892**	**81,103**	**78,055**	**76,945**
29a	**Common Equity Tier 1 Capital (CET1)** with transitional arrangements for ECL provisioning not applied						76,774
Additional Tier 1 capital (AT1): Instruments							
30	Directly issued qualifying Additional Tier 1 instruments plus related stock surplus		7,291	7,299	7,295	7,300	7,294
31	of which: classified as equity under applicable accounting standards	n'+n'''	7,291	7,299	7,295	7,300	7,294
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)**	**Q4/23**	**Q3/23**	**Q2/23**	**Q1/23**	**Q4/22**
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	2	2	3
35	*of which: instruments issued by subsidiaries subject to phase out*		-	-	-	-	-
36	**Additional Tier 1 capital before regulatory adjustments**		7,293	7,301	7,297	7,302	7,297
	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)**		**7,293**	**7,301**	**7,297**	**7,302**	**7,297**
45	**Tier 1 capital (T1 = CET1 + AT1)**		**93,904**	**90,193**	**88,400**	**85,357**	**84,242**
45a	**Tier 1 capital** with transitional arrangements for ECL provisioning not applied						84,071
Tier 2 Capital: Instruments and Provisions							
46	Directly issued qualifying Tier 2 instruments plus related stock surplus	**q" + q'""**	9,683	9,572	9,788	9,780	8,587
47	*Directly issued capital instruments subject to phase out from Tier 2*	**q'"**	-	-	-	-	-
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	3	3	3	3
49	*of which: instruments issued by subsidiaries subject to phase out*	**q""**	-	-	-	-	-
50	Collective allowances	**s**	1,362	1,304	1,349	1,298	1,018
51	**Tier 2 capital before regulatory adjustments**		**11,048**	**10,879**	**11,140**	**11,081**	**9,608**
	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)**		**11,048**	**10,879**	**11,140**	**11,081**	**9,608**
59	**Total capital (TC = T1 + T2)**		**104,952**	**101,072**	**99,540**	**96,438**	**93,850**
59a	**Total Capital** with transitional arrangements for ECL provisioning not applied						93,850
60	**Total risk-weighted assets**		**596,223**	**585,899**	**593,533**	**614,250**	**609,879**
60a	**Common Equity Tier 1 (CET1) Capital RWA**		**596,223**	**585,899**	**593,533**	**614,250**	**609,879**
60b	**Tier 1 Capital RWA**		**596,223**	**585,899**	**593,533**	**614,250**	**609,879**
60c	**Total Capital RWA**		**596,223**	**585,899**	**593,533**	**614,250**	**609,879**

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)	Q4/23	Q3/23	Q2/23	Q1/23	Q4/22
Capital ratios							
61	Common Equity Tier 1 (as a percentage of risk-weighted assets)		14.5%	14.1%	13.7%	12.7%	12.6%
61a	CET1 Ratio with transitional arrangements for ECL provisioning not applied						12.6%
62	Tier 1 (as a percentage of risk-weighted assets)		15.7%	15.4%	14.9%	13.9%	13.8%
62a	Tier 1 Capital Ratio with transitional arrangements for ECL provisioning not applied						13.8%
63	Total capital (as a percentage of risk-weighted assets)		17.6%	17.3%	16.8%	15.7%	15.4%
63a	Total Capital Ratio with transitional arrangements for ECL provisioning not applied						15.4%
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)		8.1%	8.1%	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[2]		0.1%	0.1%	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)		6.4%	6.0%	5.7%	4.7%	4.6%
OSFI target (minimum + capital conservation buffer + D-SIB surcharge (if applicable))							
69	Common Equity Tier 1 target ratio		8.1%	8.1%	8.0%	8.0%	8.0%
70	Tier 1 capital target ratio		9.6%	9.6%	9.5%	9.5%	9.5%
71	Total capital target ratio		11.6%	11.6%	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		990	990	395	448	600
73	Significant investments in the common stock of financials		6,287	6,289	6,739	6,642	6,533
74	Mortgage servicing rights (net of related tax liability)		-	-	-	-	-
75	Deferred tax assets arising from temporary differences (net of related tax liability)		1,796	1,490	1,704	1,628	1,523
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)		836	780	688	900	874
77	Cap on inclusion of allowances in Tier 2 under standardized approach		836	780	688	900	874
78	Allowances eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)		3,419	3,235	3,229	2,831	2,693
79	Cap on inclusion of allowances in Tier 2 under internal ratings-based approach		3,419	3,235	3,229	2,831	2,693

[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.

[2] Bank specific countercyclical buffer requirement is the amount which is determined based on our weighted average private sector exposures in jurisdictions identified by the BCBS (Q4/23 0.06%, Q3/23 0.06%, Q2/23 0.04%, Q1/23 0.03%, Q4/22 0.01%).

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)	Q4/23 Balance sheet as per 2023 Annual Report	Q4/23 Under regulatory scope of consolidation
Assets			
Cash and due from banks		61,989	61,989
Interest-bearing deposits with banks		71,086	71,086
Securities, net of applicable allowance		409,730	395,227
Non-significant investments in capital of other financial institutions not exceeding regulatory thresholds			990
Other securities			394,237
Assets purchased under reverse repurchase agreements and securities borrowed		340,191	340,191
Loans			
Retail		569,951	569,464
Wholesale		287,826	285,588
Allowance for loan losses		(5,004)	(5,004)
Collective allowance reflected in Tier 2 regulatory capital [1]	s		(1,362)
Shortfall of allowances to expected loss [2]	i		-
Allowances not reflected in regulatory capital			(3,642)
		852,773	850,048
Segregated fund net assets		2,760	-
Other			
Customers' liability under acceptances		21,695	21,695
Derivatives		142,450	141,894
Premises and equipment, net		6,749	6,736
Goodwill	e	12,594	12,594
Goodwill related to insurance and joint ventures	e'		-
Other intangibles	f	5,907	5,754
Other intangibles related to insurance and joint ventures	f'		153
Other		77,068	81,142
Significant investments in other financial institutions and insurance subsidiaries			6,287
of which: exceeding regulatory thresholds	l		-
of which: not exceeding regulatory thresholds			6,287
Defined - benefit pension fund net assets	k		2,744
Deferred tax assets			2,418
of which: deferred tax assets excluding those arising from temporary differences	g		244
of which: deferred tax assets arising from temporary differences exceeding regulatory thresholds	m		-
of which: deferred tax liabilities related to permitted tax netting			(1,533)
of which: deferred tax assets - other temporary differences			3,707
Other assets			69,693
of which: relates to assets of operations held for sale – Goodwill	e"		-
of which: relates to assets of operations held for sale – Intangibles	f"		-
Total assets		**2,004,992**	**1,988,356**

[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)	Q4/23	
		Balance sheet as per 2023 Annual Report	Under regulatory scope of consolidation
Liabilities			
Deposits			
Personal		441,946	441,946
Business and government		745,075	745,747
Bank		44,666	44,666
		1,231,687	1,232,359
Segregated fund net liabilities		2,760	-
Other			
Acceptances		21,745	21,745
Obligations related to securities sold short		33,651	33,651
Obligations related to assets sold under repurchase agreements and securities loaned		335,238	334,804
Derivatives		142,629	142,629
Insurance claims and policy benefit liabilities		11,966	-
Other liabilities		96,170	93,282
Gains and losses due to changes in own credit risk on fair value liabilities	j		1,251
Deferred tax liabilities			426
of which: related to goodwill	t		146
of which: related to intangibles	v		1,052
of which: related to pensions	u		753
of which: relates to permitted tax netting			(1,525)
of which: other deferred tax liabilities	w		-
Other Liabilities			91,605
Subordinated debentures	q	11,386	11,386
Regulatory capital amortization of maturing debentures	q'''''		(1,248)
Subordinated debentures not allowed for regulatory capital	q'		1,703
Subordinated debentures used for regulatory capital:			10,931
of which: are qualifying	q''		10,931
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		**1,887,232**	**1,869,856**
Equity attributable to shareholders		**117,661**	**118,401**
Common shares	a	19,167	19,167
of which are treasury - common shares			(231)
Retained earnings		84,328	84,285
of which relates to contributed surplus	a'		198
of which relates to retained earnings for capital purposes	b		84,087
of which relates to insurance and joint ventures	b'		43
Other components of equity	c	6,852	7,635
Gains and losses on derivatives designated as cash flow hedges	h		2,756
Unrealized foreign currency translation gains and losses, net of hedging activities			6,612
Other reserves allowed for regulatory capital			(1,733)
of which relates to Insurance	c'		783
Preferred shares and other equity instruments	n	7,314	7,314
of which: are qualifying	n'		7,300
of which: are subject to phase out	n''		-
of which portion are not allowed for regulatory capital			23
of which: are qualifying treasury - preferred shares			-
of which: are qualifying treasury - other	n'''		(9)
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)	Q4/23 Balance sheet as per 2023 Annual Report	Q4/23 Under regulatory scope of consolidation
Non-controlling interests	x	**99**	**99**
of which: are qualifying			
portion allowed for inclusion into CET1	d		11
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		**117,760**	**118,500**
Total liabilities and equity		**2,004,992**	**1,988,356**

Insurance subsidiaries [1]	Principal activities	Equity	Assets
Assured Assistance Inc.	Service provider for insurance claims	2	-
Royal Bank of Canada Insurance Company Limited	Life, annuity, trade credit, title and property reinsurance company provides coverage to international clients	2,380	1,473
RBC (Barbados) Services Company Ltd	Investment management, reinsurance transaction support and corporate services to Royal Bank of Canada Insurance Company Ltd.	1	-
RBC Insurance Agency Ltd.	Distribution of H&A products through AVIVA	50	38
RBC Insurance Company (Cayman) Limited	Life, annuity reinsurance company provides coverage to international clients	-	-
RBC Insurance Company of Canada	Property and casualty insurance company	102	121
RBC Insurance Holdings Inc.	Holding company	1	-
RBC Insurance Services Inc.	Service provider for insurance companies listed and the bank (creditor)	82	89
RBC Life Insurance Company	Life and health insurance company	3,732	21,266
RBC Commercial Insurance Agency Inc.	Provides commercial insurance policies for basic contents, commercial liability, errors and omissions, and cybersecurity coverage	-	-
Total		**6,350**	**22,987**

[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 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations.

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<tr><th colspan="2">Pillar 3 disclosures requirement</th><th>2023 Annual Report section</th><th>Sub-section</th></tr>
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<tr><td>Measurement of economic and regulatory capital - Gross credit risk exposure</td></tr>
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<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 October 31, 2023

		a	b	c	d	e	f	g
		Gross carrying values of		Allowances/ impairments[2]	Of which ECL accounting provisions for credit losses on SA exposures		Of which ECL accounting provisions for credit losses 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	3,800	834,566	5,004	141	434	4,429	833,362
2	Debt Securities	-	206,958	23	-	-	23	206,935
2a	Equity Securities		2,754					2,754
3	Off-Balance Sheet exposures[4]	780	334,792	315	-	-	315	335,257
4	**Total**	**4,580**	**1,379,070**	**5,342**	**141**	**434**	**4,767**	**1,378,308**

[1] Definition of default as per the CAR guidelines.

[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 July 31, 2023

		a	b	c	d	e	f	g
		Gross carrying values of		Allowances/ impairments[2]	Of which ECL accounting provisions for credit losses on SA exposures		Of which ECL accounting provisions for credit losses 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[4]	3,384	817,714	4,495	117	356	4,022	816,603
2	Debt Securities	-	183,510	24	-	-	24	183,486
2a	Equity Securities		2,843					2,843
3	Off-Balance Sheet exposures[5]	573	324,979	445	-	-	445	325,107
4	**Total**	**3,957**	**1,329,046**	**4,964**	**117**	**356**	**4,491**	**1,328,039**

[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] Includes exposures related to operations held for sale that have been reclassified to Other Assets on our balance sheet.

[5] 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.

CR2: Changes in stock of defaulted loans and debt securities

The following table presents our defaulted exposure balances, the flows between non-defaulted and defaulted exposure categories and reductions in the defaulted exposure balances due to write-offs.

For the three months ended October 31, 2023

	(Millions of Canadian dollars)	a
1	**Defaulted loans and debt securities at the end of July 31, 2023**	**3,384**
2	Loans and debt securities that have defaulted since the last reporting period	905
3	Returned to non-defaulted status	(203)
4	Amounts written off	(466)
5	Other changes	180
6	**Defaulted loans and debt securities at the end of October 31, 2023 (1+2-3-4+5)**	**3,800**

For the three months ended July 31, 2023

	(Millions of Canadian dollars)	a
1	**Defaulted loans and debt securities at the end of April 30, 2023**	**3,066**
2	Loans and debt securities that have defaulted since the last reporting period	851
3	Returned to non-defaulted status	(226)
4	Amounts written off	(446)
5	Other changes	139
6	**Defaulted loans and debt securities at the end of July 31, 2023 (1+2-3-4+5)**	**3,384**

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 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations.

Pillar 3 disclosures requirement		2023 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 October 31, 2023

	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]	451,610	114,612			
Qualifying revolving	36,091	110,473			
Other retail	48,162	20,804	136		
Total Retail	**535,863**	**245,889**	**136**		
Wholesale					
Agriculture	11,316	2,792	46	-	117
Automotive	11,568	8,586	680	-	1,148
Banking	82,319	3,060	2,267	101,736	41,300
Consumer Discretionary	18,348	9,132	650	-	1,030
Consumer Staples	8,680	6,996	546	-	2,070
Oil and Gas	6,498	8,373	1,614	-	3,134
Financial Services	48,589	24,140	4,818	83,692	22,611
Financing Products	3,988	1,265	1,447	472	1,079
Forest Products	1,485	1,004	313	-	67
Governments	270,382	6,960	1,482	10,736	5,692
Industrial Products	11,251	9,898	623	-	811
Information Technology	5,252	6,942	357	118	704
Investments	25,921	4,608	701	-	383
Mining and Metals	2,144	3,548	1,044	-	391
Public Works and Infrastructure	2,613	1,534	529	-	156
Real Estate and Related	102,235	20,406	1,592	-	850
Other Services	30,617	14,203	2,598	-	741
Telecommunication and Media	8,597	6,529	132	-	2,794
Transportation	8,461	5,925	1,009	-	2,408
Utilities	14,495	20,389	6,367	-	4,638
Other Sectors	8,698	2,773	1,193	88	20,084
Total Wholesale	**683,457**	**169,063**	**30,008**	**196,842**	**112,208**
Total Exposure[1]	**1,219,320**	**414,952**	**30,144**	**196,842**	**112,208**
By Geography[7]					
Canada	729,131	306,474	10,676	80,664	42,123
United States	358,605	79,256	13,459	62,966	24,878
Europe	58,496	21,987	3,467	27,637	31,749
Other International	73,088	7,235	2,542	25,575	13,458
Total Exposure[1,7]	**1,219,320**	**414,952**	**30,144**	**196,842**	**112,208**
By Maturity					
Unconditionally cancellable	53,688	281,293	-	-	-
Within 1 year	253,926	25,864	9,408	196,842	48,358
1 to 5 year	772,189	102,209	19,606	-	38,607
Over 5 years	139,517	5,586	1,130	-	25,243
Total Exposure[1]	**1,219,320**	**414,952**	**30,144**	**196,842**	**112,208**

[1] Excludes securitization and other assets not subject to standardized or IRB approach.

[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 HELOC.

[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 July 31, 2023

(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] Undrawn	Off-balance sheet amount[3] Other[4]	Repo-style Transaction	Derivatives
Retail					
Residential secured[6]	446,440	113,025			
Qualifying revolving	35,233	108,651			
Other retail	47,389	20,585	138		
Total Retail	**529,062**	**242,261**	**138**		
Wholesale					
Agriculture	10,938	2,762	45	-	76
Automotive	11,285	8,138	587	-	1,327
Banking	75,458	2,969	1,315	92,447	36,111
Consumer Discretionary	18,104	9,183	592	-	1,253
Consumer Staples	8,015	6,282	517	-	1,814
Oil and Gas	6,521	8,491	1,649	-	2,692
Financial Services	48,293	22,675	4,385	80,439	18,844
Financing Products	3,857	1,172	842	194	1,949
Forest Products	1,492	989	281	-	32
Governments	289,063	7,112	1,768	17,144	6,110
Industrial Products	11,441	9,306	654	-	742
Information Technology	5,301	6,822	354	97	694
Investments	24,186	4,153	688	-	281
Mining and Metals	1,952	3,509	952	-	313
Public Works and Infrastructure	2,759	1,671	591	-	135
Real Estate and Related	97,983	21,114	1,560	-	843
Other Services	29,062	13,414	2,510	-	769
Telecommunication and Media	8,571	6,043	124	-	2,762
Transportation	7,543	6,340	976	-	1,939
Utilities	15,020	19,185	6,215	-	4,206
Other Sectors	7,366	2,050	982	56	19,190
Total Wholesale	**684,210**	**163,380**	**27,587**	**190,377**	**102,082**
Total Exposure[1]	**1,213,272**	**405,641**	**27,725**	**190,377**	**102,082**
By Geography[7]					
Canada	731,356	301,219	10,535	74,031	37,406
United States	348,400	76,414	12,077	57,907	22,655
Europe	65,766	21,063	2,395	30,433	29,664
Other International	67,750	6,945	2,718	28,006	12,357
Total Exposure[1,7]	**1,213,272**	**405,641**	**27,725**	**190,377**	**102,082**
By Maturity					
Unconditionally cancellable	53,279	275,545	-	-	-
Within 1 year	269,555	25,511	7,559	190,377	41,628
1 to 5 year	751,546	99,598	18,626	-	39,697
Over 5 years	138,892	4,987	1,540	-	20,757
Total Exposure[1]	**1,213,272**	**405,641**	**27,725**	**190,377**	**102,082**

[1] Excludes securitization 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 HELOC.

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

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 October 31, 2023

Impaired exposures by geography[1] and portfolio (Millions of Canadian dollars)	Gross impaired exposures	Allowance[2]	Net impaired exposures
Canada			
Retail	972	282	690
Wholesale	685	221	464
Securities	-	-	-
Total - Canada	**1,657**	**503**	**1,154**
United States			
Retail	53	7	46
Wholesale	1,469	445	1,024
Securities	-	-	-
Total - United States	**1,522**	**452**	**1,070**
Other International			
Retail	181	92	89
Wholesale	344	101	243
Securities	149	(37)	186
Total - Other International	**674**	**156**	**518**
Total			
Retail	1,206	381	825
Wholesale	2,498	767	1,731
Securities	149	(37)	186
Total impaired exposures	**3,853**	**1,111**	**2,742**

[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 July 31, 2023

Impaired exposures by geography[1] and portfolio (Millions of Canadian dollars)	Gross impaired exposures	Allowance[2]	Net impaired exposures
Canada			
Retail	870	253	617
Wholesale	565	184	381
Securities	-	-	-
Total - Canada	**1,435**	**437**	**998**
United States			
Retail	42	4	38
Wholesale	1,284	334	950
Securities	-	-	-
Total - United States	**1,326**	**338**	**988**
Other International			
Retail	184	92	92
Wholesale	339	133	206
Securities	141	(26)	167
Total - Other International	**664**	**199**	**465**
Total			
Retail	1,096	349	747
Wholesale	2,188	651	1,537
Securities	141	(26)	167
Total impaired exposures	**3,425**	**974**	**2,451**

[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 October 31, 2023**	**For the three months ended July 31, 2023**
Canada		
Retail	255	233
Wholesale	19	23
Total Canada	**274**	**256**
United States[2]		
Retail	2	3
Wholesale	52	95
Total United States	**54**	**98**
Other International		
Retail	2	2
Wholesale[2]	34	(1)
Total Other International	**36**	**1**
Total		
Retail	259	238
Wholesale	105	117
Total net write-offs	**364**	**355**

[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 October 31, 2023

Impaired exposures by portfolio and sector (Millions of Canadian dollars)	Gross impaired exposures	Allowance[1]	Net impaired exposures
Retail			
Residential mortgages	682	168	514
Personal	280	155	125
Small business	244	58	186
Total Retail	**1,206**	**381**	**825**
Wholesale			
Agriculture	36	19	17
Automotive	26	6	20
Banking	3	1	2
Consumer Discretionary	315	113	202
Consumer Staples	148	63	85
Oil and Gas[2]	17	53	(36)
Financial Services	85	28	57
Financial Products	-	-	-
Forest Products	9	3	6
Governments	16	-	16
Industrial Products	147	57	90
Information Technology	26	12	14
Investments	96	15	81
Mining and Metals	1	1	-
Public Works and Infrastructure	15	6	9
Real Estate and Related	1,104	215	889
Other Services	180	44	136
Telecommunication and Media	186	92	94
Transportation	59	38	21
Utilities	-	-	-
Other	29	1	28
Total Wholesale	**2,498**	**767**	**1,731**
Total impaired loans and acceptances	**3,704**	**1,148**	**2,556**
Securities	149	(37)	186
Total impaired exposures	**3,853**	**1,111**	**2,742**

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

[2] Allowance includes expected credit losses for undrawn letters of credit.

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

As at July 31, 2023

Impaired exposures by portfolio and sector (Millions of Canadian dollars)	Gross impaired exposures	Allowance[1]	Net impaired exposures
Retail			
Residential mortgages	619	146	473
Personal	245	124	121
Small business	232	79	153
Total Retail	**1,096**	**349**	**747**
Wholesale			
Agriculture	54	18	36
Automotive	16	4	12
Banking	3	1	2
Consumer Discretionary	228	82	146
Consumer Staples	163	51	112
Oil and Gas[2]	67	84	(17)
Financial Services	98	29	69
Financial Products	-	-	-
Forest Products	10	3	7
Governments	15	-	15
Industrial Products	149	51	98
Information Technology	14	6	8
Investments	58	5	53
Mining and Metals	1	1	-
Public Works and Infrastructure	13	6	7
Real Estate and Related	965	167	798
Other Services	209	85	124
Telecommunication and Media	56	41	15
Transportation	41	10	31
Utilities	-	-	-
Other	28	7	21
Total Wholesale	**2,188**	**651**	**1,537**
Total impaired loans and acceptances	**3,284**	**1,000**	**2,284**
Securities	141	(26)	167
Total impaired exposures	**3,425**	**974**	**2,451**

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

[2] Allowance includes expected credit losses for undrawn letters of credit.

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 October 31, 2023

(Millions of Canadian dollars)	**30 to 89 days**	**90 days and greater**	**Total**
Retail	1,840	208	2,048
Wholesale	1,823	49	1,872
Total	**3,663**	**257**	**3,920**

As at July 31, 2023

(Millions of Canadian dollars)	**30 to 89 days**	**90 days and greater**	**Total**
Retail	1,643	167	1,810
Wholesale	1,062	63	1,125
Total	**2,705**	**230**	**2,935**

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

Restructured exposures actively benefitting from modified contractual terms as at Oct 31, 2023 are not material (Jul 31, 2023 – 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 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 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>2023 Annual Report section</th><th>Sub-section</th></tr>
<tr><td rowspan="3">a)</td><td rowspan="3">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</td><td>Credit risk</td><td>Credit risk assessment – Counterparty credit risk</td></tr>
<tr><td rowspan="2">Consolidated Financial Statements</td><td>Note 9 - Derivative financial instruments and hedging activities – Derivative-related credit risk</td></tr>
<tr><td>Note 30 - Offsetting financial assets and financial liabilities</td></tr>
<tr><td>b)</td><td>Core features of policies and processes for collateral evaluation and management</td><td>Credit risk</td><td>Credit risk mitigation – Collateral</td></tr>
<tr><td rowspan="3">c)</td><td rowspan="3">Information about market or credit risk concentrations under the credit risk mitigation instruments used</td><td rowspan="2">Credit risk</td><td>Credit risk mitigation</td></tr>
<tr><td>Credit risk approval – Credit risk limits</td></tr>
<tr><td>Consolidated Financial Statements</td><td>Note 9 - Derivative financial instruments and hedging activities</td></tr>
</table>

CR3: Credit risk mitigation techniques – overview

We utilize allowed regulatory credit mitigation techniques to reduce capital requirements associated with our balance sheet exposures. The following table presents a detailed breakdown of our unsecured and secured loan and debt and equity securities exposures. Secured exposures are mitigated by way of additional collateral or guarantees being requested of the borrower. We sometimes also utilize credit derivatives to mitigate our on-balance sheet exposures.

As at October 31, 2023

		a	b	c	d	f
	(Millions of Canadian dollars)	Exposures unsecured: carrying amount	Exposures to be secured[1]	Exposures secured by collateral[1]	Exposures secured by financial guarantees[1,2]	Exposures secured by credit derivatives
1	Loans[3]	188,057	645,305	495,381	149,924	-
2	Debt securities	187,600	19,335	19,115	220	-
2a	Equity securities	2,754	-	-	-	-
3	**Total**	375,658	664,640	514,496	150,143	-
4	Of which defaulted[4]	1,645	1,268	802	466	-

[1] Column c and d are a subset of column b (b = c + d).

[2] Credit mitigation allocation for multi-secured exposures is made by way of order of priority of available mitigation to be utilized: financial guarantees portion first followed by collateral for any remaining balance.

[3] Securitized mortgages that do not qualify as securitized under IFRS or regulatory capital requirements are recognized as collateralized in column c.

[4] Defaulted exposures are net of Stage 3 allowances.

As at July 31, 2023

		a	b	c	d	f
	(Millions of Canadian dollars)	Exposures unsecured: carrying amount	Exposures to be secured[1]	Exposures secured by collateral[1]	Exposures secured by financial guarantees[1,2]	Exposures secured by credit derivatives
1	Loans[3]	184,098	632,505	492,478	140,027	-
2	Debt securities	166,270	17,216	16,942	274	-
2a	Equity securities	2,843	-	-	-	-
3	**Total**	350,367	649,722	509,422	140,300	-
4	Of which defaulted[4]	1,448	1,159	600	559	-

[1] Column c and d are a subset of column b (b = c + d).

[2] Credit mitigation allocation for multi-secured exposures is made by way of order of priority of available mitigation to be utilized: financial guarantees portion first followed by collateral for any remaining balance.

[3] Securitized mortgages that do not qualify as securitized under IFRS or regulatory capital requirements are recognized as collateralized in column c.

[4] Defaulted exposures are net of Stage 3 allowances.

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 (Moody's), Fitch Rating Services (Fitch), DBRS and Kroll Bond Rating Agency, Inc. (Kroll) 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 securitization's 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 exposures we hold. We utilize the issuer rating only for our exposures which rank pari-passu with senior claims of the issuer.

Our supervisor 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 update of 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 October 31, 2023

		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]	34,662	325	34,678	33	93	0.3%
2	Public sector entities (PSEs)	12,456	897	28,709	338	2,674	9.2%
3	Multilateral development banks	4,003	-	4,003	-	-	-
4	Banks	4,990	2,909	6,446	809	5,388	74.3%
	Of which: securities firms and other financial institutions treated as banks	2,087	2,349	3,551	625	3,355	80.3%
5	Covered bonds	1,531	-	1,531	-	308	20.1%
6	Corporates[1]	70,951	53,793	56,407	10,778	61,999	92.3%
	Of which: securities firms and other financial institutions treated as corporates	1,853	2,495	1,853	700	2,353	92.2%
	Of which: specialised lending	-	-	-	-	-	-
7	Subordinated debt, equity and other capital	2,620	1,215	2,620	486	5,537	178.3%
8	Retail	6,056	5,559	6,056	1,417	5,032	67.3%
9	Real estate[1]	35,844	27	18,090	5	11,398	63.0%
	Of which: general RRE	20,754	27	3,300	5	1,373	41.5%
	Of which: IPRRE	3,850	-	3,558	-	2,276	64.0%
	Of which: other RRE	-	-	-	-	-	-
	Of which: general CRE	11,203	-	11,195	-	7,708	68.9%
	Of which: IPCRE	37	-	37	-	40	108.1%
	Of which: land acquisition, development and construction	-	-	-	-	-	-
10	Reverse mortgages	-	-	-	-	-	-
11	Mortgage-backed securities[2]						
12	Defaulted exposures	633	30	632	4	905	142.3%
13	Other assets	23,384	-	23,384	-	18,861	80.7%
14	**Total**	**197,130**	**64,755**	**182,556**	**13,870**	**112,195**	**57.1%**

[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.

[2] Mortgage-backed securities exposure and RWA are included in Sovereign or PSE to reflect ultimate risk.

As at July 31, 2023

		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]	35,332	378	35,386	69	95	0.3%
2	Public sector entities (PSEs)	12,939	423	28,991	157	2,705	9.3%
3	Multilateral development banks	4,110	-	4,110	-	-	-
4	Banks	4,924	2,052	6,273	560	5,633	82.4%
	Of which: securities firms and other financial institutions treated as banks	1,890	1,423	3,311	349	2,863	78.2%
5	Covered bonds	1,484	-	1,484	-	298	20.1%
6	Corporates[1]	69,643	54,083	57,198	13,082	64,845	92.3%
	Of which: securities firms and other financial institutions treated as corporates	2,016	2,587	2,016	921	2,706	92.1%
	Of which: specialised lending	-	-	-	-	-	-
7	Subordinated debt, equity and other capital	2,750	1,002	2,750	401	5,496	174.4%
8	Retail	5,693	5,386	5,693	1,441	4,824	67.6%
9	Real estate[1, 3]	35,372	28	17,894	5	11,318	63.2%
	Of which: general RRE	20,328	28	3,156	5	1,355	42.9%
	Of which: IPRRE	3,691	-	3,393	-	2,161	63.7%
	Of which: other RRE	-	-	-	-	-	-
	Of which: general CRE	11,320	-	11,315	-	7,767	68.6%
	Of which: IPCRE	32	-	32	-	35	109.4%
	Of which: land acquisition, development and construction	-	-	-	-	-	-
10	Reverse mortgages	-	-	-	-	-	-
11	Mortgage-backed securities[2]						
12	Defaulted exposures	615	30	613	4	886	143.6%
13	Other assets	23,722	-	23,722	-	19,676	82.9%
14	**Total**	**196,584**	**63,382**	**184,114**	**15,719**	**115,776**	**57.9%**

[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.

[2] Mortgage-backed securities exposure and RWA are included in Sovereign or PSE to reflect ultimate risk.

[3] Reflects transition of our US retail portfolio to A-IRB in Q3 2023. Refer to CR6.

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 October 31, 2023 (in millions of Canadian dollars)

		0%	20%	50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
1	Sovereigns and their central banks	34,618	-	-	93	-	-	34,711

		0%	20%	50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
2	Public sector entities (PSEs)	16,267	12,632	-	148	-	-	29,047

		0%	20%	30%	50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
3	Multilateral development banks	4,003	-	-	-	-	-	-	4,003

		20%	30%	40%	50%	75%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
4	Banks	250	1,072	-	195	-	4,275	-	1,463	7,255
	Of which: securities firms and other financial institutions	3	-	-	-	-	2,710	-	1,463	4,176

		20%	30%	40%	50%	75%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
5	Covered bonds	1,525	5	-	-	-	1	-	-	1,531

		20%	50%	65%	75%	80%	85%	100%	130%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
6	Corporates	1,513	7	-	544	-	26,664	38,132	-	325	-	67,185
	Of which: securities firms and other financial institutions	-	-	-	-		1,336	1,217		-	-	2,553
	Of which: specialised lending	-	-		-	-		-	-	-	-	-

		0%	20%	100%	250%	400%	Other	Total credit exposures amount (post CCF and post-CRM)
7	Subordinated debt, equity and other capital	189	146	945	1,824	-	2	3,106

		15%	75%	100%	Other	Total credit exposures amount (post CCF and post-CRM)
8	Retail	954	6,519	-	-	7,473

As at October 31, 2023 (in millions of Canadian dollars)

		20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	85%	90%	100%	105%	110%	150%	Other	Total credit exposure amount (post-CCF and post-CRM)
9	Real estate	313	243	562	1,541	4	285	814	-	6,988	1,314	853	2,328	1,421	3	1,392	-	34	-	-	18,095
	Of which: general RRE	313	243	418	1,408	4		66			-	853	-	-		-			-	-	3,305
	Of which: IPRRE			144	133		285	748		12			2,236				-		-	-	3,558
	Of which: other RRE			-	-		-		-	-			-				-		-	-	-
	Of which: general CRE	-		-		-		-	-	6,976	1,314		92	1,421		1,392			-	-	11,195
	Of which: IPCRE											1			3			33	-	-	37
	Of which: land acquisition, development and construction															-			-	-	-

		20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	85%	90%	100%	105%	110%	150%	Other	Total credit exposure amount (post-CCF and post-CRM)
10	Reverse mortgages																				

		20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	85%	90%	100%	105%	110%	150%	Other	Total credit exposure amount (post-CCF and post-CRM)
11	Mortgage-backed securities[1]			-	-		-			-						-			-	-	-

[1] Mortgage-backed securities exposure and RWA are included in Sovereign or PSE to reflect ultimate risk.

		50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
12	Defaulted exposures	-	98	538	-	636

		0%	20%	100%	1250%	Others	Total credit exposures amount (post CCF and post-CRM)
13	Other assets	4,423	125	18,836	-	-	23,384

As at October 31, 2023 (in millions of Canadian dollars)

Exposure amounts and CCFs applied to off-balance sheet exposures, categorised based on risk bucket of converted exposures					
		a	b	c	d
		On-balance sheet exposure	Off-balance sheet exposure (pre-CCF)	Weighted average CCF*	Exposure (post-CCF and post-CRM)
1	Less than 40%	74,184	4,372	28.1%	80,380
2	40 - 70%	16,869	105	34.6%	11,924
3	75 - 80%	8,712	2,576	27.1%	9,390
4	85%	26,330	11,084	24.4%	28,086
5	90 - 100%	68,301	46,373	23.6%	63,922
6	105 - 130%	34	-	-	34
7	150%	878	243	35.8%	866
8	250%	1,822	2	35.8%	1,824
9	400%				
10	1250%				
11	**Total exposures**	**197,130**	**64,755**	**27.6%**	**196,426**

* Weighting is based on off-balance sheet exposure (pre-CCF).

As at July 31, 2023 (in millions of Canadian dollars)

		0%	20%	50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
1	Sovereigns and their central banks	35,359	-	-	95	-	-	35,454

		0%	20%	50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
2	Public sector entities (PSEs)	16,052	12,987	-	109	-	-	29,148

		0%	20%	30%	50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
3	Multilateral development banks	4,110	-	-	-	-	-	-	4,110

		20%	30%	40%	50%	75%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
4	Banks	142	407	-	10	-	4,853	-	1,421	6,833
	Of which: securities firms and other financial institutions	1	-	-	-	-	2,238	-	1,421	3,660

		20%	30%	40%	50%	75%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
5	Covered bonds	1,479	4	-	-	-	1	-	-	1,484

		20%	50%	65%	75%	80%	85%	100%	130%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
6	Corporates	1,525	16	-	983	-	27,979	39,306	-	471	-	70,280
	Of which: securities firms and other financial institutions	-	-	-	-			1,405		-	-	1,405
	Of which: specialised lending	-	-		-	-		-	-	-	-	-

		0%	20%	100%	250%	400%	Other	Total credit exposures amount (post CCF and post-CRM)
7	Subordinated debt, equity and other capital	180	291	840	1,838	-	2	3,151

		15%	75%	100%	Other	Total credit exposures amount (post CCF and post-CRM)
8	Retail	878	6,256	-	-	7,134

As at July 31, 2023 (in millions of Canadian dollars)

		20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	85%	90%	100%	105%	110%	150%	Other	Total credit exposure amount (post-CCF and post-CRM)
9	Real estate[1]	284	217	536	1,402	3	269	810	-	7,107	1,373	923	2,185	1,381	1	1,377	-	31	-	-	17,899
	Of which: general RRE	284	217	394	1,273	3		67			-	923	-	-		-			-	-	3,161
	Of which: IPRRE			142	128		269	743		11			2,100				-		-	-	3,393
	Of which: other RRE			-	-		-		-	-			-				-		-	-	-
	Of which: general CRE	-		-		-		-	-	7,097	1,373		86	1,382		1,377			-	-	11,315
	Of which: IPCRE											-			1			31	-	-	32
	Of which: land acquisition, development and construction															-			-	-	-

[1] Reflects transition of our US retail portfolio to A-IRB in Q3 2023. Refer to CR6.

		20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	85%	90%	100%	105%	110%	150%	Other	Total credit exposure amount (post-CCF and post-CRM)
10	Reverse mortgages																				

		20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	85%	90%	100%	105%	110%	150%	Other	Total credit exposure amount (post-CCF and post-CRM)
11	Mortgage-backed securities[1]			-	-		-			-						-			-	-	-

[1] Mortgage-backed securities exposure and RWA are included in Sovereign or PSE to reflect ultimate risk.

		50%	100%	150%	Other	Total credit exposures amount (post CCF and post-CRM)
12	Defaulted exposures	-	80	537	-	617

		0%	20%	100%	1250%	Others	Total credit exposures amount (post CCF and post-CRM)
13	Other assets	4,046	-	19,676	-	-	23,722

As at July 31, 2023 (in millions of Canadian dollars)

Exposure amounts and CCFs applied to off-balance sheet exposures, categorised based on risk bucket of converted exposures					
		a	b	c	d
		On-balance sheet exposure	Off-balance sheet exposure (pre-CCF)	Weighted average CCF*	Exposure (post-CCF and post-CRM)
1	Less than 40%	78,202	3,772	27.2%	79,902
2	40 - 70%	12,588	32	20.8%	11,929
3	75 - 80%	8,672	2,590	29.8%	9,424
4	85%	25,929	12,088	34.7%	29,361
5	90 - 100%	68,391	44,597	25.6%	66,338
6	105 - 130%	31	-	-	31
7	150%	1,095	292	35.2%	1,010
8	250%	1,833	10	39.7%	1,838
9	400%				
10	1250%				
11	**Total exposures**	**196,741**	**63,381**	**27.6%**	**199,833**

* Weighting is based on off-balance sheet exposure (pre-CCF).

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 the Office of the Superintendent of Financial Institutions (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 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.

The IRB credit risk parameters are reviewed, at a minimum, annually and more frequently if deemed necessary by an independent validation team within the bank. In addition, quarterly monitoring and back-testing procedures are performed to compare the realized results with established estimates by the model development team.

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. 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 October 31, 2023

	EAD covered by the various approaches			
EAD (in %)	Standardized Approach[1]	Advanced Approach (A-IRB)	Foundation Approach (F-IRB)	Other
Retail				
Residential secured	1%	99%	-	-
Qualifying revolving	1%	99%	-	-
Other retail	9%	91%	-	-
Wholesale				
Corporate	17%	45%	38%	-
Sovereign	16%	84%	-	-
Bank	20%	-	80%	-
Equity	100%	-	-	-
Total credit risk	11%	77%	12%	-
Counterparty credit risk	-	13%	71%	16%
Securitization	36%	64%	-	-
Other assets not subject to Standardized or IRB Approaches	-	-	-	100%
Total[2]	10%	68%	22%	-

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

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

As at July 31, 2023

	EAD covered by the various approaches			
EAD (in %)	Standardized Approach[1]	Advanced Approach (A-IRB)	Foundation Approach (F-IRB)	Other
Retail				
Residential secured	1%	99%	-	-
Qualifying revolving	1%	99%	-	-
Other retail	9%	91%	-	-
Wholesale				
Corporate	18%	42%	40%	-
Sovereign	16%	84%	-	-
Bank	21%	-	79%	-
Equity	100%	-	-	-
Total credit risk	11%	76%	13%	-
Counterparty credit risk	-	15%	70%	15%
Securitization	35%	65%	-	-
Other assets not subject to Standardized or IRB Approaches	-	-	-	100%
Total[2]	10%	68%	22%	-

[1] Standardized Approach includes assumptions and waivers granted by OSFI based on an OSFI approved rollout plan. Q3 presentation for Counterparty Credit risk has been revised to align with Q4 EAD post CRM presentation.

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

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: A-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 A-IRB approach, broken down by asset class and PD range.

As at October 31, 2023

			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	276,364	30,194	67.31	357,246	0.02	1,056	12.94	2.30	11,056	3.1	10	
		0.15 to < 0.25	50	19	62.63	62	0.24	36	30.73	2.37	20	31.8	-	
		0.25 to < 0.50	386	30	59.68	404	0.46	228	17.27	2.67	106	26.2	-	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	80	9	58.08	85	1.31	26	31.98	2.86	61	71.8	-	
		2.50 to < 10.00	5	10	45.17	9	3.78	11	28.11	1.52	8	82.5	-	
		10.00 to < 100.00	-	-	64.40	-	18.42	2	32.50	1.28	-	159.5	-	
		100.00 (default)	39	-	-	39	100.00	5	45.00	2.50	-	0.2	35	
	Total Sovereigns		**276,924**	**30,262**	**67.29**	**357,845**	**0.03**	**1,364**	**12.96**	**2.30**	**11,251**	**3.1**	**45**	**36**
2	**Corporates**													
		0.00 to < 0.15	32,196	42,257	63.00	59,282	0.09	22,001	36.11	1.67	9,300	15.7	18	
		0.15 to < 0.25	14,618	9,028	55.10	18,696	0.24	7,846	34.71	1.94	5,501	29.4	16	
		0.25 to < 0.50	16,502	9,123	55.62	20,975	0.44	7,797	33.89	1.98	8,403	40.1	31	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	57,893	32,466	53.17	67,149	1.25	21,229	33.84	1.97	41,446	61.7	285	
		2.50 to < 10.00	11,332	7,118	54.25	12,433	4.24	6,077	35.25	2.05	11,545	92.9	186	
		10.00 to < 100.00	1,618	503	63.47	1,717	24.64	1,801	39.24	1.94	3,066	178.6	165	
		100.00 (default)	1,012	188	28.19	977	100.00	1,448	39.21	2.25	2,269	232.3	251	
	Total Corporates		**135,171**	**100,683**	**57.77**	**181,229**	**1.63**	**68,199**	**34.86**	**1.88**	**81,530**	**45.0**	**952**	**1,314**
3	**Corporate – Specialised Lending**													
		0.00 to < 0.15	3,582	2,595	60.98	5,038	0.10	113	37.86	2.81	1,366	27.1	2	
		0.15 to < 0.25	4,901	1,542	57.41	5,749	0.24	159	26.41	2.60	1,644	28.6	4	
		0.25 to < 0.50	4,944	554	55.32	5,232	0.46	284	25.44	2.54	1,848	35.3	6	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	6,979	1,650	57.30	7,883	1.15	235	27.75	2.72	4,196	53.2	25	
		2.50 to < 10.00	290	30	60.09	166	5.41	6	31.40	1.52	157	94.4	3	
		10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
		100.00 (default)	739	42	20.00	748	100.00	6	38.35	2.36	2,467	330.1	102	
	Total Corporate – Specialised Lending		**21,435**	**6,413**	**58.42**	**24,816**	**3.58**	**803**	**29.35**	**2.66**	**11,678**	**47.1**	**142**	**209**
4	**Total Wholesale**		**433,530**	**137,358**	**59.90**	**563,890**	**0.70**	**70,366**	**20.72**	**2.18**	**104,459**	**18.5**	**1,139**	**1,559**

[1] Refer to the "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report.

[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 IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

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

As at October 31, 2023

			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 - Residential mortgage exposures**													
		0.00 to < 0.15	323,108	128,742	86.86	434,937	0.12	1,609,813	20.23		24,772	5.7	107	
		0.15 to < 0.25	11,973	56	100.00	9,079	0.15	84,651	16.01		485	5.3	2	
		0.25 to < 0.50	45,884	328	100.00	11,854	0.36	174,193	14.91		1,126	9.5	7	
		0.50 to < 0.75	717	-	-	717	0.51	2,529	25.84		146	20.4	1	
		0.75 to < 2.50	30,515	2,126	90.75	26,849	0.89	121,321	21.42		6,729	25.1	51	
		2.50 to < 10.00	10,543	356	91.14	7,936	4.08	53,475	19.69		4,432	55.8	63	
		10.00 to < 100.00	3,490	128	109.08	2,978	26.91	12,314	20.62		3,124	104.9	164	
		100.00 (default)	657	1	5.00	495	100.00	2,980	20.50		234	47.2	94	
	Total Retail - Residential mortgage exposures		**426,887**	**131,737**	**87.00**	**494,843**	**0.50**	**2,061,276**	**20.10**		**41,048**	**8.3**	**489**	**366**
5a	**Of which: Retail - Insured exposure secured by real estate**													
		0.00 to < 0.15	-			-	-	-	-		-	-	-	
		0.15 to < 0.25	11,845			8,894	0.15	84,563	15.03		438	4.9	2	
		0.25 to < 0.50	42,073			7,715	0.33	170,847	11.58		521	6.8	3	
		0.50 to < 0.75	-			-	-	-	-		-	-	-	
		0.75 to < 2.50	5,616			19	1.13	25,722	15.58		4	21.2	-	
		2.50 to < 10.00	2,936			4	4.36	16,478	15.20		2	44.9	-	
		10.00 to < 100.00	655			3	38.10	3,113	16.61		2	79.5	-	
		100.00 (default)	164			2	100.00	986	14.44		4	180.5	-	
	Total Retail – Insured exposure secured by real estate		**63,289**			**16,637**	**0.26**	**301,709**	**13.43**		**971**	**5.8**	**5**	**9**
5b	**Of which: Retail - Uninsured mortgages**													
		0.00 to < 0.15	291,330	495	100.00	291,825	0.14	763,986	18.30		16,351	5.6	73	
		0.15 to < 0.25	129	56	100.00	185	0.16	88	62.93		47	25.5	-	
		0.25 to < 0.50	3,629	153	100.00	3,782	0.41	2,872	20.74		535	14.1	3	
		0.50 to < 0.75	717	-	-	717	0.51	2,529	25.84		146	20.4	1	
		0.75 to < 2.50	22,643	289	100.00	22,932	0.91	57,023	20.58		5,624	24.5	43	
		2.50 to < 10.00	6,674	22	100.00	6,695	4.03	22,225	18.60		3,504	52.3	49	
		10.00 to < 100.00	2,477	-	-	2,477	26.66	6,093	19.73		2,485	100.3	129	
		100.00 (default)	392	-	-	392	100.00	1,230	18.97		175	44.6	69	
	Total Retail – Uninsured mortgages		**327,991**	**1,015**	**100.00**	**329,005**	**0.59**	**856,046**	**18.54**		**28,867**	**8.8**	**367**	**280**

[1] Refer to the "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report.

[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 IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

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

As at October 31, 2023

	(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													
5c	**Of which: HELOCs**													
		0.00 to < 0.15	31,778	128,247	86.81	143,111	0.10	845,827	24.18		8,421	5.9	34	
		0.15 to < 0.25	-	-	-	-	-	-	-		-	-	-	
		0.25 to < 0.50	182	175	100.00	357	0.34	492	25.09		70	19.6	-	
		0.50 to < 0.75	-	-	-	-	-	-	-		-	-	-	
		0.75 to < 2.50	2,257	1,837	89.30	3,897	0.77	38,579	26.44		1,101	28.3	8	
		2.50 to < 10.00	934	335	90.57	1,237	4.36	14,774	25.61		926	74.8	14	
		10.00 to < 100.00	358	128	109.08	498	28.04	3,108	25.10		636	127.8	35	
		100.00 (default)	101	1	5.00	101	100.00	764	26.61		55	54.2	25	
	Total HELOC		**35,610**	**130,723**	**86.90**	**149,201**	**0.31**	**903,544**	**24.26**		**11,209**	**7.5**	**116**	**77**
6	**Qualifying revolving retail**													
		0.00 to < 0.15	9,128	59,815	89.07	62,407	0.09	5,768,951	93.25		3,079	4.9	50	
		0.15 to < 0.25	9,210	40,772	84.96	43,848	0.18	2,064,786	90.12		3,797	8.7	70	
		0.25 to < 0.50	898	5,893	87.05	6,027	0.34	3,752,409	90.88		883	14.6	18	
		0.50 to < 0.75	2,984	7,414	88.98	9,581	0.60	1,084,271	94.00		2,328	24.3	54	
		0.75 to < 2.50	8,120	7,829	88.49	15,048	1.62	2,223,593	91.55		7,555	50.2	223	
		2.50 to < 10.00	4,024	2,511	91.40	6,319	4.39	1,197,533	92.67		6,305	99.8	256	
		10.00 to < 100.00	1,215	429	109.14	1,682	31.22	563,203	90.67		3,619	215.1	483	
		100.00 (default)	86	1	5.40	86	100.00	49,266	87.38		191	223.1	60	
	Total Qualifying revolving retail		**35,665**	**124,664**	**87.70**	**144,998**	**0.93**	**16,704,012**	**92.02**		**27,757**	**19.1**	**1,214**	**1,608**
7	**Retail - SME**													
		0.00 to < 0.15	652	4,228	101.79	4,956	0.06	238,822	97.71		838	16.9	3	
		0.15 to < 0.25	429	4,297	93.57	4,449	0.22	113,916	69.85		1,342	30.2	7	
		0.25 to < 0.50	458	1,497	104.69	2,026	0.31	127,237	99.10		1,064	52.6	6	
		0.50 to < 0.75	2,137	57	99.18	1,906	0.54	9,425	37.58		542	28.4	4	
		0.75 to < 2.50	6,336	3,256	95.23	8,562	1.16	219,815	61.70		5,618	65.6	60	
		2.50 to < 10.00	2,680	981	98.07	3,307	5.28	121,612	60.14		2,920	88.3	98	
		10.00 to < 100.00	269	47	113.15	263	40.65	19,750	75.16		432	164.1	80	
		100.00 (default)	230	15	11.75	88	100.00	3,577	69.76		65	73.9	62	
	Total Retail - SME		**13,191**	**14,378**	**97.83**	**25,557**	**1.95**	**854,154**	**71.23**		**12,821**	**50.2**	**320**	**260**
8	**Other retail**													
		0.00 to < 0.15	4,061	2,785	100.06	6,847	0.08	16,423	53.75		793	11.6	3	
		0.15 to < 0.25	2,046	3,619	85.19	5,129	0.17	21,596	86.00		1,628	31.7	8	
		0.25 to < 0.50	8,960	2	101.13	8,961	0.31	331,705	66.60		3,198	35.7	18	
		0.50 to < 0.75	204	236	99.58	439	0.55	1,505	84.88		281	64.1	2	
		0.75 to < 2.50	10,930	485	91.16	10,812	1.12	320,460	61.39		7,172	66.3	78	
		2.50 to < 10.00	2,176	34	88.19	2,108	4.28	95,643	67.36		2,047	97.1	59	
		10.00 to < 100.00	466	15	91.30	366	37.45	23,136	73.01		585	160.1	97	
		100.00 (default)	89	1	5.03	70	100.00	3,898	69.55		62	87.6	45	
	Total Other retail		**28,932**	**7,177**	**91.86**	**34,732**	**1.33**	**814,366**	**65.66**		**15,766**	**45.4**	**310**	**308**
9	**Total retail**		**504,675**	**277,956**	**88.00**	**700,130**	**0.68**	**20,433,808**	**39.12**		**97,392**	**13.9**	**2,333**	**2,542**
10	**Total A-IRB**		**938,205**	**415,314**	**78.71**	**1,264,020**	**0.69**	**20,504,174**	**30.91**	**2.18**	**201,851**	**16.0**	**3,472**	**4,101**

[1] Refer to the "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report.

[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 IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

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

As at July 31, 2023

			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	287,284	24,665	65.15	364,816	0.02	976	12.63	2.04	9,856	2.7	9	
		0.15 to < 0.25	55	15	63.09	64	0.24	38	29.56	2.57	20	31.7	-	
		0.25 to < 0.50	386	19	65.44	398	0.46	224	17.09	2.72	105	26.3	-	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	87	11	60.76	93	1.26	26	31.84	2.89	66	70.9	-	
		2.50 to < 10.00	1	6	64.79	5	2.84	9	26.31	1.14	3	63.7	-	
		10.00 to < 100.00	-	3	64.91	2	18.68	8	43.93	1.01	4	213.6	-	
		100.00 (default)	39	-	-	39	100.00	7	44.99	2.50	-	0.5	35	
	Total Sovereigns		**287,852**	**24,719**	**65.15**	**365,417**	**0.03**	**1,288**	**12.65**	**2.04**	**10,054**	**2.8**	**44**	**36**
2	**Corporates**													
		0.00 to < 0.15	25,312	36,644	65.10	50,906	0.09	20,943	35.39	1.85	8,193	16.1	16	
		0.15 to < 0.25	14,102	9,021	54.61	17,408	0.24	7,876	35.10	1.98	5,326	30.6	15	
		0.25 to < 0.50	15,610	8,011	55.95	19,646	0.44	7,542	34.69	2.00	8,136	41.4	30	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	54,412	32,145	54.08	63,462	1.25	19,786	34.04	2.03	39,656	62.5	272	
		2.50 to < 10.00	11,227	6,476	54.01	11,834	4.22	6,372	35.03	2.09	10,936	92.4	176	
		10.00 to < 100.00	1,477	420	60.01	1,553	25.07	1,570	39.92	2.00	2,825	181.9	153	
		100.00 (default)	867	147	24.59	825	100.00	1,281	40.93	2.18	1,591	192.8	275	
	Total Corporates		**123,007**	**92,864**	**58.62**	**165,634**	**1.62**	**65,370**	**34.80**	**1.97**	**76,663**	**46.3**	**937**	**1,245**
3	**Corporate – Specialised Lending**													
		0.00 to < 0.15	3,722	2,416	60.11	5,053	0.10	115	37.68	2.95	1,416	28.0	2	
		0.15 to < 0.25	5,020	1,410	56.72	5,820	0.24	163	27.02	2.68	1,717	29.5	4	
		0.25 to < 0.50	5,844	448	57.83	6,140	0.46	298	26.30	2.67	2,267	36.9	7	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	5,935	1,428	59.01	6,712	1.09	207	27.66	2.97	3,598	53.6	20	
		2.50 to < 10.00	187	5	49.89	154	5.34	5	31.63	1.69	148	96.2	3	
		10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
		100.00 (default)	627	35	20.00	634	100.00	5	33.83	2.63	1,741	274.7	75	
	Total Corporate – Specialised Lending		**21,335**	**5,742**	**58.57**	**24,513**	**3.11**	**793**	**29.42**	**2.81**	**10,887**	**44.4**	**111**	**151**
4	**Total Wholesale**		**432,194**	**123,325**	**59.92**	**555,564**	**0.64**	**67,451**	**19.99**	**2.05**	**97,604**	**17.6**	**1,092**	**1,432**

[1] Refer to the “Internal ratings map” under the Credit risk assessment subsection of the Risk management section in our 2022 Annual Report.

[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 IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

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

As at July 31, 2023

			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 - Residential mortgage exposures**													
		0.00 to < 0.15	318,434	126,488	86.91	428,363	0.12	1,605,429	20.81		25,287	5.9	109	
		0.15 to < 0.25	12,701	62	100.00	9,627	0.15	88,787	16.09		517	5.4	2	
		0.25 to < 0.50	45,781	415	100.00	10,992	0.36	175,928	15.00		1,051	9.6	6	
		0.50 to < 0.75	751	-	-	751	0.51	2,645	25.41		151	20.0	1	
		0.75 to < 2.50	30,378	2,324	91.72	26,771	0.88	123,903	22.02		6,887	25.7	52	
		2.50 to < 10.00	10,664	375	91.38	7,971	4.11	55,054	20.20		4,584	57.5	65	
		10.00 to < 100.00	3,024	128	109.02	2,569	26.73	11,312	21.14		2,783	108.3	145	
		100.00 (default)	561	2	5.00	408	100.00	2,685	20.36		198	48.5	76	
	Total Retail - Residential mortgage exposures		**422,294**	**129,794**	**87.08**	**487,452**	**0.46**	**2,065,743**	**20.65**		**41,458**	**8.5**	**456**	**354**
5a	**Of which: Retail - Retail insured exposure secured by real estate**													
		0.00 to < 0.15	-			-	-	-	-		-	-	-	
		0.15 to < 0.25	12,560			9,424	0.15	88,694	15.08		465	4.9	2	
		0.25 to < 0.50	42,214			7,011	0.33	172,523	11.51		471	6.7	3	
		0.50 to < 0.75	-			-	-	-	-		-	-	-	
		0.75 to < 2.50	5,759			20	1.13	26,530	15.37		4	20.8	-	
		2.50 to < 10.00	3,040			4	4.32	17,205	15.09		2	44.4	-	
		10.00 to < 100.00	597			3	38.88	2,918	15.63		2	73.9	-	
		100.00 (default)	155			2	100.00	942	14.41		4	180.2	-	
	Total Retail – Insured exposure secured by real estate		**64,325**			**16,464**	**0.25**	**308,812**	**13.56**		**948**	**5.8**	**5**	**7**
5b	**Of which: Retail - uninsured mortgages**													
		0.00 to < 0.15	286,541	902	100.00	287,443	0.14	759,377	19.00		16,893	5.9	75	
		0.15 to < 0.25	141	62	100.00	203	0.16	93	62.93		52	25.6	-	
		0.25 to < 0.50	3,393	242	100.00	3,634	0.41	3,006	21.04		520	14.3	3	
		0.50 to < 0.75	751	-	-	751	0.51	2,645	25.41		151	20.0	1	
		0.75 to < 2.50	22,348	500	100.00	22,848	0.90	57,697	21.14		5,745	25.1	44	
		2.50 to < 10.00	6,627	31	100.00	6,658	4.05	22,503	19.09		3,592	53.9	50	
		10.00 to < 100.00	2,118	-	-	2,118	26.56	5,664	20.16		2,188	103.3	113	
		100.00 (default)	314	-	-	314	100.00	1,048	18.67		144	46.0	53	
	Total Retail – uninsured mortgages		**322,233**	**1,737**	**100.00**	**323,969**	**0.55**	**852,033**	**19.23**		**29,285**	**9.0**	**339**	**269**

[1] Refer to the "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2022 Annual Report.

[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 IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

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

As at July 31, 2023

			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													
5c	**Of which: HELOCs**													
		0.00 to < 0.15	31,893	125,586	86.81	140,920	0.10	846,052	24.49		8,394	6.0	34	
		0.15 to < 0.25	-	-	-	-	-	-	-		-	-	-	
		0.25 to < 0.50	173	173	100.00	346	0.34	441	22.46		60	17.3	-	
		0.50 to < 0.75	-	-	-	-	-	-	-		-	-	-	
		0.75 to < 2.50	2,272	1,824	89.45	3,903	0.76	39,677	27.25		1,137	29.1	8	
		2.50 to < 10.00	997	344	90.60	1,309	4.38	15,347	25.86		991	75.7	15	
		10.00 to < 100.00	309	128	109.02	449	27.41	2,730	25.78		593	132.2	32	
		100.00 (default)	92	2	5.00	92	100.00	695	26.24		50	54.1	23	
	Total HELOC		**35,736**	**128,057**	**86.90**	**147,019**	**0.30**	**904,942**	**24.58**		**11,225**	**7.6**	**112**	**77**
6	**Qualifying revolving retail**													
		0.00 to < 0.15	8,954	58,478	89.09	61,053	0.09	5,695,216	93.20		3,008	4.9	49	
		0.15 to < 0.25	8,984	40,374	84.96	43,284	0.18	2,040,958	90.12		3,748	8.7	69	
		0.25 to < 0.50	851	5,787	87.01	5,886	0.34	3,687,857	90.87		862	14.7	18	
		0.50 to < 0.75	2,899	7,241	89.03	9,346	0.60	1,043,969	93.92		2,269	24.3	53	
		0.75 to < 2.50	7,973	7,818	88.46	14,889	1.62	2,212,508	91.51		7,473	50.2	220	
		2.50 to < 10.00	4,017	2,546	91.43	6,345	4.38	1,193,627	92.65		6,324	99.7	257	
		10.00 to < 100.00	1,094	420	109.16	1,552	30.13	496,774	90.58		3,308	213.2	429	
		100.00 (default)	78	1	5.19	78	100.00	54,441	87.33		167	213.4	55	
	Total Qualifying revolving retail		**34,850**	**122,665**	**87.71**	**142,433**	**0.89**	**16,425,350**	**91.98**		**27,159**	**19.1**	**1,150**	**1,485**
7	**Retail - SME**													
		0.00 to < 0.15	627	3,951	102.91	4,694	0.06	228,932	99.16		807	17.2	3	
		0.15 to < 0.25	408	4,166	93.59	4,307	0.22	110,338	69.81		1,299	30.2	7	
		0.25 to < 0.50	445	1,502	104.51	2,015	0.31	126,856	99.09		1,060	52.5	5	
		0.50 to < 0.75	2,063	68	99.28	1,851	0.54	9,158	37.32		522	28.2	4	
		0.75 to < 2.50	6,318	3,358	95.37	8,650	1.16	219,463	61.92		5,694	65.8	61	
		2.50 to < 10.00	2,732	979	98.12	3,353	5.24	116,465	59.61		2,932	87.5	98	
		10.00 to < 100.00	228	45	112.48	230	40.33	17,397	75.09		373	162.3	70	
		100.00 (default)	219	11	11.80	82	100.00	2,952	68.60		53	64.5	58	
	Total Retail - SME		**13,040**	**14,080**	**98.14**	**25,182**	**1.90**	**831,561**	**71.20**		**12,740**	**50.6**	**306**	**261**
8	**Other retail**													
		0.00 to < 0.15	4,110	2,834	100.18	6,950	0.08	17,018	54.26		817	11.8	3	
		0.15 to < 0.25	2,211	3,474	85.27	5,174	0.17	21,582	85.02		1,620	31.3	8	
		0.25 to < 0.50	8,824	2	97.15	8,825	0.31	331,659	66.62		3,155	35.7	18	
		0.50 to < 0.75	224	237	99.80	461	0.55	1,587	84.88		295	64.1	2	
		0.75 to < 2.50	10,588	482	91.74	10,446	1.12	316,821	61.25		6,912	66.2	76	
		2.50 to < 10.00	2,180	40	89.45	2,114	4.30	98,175	67.49		2,057	97.3	60	
		10.00 to < 100.00	424	10	88.23	319	37.15	21,784	72.61		503	158.1	84	
		100.00 (default)	79	-	5.00	58	100.00	3,798	68.86		56	96.6	35	
	Total Other retail		**28,640**	**7,079**	**92.19**	**34,347**	**1.25**	**812,424**	**65.61**		**15,415**	**44.9**	**286**	**331**
9	**Total retail**		**498,824**	**273,618**	**88.06**	**689,414**	**0.64**	**20,135,078**	**39.47**		**96,772**	**14.0**	**2,198**	**2,431**
10	**Total A-IRB**		**931,018**	**396,943**	**79.32**	**1,244,978**	**0.64**	**20,202,529**	**30.78**	**2.05**	**194,376**	**15.6**	**3,290**	**3,863**

[1] Refer to the “Internal ratings map” under the Credit risk assessment subsection of the Risk management section in our 2022 Annual Report.

[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 IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

CR6: F-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 F-IRB approach adopted in Q2 2023, broken down by asset class and PD range. Only Banks and Large Corporates are currently required to follow the Foundation Approach under the CAR guidelines with all other IRB exposures allowed under A-IRB.

As at October 31, 2023

			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	**Banks**													
		0.00 to < 0.15	25,680	4,344	50.56	35,078	0.06	256	39.65	2.37	8,157	23.3	8	
		0.15 to < 0.25	92	82	32.57	156	0.24	16	64.48	3.04	126	81.1	-	
		0.25 to < 0.50	10	417	37.93	168	0.46	30	26.06	1.03	51	30.4	-	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	142	162	28.53	215	0.93	31	63.04	1.58	234	109.3	1	
		2.50 to < 10.00	45	25	39.91	53	2.63	8	45.00	1.17	58	107.6	1	
		10.00 to < 100.00	-	1	10.00	-	29.08	3	45.00	1.00	-	240.7	-	
		100.00 (default)	-	-	-	-	100.00	3	45.00	2.50	-	562.5	-	
	Total Banks		**25,969**	**5,031**	**48.45**	**35,670**	**0.07**	**347**	**39.84**	**2.36**	**8,626**	**24.2**	**11**	**7**
2	**Corporates**													
		0.00 to < 0.15	39,723	178,200	39.78	110,693	0.08	4,310	41.32	2.46	28,822	26.0	37	
		0.15 to < 0.25	11,715	20,033	39.19	18,754	0.24	736	42.96	2.73	9,911	52.8	19	
		0.25 to < 0.50	6,082	12,113	42.38	9,752	0.46	612	36.94	2.73	5,666	58.1	16	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	17,210	29,908	41.31	26,954	1.25	1,495	36.80	2.70	22,460	83.3	124	
		2.50 to < 10.00	4,456	7,908	41.28	6,433	3.96	908	33.92	2.88	6,882	107.0	83	
		10.00 to < 100.00	224	393	40.58	338	27.92	89	38.59	1.62	686	203.1	37	
		100.00 (default)	272	597	63.75	584	100.00	49	33.45	1.96	800	137.0	207	
	Total Corporates		**79,682**	**249,152**	**40.15**	**173,508**	**0.84**	**8,199**	**40.24**	**2.55**	**75,227**	**43.4**	**523**	**445**
3	**Total F-IRB**		**105,651**	**254,183**	**40.31**	**209,178**	**0.71**	**8,546**	**40.17**	**2.52**	**83,853**	**40.1**	**534**	**452**

[1] Refer to the “Internal ratings map” under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report.

[2] Number of obligors is defined as the number of borrowers in each PD band. Wholesale obligors are reflected as unique borrowers.

[3] Provisions reflect IFRS 9, Stage 1, 2 & 3 allowances under IRB portfolio.

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

As at July 31, 2023

			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	**Banks**													
		0.00 to < 0.15	23,049	3,276	41.91	31,729	0.06	226	39.52	2.50	7,536	23.8	8	
		0.15 to < 0.25	97	94	29.19	146	0.24	16	65.44	3.10	122	83.9	-	
		0.25 to < 0.50	24	374	33.72	148	0.46	31	27.30	1.10	52	35.5	-	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	156	169	29.34	227	1.03	32	61.48	1.72	262	115.2	1	
		2.50 to < 10.00	11	42	40.02	27	2.64	7	44.98	1.36	30	110.2	-	
		10.00 to < 100.00	-	1	10.00	-	29.26	3	45.00	1.00	-	241.0	-	
		100.00 (default)	-	-	-	-	100.00	4	45.00	2.50	-	562.5	-	
	Total Banks		**23,337**	**3,956**	**40.27**	**32,277**	**0.07**	**319**	**39.74**	**2.49**	**8,002**	**24.8**	**10**	**4**
2	**Corporates**													
		0.00 to < 0.15	45,374	178,364	40.14	116,588	0.08	5,118	41.65	2.45	30,765	26.4	39	
		0.15 to < 0.25	11,517	19,090	39.18	18,154	0.24	759	42.97	2.84	9,803	54.0	19	
		0.25 to < 0.50	6,251	12,321	41.60	9,869	0.46	613	37.38	2.74	5,804	58.8	17	
		0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
		0.75 to < 2.50	17,097	28,655	40.52	26,379	1.25	1,488	37.35	2.81	22,699	86.0	124	
		2.50 to < 10.00	3,581	7,422	40.92	5,371	4.16	864	34.19	2.69	5,732	106.7	75	
		10.00 to < 100.00	235	410	48.29	365	29.47	78	39.70	1.52	767	209.9	43	
		100.00 (default)	294	461	61.28	497	100.00	47	33.24	1.50	2,066	415.4	-	
	Total Corporates		**84,349**	**246,723**	**40.26**	**177,223**	**0.76**	**8,967**	**40.65**	**2.56**	**77,636**	**43.8**	**316**	**290**
3	**Total F-IRB**		**107,686**	**250,679**	**40.26**	**209,500**	**0.65**	**9,286**	**40.51**	**2.55**	**85,638**	**40.9**	**326**	**294**

[1] Refer to the "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2022 Annual Report.

[2] Number of obligors is defined as the number of borrowers in each PD band. Wholesale obligors are reflected as unique borrowers.

[3] Provisions reflect IFRS 9, Stage 1, 2 & 3 allowances under 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. Currently no credit derivatives are used for mitigation.

As at October 31, 2023

		a	b
	(Millions of Canadian dollars)	**Pre-credit derivatives RWA**	**Actual RWA**
1	Sovereign - F-IRB	-	-
2	Sovereign - A-IRB	-	-
3	Banks - F-IRB	-	-
4	Banks - A-IRB	-	-
5	Other securities firms treated as Bank - F-IRB	-	-
6	Other securities firms treated as Bank - A-IRB	-	-
7	Corporate - F-IRB	-	-
8	Corporate - A-IRB	-	-
9	Other securities firms treated as Corporate - F-IRB	-	-
10	Other securities firms treated as Corporate - A-IRB	-	-
11	Specialised lending - F-IRB	-	-
12	Specialised lending - A-IRB	-	-
13	Retail - qualifying revolving (QRRE)	-	-
14	Retail - residential mortgage exposures	-	-
15	Retail - SME	-	-
16	Other retail exposures	-	-
17	Equity - F-IRB	-	-
18	Equity - A-IRB	-	-
19	Purchased receivables - F-IRB	-	-
20	Purchased receivables - A-IRB	-	-
21	**Total**	-	-

As at July 31, 2023

		a	b
	(Millions of Canadian dollars)	**Pre-credit derivatives RWA**	**Actual RWA**
1	Sovereign - F-IRB	-	-
2	Sovereign - A-IRB	-	-
3	Banks - F-IRB	-	-
4	Banks - A-IRB	-	-
5	Other securities firms treated as Bank - F-IRB	-	-
6	Other securities firms treated as Bank - A-IRB	-	-
7	Corporate - F-IRB	-	-
8	Corporate - A-IRB	-	-
9	Other securities firms treated as Corporate - F-IRB	-	-
10	Other securities firms treated as Corporate - A-IRB	-	-
11	Specialised lending - F-IRB	-	-
12	Specialised lending - A-IRB	-	-
13	Retail - qualifying revolving (QRRE)	-	-
14	Retail - residential mortgage exposures	-	-
15	Retail - SME	-	-
16	Other retail exposures	-	-
17	Equity - F-IRB	-	-
18	Equity - A-IRB	-	-
19	Purchased receivables - F-IRB	-	-
20	Purchased receivables - A-IRB	-	-
21	**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 October 31, 2023	As at July 31, 2023
1	**RWA as at end of previous reporting period**	**431,853**	**437,132**
2	Asset size[2]	(5,515)	2,735
3	Asset quality[3]	1,494	1,396
4	Model updates[4]	-	(1,681)
5	Methodology and policy[5]	-	(1,100)
6	Acquisitions and disposals	-	(1,152)
7	Foreign exchange movements	8,649	(5,382)
8	Other	(1,452)	(95)
9	**RWA as at end of reporting period**	**435,029**	**431,853**

[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.

CR9: A-IRB – Credit risk exposures by portfolio and PD range

The following table presents a comparison of the PD used in our IRB models with the effective default rates of the bank's obligors in order to validate the reliability of our PD calculations for our exposures under the Advanced Rating Based Approach.

As at October 31, 2023

	a	b	c					d	e	f		g	h	i
	(Millions of Canadian dollars, except as otherwise noted) Asset Classes	PD Range[1]	External rating equivalent					Weighted average PD[2]	Arithmetic average PD by obligors[2]	Number of obligors[3]		Defaulted obligors in the year[4,6]	of which: new defaulted obligors in the year[5,6]	Average historical annual default rate
			S&P	Moody's	Fitch	DBRS	Kroll			End of previous year	End of the year			
1	**Sovereigns**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.02%	0.02%	1,428	1,056	-	-	0.07%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.24%	0.24%	80	36	-	-	0.00%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.46%	0.46%	-	228	-	-	0.00%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.00%	0.00%	-	-	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.31%	1.20%	68	26	-	-	0.00%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	3.78%	4.41%	14	11	1	-	1.90%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	18.42%	18.42%	6	2	-	-	0.00%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	4	5	-	-	
	Total Sovereigns							**0.03%**	**0.02%**	**2,070**	**1,364**	**1**	**-**	
2	**Corporates**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.09%	0.09%	16,823	22,001	9	-	0.03%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.24%	0.24%	7,225	7,846	6	-	0.06%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.44%	0.45%	2,070	7,797	20	-	0.19%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.00%	0.00%	-	-	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.25%	1.30%	16,688	21,229	99	-	0.43%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	4.24%	4.37%	4,518	6,077	108	3	1.73%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	24.64%	24.37%	778	1,801	114	-	15.56%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	378	1,448	-	-	
	Total Corporates							**1.63%**	**3.66%**	**52,908**	**68,199**	**356**	**3**	

[1] Refer to "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report

[2] Weighted average PD means PD (after CRM) weighted by EAD as at October 31, 2023. Arithmetic average PD is the sum of all the PDs (after CRM) over the number of accounts as at October 31, 2023.

[3] 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. 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.

[4] Number of defaulted obligors in the year includes i) existing obligors not in default at the beginning of the year who went into default during the year; and ii) new obligors in the year who went into default.

[5] Number of new defaulted obligors in the year reflects the amount in column g that relates to new obligors in the year who went into default.

[6] Defaulted obligors reflects obligors who were in default after 90 days that have either returned to performing status or were written-off. For example, unadvised overdraft facilities have been included that returned to performing status.

[7] Retail insured exposures secured by real estate includes residential mortgages and other retail. Exposures are insured with government and/or private insurance providers.

CR9: A-IRB – Credit risk exposures by portfolio and PD range (continued)

As at October 31, 2023

	a	b	c					d	e	f		g	h	i
	(Millions of Canadian dollars, except as otherwise noted) Asset Classes	PD Range[1]	External rating equivalent					Weighted average PD[2]	Arithmetic average PD by obligors[2]	Number of obligors[3]		Defaulted obligors in the year[4,6]	of which: new defaulted obligors in the year[5,6]	Average historical annual default rate
			S&P	Moody's	Fitch	DBRS	Kroll			End of previous year	End of the year			
3	**Corporates - Specialised Lending**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.10%	0.11%	66	113	-	-	0.00%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.24%	0.24%	117	159	-	-	0.00%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.46%	0.46%	214	284	-	-	0.00%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.00%	0.00%	-	-	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.15%	1.10%	20	235	-	-	0.00%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	5.41%	5.65%	-	6	-	-	0.00%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	0.00%	0.00%	-	-	-	-	0.00%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	1	6	-	-	0.00%
	Total Corporates - Specialised Lending							**3.58%**	**1.33%**	**418**	**803**	**-**	**-**	
4	**Total Wholesale**							**0.70%**	**0.05%**	**55,396**	**70,366**	**357**	**3**	
5	**Retail residential mortgages**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.12%	0.12%	1,574,346	1,609,813	904	12	0.05%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.15%	0.15%	94	84,651	78	1	0.07%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.36%	0.33%	180,842	174,193	138	-	0.08%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.51%	0.51%	40,122	2,529	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	0.89%	0.92%	76,832	121,321	695	23	0.40%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	4.08%	4.41%	44,052	53,475	1,421	11	1.99%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	26.91%	27.51%	7,068	12,314	1,925	4	17.72%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	2,480	2,980	-	-	
	Total Retail residential mortgages							**0.49%**	**0.61%**	**1,925,836**	**2,061,276**	**5,161**	**51**	
5a	**Of which: Retail - Insured exposure secured by real estate**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.00%	0.00%	99,314	-	-	-	0.00%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.15%	0.15%	-	84,563	77	-	0.07%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.33%	0.33%	180,189	170,847	138	-	0.08%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.00%	0.00%	-	-	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.13%	1.22%	28,713	25,722	132	3	0.42%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	4.36%	4.38%	15,056	16,478	374	-	1.74%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	38.10%	31.23%	2,557	3,113	679	-	21.21%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	1,052	986	-	-	
	Total Retail - Insured exposure secured by real estate							**0.26%**	**1.22%**	**326,881**	**301,709**	**1,400**	**3**	

[1] Refer to "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report

[2] Weighted average PD means PD (after CRM) weighted by EAD as at October 31, 2023. Arithmetic average PD is the sum of all the PDs (after CRM) over the number of accounts as at October 31, 2023.

[3] 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. 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.

[4] Number of defaulted obligors in the year includes i) existing obligors not in default at the beginning of the year who went into default during the year; and ii) new obligors in the year who went into default.

[5] Number of new defaulted obligors in the year reflects the amount in column g that relates to new obligors in the year who went into default.

[6] Defaulted obligors reflects obligors who were in default after 90 days that have either returned to performing status or were written-off. For example, unadvised overdraft facilities have been included that returned to performing status.

[7] Retail insured exposures secured by real estate includes residential mortgages and other retail. Exposures are insured with government and/or private insurance providers.

CR9: A-IRB – Credit risk exposures by portfolio and PD range (continued)

As at October 31, 2023

	a	b	c					d	e	f		g	h	i
	(Millions of Canadian dollars, except as otherwise noted) Asset Classes	PD Range[1]	External rating equivalent					Weighted average PD[2]	Arithmetic average PD by obligors[2]	Number of obligors[3]		Defaulted obligors in the year[4,6]	of which: new defaulted obligors in the year[5,6]	Average historical annual default rate
			S&P	Moody's	Fitch	DBRS	Kroll			End of previous year	End of the year			
5b	**Of which: Retail - Uninsured residential mortgages**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.14%	0.14%	637,306	763,986	472	8	0.06%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.16%	0.16%	94	88	1	1	0.00%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.41%	0.40%	653	2,872	-	-	0.07%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.51%	0.51%	-	2,529	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	0.91%	0.89%	48,119	57,023	317	18	0.37%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	4.02%	4.25%	16,004	22,225	558	11	1.94%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	26.64%	25.73%	3,426	6,093	796	4	15.72%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	844	1,230	-	-	
	Total Retail - Uninsured residential mortgages							**0.59%**	**0.63%**	**706,446**	**856,046**	**2,144**	**42**	
5c	**Of which: HELOCs**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.10%	0.10%	837,726	845,827	432	4	0.05%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.00%	0.00%	-	-	-	-	0.00%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.34%	0.34%	-	492	-	-	0.00%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.00%	0.00%	40,122	-	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	0.77%	0.76%	-	38,579	246	2	0.42%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	4.36%	4.70%	12,992	14,774	489	-	2.39%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	28.04%	27.28%	1,085	3,108	450	-	16.57%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	584	764	-	-	
	Total HELOCs							**0.31%**	**0.38%**	**892,509**	**903,544**	**1,617**	**6**	
6	**Qualifying revolving retail[6]**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.09%	0.10%	4,824,082	5,768,951	4,793	66	0.07%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.18%	0.18%	3,391,636	2,064,786	3,627	67	0.14%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.34%	0.45%	3,778,185	3,752,409	12,278	643	0.30%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.60%	0.59%	7,353	1,084,271	5,637	569	0.47%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.62%	1.63%	2,278,680	2,223,593	37,489	721	1.27%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	4.39%	4.54%	1,257,008	1,197,533	56,359	638	3.27%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	31.22%	33.27%	439,336	563,203	169,322	38,129	32.44%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	37,343	49,266	-	-	
	Total Qualifying revolving retail							**0.93%**	**2.18%**	**16,013,623**	**16,704,012**	**289,505**	**40,833**	

[1] Refer to "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report

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[3] 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. 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.

[4] Number of defaulted obligors in the year includes i) existing obligors not in default at the beginning of the year who went into default during the year; and ii) new obligors in the year who went into default.

[5] Number of new defaulted obligors in the year reflects the amount in column g that relates to new obligors in the year who went into default.

[6] Defaulted obligors reflects obligors who were in default after 90 days that have either returned to performing status or were written-off. For example, unadvised overdraft facilities have been included that returned to performing status.

[7] Retail insured exposures secured by real estate includes residential mortgages and other retail. Exposures are insured with government and/or private insurance providers.

CR9: A-IRB – Credit risk exposures by portfolio and PD range (continued)

As at October 31, 2023

	a	b	c					d	e	f		g	h	i
	(Millions of Canadian dollars, except as otherwise noted) Asset Classes	PD Range[1]	External rating equivalent					Weighted average PD[2]	Arithmetic average PD by obligors[2]	Number of obligors[3]		Defaulted obligors in the year[4,6]	of which: new defaulted obligors in the year[5,6]	Average historical annual default rate
			S&P	Moody's	Fitch	DBRS	Kroll			End of previous year	End of the year			
7	**Retail – SME**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.06%	0.06%	251,402	238,822	67	-	0.04%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.22%	0.22%	105,060	113,916	43	6	0.07%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.31%	0.29%	79,463	127,237	319	63	0.18%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.54%	0.56%	105,992	9,425	17	-	0.14%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.16%	1.13%	178,589	219,815	1,951	212	0.64%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	5.28%	4.87%	131,994	121,612	11,593	8,105	2.21%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	40.65%	30.37%	17,364	19,750	3,549	374	27.47%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	4,761	3,577	-	-	
	Total Retail – SME							**1.95%**	**2.20%**	**874,625**	**854,154**	**17,539**	**8,760**	
8	**Other retail**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.08%	0.09%	110,398	16,423	16	-	0.05%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.17%	0.17%	33,371	21,596	22	-	0.06%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.31%	0.31%	352,351	331,705	461	31	0.13%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.55%	0.55%	38,809	1,505	21	-	0.53%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.12%	1.20%	282,614	320,460	2,470	399	0.71%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	4.28%	4.42%	74,619	95,643	3,362	93	2.88%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	37.45%	32.12%	20,627	23,136	5,588	108	21.41%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	3,456	3,898	-	-	
	Total Other retail							**1.34%**	**2.52%**	**916,245**	**814,366**	**11,940**	**631**	
9	**Total retail**							**0.68%**	**2.03%**	**19,730,329**	**20,433,808**	**324,145**	**50,275**	
	Total							**0.69%**	**2.01%**	**19,785,725**	**20,504,174**	**324,502**	**50,278**	

[1] Refer to "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report

[2] Weighted average PD means PD (after CRM) weighted by EAD as at October 31, 2023. Arithmetic average PD is the sum of all the PDs (after CRM) over the number of accounts as at October 31, 2023.

[3] 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. 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.

[4] Number of defaulted obligors in the year includes i) existing obligors not in default at the beginning of the year who went into default during the year; and ii) new obligors in the year who went into default.

[5] Number of new defaulted obligors in the year reflects the amount in column g that relates to new obligors in the year who went into default.

[6] Defaulted obligors reflects obligors who were in default after 90 days that have either returned to performing status or were written-off. For example, unadvised overdraft facilities have been included that returned to performing status.

[7] Retail insured exposures secured by real estate includes residential mortgages and other retail. Exposures are insured with government and/or private insurance providers.

CR9: F-IRB – Credit risk exposures by portfolio and PD range

The following table presents a comparison of the PD used in our IRB models with the effective default rates of the bank's obligors in order to validate the reliability of our PD calculations for our exposures under the Foundation Approach.

As at October 31, 2023

	a	b	c					d	e	f		g	h	i
	(Millions of Canadian dollars, except as otherwise noted) Asset Classes	PD Range[1]	External rating equivalent					Weighted average PD[2]	Arithmetic average PD by obligors[2]	Number of obligors[3]		Defaulted obligors in the year[4,6]	of which: new defaulted obligors in the year[5,6]	Average historical annual default rate
			S&P	Moody's	Fitch	DBRS	Kroll			End of previous year	End of the year			
1	**Banks**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.06%	0.07%	256	256	1	-	0.06%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.24%	0.24%	15	16	-	-	0.56%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.46%	0.46%	27	30	1	-	0.68%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.00%	0.00%	-	-	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	0.91%	1.15%	41	31	-	-	0.00%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	2.63%	3.56%	9	8	-	-	2.11%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	29.08%	27.15%	3	3	-	-	1.90%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	3	3	-	-	
	Total Banks							**0.07%**	**0.27%**	**354**	**347**	**2**	**-**	
2	**Corporates**													
		0.00 to < 0.15	AAA to A-	Aaa to A3	AAA to A-	AAA to AL	AAA to A-	0.08%	0.08%	9,276	4,310	-	-	0.01%
		0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	BBB+ to BBB	BBBH to BBB	BBB+ to BBB	0.24%	0.24%	1,744	736	-	-	0.03%
		0.25 to < 0.50	BBB- to BB+	Baa3 to Ba1	BBB- to BB+	BBBL to BBH	BBB- to BB+	0.46%	0.46%	1,596	612	2	-	0.11%
		0.50 to < 0.75	BB	Ba2	BB	BB	BB	0.00%	0.00%	-	-	-	-	0.00%
		0.75 to < 2.50	BB- to B+	Ba3 to B1	BB- to B+	BBL to BH	BB- to B+	1.25%	1.29%	4,704	1,495	3	2	0.24%
		2.50 to < 10.00	B to CCC+	B2 to Caa1	B to CCC+	BL to CCCH	B to CCC+	3.96%	4.95%	3,050	908	18	-	1.42%
		10.00 to < 100.00	CCC to CC	Caa2 to Ca	CCC or CC	CCC or CC	CCC or CC	27.92%	28.43%	343	89	2	-	14.67%
		100.00 (default)	C or lower	C or lower	C or lower	C or lower	C or lower	100.00%	100.00%	883	49	-	-	0.00%
	Total Corporates							**0.84%**	**1.73%**	**21,596**	**8,199**	**25**	**2**	
3	**Total F-IRB**							**0.72%**	**1.41%**	**21,950**	**8,546**	**27**	**2**	

[1] Refer to the "Internal ratings map" under the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report

[2] Weighted average PD means PD (after CRM) weighted by EAD as at October 31, 2023. Arithmetic average PD is the sum of all the PDs (after CRM) over the number of accounts as at October 31, 2023.

[3] Number of obligors is defined as the number of borrowers in each PD band. 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.

[4] Number of defaulted obligors in the year includes i) existing obligors not in default at the beginning of the year who went into default during the year; and ii) new obligors in the year who went into default.

[5] Number of new defaulted obligors in the year reflects the amount in column g that relates to new obligors in the year who went into default.

[6] Defaulted obligors reflects obligors who were in default after 90 days that have either returned to performing status or were written-off. For example, unadvised overdraft facilities have been included that returned to performing status.

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 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 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>2023 Annual Report section</th><th>Sub-section</th></tr>
<tr><td rowspan="2">a)</td><td rowspan="2">Risk management objectives and policies related to counterparty credit risk</td><td>Credit risk</td><td>Credit risk assessment – Counterparty credit risk</td></tr>
<tr><td>Consolidated Financial Statements</td><td>Note 9 - Derivative financial instruments and hedging activities – Derivative-related credit risk</td></tr>
<tr><td>b)</td><td>The method used to assign the operating limits defined in terms of internal capital for counterparty credit exposures and for CCP exposures</td><td>Credit risk</td><td>Credit risk assessment – Counterparty credit risk</td></tr>
<tr><td rowspan="3">c)</td><td rowspan="3">Policies relating to guarantees and other risk mitigants and assessments concerning counterparty credit risk, including exposures towards CCPs</td><td>Credit risk</td><td>Credit risk assessment – Counterparty credit risk</td></tr>
<tr><td rowspan="2">Consolidated Financial Statements</td><td>Note 9 - Derivative financial instruments and hedging activities – Derivative-related credit risk</td></tr>
<tr><td>Note 30 - Offsetting financial assets and financial liabilities</td></tr>
<tr><td>d)</td><td>Policies with respect to wrong-way risk exposures</td><td>Credit risk</td><td>Credit risk assessment – Wrong-way risk</td></tr>
<tr><td>e)</td><td>The impact in terms of the amount of collateral that the bank would be required to provide given a credit rating downgrade</td><td>Liquidity and funding risk</td><td>Credit ratings</td></tr>
</table>

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 October 31, 2023

		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	RWA
1	SA-CCR (for derivatives)	18,676	40,608		1.4	82,636	19,338
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)					192,228	7,696
5	Value-at-Risk (VaR) for SFTs						
6	**Total**						**27,034**

As at July 31, 2023

		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	RWA
1	SA-CCR (for derivatives)	16,496	37,425		1.4	75,152	18,108
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)					186,540	7,103
5	Value-at-Risk (VaR) for SFTs						
6	**Total**						**25,211**

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 October 31, 2023

		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	82,998	12,875
4	**Total subject to the CVA capital charge**	**82,998**	**12,875**

[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 July 31, 2023

		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	75,489	12,855
4	**Total subject to the CVA capital charge**	**75,489**	**12,855**

[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 October 31, 2023

	a	b	c	d	e	f	g	h	i	j	k	l	m	n
Risk weight / Regulatory portfolio (Millions of Canadian dollars)	0%	10%	20%	30%	40%	50%	75%	80%	85%	100%	130%	150%	Others	Total credit exposure
Sovereigns	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Banks	-	-	4	12	-	-	-	-	-	6	-	-	-	22
Securities firms and other financial institutions treated as Banks	-	-	-	-	-	-	-	-	-	52	-	-	-	52
Corporates	-	-	4	-	-	3	-	-	53	562	-	-	-	622
Of which: specialised lending	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Securities firms and other financial institutions treated as Corporate	-	-	-	-	-	-	-	-	-	3	-	-	-	3
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**8**	**12**	**-**	**3**	**-**	**-**	**53**	**623**	**-**	**-**	**-**	**699**

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

As at July 31, 2023

	a	b	c	d	e	f	g	h	i	j	k	l	m	n
Regulatory portfolio (Millions of Canadian dollars) / Risk weight	0%	10%	20%	30%	40%	50%	75%	80%	85%	100%	130%	150%	Others	Total credit exposure
Sovereigns	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Banks	-	-	1	17	-	-	-	-	-	5	-	-	-	23
Securities firms and other financial institutions treated as Banks	-	-	-	-	-	-	-	-	-	16	-	-	-	16
Corporates	-	-	1	-	-	6	-	-	85	385	-	-	-	477
Of which: specialised lending	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Securities firms and other financial institutions treated as Corporate	-	-	-	-	-	-	-	-	-	6	-	-	-	6
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other assets	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**-**	**-**	**2**	**17**	**-**	**6**	**-**	**-**	**85**	**412**	**-**	**-**	**-**	**522**

CCR4: A-IRB – CCR exposures by portfolio and PD scale

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

As at October 31, 2023

		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	36,979	0.05	339	10.96	1.50	1,143	3.1
	0.15 to < 0.25	19	0.24	10	39.82	1.27	6	32.2
	0.25 to < 0.50	2	0.46	5	35.46	2.21	1	46.7
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	-	1.07	2	40.00	2.88	-	87.5
	2.50 to < 10.00	-	-	-	-	-	-	-
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (default)	27	100.00	1	40.00	1.00	134	500.0
Total sovereigns		**37,027**	**0.12**	**357**	**10.99**	**1.50**	**1,285**	**3.5**
Corporates								
	0.00 to < 0.15	3,507	0.08	851	24.18	1.24	375	10.7
	0.15 to < 0.25	155	0.24	174	34.98	3.12	60	38.8
	0.25 to < 0.50	208	0.46	179	33.00	1.62	87	41.9
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	1,295	1.52	483	36.65	1.92	1,031	79.6
	2.50 to < 10.00	233	5.31	102	46.63	3.21	402	172.7
	10.00 to < 100.00	10	31.43	9	40.37	1.12	21	210.4
	100.00 (default)	-	100.00	1	40.00	1.00	2	500.0
Total corporates		**5,407**	**0.73**	**1,799**	**28.81**	**1.56**	**1,978**	**36.6**
Total		**42,434**	**0.20**	**2,156**	**13.26**	**1.51**	**3,263**	**7.7**

[1] Refer to the "Internal ratings map" in the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report.

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

As at July 31, 2023

		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	33,522	0.04	290	10.90	1.46	1,043	3.1
	0.15 to < 0.25	27	0.24	8	40.00	1.02	8	30.1
	0.25 to < 0.50	12	0.46	4	36.65	1.27	5	42.1
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	3	0.86	4	40.00	1.36	2	64.7
	2.50 to < 10.00	-	-	-	-	-	-	-
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (default)	2	100.00	1	40.00	1.00	8	500.0
Total sovereigns		**33,566**	**0.05**	**307**	**10.93**	**1.46**	**1,066**	**3.2**
Corporates								
	0.00 to < 0.15	13,098	0.07	928	7.87	0.69	453	3.5
	0.15 to < 0.25	222	0.24	185	35.27	3.10	88	39.6
	0.25 to < 0.50	174	0.46	189	32.94	1.67	73	41.6
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	1,231	1.46	488	36.09	1.94	915	74.3
	2.50 to < 10.00	199	5.49	111	48.39	3.53	360	181.0
	10.00 to < 100.00	7	31.26	10	40.08	1.43	15	211.3
	100.00 (default)	-	100.00	1	40.00	1.00	-	500.0
Total corporates		**14,931**	**0.28**	**1,912**	**11.45**	**0.88**	**1,903**	**12.7**
Total		**48,497**	**0.12**	**2,219**	**11.09**	**1.28**	**2,969**	**6.1**

[1] Refer to the “Internal ratings map” in the Credit risk assessment subsection of the Risk management section in our 2022 Annual Report.

CCR4: F-IRB – CCR exposures by portfolio and PD scale

The following table presents a detailed view of CCR exposures subject to F-IRB approach adopted Q2 2023 by asset classes and PD scale. Only Banks and Large Corporates are currently required to follow the Foundation Approach under the CAR guidelines with all other IRB exposures allowed under A-IRB.

As at October 31, 2023

		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								
Banks								
	0.00 to < 0.15	116,455	0.07	273	11.52	0.72	5,704	4.9
	0.15 to < 0.25	184	0.24	26	40.72	1.59	79	43.1
	0.25 to < 0.50	2,379	0.46	19	3.05	0.56	82	3.4
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	287	1.16	26	25.90	0.63	129	44.8
	2.50 to < 10.00	2	2.74	2	45.00	0.19	2	96.0
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (default)	3	100.00	2	45.00	1.50	17	562.5
Total banks		**119,310**	**0.08**	**348**	**11.43**	**0.72**	**6,013**	**5.0**
Corporates								
	0.00 to < 0.15	104,909	0.07	6,791	34.11	0.73	12,427	11.8
	0.15 to < 0.25	2,651	0.24	325	39.82	1.37	1,030	38.8
	0.25 to < 0.50	1,939	0.46	132	42.70	1.43	1,176	60.6
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	2,730	1.20	209	41.85	1.11	2,209	80.9
	2.50 to < 10.00	180	4.10	61	41.09	1.63	219	121.5
	10.00 to < 100.00	12	23.56	4	40.00	1.00	23	200.3
	100.00 (default)	-	100.00	1	45.00	1.00	-	562.5
Total corporates		**112,421**	**0.11**	**7,523**	**34.59**	**0.77**	**17,084**	**15.2**
Total		**231,731**	**0.09**	**7,871**	**22.67**	**0.75**	**23,097**	**10.0**

[1] Refer to the "Internal ratings map" in the Credit risk assessment subsection of the Risk management section in our 2023 Annual Report.

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

As at July 31, 2023

		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								
Banks								
	0.00 to < 0.15	105,286	0.06	272	11.89	0.74	5,485	5.2
	0.15 to < 0.25	199	0.24	25	40.92	1.52	89	45.0
	0.25 to < 0.50	2,175	0.46	16	4.03	0.56	103	4.7
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	354	1.26	28	19.01	0.57	118	33.3
	2.50 to < 10.00	1	3.04	2	45.00	0.58	1	104.0
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (default)	6	100.00	2	45.00	1.26	33	562.5
Total banks		**108,021**	**0.08**	**345**	**11.81**	**0.74**	**5,829**	**5.4**
Corporates								
	0.00 to < 0.15	97,619	0.07	7,349	32.15	0.78	11,436	11.7
	0.15 to < 0.25	2,224	0.24	357	40.68	1.31	878	39.5
	0.25 to < 0.50	2,028	0.46	136	42.33	1.58	1,227	60.5
	0.50 to < 0.75	-	-	-	-	-	-	-
	0.75 to < 2.50	2,618	1.21	212	41.96	1.23	2,171	82.9
	2.50 to < 10.00	157	4.05	58	40.96	1.93	195	123.9
	10.00 to < 100.00	7	19.74	4	40.00	1.00	13	195.7
	100.00 (default)	-	-	-	-	-	-	-
Total corporates		**104,653**	**0.11**	**8,116**	**32.78**	**0.82**	**15,920**	**15.2**
Total		**212,674**	**0.10**	**8,461**	**22.13**	**0.78**	**21,749**	**10.2**

[1] Refer to the “Internal ratings map” in the Credit risk assessment subsection of the Risk management section in our 2022 Annual Report.

CCR5: Composition of collateral for CCR exposure

The following table presents a breakdown of collateral posted or received to support or reduce the CCR exposures related to derivative transactions or securities financing transactions (SFTs), including transactions cleared through a central counterparty clearing house (CCP).

As at October 31, 2023

	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
(Millions of Canadian dollars)	Segregated	Unsegregated	Segregated	Unsegregated		
Cash - domestic currency	83	3,188	134	3,483	54,839	69,866
Cash - other currencies	4,746	18,463	10,984	18,762	388,214	377,941
Domestic sovereign debt	865	2,597	2,093	886	138,033	143,922
Other sovereign debt	4,850	2,596	6,374	2,872	277,093	274,608
Government agency debt	62	179	180	1,800	122,316	134,616
Corporate bonds	1,809	1,293	1,835	5	40,591	57,047
Equity securities	1,100	-	1,697	3,984	91,629	166,388
Other collateral	-	30	-	-	27,689	6,890
Total	**13,515**	**28,346**	**23,297**	**31,792**	**1,140,404**	**1,231,278**

As at July 31, 2023

	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
(Millions of Canadian dollars)	Segregated	Unsegregated	Segregated	Unsegregated		
Cash - domestic currency	89	2,316	132	2,534	44,657	61,352
Cash - other currencies	5,573	17,418	11,939	16,453	387,093	374,041
Domestic sovereign debt	766	1,399	3,927	1,145	125,455	132,895
Other sovereign debt	4,497	2,004	5,631	3,253	294,660	296,223
Government agency debt	616	688	208	2,021	83,562	94,389
Corporate bonds	2,471	985	1,664	6	42,375	52,348
Equity securities	954	-	1,180	3,588	96,671	161,144
Other collateral	-	28	-	-	28,241	6,471
Total	**14,966**	**24,838**	**24,681**	**29,000**	**1,102,714**	**1,178,863**

CCR6: Credit derivatives exposures

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

As at October 31, 2023

	a	b
(Millions of Canadian dollars)	Protection bought	Protection sold
Notionals		
Single-name credit default swaps	11,075	17,315
Index credit default swaps	88,535	76,376
Total return swaps	-	-
Credit options	20,277	21,231
Other credit derivatives	-	-
Total notionals	**119,887**	**114,922**
Fair values		
Positive fair value (asset)	152	72
Negative fair value (liability)	56	120

As at July 31, 2023

	a	b
(Millions of Canadian dollars)	Protection bought	Protection sold
Notionals		
Single-name credit default swaps	10,110	17,840
Index credit default swaps	66,809	51,612
Total return swaps	-	-
Credit options	14,187	12,069
Other credit derivatives	-	-
Total notionals	**91,106**	**81,521**
Fair values		
Positive fair value (asset)	55	243
Negative fair value (liability)	48	61

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 October 31, 2023

		a	b
(Millions of Canadian dollars)		EAD (post-CRM)	RWA
1	**Exposures to QCCPs (total)**	**51,265**	**878**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	34,185	839
3	(i) OTC derivatives	13,382	419
4	(ii) Exchange-traded derivatives	16,190	324
5	(iii) Securities financing transactions	4,613	96
6	(iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated initial margin	6,092	
8	Non-segregated initial margin[1]	1,867	-
9	Pre-funded default fund contributions	1,679	39
9a	Unfunded default fund contributions[2]	7,442	-
10	**Exposures to non-QCCPs (total)**		
11	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which		
12	(i) OTC derivatives		
13	(ii) Exchange-traded derivatives		
14	(iii) Securities financing transactions		
15	(iv) Netting sets where cross-product netting has been approved		
16	Segregated initial margin		
17	Non-segregated initial margin		

[1] Non-segregated initial margin pertaining to QCCPs is already embedded in the total trade exposure.

[2] Unfunded default fund contributions are risk weighted at 0%. Table reflects revised Pillar 3 format released by OSFI on Nov. 14, 2023.

CCR8: Exposures to central counterparties (continued)

As at July 31, 2023

	(Millions of Canadian dollars)	a EAD (post-CRM)	b RWA
1	**Exposures to QCCPs (total)**	**46,118**	**755**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	30,767	722
3	(i) OTC derivatives	11,426	335
4	(ii) Exchange-traded derivatives	15,504	310
5	(iii) Securities financing transactions	3,837	77
6	(iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated initial margin	6,344	
8	Non-segregated initial margin	1,380	-
	Pre-funded default fund contributions	1,593	33
	Unfunded default fund contributions[1]	6,034	-
9	**Exposures to non-QCCPs (total)**		
10	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which		
11	(i) OTC derivatives		
12	(ii) Exchange-traded derivatives		
13	(iii) Securities financing transactions		
14	(iv) Netting sets where cross-product netting has been approved		
15	Segregated initial margin		
16	Non-segregated initial margin		
	Pre-funded default fund contributions		
	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 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations.

Pillar 3 disclosures requirement		2023 Annual Report section	Sub-section
a)	Objectives in relation to securitization activities	Off-balance sheet arrangements	Off-balance sheet arrangements
		Consolidated Financial Statements	Note 7 - Derecognition of financial assets
		Consolidated Financial Statements	Note 8 - Structured entities
b)	List of SPEs where RBC is sponsor / provides implicit support	Consolidated Financial Statements	Note 8 - 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 October 31, 2023

		a	b	c	d	e	f	g	h	i	j	k	l
		Bank acts as originator[1]				Bank acts as sponsor[2]				Bank acts as investor[3]			
(Millions of Canadian dollars)		Traditional	Of which simple, transparent and comparable (STC)	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**-**	**36,232**	**31,561**	**-**	**36,232**	**557**	**-**	**-**	**557**
2	residential mortgage					3,309	2,292		3,309	1	-		1
3	credit card					5,327	4,240		5,327	-	-		-
4	other retail exposures					27,596	25,029		27,596	556	-		556
4a	of which student loans					3,203	3,203		3,203	528			528
4b	of which auto loans and leases					17,241	16,453		17,241	28			28
4c	of which consumer loans					7,152	5,373		7,152	-			-
4d	of which other retail					-	-		-	-			-
5	re-securitization					-	-		-	-			-
6	**Wholesale (total) – of which**			**1,220**	**1,220**	**20,132**	**13,454**		**20,132**	**11,595**	**83**		**11,595**
7	loans to corporates			1,220	1,220	3,660	-		3,660	8,780	-		8,780
8	commercial mortgage					-	-		-	1,546	-		1,546
9	lease and receivables					-	-		-	-	-		-
10	other wholesale					16,472	13,454		16,472	1,269	83		1,269
10a	of which dealer floor plan receivable					1,785	1,660		1,785	-	-		-
10b	of which equipment receivable					4,069	3,915		4,069	-	-		-
10c	of which trade receivable					217	217		217	-	-		-
10d	of which other wholesale					10,401	7,662		10,401	1,269	83		1,269
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 July 31, 2023

		a	b	c	d	e	f	g	h	i	j	k	l
		Bank acts as originator[1]				Bank acts as sponsor[2]				Bank acts as investor[3]			
(Millions of Canadian dollars)		Traditional	Of which simple, transparent and comparable (STC)	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**-**	**35,667**	**31,070**	**-**	**35,667**	**562**	**-**	**-**	**562**
2	residential mortgage					3,326	2,273		3,326	2	-		2
3	credit card					5,395	4,369		5,395	-	-		-
4	other retail exposures					26,946	24,428		26,946	560	-		560
4a	of which student loans					3,185	3,185		3,185	521			521
4b	of which auto loans and leases					17,070	16,241		17,070	39			39
4c	of which consumer loans					6,691	5,002		6,691	-			-
4d	of which other retail					-	-		-	-			-
5	re-securitization					-	-		-	-			-
6	**Wholesale (total) – of which**			**1,161**	**1,161**	**19,449**	**12,896**		**19,449**	**10,668**	**-**		**10,668**
7	loans to corporates			1,161	1,161	3,538	-		3,538	8,092	-		8,092
8	commercial mortgage					-	-		-	1,471	-		1,471
9	lease and receivables					-	-		-	-	-		-
10	other wholesale					15,911	12,896		15,911	1,105	-		1,105
10a	of which dealer floor plan receivable					1,729	1,614		1,729	-	-		-
10b	of which equipment receivable					4,327	4,171		4,327	-	-		-
10c	of which trade receivable					222	222		222	-	-		-
10d	of which other wholesale					9,633	6,889		9,633	1,105	-		1,105
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 October 31, 2023

		a	b	c	d	e	f	g	h	i	j	k	l
		Bank acts as originator[1]				Bank acts as sponsor[2]				Bank acts as investor[3]			
	(Millions of Canadian dollars)	Traditional	Of which STC	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**309**	**-**	**-**	**309**
2	residential mortgages	-	-	-	-	-	-	-	-	3	-	-	3
3	credit cards	-	-	-	-	-	-	-	-	15	-	-	15
4	other retail exposures	-	-	-	-	-	-	-	-	291	-	-	291
4a	of which student loans	-	-	-	-	-	-	-	-	17	-	-	17
4b	of which auto loans and leases	-	-	-	-	-	-	-	-	234	-	-	234
4c	of which consumer loans	-	-	-	-	-	-	-	-	40	-	-	40
4d	of which other retail	-	-	-	-	-	-	-	-	-	-	-	-
5	re-securitization	-	-	-	-	-	-	-	-	-	-	-	-
6	**Wholesale (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,179**	**-**	**-**	**1,179**
7	loans to corporates	-	-	-	-	-	-	-	-	236	-	-	236
8	commercial mortgages	-	-	-	-	-	-	-	-	11	-	-	11
9	leases and receivables	-	-	-	-	-	-	-	-	-	-	-	-
10	other wholesale exposures	-	-	-	-	-	-	-	-	932	-	-	932
10a	of which dealer floor plan receivables	-	-	-	-	-	-	-	-	-	-	-	-
10b	of which equipment receivables	-	-	-	-	-	-	-	-	14	-	-	14
10c	of which trade receivables	-	-	-	-	-	-	-	-	-	-	-	-
10d	of which other wholesale	-	-	-	-	-	-	-	-	918	-	-	918
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 July 31, 2023

		a	b	c	d	e	f	g	h	i	j	k	l
		Bank acts as originator[1]				Bank acts as sponsor[2]				Bank acts as investor[3]			
	(Millions of Canadian dollars)	Traditional	Of which STC	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total	Traditional	Of which STC	Synthetic	Sub-total
1	**Retail (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**112**	**-**	**-**	**112**
2	residential mortgages	-	-	-	-	-	-	-	-	4	-	-	4
3	credit cards	-	-	-	-	-	-	-	-	18	-	-	18
4	other retail exposures	-	-	-	-	-	-	-	-	90	-	-	90
4a	of which student loans	-	-	-	-	-	-	-	-	22	-	-	22
4b	of which auto loans and leases	-	-	-	-	-	-	-	-	64	-	-	64
4c	of which consumer loans	-	-	-	-	-	-	-	-	4	-	-	4
4d	of which other retail	-	-	-	-	-	-	-	-	-	-	-	-
5	re-securitization	-	-	-	-	-	-	-	-	-	-	-	-
6	**Wholesale (total) - of which**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,136**	**-**	**-**	**1,136**
7	loans to corporates	-	-	-	-	-	-	-	-	330	-	-	330
8	commercial mortgages	-	-	-	-	-	-	-	-	9	-	-	9
9	leases and receivables	-	-	-	-	-	-	-	-	-	-	-	-
10	other wholesale exposures	-	-	-	-	-	-	-	-	797	-	-	797
10a	of which dealer floor plan receivables	-	-	-	-	-	-	-	-	-	-	-	-
10b	of which equipment receivables	-	-	-	-	-	-	-	-	4	-	-	4
10c	of which trade receivables	-	-	-	-	-	-	-	-	-	-	-	-
10d	of which other wholesale	-	-	-	-	-	-	-	-	793	-	-	793
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 October 31, 2023

		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 (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]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%
1	**Total exposures**	**52,568**	**3,842**	**848**	**326**	**-**	**1,220**	**44,889**	**11,475**	**-**	**183**	**6,303**	**2,090**	**-**	**15**	**504**	**167**	**-**
2	Traditional securitization	51,348	3,842	848	326	-	-	44,889	11,475	-	-	6,303	2,090	-	-	504	167	-
3	Of which: securitization	51,348	3,842	848	326	-	-	44,889	11,475	-	-	6,303	2,090	-	-	504	167	-
4	Of which: retail underlying	33,996	1,813	234	190	-	-	32,014	4,218	-	-	4,326	551	-	-	346	44	-
5	Of which: STC	30,998	496	68	-	-	-	28,754	2,808	-	-	3,324	320	-	-	266	26	-
6	Of which: wholesale	17,352	2,029	614	136	-	-	12,875	7,257	-	-	1,977	1,539	-	-	158	123	-
7	Of which: STC	13,046	143	155	110	-	-	11,333	2,120	-	-	1,643	247	-	-	131	20	-
8	Of which: re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Synthetic securitization	1,220	-	-	-	-	1,220	-	-	-	183	-	-	-	15	-	-	-
10	Of which: securitization	1,220	-	-	-	-	1,220	-	-	-	183	-	-	-	15	-	-	-
11	Of which: retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Of which: wholesale	1,220	-	-	-	-	1,220	-	-	-	183	-	-	-	15	-	-	-
13	Of which: re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

As at July 31, 2023

(Millions of Canadian dollars)		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 (by regulatory approach)				Capital charge after cap (by regulatory approach)			
		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%
1	**Total exposures**	**50,848**	**3,446**	**1,632**	**351**	**-**	**1,161**	**44,423**	**10,693**	**-**	**174**	**6,293**	**2,408**	**-**	**14**	**503**	**193**	**-**
2	Traditional securitization	49,687	3,446	1,632	351	-	-	44,423	10,693	-	-	6,293	2,408	-	-	503	193	-
3	Of which: securitization	49,687	3,446	1,632	351	-	-	44,423	10,693	-	-	6,293	2,408	-	-	503	193	-
4	Of which: retail underlying	33,619	1,632	219	196	-	-	31,580	4,086	-	-	4,280	510	-	-	342	41	-
5	Of which: STC	30,619	391	60	-	-	-	28,347	2,723	-	-	3,270	287	-	-	262	23	-
6	Of which: wholesale	16,068	1,814	1,413	155	-	-	12,843	6,607	-	-	2,013	1,898	-	-	161	152	-
7	Of which: STC	12,512	135	119	129	-	-	11,268	1,627	-	-	1,636	192	-	-	131	15	-
8	Of which: re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Synthetic securitization	1,161	-	-	-	-	1,161	-	-	-	174	-	-	-	14	-	-	-
10	Of which: securitization	1,161	-	-	-	-	1,161	-	-	-	174	-	-	-	14	-	-	-
11	Of which: retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	Of which: wholesale	1,161	-	-	-	-	1,161	-	-	-	174	-	-	-	14	-	-	-
13	Of which: re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[1] 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 October 31, 2023

		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 (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]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%
1	**Total exposures**	**11,824**	**270**	**-**	**25**	**33**	**-**	**12,119**	**-**	**33**	**-**	**2,516**	**-**	**418**	**-**	**202**	**-**	**33**
2	Traditional securitization	11,824	270	-	25	33	-	12,119	-	33	-	2,516	-	418	-	202	-	33
3	Of which: securitization	11,824	270	-	25	33	-	12,119	-	33	-	2,516	-	418	-	202	-	33
4	Of which: retail underlying	300	258	-	-	-	-	557	-	-	-	137	-	-	-	11	-	-
5	Of which: STC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Of which: wholesale	11,524	12	-	25	33	-	11,562	-	33	-	2,379	-	418	-	191	-	33
7	Of which: STC	83	-	-	-	-	-	83	-	-	-	8	-	-	-	1	-	-
8	Of which: re-securitization																	
9	Synthetic securitization																	
10	Of which: securitization																	
11	Of which: retail underlying																	
12	Of which: wholesale																	
13	Of which: re-securitization																	

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

As at July 31, 2023

(Millions of Canadian dollars)		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 (by regulatory approach)				Capital charge after cap (by regulatory approach)			
		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%	SEC – IRBA [1]	SEC – ERBA and SEC-IAA	SEC – SA	1250%
1	**Total exposures**	**11,001**	**192**	**-**	**25**	**12**	**-**	**11,218**	**-**	**12**	**-**	**2,347**	**-**	**149**	**-**	**187**	**-**	**12**
2	Traditional securitization	11,001	192	-	25	12	-	11,218	-	12	-	2,347	-	149	-	187	-	12
3	Of which: securitization	11,001	192	-	25	12	-	11,218	-	12	-	2,347	-	149	-	187	-	12
4	Of which: retail underlying	507	56	-	-	-	-	563	-	-	-	118	-	-	-	9	-	-
5	Of which: STC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Of which: wholesale	10,494	136	-	25	12	-	10,655	-	12	-	2,229	-	149	-	178	-	12
7	Of which: STC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Of which: re-securitization																	
9	Synthetic securitization																	
10	Of which: securitization																	
11	Of which: retail underlying																	
12	Of which: wholesale																	
13	Of which: re-securitization																	

[1] 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 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 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>2023 Annual Report section</th><th>Sub-Section</th></tr>
<tr><td rowspan="9">a)</td><td rowspan="8">Processes implemented to identify, measure, monitor and control the bank’s market risks</td><td rowspan="8">Market Risk</td><td>Market risk controls – FVTPL positions, including trading portfolios</td></tr>
<tr><td>Stress tests</td></tr>
<tr><td>Market risk measures – FVTPL positions</td></tr>
<tr><td>Market risk measures for assets and liabilities of RBC Insurance</td></tr>
<tr><td>Market risk controls – Interest Rate Risk in the Banking Book (IRRBB) positions</td></tr>
<tr><td>IRRBB measurement</td></tr>
<tr><td>Market risk measures – IRRBB Sensitivities</td></tr>
<tr><td>Market risk measures for other material non-trading portfolios</td></tr>
<tr><td>Policies for hedging risk and strategies/processes for monitoring the continuing effectiveness of hedges</td><td>Consolidated Financial Statements</td><td>Note 2 - Summary of significant accounting policies, estimates and judgements – Hedge accounting</td></tr>
</table>

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>2023 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="5">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>Operational risk</td><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 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 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>2023 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, including trading portfolios</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.	11%
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.	30%
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.	14%

[1] As at October 31, 2023.

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.

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Pillar 3 disclosures requirement		2023 Annual Report section	Sub-Section
c)	General description of the models (VaR/stressed VaR)	Market Risk	Market risk controls – FVTPL positions, including trading portfolios
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 backtested by comparing changes in the mark-to-market amounts 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.

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

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 the most 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 October 31, 2023**	**As at July 31, 2023**
	Outright products		
1	Interest rate risk (general and specific)	6,521	7,211
2	Equity risk (general and specific)	251	255
3	Foreign exchange risk	1,374	3,113
4	Commodity risk	1,055	1,041
	Options		
5	Simplified approach	-	-
6	Delta-plus method	-	-
7	Scenario approach	7,614	5,544
8	**Securitization**	1,266	664
9	**Total**	**18,081**	**17,828**

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 October 31, 2023

		a	b	c	d	e	f
	(Millions of Canadian dollars)	VaR	Stressed VaR	IRC	CRM	Other	Total RWA
1	**RWA at previous quarter end**	**3,991**	**10,613**	**4,994**	**-**	**-**	**19,598**
2	Movement in risk levels[1]	233	1,862	955	-	-	3,050
3	Model updates/changes[2]	191	(225)	(405)	-	-	(439)
4	Methodology and policy[3]	-	-	-	-	-	-
5	Acquisitions and disposals	-	-	-	-	-	-
6	Foreign exchange movements[4]	-	-	208	-	-	208
7	Other	-	-	-	-	-	-
8	**RWA at end of Reporting Period**	**4,415**	**12,250**	**5,752**	**-**	**-**	**22,417**

[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 July 31, 2023

		a	b	c	d	e	f
	(Millions of Canadian dollars)	VaR	Stressed VaR	IRC	CRM	Other	Total RWA
1	**RWA at previous quarter end**	**3,141**	**10,711**	**3,713**	**-**	**-**	**17,565**
2	Movement in risk levels[1]	346	444	1,370	-	-	2,160
3	Model updates/changes[2]	504	(542)	(23)	-	-	(61)
4	Methodology and policy[3]	-	-	-	-	-	-
5	Acquisitions and disposals	-	-	-	-	-	-
6	Foreign exchange movements[4]	-	-	(66)	-	-	(66)
7	Other	-	-	-	-	-	-
8	**RWA at end of Reporting Period**	**3,991**	**10,613**	**4,994**	**-**	**-**	**19,598**

[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.

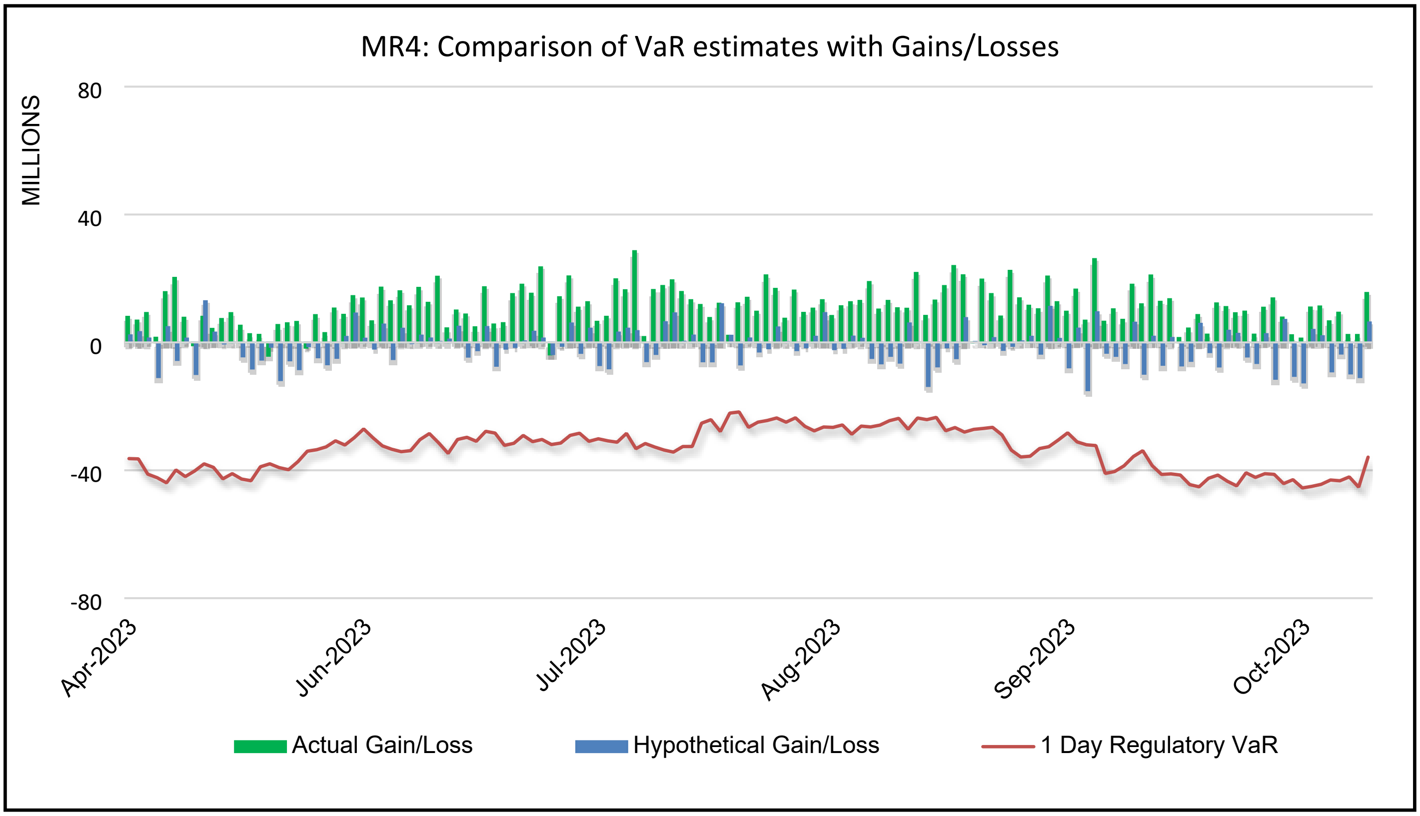
(Millions of Canadian dollars)		Value	
VaR (10 day 99%)[1,2]		As at October 31, 2023	As at July 31, 2023
1	Maximum value	165	147
2	Average value	116	114
3	Minimum value	75	72
4	Period end	147	84
Stressed VaR (10 day 99%)[1]			
5	Maximum value	492	418
6	Average value	312	280
7	Minimum value	130	131
8	Period end	468	131
Incremental Risk Charge (99.9%)			
9	Maximum value	516	515
10	Average value	409	386
11	Minimum value	315	223
12	Period end	460	317
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 2023 Annual Report.

[2] VaR shown 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.

MR4: Comparison of VaR estimates with gains/losses

The following graph compares the results of the 1 day regulatory VaR model with both hypothetical and actual trading gains and losses, for all trading portfolios included in Internal Models Approach (IMA) based market risk capital.



Actual Gain/Loss reported in this graph is the gain or loss which occurred as a result of all portfolio changes impacting income over the holding period and therefore includes reserves and intraday trading but excludes commissions and fees. Hypothetical Gain/Loss is the gain or loss which would have occurred if end of day positions remained unchanged.

Refer to table MRB for further details into our backtesting program and a list of the key models used at the group-wide level with explanations as to the extent they represent the models used at the group-wide level.

During the six month period ending October 31 2023, the bank experienced zero backtesting exception of Total Risk VaR against Actual Gain/Loss.

During the six month period ending October 31 2023, the bank experienced zero Hypothetical Gain/Loss breaches.

PRUDENT VALUATION ADJUSTMENTS

PV1: Prudent valuation adjustments (PVAs)

The following table presents an overview of the prudent valuation adjustments (PVAs) included in our regulatory capital as disclosed in table CC1 – Composition of Capital.

As at October 31, 2023

		a	b	c	d	e	f	g	h
	(Millions of Canadian dollars)	Equity	Interest rates	Foreign exchange	Credit	Commodities	**Total**	Of which: in the trading book	Of which: in the banking book
1	Closeout uncertainty, of which:	91	45	-	48	-	184	85	99
2	*Mid-market value*	73	13	-	38	-	124	45	79
3	*Closeout cost*	18	32	-	10	-	60	40	20
4	*Concentration*	-	-	-	-	-	-	-	-
5	Early termination	-	-	-	-	-	-	-	-
6	Model risk	-	-	-	-	-	-	-	-
7	Operational risk	-	-	-	-	-	-	-	-
8	Investing and funding costs						-	-	-
9	Unearned credit spreads						-	-	-
10	Future administrative costs	-	-	-	-	-	-	-	-
11	Other	-	-	-	-	-	-	-	-
12	**Total adjustment**	**91**	**45**	**-**	**48**	**-**	**184**	**85**	**99**

OPERATIONAL RISK

ORA: General qualitative information on a bank's operational risk framework

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations.

	Pillar 3 disclosures requirement	2023 Annual Report section	Sub-section
a)	Policies, frameworks and guidelines for the management of operational risk	Operational risk	Overview
			Operational risk framework
b)	The structure and organisation of their operational risk management and control function	Operational risk	Overview
			Operational risk framework
c)	Operational risk measurement system	Operational risk	Operational risk framework
			Operational risk capital
d)	The scope and main context of the reporting framework on operational risk to executive management and to the board of directors	Operational risk	Operational risk framework
			Culture and conduct risk
e)	The risk mitigation and risk transfer used in the management of operational risk including mitigation by policy, divesting from high-risk businesses, and by the establishment of controls	Operational risk	Operational risk framework

OR1: Historical losses

The following table presents the aggregate operational losses incurred over the past 10 years, based on the accounting date of the incurred losses (reported on a one quarter lag) which informs the operational risk capital calculation.

As at October 31, 2023

		a	b	c	d	e	f	g	h	i	j	k
(Millions of Canadian dollars, except as otherwise noted)		2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	Ten-year average
Using $30,000 CAD threshold												
1	Total amount of operational losses net of recoveries (no exclusions)	277	190	129	174	165	208	295	219	350	282	**229**
2	Total number of operational risk losses	927	671	631	720	706	630	496	512	476	427	**620**
3	Total amount of excluded operational risk losses	-	-	-	-	-	-	-	-	-	-	**-**
4	Total number of exclusions	-	-	-	-	-	-	-	-	-	-	**-**
5	Total amount of operational losses net of recoveries and net of excluded losses	277	190	129	174	165	208	295	219	350	282	**229**
Details of operational risk capital calculation												
6	Are losses used to calculate the ILM (yes/no)?	Yes										

OR2: Business Indicator and subcomponents

The following table presents the business indicator (BI) and its subcomponents, which inform the operational risk capital calculation.

As at October 31, 2023

(Millions of Canadian dollars)		a	b	c
BI and its subcomponents[1]		2023	2022	2021
1	Interest, lease and dividend component	**22,616**		
1a	Interest and lease income	84,329	38,115	25,918
1b	Interest and lease expense	61,862	18,054	8,143
1c	Interest earning assets	1,654,793	1,567,186	1,424,667
1d	Dividend income	2,663	2,656	2,228
2	Services component	**27,449**		
2a	Fee and commission income	29,749	26,300	25,466
2b	Fee and commission expense	6,790	4,620	2,834
2c	Other operating income	(219)	110	130
2d	Other operating expense	441	139	254
3	Financial component	**1,627**		
3a	Net P&L on the trading book	2,392	926	1,183
3b	Net P&L on the banking book	193	43	145
	Merger & Acquisition BI	437		
4	BI	**52,130**		
5	Business indicator component (BIC)	**7,988**		

Disclosure on the BI		a
6a	BI gross of excluded divested activities	52,130
6b	Reduction in BI due to excluded divested activities	-

[1] Figures are as reflected in regulatory filings of our Income Statement and Balance Sheet to OSFI based on CAR Operational Risk requirements.

OR3: Minimum required operational risk capital

The following table presents the operational risk regulatory capital requirements.

As at October 31, 2023

	(Millions of Canadian dollars)	a
1	Business indicator component (BIC)	7,988
2	Internal loss multiplier (ILM)	0.80
3	**Minimum required operational risk capital (ORC)**	**6,391**
4	**Operational risk RWA**	**79,883**

STANDARDISED RISK WEIGHTED COMPARISON

CMS1: Comparison of modelled and standardised RWA at risk level

The following table provides details of the comparison of modelled and standardised RWA at risk level.

As at October 31, 2023

		a	b	c	d
		RWA			
	(Millions of Canadian dollars)	**RWA for modelled approaches that D-SIBs have supervisory approval to use**	**RWA for portfolios where standardised approaches are used**	**Total Actual RWA (a + b) (i.e., RWA which D-SIBs report as current requirements)**	**RWA calculated using full standardised approach (i.e., used in the base of the output floor)**
1	Credit risk (excluding counterparty credit risk)	285,704	112,195	397,899	609,498
2	Counterparty credit risk	26,359	1,553	27,912	99,853
3	Credit valuation adjustment		12,875	12,875	12,875
4	Securitisation exposures in the banking book	6,178	5,332	11,510	15,993
5	Market risk	22,417	18,081	40,498	22,496
6	Operational risk		79,883	79,883	79,883
7	Residual RWA		25,646	25,646	25,646
8	**Total**	**340,658**	**255,565**	**596,223**	**866,244**

CMS2: Comparison of modelled and standardised RWA for credit risk at asset class level

The following table provides details of the comparison of modelled and standardised RWA for credit risk at asset class level.

As at October 31, 2023

		a	b	c	d
		RWA			
	(Millions of Canadian dollars)	**RWA for modelled approaches that D-SIBs have supervisory approval to use**	**RWA for portfolios where standardised approaches are used**	**Total Actual RWA (a + b) (i.e., RWA which D-SIBs report as current requirements)**	**RWA calculated using full standardised approach (i.e., used in the base of the output floor)**
1	Sovereign	11,251	2,767	14,018	16,068
	Of which: categorised as MDB/PSE in SA	5,988	2,675	8,663	12,002
2	Banks and other financial institutions	4,800	5,406	10,206	12,117
3	Covered Bonds	3,826	308	4,134	4,504
4	Equity [1]	-	5,537	5,537	5,537
5	Purchased receivables	-	-	-	-
6	Corporates	156,774	70,131	226,905	354,415
	Of which: F-IRB is applied	75,228	-	75,228	147,224
	Of which: A-IRB is applied	81,546	-	81,546	137,316
7	Retail	97,392	9,185	106,577	176,049
	Of which: qualifying revolving retail	27,758	606	28,364	34,848
	Of which: other retail	28,587	4,762	33,349	36,797
	Of which: retail residential mortgages	41,047	3,817	44,864	104,404
8	Specialised lending	11,661	-	11,661	21,947
	Of which: income-producing real estate and high volatility commercial real estate	10,777	-	10,777	18,502
9	Others	-	18,861	18,861	18,861
10	**Total**	**285,704**	**112,195**	**397,899**	**609,498**

[1] OSFI's CAR guideline only allows the Standardized Approach for our Equity holdings.

COUNTERCYCLICAL CAPITAL BUFFER

CCyB: Geographical distribution of credit exposures used in the countercyclical buffer

The following table provides the geographical distribution of our private sector credit exposures used in the calculation of the bank-specific countercyclical capital buffer requirement. Countercyclical capital buffer rates are as enacted by the respective jurisdiction.

As at October 31, 2023

Geographical distribution of credit exposures	a	b	c	d	e
	Countercyclical capital buffer rate	Exposure values and/or risk-weighted assets (RWA) used in the computation of the countercyclical capital buffer		Bank-specific countercyclical capital buffer rate[1]	Countercyclical capital buffer amount[2]
(Millions of Canadian dollars, except percentage and otherwise noted)		Exposure values	RWA		
Geographical breakdown					
Australia (AU)	1.00	5,172	1,711		
Canada (CA)	-	*884,972*	205,525		
China (CN)	-	13,571	1,601		
France (FR)	0.50	4,388	1,530		
Germany (DE)	0.75	2,079	821		
Hong Kong SAR (HK)	1.00	794	240		
Japan (JP)	-	1,983	189		
Luxembourg (LU)	0.50	12,533	3,380		
Netherlands (NL)	1.00	2,838	1,107		
Spain (ES)	-	913	365		
Sweden (SE)	2.00	333	176		
Switzerland (CH)	-	1,952	600		
United Kingdom (GB)	2.00	21,788	7,982		
USA (US)	-	269,079	122,242		
Norway (NO)	2.50	172	127		
Other	-	109,046	26,181		
Total, where countercyclical capital buffer rate applies		**50,097**	**17,074**		
Total of geographical breakdowns		**1,331,613**	**373,777**	**0.06%**	**358**

[1] Bank-specific countercyclical capital buffer rate is the weighted average of the countercyclical capital buffer rates in which our private credit exposures are located.

[2] Countercyclical capital buffer amount is the amount of Common Equity Tier 1 capital held to meet the countercyclical capital buffer requirement determined by multiplying Total RWA (credit risk, market risk, and operational risk) by the bank-specific countercyclical capital buffer rate (column d).

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)		Q4/2023	Q3/2023	Q2/2023	Q1/2023	Q4/2022
1	**Total consolidated assets as per published financial statements**	**$2,004,992**	**$1,957,734**	**$1,940,302**	**$1,933,019**	**$1,917,219**
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(16,080)	(18,400)	(17,908)	(17,362)	(16,073)
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	(36,521)	(19,177)	(23,699)	(36,321)	(51,188)
6	Adjustment for securities financing transactions (SFT) (i.e. repo assets and similar secured lending)	22,007	20,242	17,305	17,762	16,624
7	Adjustments for off-balance sheet items (i.e., credit equivalent amounts of off-balance sheet exposures)	249,049	241,480	242,434	258,399	251,034
8	Other adjustments[3]	(43,857)	(39,847)	(42,054)	(234,187)	(219,437)
9	**Leverage Ratio Exposure**	**$2,179,590**	**$2,142,032**	**$2,116,380**	**$1,921,310**	**$1,898,179**

[1] Based on OSFI's LR guideline effective Q2 2023.

[2] OSFI's LR guideline allows for the exclusion of securitized exposures that meet the operational requirements for risk transference.

[3] Includes OSFI permitted exclusion of central bank reserves that qualify as high quality liquid assets and exposures related to the US Government Payment Protection Program (PPP). Exclusions for central bank reserves ceased on April 1, 2023.

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 3.5% at all times.

LEVERAGE RATIO COMMON DISCLOSURE TEMPLATE[1] (Millions of Canadian dollars, except percentages)		Q4/2023	Q3/2023	Q2/2023	Q1/2023	Q4/2022
	On-balance sheet exposures					
1	On-balance sheet items (excluding derivatives, SFTs and grandfathered securitization exposures, but including collateral)	1,504,358	1,474,682	1,460,662	1,262,959	1,254,962
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)	(21,362)	(18,547)	(20,471)	(21,342)	(26,414)
4	(Asset amounts deducted in determining Basel III Tier 1 capital)	(22,495)	(21,300)	(21,583)	(21,438)	(22,090)
5	**Total on-balance sheet exposure (excluding derivatives and SFTs) (sum of lines 1 and 4)**	**1,460,501**	**1,434,835**	**1,418,608**	**1,220,179**	**1,206,458**
	Derivatives exposures					
6	Replacement cost associated with all derivatives transactions (i.e., net of eligible cash variation margin)	31,236	27,071	29,666	28,554	41,180
7	Add-on amounts for potential future exposure (PFE) associated with all derivatives transactions	70,943	66,591	68,038	62,973	60,172
8	(Exempted central counterparty (CCP)-leg of client-cleared trade exposures)	-	-	-	-	-
9	Adjusted effective notional amount of written credit derivatives	3,749	3,075	2,746	2,271	1,897
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-	-	-	-	-
11	**Total derivative exposures (sum of lines 6 to 10)**	**105,928**	**96,737**	**100,450**	**93,798**	**103,249**
	Securities financing transaction exposures					
12	Gross SFT assets recognized for accounting purposes (with no recognition of netting), after adjusting for sale accounting transactions	438,781	443,453	437,241	418,383	415,017
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(96,676)	(94,715)	(99,658)	(87,211)	(94,203)
14	Counterparty credit risk (CCR) exposure for SFTs	22,007	20,242	17,305	17,762	16,624
15	Agent transaction exposures	-	-	-	-	-
16	**Total securities financing transaction exposures (sum of lines 12 to 15)**	**364,112**	**368,980**	**354,888**	**348,934**	**337,438**
	Other off-balance sheet exposures					
17	Off-balance sheet exposures at gross notional amount	793,703	768,822	767,609	749,066	733,563
18	(Adjustments for conversion to credit equivalent amounts)	(544,654)	(527,342)	(525,175)	(490,667)	(482,529)
19	**Off-balance sheet items (sum of lines 17 and 18)**	**249,049**	**241,480**	**242,434**	**258,399**	**251,034**
	Capital and Total Exposures					
20	**Tier 1 capital**	**93,904**	**90,193**	**88,400**	**85,357**	**84,242**
20a	**Tier 1 capital with transitional arrangements for ECL provisioning not applied**					**84,070**
21	**Total Exposures (sum of lines 3,11,16 and 19)**	**2,179,590**	**2,142,032**	**2,116,380**	**1,921,310**	**1,898,179**
	Leverage ratio					
22	**Basel III leverage ratio**	**4.3%**	**4.2%**	**4.2%**	**4.4%**	**4.4%**
22a	**Basel III leverage ratio with transitional arrangements for ECL provisioning not applied**					**4.4%**

[1] Based on OSFI's LR guideline effective Q2 2023.

Our Leverage ratio of 4.3% was down 10 bps from October 31, 2022, mainly due to the reversal of the regulatory modification for central bank reserves qualifying as HQLA, business-driven growth in leverage exposures and the impact of the CRD and other tax related adjustments. These factors were partially offset by net internal capital generation and the impact of share issuances under the DRIP, the partial sale of RBC Investor Services operations and the Basel III reforms.

Leverage exposures increased by $281.4 billion, mainly driven by the reversal of the regulatory modification noted above, business growth primarily in securities, personal and commercial lending in Canada, repo-style transactions and undrawn commitments, partially offset by lower interest-bearing deposits with banks and cash. The impact of foreign exchange translation also contributed to the increase. These factors were partially offset by the impact of the partial sale of RBC Investor Services operations and the Basel III reforms.

TOTAL LOSS ABSORBING CAPACITY (TLAC) DISCLOSURE REQUIREMENTS

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

The following summary table provides information about our 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 OSFI's CAR guideline, and the TLAC leverage ratio, which builds on the leverage ratio described in OSFI's LR guideline. The risk-based TLAC ratio is defined as TLAC divided by Total risk-weighted assets while the TLAC leverage ratio is defined as TLAC divided by the Leverage ratio exposure. OSFI requires D-SIBs to maintain a minimum TLAC ratio of 24% (inclusive of the DSB of 2.5%) and a TLAC leverage ratio of 6.75%. On December 8, 2022, OSFI announced the DSB would increase to 3% of RWA effective February 1, 2023. Thus, our TLAC ratio minimum requirement beginning Q2 2023 was 24.5%, before considering the countercyclical capital buffer. The TLAC ratio minimum requirement increased to 25% effective November 1, 2023, reflecting OSFI's additional 50 bps increase discussed in the Capital framework section above, before considering the countercyclical capital buffer. Our TLAC leverage ratio minimum requirement beginning Q2 2023 was 7.25% reflecting incorporation of a 50 bps leverage buffer discussed in the Leverage framework section above. 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)		October 31 2023	July 31 2023	April 30 2023	January 31 2023	October 31 2022	Change (a) - (b)
Resolution group[1]							
1	Total loss-absorbing capacity (TLAC) available	184,916	181,035	183,978	173,179	160,961	3,881
1a	Total loss-absorbing capacity (TLAC) available with transitional arrangements for ECL provisioning not applied	184,916	181,035	183,978	173,179	160,961	3,881
2	Total RWA at the level of the resolution group	596,223	585,899	593,533	614,250	609,879	10,324
3	TLAC ratio: TLAC as a percentage of RWA (row 1/row 2) (%)	31.0%	30.9%	31.0%	28.2%	26.4%	0.1%
3a	TLAC ratio: TLAC as a percentage of RWA (row 1a / row 2) (%) available with transitional arrangements for ECL provisioning not applied					26.4%	0.0%
4	Leverage ratio exposure measure at the level of the resolution group	2,179,590	2,142,032	2,116,380	1,921,310	1,898,179	37,558
5	TLAC Leverage Ratio: TLAC as a percentage of leverage ratio exposure measure (row 1/row 4) (%)	8.5%	8.5%	8.7%	9.0%	8.5%	0.0%
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%	0.0%
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 31.0% was up 460 bps from October 31,2022, reflecting the factors noted above in KM1, as well as a favourable impact from a net increase in eligible external TLAC instruments.

Our TLAC leverage ratio of 8.5% was unchanged from October 31,2022, reflecting the factors noted above under the LR2, offset by a favourable impact from a net increase in eligible external TLAC instruments.

TLAC1: TLAC composition (at resolution group level)

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

As at October 31, 2023

	(Millions of Canadian dollars, except as otherwise noted)	Amount
	Regulatory capital elements of TLAC and adjustments	
1	Common Equity Tier 1 capital (CET1)	86,611
2	Additional Tier 1 capital (AT1) before TLAC adjustments	7,293
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties	-
4	Other adjustments	-
5	AT1 instruments eligible under the TLAC framework	7,293
6	Tier 2 capital (T2) before TLAC adjustments	11,048
7	Amortised portion of T2 instruments where remaining maturity > 1 year	1,248
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	12,296
11	TLAC arising from regulatory capital	106,200
	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	78,952
14	Of which: amount eligible as TLAC after application of the caps	78,952
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	78,952
	Non-regulatory capital elements of TLAC: adjustments	
18	TLAC before deductions	185,152
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	(236)
21	Other adjustments to TLAC	-
22	TLAC available after deductions	184,916
	Risk-weighted assets and leverage exposure measure for TLAC purposes	
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	596,223
24	Leverage exposure measure	2,179,590
	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)	31.0%
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	6.0%
28	Institution-specific buffer (capital conservation buffer plus countercyclical buffer plus higher loss absorbency, expressed as a percentage of risk-weighted assets)	3.6%
29	Of which: capital conservation buffer	2.5%
30	Of which: bank specific countercyclical buffer	0.1%
31	Of which: higher loss absorbency	1.0%

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

As at July 31, 2023

	(Millions of Canadian dollars, except as otherwise noted)	Amount
	Regulatory capital elements of TLAC and adjustments	
1	Common Equity Tier 1 capital (CET1)	82,892
2	Additional Tier 1 capital (AT1) before TLAC adjustments	7,301
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties	-
4	Other adjustments	-
5	AT1 instruments eligible under the TLAC framework	7,301
6	Tier 2 capital (T2) before TLAC adjustments	10,879
7	Amortised portion of T2 instruments where remaining maturity > 1 year	1,187
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	12,066
11	TLAC arising from regulatory capital	102,259
	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	79,052
14	Of which: amount eligible as TLAC after application of the caps	79,052
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	79,052
	Non-regulatory capital elements of TLAC: adjustments	
18	TLAC before deductions	181,311
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	(276)
21	Other adjustments to TLAC	-
22	TLAC available after deductions	181,035
	Risk-weighted assets and leverage exposure measure for TLAC purposes	
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	585,899
24	Leverage exposure measure	2,142,032
	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)	30.9%
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	5.6%
28	Institution-specific buffer (capital conservation buffer plus countercyclical buffer plus higher loss absorbency, expressed as a percentage of risk-weighted assets)	3.6%
29	Of which: capital conservation buffer	2.5%
30	Of which: bank specific countercyclical buffer	0.1%
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 on or after June 2021. OSFI has advised RBC it can align its RBC IHC TLAC 2 disclosure requirements to similarly commence in Q3 2021 and will require only disclosure of RBC 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 October 31, 2023

	(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	Bail-in Debt[1]	Other Liabilities excluding Bail-in Debt and Subordinated Debt[2]	
3	Total capital and liabilities net of credit risk mitigation	26,620	-	-	15,742	2,109	44,471
4	Subset of row 3 that are excluded liabilities	-	-	-	-	2,109	2,109
5	Total capital and liabilities less excluded liabilities (row 3 minus row 4)	26,620	-	-	15,742	-	42,362
6	Subset of row 5 that are eligible as TLAC	26,620	-	-	15,742	-	42,362
7	Subset of row 6 with 1 year ≤ residual maturity < 2 years			-	-	-	-
8	Subset of row 6 with 2 years ≤ residual maturity < 5 years			-	10,986	-	10,986
9	Subset of row 6 with 5 years ≤ residual maturity < 10 years			-	4,756	-	4,756
10	Subset of row 6 with residual maturity ≥ 10 years, but excluded perpetual securities			-	-	-	-
11	Subset of row 6 that is perpetual securities	26,620	-	-	-	-	26,620

[1] Under the Bail-in regime, claims of some creditors whose claims otherwise rank equally with those of the holders holding bail-inable notes would be excluded from a bail-in conversion and thus the holders and beneficial owners of bail-inable notes will have to absorb losses ahead of these other creditors as a result of the bail-in 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.

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

As at July 31, 2023

(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	Bail-in Debt[1]	Other Liabilities excluding Bail-in Debt and Subordinated Debt[2]	
3	Total capital and liabilities net of credit risk mitigation	23,333	-	-	15,363	2,058	40,754
4	Subset of row 3 that are excluded liabilities	-	-	-	-	2,058	2,058
5	Total capital and liabilities less excluded liabilities (row 3 minus row 4)	23,333	-	-	15,363	-	38,696
6	Subset of row 5 that are eligible as TLAC	23,333	-	-	15,363	-	38,696
7	Subset of row 6 with 1 year ≤ residual maturity < 2 years			-	-	-	-
8	Subset of row 6 with 2 years ≤ residual maturity < 5 years			-	9,396	-	9,396
9	Subset of row 6 with 5 years ≤ residual maturity < 10 years			-	5,967	-	5,967
10	Subset of row 6 with residual maturity ≥ 10 years, but excluded perpetual securities			-	-	-	-
11	Subset of row 6 that is perpetual securities	23,333	-	-	-	-	23,333

[1] Under the Bail-in regime, claims of some creditors whose claims otherwise rank equally with those of the holders holding bail-inable notes would be excluded from a bail-in conversion and thus the holders and beneficial owners of bail-inable notes will have to absorb losses ahead of these other creditors as a result of the bail-in 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.

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 October 31, 2023

	(Millions of Canadian dollars, except as otherwise noted)	Creditor ranking 1 (most junior)	2	3	4	5	Sum
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	19,398	7,323	12,045	105,667	-	144,433
3	Subset of row 2 that are excluded liabilities	231	10	7	19,744	-	19,992
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	19,167	7,313	12,038	85,923	-	124,441
5	Subset of row 4 that are *potentially* eligible as TLAC	19,167	7,313	12,038	85,923	-	124,441
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years			-	22,494	-	22,494
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years			2,080	41,729	-	43,809
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years			9,493	14,556	-	24,049
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities			465	7,144	-	7,609
10	Subset of row 5 that is perpetual securities	19,167	7,313	-	-	-	26,480

[1] Under the Bail-in regime, claims of some creditors whose claims otherwise rank equally with those of the holders holding bail-inable notes would be excluded from a bail-in conversion and thus the holders and beneficial owners of bail-inable notes will have to absorb losses ahead of these other creditors as a result of the bail-in 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 July 31, 2023

	(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	18,670	7,323	11,932	107,222	-	145,147
3	Subset of row 2 that are excluded liabilities	158	-	51	22,692	-	22,901
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	18,512	7,323	11,881	84,530	-	122,246
5	Subset of row 4 that are *potentially* eligible as TLAC	18,512	7,323	11,881	84,530	-	122,246
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years			-	22,391	-	22,391
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years			1,979	40,660	-	42,639
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years			9,449	14,762	-	24,211
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities			453	6,717	-	7,170
10	Subset of row 5 that is perpetual securities	18,512	7,323	-	-	-	25,835

[1] Under the Bail-in regime, claims of some creditors whose claims otherwise rank equally with those of the holders holding bail-inable notes would be excluded from a bail-in conversion and thus the holders and beneficial owners of bail-inable notes will have to absorb losses ahead of these other creditors as a result of the bail-in conversion.

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

INTEREST RATE RISK IN THE BANKING BOOK

The table below presents an overview of Pillar 3 disclosure requirements that have been met within our 2023 Annual Report and incorporated by reference into this Pillar 3 report. Our 2023 Annual Report is available free of charge on our website at http://www.rbc.com/investorrelations.

Pillar 3 disclosures requirement	2023 Annual Report section	Sub-section
Interest rate risk in the banking book	Market Risk	Market Risk