Supplementary Regulatory Capital and Pillar 3 Disclosure

Fourth Quarter 2022

(unaudited)

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Notes to users

1) This *Supplementary Regulatory Capital and Pillar 3 Disclosure* document is unaudited and should be read in conjunction with the *2022 Annual Report*. All amounts are in millions of Canadian dollars, unless otherwise indicated.

2) The information provided in this document is subject to the same level of internal review and internal control processes as the information provided by the Bank for its financial reporting.

3) Financial information is available through the *Report to Shareholders* for all quarters of 2022 and also in the document entitled *Supplementary Financial Information* which are available on the Bank's website at nbc.ca. Prior reporting periods are also available on the Bank's website.

4) The Bank has its own methods for managing capital and liquidity, and IFRS does not prescribe any particular calculation method. These measures are calculated using various OSFI guidelines and advisories, which are based on the standards, recommendations, and best practices of the Basel Committee on Banking Supervision (BCBS), as presented in the following table.

OSFI guideline or advisory	Measure
Capital Adequacy Requirements	Common Equity Tier 1 (CET1) capital ratio Tier 1 capital ratio Total capital ratio CET1 capital Tier 1 capital Tier 2 capital Total capital Risk-weighted assets Maximum credit risk exposure under the Basel asset classes
Leverage Requirements	Leverage ratio Total exposure
Total Loss Absorbing Capacity (TLAC)	Key indicators – TLAC requirements Available TLAC TLAC ratio TLAC leverage ratio

5) For certain prescribed tables formats where row or column items have zero balances, such items have not been presented.

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n.a. Not applicable
(1) Information available on the Bank's website at nbc.ca.
(2) These pages are included in the document entitled *Supplementary Financial Information – Fourth Quarter 2022.*

KM2 – Key Metrics - TLAC Requirements[1]

(millions of Canadian dollars)

		2022				2021			
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
		a				a			
1	Total loss-absorbing capacity (TLAC) available	32,351	31,549	29,887	29,462	27,492	26,748	25,576	24,602
1a	TLAC available with transitional arrangements for ECL provisioning not applied	32,351	31,549	29,887	29,462	27,492	26,748	25,576	24,602
2	Total RWA at the level of the resolution group	116,840	111,377	107,478	106,168	104,358	103,139	98,705	97,183
3	TLAC ratio: TLAC as a percentage of RWA (row 1 / row 2) (%)	27.7%	28.3%	27.8%	27.8%	26.3%	25.9%	25.9%	25.3%
3a	TLAC ratio: TLAC as a percentage of RWA (row 1a / row 2) (%) with transitional arrangements for ECL provisioning not applied	27.7%	28.3%	27.8%	27.8%	26.3%	25.9%	25.9%	25.3%
4	Leverage ratio exposure measure at the level of the resolution group	401,780	383,360	371,977	367,775	351,160	344,930	339,738	334,013
5	TLAC Leverage Ratio: TLAC as a percentage of leverage ratio exposure measure (row 1 / row 4) (%)	8.1%	8.2%	8.0%	8.0%	7.8%	7.8%	7.5%	7.4%
5a	TLAC Leverage Ratio: TLAC as a percentage of leverage ratio exposure measure with transitional arrangements for ECL provisioning not applied (row 1a / row 4) (%)	8.1%	8.2%	8.0%	8.0%	7.8%	7.8%	7.5%	7.4%
6a	Does the subordination exemption in the antepenultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	yes	yes	yes	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	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 recognised as external TLAC, divided by funding issued that ranks pari passu with Excluded Liabilities and that would be recognised as external TLAC if no cap was applied (%)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

(1) Minimum TLAC ratios is required since November 1, 2021. Rows 1, 3 and 5 incorporate expected credit loss transitional relief provided by OSFI as announced on March 27, 2020. Rows 1a, 3a and 5a represent TLAC available with transitional arrangements for ECL provisioning not applied.

OV1 – Overview of RWA[1]

(millions of Canadian dollars)

The following table provides an overview of total RWA forming the denominator of the risk-based capital requirements. Further breakdowns of RWA are presented in subsequent parts.

		Q4 2022	Q3 2022	Q2 2022	Q1 2022	Q4 2021	Q4 2022
		a	b	b	b	b	c
		RWA[1]	RWA[1]	RWA[1]	RWA[1]	RWA[1]	Minimum capital requirement[2]
1	**Credit risk (excluding counterparty credit risk)**	**83,620**	**79,036**	**75,524**	**75,604**	**73,421**	**6,690**
2	Of which: standardised approach (SA)	18,998	16,948	16,353	17,284	15,984	1,520
3	Of which: foundation internal ratings-based (F-IRB) approach	–	–	–	–	–	–
4	Of which: supervisory slotting approach	–	–	–	–	–	–
5	Of which: advanced internal ratings-based (A-IRB) approach	64,622	62,088	59,171	58,320	57,437	5,170
6	**Counterparty credit risk (CCR)**	**5,810**	**5,950**	**7,037**	**7,270**	**7,346**	**464**
7	Of which: standardised approach for counterparty credit risk	4,131	4,155	5,010	5,205	5,495	330
8	Of which: internal model method (IMM)	–	–	–	–	–	–
9	Of which: other CCR	1,438	1,557	1,591	1,646	1,399	115
9a	Of which: exposures to central counterparties	241	238	436	419	452	19
10	**Credit valuation adjustment (CVA)**	**2,677**	**2,230**	**2,304**	**2,115**	**2,112**	**214**
11	**Equity positions under the simple risk weight approach**[3]	**835**	**812**	**885**	**896**	**945**	**67**
12	**Equity investments in funds – look-through approach**	**223**	**233**	**256**	**242**	**205**	**18**
13	**Equity investments in funds – mandate-based approach**	**–**	**–**	**–**	**–**	**–**	**–**
14	**Equity investments in funds – fall-back approach**	**–**	**–**	**–**	**–**	**–**	**–**
15	**Settlement risk**	**43**	**92**	**71**	**76**	**160**	**3**
16	**Securitization exposures in banking book**	**1,008**	**976**	**963**	**843**	**856**	**81**
16a	Of which: subject to the transitional arrangement	–	–	–	–	–	–
17	Of which: securitization IRB approach (SEC-IRBA)	177	127	177	181	244	14
18	Of which: securitization external ratings-based approach (SEC-ERBA), including internal assessment approach (IAA)	497	490	458	346	370	40
19	Of which: securitization standardised approach (SEC-SA)	334	359	328	316	242	27
20	**Market risk**	**6,025**	**5,696**	**4,453**	**3,498**	**3,770**	**482**
21	Of which: standardised approach (SA)	1,405	1,411	1,220	1,002	929	112
22	Of which: internal model approach (IMA)	4,620	4,285	3,233	2,496	2,841	370
23	**Capital charge for switch between trading book and banking book**	**–**	**–**	**–**	**–**	**–**	**–**
24	**Operational risk**	**14,674**	**14,452**	**14,147**	**13,781**	**13,375**	**1,174**
25	**Amounts below the thresholds for deduction (subject to 250% risk weight)**	**1,925**	**1,900**	**1,838**	**1,843**	**2,168**	**154**
26	**Floor adjustment**	**–**	**–**	**–**	**–**	**–**	**–**
27	**Total (1+6+10+11+12+13+14+15+16+20+23+24+25+26)**	**116,840**	**111,377**	**107,478**	**106,168**	**104,358**	**9,347**

(1) Risk weighted assets including the 1.06 scaling factor.

(2) The capital requirement is equal to 8% of risk weighted assets.

(3) Banking Book Equities that are not equity investments in funds (EIF) are treated under the materiality exemption and consequently reported in OV1 row 11 as the materiality exemption is available for AIRB banks.

LI1 – Differences Between Accounting and Regulatory Scopes of Consolidation and Mapping of Financial Statements with Regulatory Risk Categories[1]

(millions of Canadian dollars)

For the following table columns a and b enable users to identify the differences between the scope of accounting consolidation and the scope of regulatory consolidation; and columns c to g break down how the amounts reported in banks' financial statements (rows) correspond to regulatory risk categories.

	Q4 2022						
	a	b	c	d	e	f	g
			Carrying values of items[2]				
	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 deposits with financial institutions	31,870	31,870	31,870	–	–	837	–
Securities							
At fair value through profit or loss	87,375	91,248	1,483	–	–	89,765	–
At fair value through other comprehensive income	8,828	18,333	18,331	–	2	–	–
At amortized cost	13,516	13,628	10,710	–	2,918	–	–
	109,719	123,209	30,524	–	2,920	89,765	–
Securities purchased under reverse repurchase agreements and securities borrowed	26,486	29,699	–	29,699	–	–	–
Loans and acceptances							
Residential mortgage	80,129	49,696	49,696	–	–	–	–
Personal	45,323	45,323	45,323	–	–	–	–
Credit card	2,389	2,389	960	–	1,271	–	158
Business and government	73,317	73,317	73,099	–	218	345	–
	201,158	170,725	169,078	–	1,489	345	158
Customers' liability under acceptances	6,541	6,541	6,541	–	–	–	–
Allowances for credit losses	(955)	(955)	(62)	–	–	–	(893)
	206,744	176,311	175,557	–	1,489	345	(735)
Other							
Derivative financial instruments[3]	18,547	19,345	–	19,345	–	16,968	–
Investments in associates and joint ventures	140	123	123	–	–	–	–
Premises and equipment	1,397	1,397	1,397	–	–	–	–
Goodwill	1,519	1,598	–	–	–	–	1,598
Intangible assets	1,360	1,133	–	–	–	–	1,133
Other assets	5,958	6,120	5,784	–	–	–	336
	28,921	29,716	7,304	19,345	–	16,968	3,067
Total assets	**403,740**	**390,805**	**245,255**	**49,044**	**4,409**	**107,915**	**2,332**
Liabilities							
Deposits	266,394	266,394	–	–	–	15,422	250,972
Other							
Acceptances	6,541	6,541	–	–	–	–	6,541
Obligations related to securities sold short	21,817	21,817	–	–	–	21,817	–
Obligations related to securities sold under repurchase agreements and securities loaned	33,473	44,001	–	44,001	–	–	–
Derivative financial instruments[3]	19,632	20,509	–	20,509	–	18,909	–
Liabilities related to transferred receivables	26,277	–	–	–	–	–	–
Other liabilities	6,361	8,298	–	–	–	–	8,298
	114,101	101,166	–	64,510	–	40,726	14,839
Subordinated debt	1,499	1,499	–	–	–	–	1,499
Total liabilities	**381,994**	**369,059**	**–**	**64,510**	**–**	**56,148**	**267,310**

(1) The basis of consolidation used for financial accounting purposes, described in Note 1 to the audited annual consolidated financial statements for the year ended October 31, 2022, may differ from regulatory purposes. The regulatory consolidation does not include structured entities, where significant risk has been transferred to third parties nor subsidiaries and associates engaged in insurance activities.
(2) The sum of amounts in columns c to g may not equal the amounts in column b as some items may be subject to regulatory capital charges in more than one risk category.
(3) Derivatives financial instruments are subject to both counterparty credit risk and market risk frameworks.

LI2 – Main Sources of Differences Between Regulatory Exposure Amounts and Carrying Values in Financial Statements

(millions of Canadian dollars)

The following table provides information on the main sources of differences (other than due to different scopes of consolidation which are shown in table LI1) between the financial statements' carrying value amounts and the exposure amounts used for regulatory purposes.

		Q4 2022				
		a	b	c	d	e
			Items subject to[1]:			
		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)**	**388,473**	**245,255**	**4,409**	**49,044**	**107,915**
2	Liabilities carrying value amount under scope of regulatory consolidation (as per template LI1)	101,749	–	–	64,510	56,148
3	Total net amount under regulatory scope of consolidation	286,724	245,255	4,409	(15,466)	51,767
4	*Gross-up for repo-style transactions*[2]	88,002	–	–	88,002	–
5	*Potential future exposures (PFE)*[3]	11,396	–	–	11,396	–
6	*Off-balance sheet amounts*[4]	202,991	60,731	4,373	101,777	–
7	*Differences due to different netting rules, other than those already included in row 2 including collateral*	4,903	–	–	4,903	–
8	VaR amounts for Securities Financing Transactions (SFTs)	6,478	–	–	6,478	–
9	*Differences in valuations*	–	–	–	–	–
10	*Collateral for SFTs*	(170,951)	–	–	(170,951)	–
11	**Exposure amounts considered for regulatory purposes**[5]	**429,543**	**305,986**	**8,782**	**26,139**	**51,767**

(1) The sum of amounts in columns b to e may not equal the amounts in column a as some items may be subject to regulatory capital charges in more than one risk category.

(2) Liabilities for repo-style transactions represent regulatory exposures under the counterparty credit risk framework. As these liabilities are deducted from the carrying value of assets in line 2, a gross-up is required to arrive at the exposure amount considered for regulatory purposes.

(3) The PFE amount is presented after the alpha of 1.4.

(4) Original off-balance sheet amounts are presented in column a while in columns b through e exposures are after application of credit conversion factors (CCFs).

(5) The aggregate amount considered as a starting point of the RWA calculation.

CC1 – Composition of Regulatory Capital

(millions of Canadian dollars)

		Reference[1]	2022				2021			
			Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
	Common Equity Tier 1 capital: instruments and reserves									
1	Directly issued qualifying common share capital plus related contributed surplus[2]	a + a'	3,252	3,244	3,245	3,254	3,207	3,188	3,171	3,139
2	Retained earnings	b	15,140	14,994	14,293	13,543	12,854	12,325	11,543	10,850
3	Accumulated other comprehensive income and other reserves	c	202	27	54	23	(32)	(151)	(169)	(167)
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	–	–	–	–	–	–	–	–
6	**Common Equity Tier 1 capital before regulatory adjustments**		**18,594**	**18,265**	**17,592**	**16,820**	**16,029**	**15,362**	**14,545**	**13,822**
	Regulatory adjustments to Common Equity Tier 1 capital									
7	Prudential valuation adjustments		–	–	–	–	–	–	–	–
8	Goodwill (net of related tax liability)	e -w	(1,598)	(1,586)	(1,589)	(1,592)	(1,587)	(1,500)	(1,497)	(1,508)
9	Intangible assets other than mortgage-servicing rights	f - x	(1,133)	(1,132)	(1,118)	(1,088)	(1,077)	(1,078)	(1,079)	(1,074)
10	Deferred tax assets excluding those arising from temporary differences (net of related tax liability)	g	(39)	(38)	(33)	(34)	(34)	(39)	(42)	(41)
11	Accumulated other comprehensive income related to cash flow hedges	h	(31)	(71)	(73)	(39)	(23)	115	114	249
12	Shortfall of total provisions to expected losses	i	–	–	–	–	–	–	–	–
13	Securitisation gain on sale		–	–	–	–	–	–	–	–
14	Gains (losses) due to changes in own credit risk on fair valued liabilities	j	(694)	(634)	(377)	(34)	39	56	117	140
15	Defined benefit pension plan assets (net of related tax liability)	k - y	(336)	(583)	(612)	(566)	(481)	(471)	(305)	(196)
16	Investments in own shares (if not already netted off contributed surplus on reported balance sheet)		–	–	–	–	–	–	–	–
17	Reciprocal cross holdings in common equity		–	–	–	–	–	–	–	–
18	Non-significant investments in capital of banking, financial and insurance entities, net of eligible short positions (amount above 10% threshold)	l	–	–	–	–	–	–	–	–
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)	m	–	–	–	–	–	–	–	–
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	n	–	–	–	–	–	–	–	–
24	of which: mortgage servicing rights		–	–	–	–	–	–	–	–
25	of which: deferred tax assets arising from temporary differences	o	–	–	–	–	–	–	–	–
26	Other deductions or regulatory adjustments to CET1 as determined by OSFI (including regulatory adjustments in respect of own use property)		55	49	43	48	107	129	144	171
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**		**(3,776)**	**(3,995)**	**(3,759)**	**(3,305)**	**(3,056)**	**(2,788)**	**(2,548)**	**(2,259)**
29	**Common Equity Tier 1 capital (CET1)**		**14,818**	**14,270**	**13,833**	**13,515**	**12,973**	**12,574**	**11,997**	**11,563**
29a	**CET1 with transitional arrangements for ECL provisioning not applied**		**14,763**	**14,221**	**13,790**	**13,467**	**12,866**	**12,445**	**11,853**	**11,392**
	Additional Tier 1 capital: instruments									
30	Directly issued qualifying Additional Tier 1 instruments plus related contributed surplus[2]		3,150	2,650	2,650	2,650	2,650	2,650	3,050	2,950
31	of which: classified as equity under applicable accounting standards	v + z	3,150	2,650	2,650	2,650	2,650	2,650	3,050	2,950
32	of which: classified as liabilities under applicable accounting standards	p	–	–	–	–	–	–	–	–
33	Directly issued capital instruments subject to phase out from Additional Tier 1[2]	v' + z' + p '	–	–	–	–	–	–	–	–
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)	q	–	–	–	–	–	–	–	–
35	of which: instruments issued by subsidiaries subject to phase out		–	–	–	–	–	–	–	–
36	**Additional Tier 1 capital before regulatory adjustments**		**3,150**	**2,650**	**2,650**	**2,650**	**2,650**	**2,650**	**3,050**	**2,950**

(1) Reconciliation with Balance Sheet is presented on pages 12 and 13.

(2) A complete list of capital instruments and their main features is now available on the Bank's website at nbc.ca under *Investor Relations › Capital & Debt Information › Main Features of Regulatory Capital Instruments.*

CC1 – Composition of Regulatory Capital (continued)

(millions of Canadian dollars)

		Reference[1]	2022 Q4	2022 Q3	2022 Q2	2022 Q1	2021 Q4	2021 Q3	2021 Q2	2021 Q1
	Additional Tier 1 capital: regulatory adjustments									
37	Investments in own Additional Tier 1 instruments		(6)	–	–	–	–	(2)	(4)	–
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		(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)
41a	of which: Reverse mortgages		(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)
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**		**(7)**	**(2)**	**(2)**	**(1)**	**(1)**	**(3)**	**(5)**	**(1)**
44	**Additional Tier 1 capital (AT1)**		**3,143**	**2,648**	**2,648**	**2,649**	**2,649**	**2,647**	**3,045**	**2,949**
45	**Tier 1 capital (T1 = CET1 + AT1)**		**17,961**	**16,918**	**16,481**	**16,164**	**15,622**	**15,221**	**15,042**	**14,512**
45a	**Tier 1 Capital with transitional arrangements for ECL provisioning not applied**		**17,906**	**16,869**	**16,438**	**16,116**	**15,515**	**15,092**	**14,898**	**14,341**
	Tier 2 capital: instruments and allowances									
46	Directly issued qualifying Tier 2 instruments plus related contributed surplus[2]	r	1,500	1,500	750	750	750	750	750	750
47	Directly issued capital instruments subject to phase out from Tier 2[2]	r'	–	–	–	–	9	9	9	9
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)	s	–	–	–	–	–	–	–	–
49	of which: instruments issued by subsidiaries subject to phase out		–	–	–	–	–	–	–	–
50	Allowances for credit losses	t	358	339	332	359	337	368	397	402
51	**Tier 2 capital before regulatory adjustments**		**1,858**	**1,839**	**1,082**	**1,109**	**1,096**	**1,127**	**1,156**	**1,161**
	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)		(92)	(23)	(164)	(150)	(75)	(45)	(45)	(84)
54a	[Reporting row for G-SIBs and D-SIBs only] 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 no longer meets the conditions		(92)	(23)	(164)	(150)	(75)	(45)	(45)	(84)
55	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		–	–	–	–	–	–	–	–
56	Other deductions from Tier 2 capital		–	–	–	–	–	–	–	–
57	**Total regulatory adjustments to Tier 2 capital**		**(92)**	**(23)**	**(164)**	**(150)**	**(75)**	**(45)**	**(45)**	**(84)**
58	**Tier 2 capital (T2)**		**1,766**	**1,816**	**918**	**959**	**1,021**	**1,082**	**1,111**	**1,077**
59	**Total capital (TC = T1 + T2)**		**19,727**	**18,734**	**17,399**	**17,123**	**16,643**	**16,303**	**16,153**	**15,589**
59a	**Total Capital with transitional arrangements for ECL provisioning not applied**		**19,727**	**18,734**	**17,399**	**17,123**	**16,643**	**16,303**	**16,153**	**15,589**

(1) Reconciliation with Balance Sheet is presented on pages 12 and 13.

(2) A complete list of capital instruments and their main features is now available on the Bank's website at nbc.ca under *Investor Relations › Capital & Debt Information › Main Features of Regulatory Capital Instruments.*

CC1 – Composition of Regulatory Capital (continued)

(millions of Canadian dollars)

		2022				2021			
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
60	**Total risk-weighted assets**	**116,840**	**111,377**	**107,478**	**106,168**	**104,358**	**103,139**	**98,705**	**97,183**
60a	Common Equity Tier 1 Capital RWA (CET1)	116,840	111,377	107,478	106,168	104,358	103,139	98,705	97,183
60b	Tier 1 Capital RWA	116,840	111,377	107,478	106,168	104,358	103,139	98,705	97,183
60c	Total capital RWA	116,840	111,377	107,478	106,168	104,358	103,139	98,705	97,183
	Capital ratios								
61	Common Equity Tier 1 (as a percentage of risk weighted assets)	12.7%	12.8%	12.9%	12.7%	12.4%	12.2%	12.2%	11.9%
61a	CET1 Ratio with transitional arrangements for ECL provisioning not applied	12.6%	12.8%	12.8%	12.7%	12.3%	12.1%	12.0%	11.7%
62	Tier 1 (as a percentage of risk weighted assets)	15.4%	15.2%	15.3%	15.2%	15.0%	14.8%	15.2%	14.9%
62a	Tier 1 Capital Ratio with transitional arrangements for ECL provisioning not applied	15.3%	15.1%	15.3%	15.2%	14.9%	14.6%	15.1%	14.8%
63	Total capital (as a percentage of risk weighted assets)	16.9%	16.8%	16.2%	16.1%	15.9%	15.8%	16.4%	16.0%
63a	Total Capital Ratio with transitional arrangements for ECL provisioning not applied	16.9%	16.8%	16.2%	16.1%	15.9%	15.8%	16.4%	16.0%
64	Institution-specific buffer requirement (minimum CET1 requirement plus capital conservation buffer plus G-SIB buffer requirement plus D-SIB buffer requirement expressed as a percentage of risk weighted assets)	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
65	of which: capital conservation buffer requirement	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
66	of which: bank-specific countercyclical buffer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
67	of which: G-SIB buffer requirement	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
67a	of which: D-SIBs buffer requirement	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk weighted assets)	12.7%	12.8%	12.9%	12.7%	12.4%	12.2%	12.2%	11.9%
	OSFI target (minimum + capital conservation buffer + D-SIB buffer)[1]								
69	Common Equity Tier 1 all-in target ratio	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
70	Tier 1 capital all-in target ratio	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%
71	Total capital all-in target ratio	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%	11.5%
	Amounts below the thresholds for deduction (before risk weighting)								
72	Non-significant investments in the capital and other TLAC-eligible instruments of other financials entities	1,084	976	705	694	668	696	695	435
73	Significant investments in the common stock of financials	409	438	419	392	363	381	369	353
74	Mortgage servicing rights (net of related tax liability)	–	–	–	–	–	–	–	–
75	Deferred tax assets arising from temporary differences (net of related tax liabilities)	361	322	316	346	505	601	608	563
	Applicable caps on the inclusion of allowances in Tier 2								
76	Allowance eligible for inclusion in Tier 2 in respect of exposures subject to standardised approach (prior to application of cap)	152	139	134	143	130	131	134	137
77	Cap on inclusion of allowances in Tier 2 under standardised approach	224	200	194	203	189	177	167	167
78	Allowance eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (IRB) (prior to application of cap)	206	200	199	216	208	237	263	265
79	Cap on inclusion of allowances in Tier 2 under internal ratings-based approach	469	452	440	436	433	431	415	407
	Capital instruments subject to phase-out arrangements (only applicable between January 1, 2013 and January 1, 2022)								
80	Current cap on CET1 instruments subject to phase out arrangements					–	–	–	–
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)					–	–	–	–
82	Current cap on AT1 instruments subject to phase out arrangements					194	194	194	194
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)					–	–	–	–
84	Current cap on T2 instruments subject to phase out arrangements					238	238	238	238
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)					–	–	–	–

(1) Does not include the domestic stability buffer.

CC2 – Reconciliation of Regulatory Capital to Balance Sheet[1]

(millions of Canadian dollars)

	Q4 2022		
	Cross - Reference to Definition of Capital[2]	As in Report to Shareholders	Under scope of regulatory consolidation
Assets			
Cash and deposits with financial institutions		31,870	31,870
Securities		109,719	123,209
Non-significant investments in capital of other financial institutions reflected in regulatory capital	l	–	–
Other securities		109,719	123,209
Assets purchased under reverse repurchase agreements and securities borrowed		26,486	29,699
Loans			
Residential mortgage		80,129	49,696
Personal		45,323	45,323
Credit card		2,389	2,389
Business and government		73,317	73,317
Customers' liability under acceptances		6,541	6,541
Less: Allowances for credit losses		(955)	(955)
Allowance reflected in Tier 2 regulatory capital	t	–	(413)
Shortfall of allowances to expected loss	i	–	–
Allowances not reflected in regulatory capital		–	(542)
Other assets			
Derivative financial instruments		18,547	19,345
Other		10,374	10,371
Goodwill	e	1,519	1,598
Intangibles assets	f	1,360	1,360
Deferred tax assets		**860**	**737**
Deferred tax assets excluding those arising from temporary differences	g	–	39
Deferred tax assets arising from temporary differences exceeding regulatory thresholds	o	–	–
Deferred tax assets - realize through loss carrybacks		–	337
Deferred tax assets - other temporary differences		–	361
Defined-benefit pension fund net assets	k	**–**	**457**
Significant investments in other financial institutions		**–**	**409**
Significant investments exceeding regulatory thresholds	m + n	–	–
Significant investments not exceeding regulatory thresholds		–	409
Other		**6,635**	**5,810**
Total assets		**403,740**	**390,805**

(1) The basis of consolidation used for financial accounting purposes, described in Note 1 to the audited annual consolidated financial statements for the year ended October 31, 2022, may differ from regulatory purposes. The regulatory consolidation does not include structured entities, where significant risk has been transferred to third parties nor subsidiaries and associates engaged in insurance activities. As at October 31, 2022, on a legal entity basis, National Bank Life Insurance Company had $308 million in assets and $281 million in equity, Natcan Insurance Company SCC had $9 million in assets and $8 million in equity.
(2) The references identify balance sheet components which are used in calculation of regulatory capital on pages 9 to 11.

CC2 – Reconciliation of Regulatory Capital to Balance Sheet[1] (continued)

(millions of Canadian dollars)

	Q4 2022		
	Cross - Reference to Definition of Capital[2]	As in Report to Shareholders	Under scope of regulatory consolidation
Liabilities			
Deposits		266,394	266,394
Derivatives financials instruments		19,632	20,509
Other liabilities		94,469	80,657
Gains and losses due to changes in own credit risk on fair value liabilities	j	–	694
Deferred tax liabilities		**485**	**485**
Related to goodwill	w	–	–
Related to intangibles	x	–	227
Related to pensions	y	–	121
Other deferred tax liabilities		–	137
Other		93,984	79,478
Subordinated debt		**1,499**	**1,499**
Regulatory capital amortization of maturing debentures		–	–
Fair value adjustment and unamortized issuance cost		–	(1)
Subordinated debentures not allowed for regulatory capital	s	–	–
Subordinated debentures used for regulatory capital		**–**	**1,500**
Allowed for inclusion in Tier 2 capital	r	–	1,500
Subject to phase out	r'	–	–
Total liabilities		**381,994**	**369,059**
Equity Attributable to Shareholders and holders of other equity instruments		**21,744**	**21,744**
Common shares	a	3,196	3,196
Contributed surplus	a'	56	56
Retained earnings	b	15,140	15,140
Accumulated Other Comprehensive Income (loss)	c	202	202
Net gains (losses) on instruments designated as cash flow hedges	h	31	31
Net foreign currency translation adjustments		204	204
Other		(33)	(33)
Preferred shares and other equity instruments		**3,150**	**3,150**
of which: are qualifying	v	–	3,150
of which: are subject to phase out	v'	–	–
Non-controlling interest		**2**	**2**
Innovative instruments		**–**	**–**
of which: are qualifying		–	–
of which: are subject to phase out	p'	–	–
Other		–	–
Portion allowed for inclusion into CET1	d	**–**	**–**
Portion allowed for inclusion into Tier 1 capital	q	**–**	**–**
Portion allowed for inclusion into Tier 2 capital	s	**–**	**–**
Portion not allowed for regulatory capital		**–**	**2**
Total Equity		**21,746**	**21,746**
Total Liabilities and Equity		**403,740**	**390,805**

(1) The basis of consolidation used for financial accounting purposes, described in Note 1 to the audited annual consolidated financial statements for the year ended October 31, 2022, may differ from regulatory purposes. The regulatory consolidation does not include structured entities, where significant risk has been transferred to third parties nor subsidiaries and associates engaged in insurance activities. As at October 31, 2022, on a legal entity basis, National Bank Life Insurance Company had $308 million in assets and $281 million in equity, Natcan Insurance Company SCC had $9 million in assets and $8 million in equity.

(2) The references identify balance sheet components which are used in calculation of regulatory capital on pages 9 to 11.

TLAC1 – TLAC Composition[1]

(millions of Canadian dollars)

		2022				2021			
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
	Regulatory capital elements of TLAC and adjustments								
1	Common Equity Tier 1 capital (CET1)	14,818	14,270	13,833	13,515	12,973	12,574	11,997	11,563
2	Additional Tier 1 capital (AT1) before TLAC adjustments	3,143	2,648	2,648	2,649	2,649	2,647	3,045	2,949
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties[2]	–	–	–	–	–	–	–	–
4	Other adjustments	–	–	–	–	–	–	–	–
5	AT1 instruments eligible under the TLAC framework	3,143	2,648	2,648	2,649	2,649	2,647	3,045	2,949
6	Tier 2 capital (T2) before TLAC adjustments	1,766	1,816	918	959	1,021	1,082	1,111	1,077
7	Amortised portion of T2 instruments where remaining maturity > 1 year	–	–	–	–	–	–	–	–
8	T2 capital ineligible as TLAC as issued out of subsidiaries to third parties[2]	–	–	–	–	–	–	–	–
9	Other adjustments	–	–	–	–	–	–	–	–
10	T2 instruments eligible under the TLAC framework	1,766	1,816	918	959	1,021	1,082	1,111	1,077
11	**TLAC arising from regulatory capital**	19,727	18,734	17,399	17,123	16,643	16,303	16,153	15,589
	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	12,689	12,916	12,576	12,400	10,869	10,480	9,442	9,033
14	Of which: amount eligible as TLAC after application of the caps	–	–	–	–	–	–	–	–
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**	12,689	12,916	12,576	12,400	10,869	10,480	9,442	9,033
	Non-regulatory capital elements of TLAC: adjustments								
18	TLAC before deductions	32,416	31,650	29,975	29,523	27,512	26,783	25,595	24,622
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	(65)	(101)	(88)	(61)	(20)	(35)	(19)	(20)
21	Other adjustments to TLAC	–	–	–	–	–	–	–	–
22	**TLAC available after deductions**	32,351	31,549	29,887	29,462	27,492	26,748	25,576	24,602
	Risk-weighted assets and leverage exposure measure for TLAC purposes								
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	116,840	111,377	107,478	106,168	104,358	103,139	98,705	97,183
24	Leverage exposure measure	401,780	383,360	371,977	367,775	351,160	344,930	339,738	334,013
	TLAC ratios and buffers								
25	TLAC ratio (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	27.7%	28.3%	27.8%	27.8%	26.3%	25.9%	25.9%	25.3%
26	TLAC Leverage ratio (as a percentage of leverage exposure)	8.1%	8.2%	8.0%	8.0%	7.8%	7.8%	7.5%	7.4%
27	CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	7.7%	7.9%	7.2%	7.1%	n.a.	n.a.	n.a.	n.a.
28	Institution-specific buffer requirement (capital conservation buffer plus countercyclical buffer plus higher loss absorbency, expressed as a percentage of risk-weighted assets)	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
29	Of which: capital conservation buffer	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
30	Of which: bank specific countercyclical buffer	–	–	–	–	–	–	–	–
31	Of which: D-SIB \ G-SIB buffer	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

(1) Minimum TLAC ratios is required since November 1, 2021.

(2) Additional Tier 1 capital and Tier 2 capital issued out of subsidiaries to third parties were eligible as TLAC up to January 1, 2022.

TLAC3 – Creditor Ranking at Legal Entity Level[1]

(millions of Canadian dollars)

		Q4 2022						Q3 2022					
		Creditor ranking					Sum (1 to 5)	Creditor ranking					Sum (1 to 5)
		1			4[2]	5[3]		1			4[2]	5[3]	
		Most junior	2	3	Most senior			Most junior	2	3	Most senior		
1	**Description of creditor ranking**	Common shares	Preferred shares and other equity instruments	Subordinated debt	Bail-in debt	Other liabilities excluding Bail-in debt		Common shares	Preferred shares and other equity instruments	Subordinated debt	Bail-in debt	Other liabilities excluding Bail-in debt	
2	Total capital and liabilities net of credit risk mitigation	3,196	3,150	1,500	14,304	–	22,150	3,189	2,650	1,500	15,395	–	22,734
3	Subset of row 2 that are excluded liabilities	–	–	–	1,680	–	1,680	–	–	–	2,580	–	2,580
4	**Total capital and liabilities less excluded liabilities (row 2 minus row 3)**	**3,196**	**3,150**	**1,500**	**12,624**	**–**	**20,470**	**3,189**	**2,650**	**1,500**	**12,815**	**–**	**20,154**
5	Subset of row 4 that are potentially eligible as TLAC	3,196	3,150	1,500	12,624	–	20,470	3,189	2,650	1,500	12,815	–	20,154
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	–	–	–	3,760	–	3,760	–	–	–	3,241	–	3,241
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	–	–	–	6,420	–	6,420	–	–	–	7,113	–	7,113
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	–	–	1,500	171	–	1,671	–	–	1,500	319	–	1,819
9	Subset of row 5 residual maturity ≥ 10 years, but excluding perpetual securities	–	–	–	2,273	–	2,273	–	–	–	2,142	–	2,142
10	Subset of row 5 that is perpetual securities	3,196	3,150	–	–	–	6,346	3,189	2,650	–	–	–	5,839

		Q2 2022						Q1 2022					
		Creditor ranking					Sum (1 to 5)	Creditor ranking					Sum (1 to 5)
		1			4[2]	5[3]		1			4[2]	5[3]	
		Most junior	2	3	Most senior			Most junior	2	3	Most senior		
1	**Description of creditor ranking**	Common shares	Preferred shares and other equity instruments	Subordinated debt	Bail-in debt	Other liabilities excluding Bail-in debt		Common shares	Preferred shares and other equity instruments	Subordinated debt	Bail-in debt	Other liabilities excluding Bail-in debt	
2	Total capital and liabilities net of credit risk mitigation	3,196	2,650	750	14,998	–	21,594	3,208	2,650	750	13,354	–	19,962
3	Subset of row 2 that are excluded liabilities	–	–	–	2,510	–	2,510	–	–	–	1,015	–	1,015
4	**Total capital and liabilities less excluded liabilities (row 2 minus row 3)**	**3,196**	**2,650**	**750**	**12,488**	**–**	**19,084**	**3,208**	**2,650**	**750**	**12,339**	**–**	**18,947**
5	Subset of row 4 that are potentially eligible as TLAC	3,196	2,650	750	12,488	–	19,084	3,208	2,650	750	12,339	–	18,947
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	–	–	–	2,867	–	2,867	–	–	–	2,650	–	2,650
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	–	–	–	7,150	–	7,150	–	–	–	7,367	–	7,367
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	–	–	750	321	–	1,071	–	–	750	319	–	1,069
9	Subset of row 5 residual maturity ≥ 10 years, but excluding perpetual securities	–	–	–	2,150	–	2,150	–	–	–	2,003	–	2,003
10	Subset of row 5 that is perpetual securities	3,196	2,650	–	–	–	5,846	3,208	2,650	–	–	–	5,858

(1) This table provides creditors of the legal entity National Bank of Canada with information regarding their ranking in its liabilities structure.
(2) Bail-in Debt is reflected as subordinated to Other Liabilities. Under the Bail-in Regime, Bail-in Debt which would ordinarily rank equally to Other Liabilities in liquidation, is subject to conversion under statutory resolution powers whereas Other Liabilities are not subject to such conversion.
(3) OSFI doesn't require to complete this column at this time.

LR1 – Summary Comparison of Accounting Assets vs Leverage Ratio Exposure Measure

(millions of Canadian dollars)

		2022				2021			
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
	Accounting assets vs. leverage ratio exposure								
1	Total consolidated assets as per published financial statements	403,740	387,051	369,785	366,888	355,795	354,040	350,742	343,637
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	5	35	33	9	(2)	22	20	14
3	Adjustment for securitized exposures that meet the operational requirements for the recognition of risk transference[1]	(78)	(78)	(78)	(78)	(114)	(65)	(65)	(65)
4	Adjustment for fiduciary assets recognised on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure	–	–	–	–	–	–	–	–
5	Adjustment for derivative financial instruments[2]	(4,693)	(402)	(1,559)	3,217	2,252	3,420	5	3,859
6	Adjustment for securities financing transactions (i.e. repos and similar secured lending)[2]	3,003	4,296	3,969	6,416	3,936	4,752	5,157	3,754
7	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	32,871	31,328	30,463	30,971	30,477	30,357	29,568	27,716
8	Other adjustments	(33,068)	(38,870)	(30,636)	(39,648)	(41,184)	(47,596)	(45,689)	(44,902)
9	**Leverage Ratio Exposure**	**401,780**	**383,360**	**371,977**	**367,775**	**351,160**	**344,930**	**339,738**	**334,013**

(1) OSFI's October 2018 Leverage Requirements Guideline now allows for the exclusion of securitized exposures that meet the operational requirements for risk transference.

(2) Adjustments due to differences between accounting and regulatory netting standards.

LR2 – Leverage Ratio Common Disclosure Template

(millions of Canadian dollars)

		2022				2021			
		Q4	Q3	Q2	Q1	Q4	Q3	Q2	Q1
	Leverage ratio common disclosure								
	On-balance sheet exposures								
1	On-balance sheet items (excluding derivatives, SFTs and grandfathered securitization exposures but including collateral)	333,863	324,351	312,588	303,578	298,494	289,192	285,293	281,196
2	Gross-up for derivatives collateral provided where deducted from balance sheet assets pursuant to the operative accounting framework	–	–	–	–	–	–	–	–
3	(Deductions of receivables assets for cash variation margin provided in derivative transactions)	(5,151)	(3,400)	(4,390)	(3,422)	(4,620)	(3,696)	(3,946)	(3,088)
4	(Asset amounts deducted in determining Basel III Tier 1 capital)	(3,145)	(3,594)	(3,609)	(3,497)	(3,379)	(3,143)	(2,978)	(2,721)
5	**Total on-balance sheet exposures** (excluding derivatives and SFTs) (sum of rows 1 to 4)	**325,567**	**317,357**	**304,589**	**296,659**	**290,495**	**282,353**	**278,369**	**275,387**
	Derivative exposures								
6	Replacement cost associated with all derivative transactions (where applicable net of eligible cash variation margin and/or with bilateral netting)	3,661	3,521	9,375	5,867	6,437	5,898	3,998	4,811
7	Add-on amounts for PFE associated with all derivative transactions	10,148	9,637	11,790	12,666	12,282	12,767	11,278	11,913
8	(Exempted CCP leg of client-cleared trade exposures)	–	–	–	–	–	–	–	–
9	Adjusted effective notional amount of written credit derivatives	44	398	50	18	17	12	12	13
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	–	–	–	–	–	–	–	–
11	**Total derivative exposures (sum of rows 6 to 10)**	**13,853**	**13,556**	**21,215**	**18,551**	**18,736**	**18,677**	**15,288**	**16,737**
	Securities financing transaction exposures								
12	Gross SFT assets (with no recognition of netting), after adjusting for sale accounting transactions	26,486	16,823	11,741	15,178	7,516	8,791	11,356	10,419
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(2,666)	(2,320)	(1,423)	(1,918)	(1,945)	(600)	(752)	(1,272)
14	CCR exposure for SFTs assets	5,669	6,616	5,392	8,334	5,881	5,352	5,909	5,026
15	Agent transaction exposures	–	–	–	–	–	–	–	–
16	**Total securities financing transaction exposures (sum of rows 12 to 15)**	**29,489**	**21,119**	**15,710**	**21,594**	**11,452**	**13,543**	**16,513**	**14,173**
	Other off-balance sheet exposures								
17	Off-balance sheet exposure at gross notional amount	100,113	97,530	95,471	95,272	93,926	92,825	90,948	87,397
18	(Adjustments for conversion to credit equivalent amounts)	(67,242)	(66,202)	(65,008)	(64,301)	(63,449)	(62,468)	(61,380)	(59,681)
19	**Off-balance sheet items (sum of rows 17 and 18)**	**32,871**	**31,328**	**30,463**	**30,971**	**30,477**	**30,357**	**29,568**	**27,716**
	Capital and Total Exposures								
20	**Tier 1 capital**	**17,961**	**16,918**	**16,481**	**16,164**	**15,622**	**15,221**	**15,042**	**14,512**
20a	**Tier 1 Capital with transitional arrangements for ECL provisioning not applied**	**17,906**	**16,869**	**16,438**	**16,116**	**15,514**	**15,092**	**14,898**	**14,341**
21	**Total Exposures (sum of rows 5, 11, 16 and 19)**	**401,780**	**383,360**	**371,977**	**367,775**	**351,160**	**344,930**	**339,738**	**334,013**
	Leverage Ratio								
22	**Basel III leverage ratio**	**4.5%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	**4.3%**
22a	**Basel III leverage ratio with transitional arrangements for ECL provisioning not applied**	**4.5%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	**4.4%**	**4.3%**

CR1 – Credit Quality of Assets(1)

(millions of Canadian dollars)

The following tables provide a comprehensive picture of the credit quality of a bank's (on- and off-balance sheet) assets.

		Q4 2022							Q3 2022						
		a	b	c	d	e	f	g	a	b	c	d	e	f	g
		Gross carrying values(2) of			Of which ECL accounting provisions for credit losses on SA exposures		Of which ECL accounting		Gross carrying values(2) of			Of which ECL accounting provisions for credit losses on SA exposures		Of which ECL accounting	
		Default exposures(3)	Non-default exposures	Allowances for credit losses(4)	Allocated in regulatory category of Specific	Allocated in regulatory category of General	provisions for credit losses on IRB exposures	Net values (a+b-c)	Default exposures(3)	Non-default exposures	Allowances for credit losses(4)	Allocated in regulatory category of Specific	Allocated in regulatory category of General	provisions for credit losses on IRB exposures	Net values (a+b-c)
1	Loans(5)	804	206,765	960	62	40	858	206,609	608	208,549	957	46	51	860	208,200
2	Debt Securities	–	30,981	9	–	2	7	30,972	–	30,961	6	–	2	4	30,955
3	Off-balance-sheet commitments(6)	29	96,701	162	–	7	155	96,568	8	94,567	130	–	6	124	94,445
4	**Total**	**833**	**334,447**	**1,131**	**62**	**49**	**1,020**	**334,149**	**616**	**334,077**	**1,093**	**46**	**59**	**988**	**333,600**

		Q2 2022							Q1 2022						
		a	b	c	d	e	f	g	a	b	c	d	e	f	g
		Gross carrying values(2) of			Of which ECL accounting provisions for credit losses on SA exposures		Of which ECL accounting		Gross carrying values(2) of			Of which ECL accounting provisions for credit losses on SA exposures		Of which ECL accounting	
		Default exposures(3)	Non-default exposures	Allowances for credit losses(4)	Allocated in regulatory category of Specific	Allocated in regulatory category of General	provisions for credit losses on IRB exposures	Net values (a+b-c)	Default exposures(3)	Non-default exposures	Allowances for credit losses(4)	Allocated in regulatory category of Specific	Allocated in regulatory category of General	provisions for credit losses on IRB exposures	Net values (a+b-c)
1	Loans(5)	603	195,192	920	39	39	842	194,875	596	197,853	935	30	22	883	197,514
2	Debt Securities	–	31,122	7	–	2	5	31,115	–	27,061	6	–	2	4	27,055
3	Off-balance-sheet commitments(6)	13	92,538	131	–	5	126	92,420	12	92,247	145	–	6	139	92,114
4	**Total**	**616**	**318,852**	**1,058**	**39**	**46**	**973**	**318,410**	**608**	**317,161**	**1,086**	**30**	**30**	**1,026**	**316,683**

(1) Excluding insurances subsidiaries and securitization exposures.
(2) Gross carrying values of on- and off-balance sheet items that give rise to a credit risk exposure according to the Basel framework (gross of CCF or CRM techniques).
(3) Definition of default as per the Capital Adequacy Requirements (CAR) guideline.
(4) Represent allowances for credit losses according to IFRS 9.
(5) Including deposits with financial institutions.
(6) For completeness purposes, revocable commitments are included.

CR2 – Changes in Stock of Defaulted Loans and Debt Securities

(millions of Canadian dollars)

The following table identifies the change in a bank's stock of defaulted exposures, the flows between non-defaulted and defaulted exposure categories and reductions in the stock of defaulted exposures due to write-offs.

		Q4 2022	Q3 2022	Q2 2022	Q1 2022	Q4 2021
		a	a	a	a	a
1	Defaulted loans[1] and debt securities at beginning	608	603	596	653	684
2	Loans and debt securities that have defaulted since the last reporting period	318	172	136	132	106
3	Returned to non-defaulted status since the last reporting period	(29)	(31)	(21)	(23)	(19)
4	Amounts written off	(67)	(30)	(42)	(94)	(38)
5	Other changes[2]	(26)	(106)	(66)	(72)	(80)
6	**Defaulted loans[1] and debt securities at end**	**804**	**608**	**603**	**596**	**653**

(1) Including deposits with financial institutions.
(2) Including net repayments and foreign exchange movements.

CR3 – Credit Risk Mitigation Techniques - Overview

(millions of Canadian dollars)

The following tables disclose the extent of use of credit risk mitigation techniques.

		Q4 2022					Q3 2022				
		a	b1	b	d	f	a	b1	b	d	f
		Exposures unsecured: carrying amount(1)	Exposures subject to risk mitigation techniques(1)	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives	Exposures unsecured: carrying amount(1)	Exposures subject to risk mitigation techniques(1)	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1	Loans(2)	124,973	82,533	74,648	7,677	–	127,253	81,860	74,243	7,398	–
2	Debt securities	30,981	–	–	–	–	30,961	–	–	–	–
3	**Total**	**155,954**	**82,533**	**74,648**	**7,677**	**–**	**158,214**	**81,860**	**74,243**	**7,398**	**–**
4	Of which defaulted	620	112	83	27	–	472	96	69	25	–

		Q2 2022					Q1 2022				
			b1	b	d	f	a	b1	b	d	f
		Exposures unsecured: carrying amount(1)	Exposures subject to risk mitigation techniques(1)	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives	Exposures unsecured: carrying amount(1)	Exposures subject to risk mitigation techniques(1)	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1	Loans(2)	116,196	79,562	72,134	7,082	–	121,524	76,895	69,858	6,801	–
2	Debt securities	31,122	–	–	–	–	27,061	–	–	–	–
3	**Total**	**147,318**	**79,562**	**72,134**	**7,082**	**–**	**148,585**	**76,895**	**69,858**	**6,801**	**–**
4	Of which defaulted	436	125	93	30	–	425	152	102	46	–

(1) Carrying amounts of on-balance sheet exposures are net of all three ECL Stages.
(2) Including deposits with financial institutions.

Distribution of Gross Credit Risk Exposure (Non-Retail Portfolio by Industries)

(millions of Canadian dollars)

	2022																	
	Q4						Q3						Q2					
	EAD - Gross Exposure[1]																	
	Drawn	Undrawn commitments	Other	Repo-style transactions	Derivatives financial instruments	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	Derivatives financial instruments	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	Derivatives financial instruments	Total
Non-Retail Portfolio																		
Agriculture	7,330	614	6	–	–	7,950	7,210	572	6	–	–	7,788	6,981	591	5	–	–	7,577
Oil & Gas[2]	1,440	2,116	75	–	–	3,631	1,186	2,286	62	–	–	3,534	1,473	2,196	89	–	–	3,758
Mining	960	2,028	221	–	322	3,531	916	1,391	210	–	263	2,780	591	1,584	211	–	249	2,635
Utilities[2]	10,051	6,111	2,089	–	–	18,251	9,392	6,568	1,821	–	1	17,782	8,800	6,083	1,786	–	–	16,669
Utilities excluding Pipelines	*7,568*	*4,017*	*1,889*	–	–	*13,474*	*7,079*	*3,671*	*1,613*	–	*1*	*12,364*	*6,654*	*3,562*	*1,610*	–	–	*11,826*
Pipelines	*2,483*	*2,094*	*200*	–	–	*4,777*	*2,313*	*2,897*	*208*	–	–	*5,418*	*2,146*	*2,521*	*176*	–	–	*4,843*
Construction Non-Real Estate[3]	2,154	1,200	125	–	–	3,479	2,113	991	122	–	–	3,226	2,051	927	112	–	–	3,090
Manufacturing[2]	7,013	2,453	372	–	–	9,838	6,807	2,384	348	–	–	9,539	6,042	2,383	310	–	–	8,735
Wholesale	3,061	1,181	57	–	–	4,299	3,008	1,038	54	–	–	4,100	2,905	921	56	–	–	3,882
Retail	3,327	1,293	50	–	–	4,670	3,212	1,270	57	–	–	4,539	3,230	1,408	56	–	–	4,694
Transportation	2,214	1,391	100	44	2	3,751	2,294	1,321	91	46	1	3,753	2,187	1,143	98	60	1	3,489
Communications	1,802	1,478	245	–	–	3,525	1,701	1,509	241	–	–	3,451	1,634	1,438	313	–	–	3,385
Financial Services[2]	38,882	5,256	979	142,474	764	188,355	44,564	4,989	1,693	145,717	1,484	198,447	42,921	4,866	1,582	135,635	4,856	189,860
Real Estate and Construction Real Estate[4]	19,009	5,021	361	–	–	24,391	19,007	4,905	325	–	–	24,237	18,169	4,332	365	–	–	22,866
Professional Services	2,131	1,021	272	–	–	3,424	1,986	1,029	261	–	–	3,276	1,895	1,045	283	–	–	3,223
Education & Health Care	3,090	1,128	13	3	–	4,234	3,222	980	17	6	–	4,225	3,327	1,321	10	7	–	4,665
Other Services	6,146	2,187	527	34	28	8,922	6,514	2,185	481	49	27	9,256	6,070	2,275	501	47	27	8,920
Government	23,476	1,312	3	39,353	356	64,500	29,551	1,337	3	38,646	302	69,839	24,802	1,402	3	38,466	333	65,006
Other[2]	13,130	8	1,123	48	–	14,309	5,805	15	334	1,494	4	7,652	5,830	19	275	1,369	4	7,497
Total – Non-retail[5]	**145,216**	**35,798**	**6,618**	**181,956**	**1,472**	**371,060**	**148,488**	**34,770**	**6,126**	**185,958**	**2,082**	**377,424**	**138,908**	**33,934**	**6,055**	**175,584**	**5,470**	**359,951**

(1) EAD amounts are after securitization and excluding trading related portfolio.
(2) The presentation was changed in Q3 2022 to better align with borrower categories definition. Comparative figures have been revised.
(3) Including civil engineering loans, public-private partnership loans, and project finance loans.
(4) Including residential mortgages on dwellings of five or more units.
(5) Excluding SME retail exposure.

Distribution of Gross Credit Risk Exposure (Non-Retail Portfolio by Industries) (continued)

(millions of Canadian dollars)

	2022						2021											
	Q1						Q4						Q3					
	EAD - Gross Exposure[1]																	
	Drawn	Undrawn commitments	Other	Repo-style transactions	Derivatives financial instruments	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	Derivatives financial instruments	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	Derivatives financial instruments	Total
Non-Retail Portfolio																		
Agriculture	6,789	546	5	–	–	7,340	6,584	540	5	–	–	7,129	6,399	515	7	–	–	6,921
Oil & Gas[2]	1,792	1,973	83	–	–	3,848	1,849	1,660	79	–	–	3,588	1,958	1,923	55	–	–	3,936
Mining	394	1,507	192	–	191	2,284	473	1,477	197	–	160	2,307	473	1,326	198	–	141	2,138
Utilities[2]	8,366	5,658	1,513	–	–	15,537	8,255	5,093	1,383	–	–	14,731	7,441	5,010	1,391	–	–	13,842
Utilities excluding Pipelines	*6,211*	*4,144*	*1,361*	–	–	*11,716*	*5,952*	*3,742*	*1,206*	–	–	*10,900*	*5,438*	*3,482*	*1,222*	–	–	*10,142*
Pipelines	*2,155*	*1,514*	*152*	–	–	*3,821*	*2,303*	*1,351*	*177*	–	–	*3,831*	*2,003*	*1,528*	*169*	–	–	*3,700*
Construction Non-Real Estate[3]	1,830	928	113	–	–	2,871	1,775	1,034	113	–	–	2,922	1,654	1,165	104	–	–	2,923
Manufacturing[2]	5,685	2,774	259	–	–	8,718	5,466	2,731	335	–	–	8,532	5,408	2,584	324	–	–	8,316
Wholesale	2,498	1,125	56	–	–	3,679	2,506	1,031	56	–	–	3,593	2,847	1,061	51	–	–	3,959
Retail	2,949	1,389	50	–	–	4,388	2,833	1,433	42	–	–	4,308	2,940	1,485	41	–	–	4,466
Transportation	2,030	1,264	92	48	–	3,434	1,848	1,298	82	48	1	3,277	1,871	1,239	80	48	1	3,239
Communications	1,594	2,067	321	–	–	3,982	1,369	2,212	934	–	–	4,515	1,262	2,074	937	–	–	4,273
Financial Services[2]	41,946	4,790	1,535	131,738	2,902	182,911	36,180	4,929	1,594	121,821	2,251	166,775	39,862	4,562	1,643	123,044	2,233	171,344
Real Estate and Construction Real Estate[4]	17,720	4,317	305	–	–	22,342	16,924	4,347	292	–	–	21,563	17,274	4,561	283	–	–	22,118
Professional Services	1,729	1,055	296	–	–	3,080	1,599	1,134	300	–	–	3,033	1,561	1,096	291	–	–	2,948
Education & Health Care	3,866	1,731	11	9	–	5,617	3,871	1,728	11	3	–	5,613	3,903	1,605	12	6	–	5,526
Other Services	5,971	2,121	919	51	27	9,089	5,991	2,053	407	1	–	8,452	6,255	1,896	446	28	–	8,625
Government	30,026	1,348	5	38,336	294	70,009	30,461	1,373	5	33,339	291	65,469	31,051	1,416	5	30,954	238	63,664
Other[2]	5,617	89	276	739	13	6,734	5,156	53	282	1,552	–	7,043	5,006	174	431	1,881	–	7,492
Total – Non-retail[5]	**140,802**	**34,682**	**6,031**	**170,921**	**3,427**	**355,863**	**133,140**	**34,126**	**6,117**	**156,764**	**2,703**	**332,850**	**137,165**	**33,692**	**6,299**	**155,961**	**2,613**	**335,730**

(1) EAD amounts are after securitization and excluding trading related portfolio.
(2) The presentation was changed in Q3 2022 to better align with borrower categories definition. Comparative figures have been revised.
(3) Including civil engineering loans, public-private partnership loans, and project finance loans.
(4) Including residential mortgages on dwellings of five or more units.
(5) Excluding SME retail exposure.

Net International Non-Retail Credit Risk Exposure at Default[1]

(millions of Canadian dollars)

	2022												2021
	Q4									Q3	Q2	Q1	Q4
	Asset Type					Client Type							
	Drawn	Undrawn commitments	Repo-style transactions[2]	Derivatives financial instruments	Other off-balance sheet items[3]	Corporate	Sovereign	Financial Institutions	Total	Total	Total	Total	Total
Europe[4]	694	248	535	177	158	764	258	790	**1,812**	**1,726**	**1,802**	**2,174**	**3,269**
United Kingdom	1,103	104	511	1,461	5	268	45	2,871	**3,184**	**3,509**	**3,860**	**4,104**	**4,251**
Latin America	164	75	186	36	–	67	173	221	**461**	**311**	**270**	**294**	**263**
Asia	2,394	493	4,447	106	18	1,351	5,808	299	**7,458**	**8,080**	**7,923**	**10,112**	**8,414**
Other	115	3	110	26	3	185	6	66	**257**	**391**	**456**	**387**	**363**
Total[5]	**4,470**	**923**	**5,789**	**1,806**	**184**	**2,635**	**6,290**	**4,247**	**13,172**	**14,017**	**14,311**	**17,071**	**16,560**

(1) Exposure at default is the expected net exposure upon the default of an obligor. This amount is before any specific allowance or partial write-offs. For repo-style transactions and derivatives, the exposure presented is calculated as per the permitted regulatory approaches. These tables exclude equity exposures.

(2) Securities purchased under reverse repurchase agreements and sold under repurchase agreements as well as securities loaned and borrowed.

(3) Letters of guarantee, documentary letters of credit that represent the Bank's commitment to make payments in the event that a client cannot meet its financial obligations to third parties.

(4) Excluding United Kingdom.

(5) For drawn, undrawn commitments and other off-balance sheet items exposures, eligible financial collateral is taken into account in the Bank's Loss Given Default (LGD) models.

CR4 – Standardised Approach - Credit Risk Exposure and Credit Risk Mitigation (CRM) Effects[1]

(millions of Canadian dollars)

The following tables illustrate the effect of CRM on standardised approach capital requirements' calculations. RWA density provides a synthetic metric on riskiness of each portfolio.

		Q4 2022						Q3 2022					
		a	b	c	d	e	f	a	b	c	d	e	f
		Exposures before CCF and CRM		Exposures post-CCF and CRM				Exposures before CCF and CRM		Exposures post-CCF and CRM			
	Assets classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density	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	2,558	796	2,558	–	1,425	56%	2,309	800	2,309	–	1,212	52%
2	Non-central government public sector entities	–	–	–	–	–	0%	–	–	–	–	–	0%
3	Multilateral development banks	375	–	375	–	–	0%	360	–	360	–	–	0%
4	Financial institutions	916	4,825	916	292	682	56%	1,018	4,826	1,018	292	694	53%
5	Securities firms	–	–	–	–	–	0%	–	–	–	–	–	0%
6	Corporates	9,200	870	9,200	230	5,441	58%	8,588	1,007	8,588	258	4,900	55%
7	Regulatory retail portfolios	4,868	275	4,868	116	3,373	68%	4,595	255	4,595	99	3,142	67%
8	Secured by residential property	9,254	138	9,254	56	3,483	37%	8,149	136	8,149	55	2,868	35%
9	Secured by commercial real estate	497	–	497	–	497	100%	356	–	356	–	356	100%
10	Equity	–	–	–	–	–	0%	–	–	–	–	–	0%
11	Past-due loans	191	–	191	–	182	95%	134	–	134	–	162	121%
12	Higher-risk categories	–	–	–	–	–	0%	–	–	–	–	–	0%
13	Other assets[2]	5,481	–	5,481	–	3,915	71%	5,008	–	5,008	–	3,614	72%
14	**Total**	**33,340**	**6,904**	**33,340**	**694**	**18,998**	**56%**	**30,517**	**7,024**	**30,517**	**704**	**16,948**	**54%**

		Q2 2022						Q1 2022					
		a	b	c	d	e	f	a	b	c	d	e	f
		Exposures before CCF and CRM		Exposures post-CCF and CRM				Exposures before CCF and CRM		Exposures post-CCF and CRM			
	Assets classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density	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	2,320	828	2,320	–	1,216	52%	2,408	817	2,408	–	1,322	55%
2	Non-central government public sector entities	–	–	–	–	–	0%	–	–	–	–	–	0%
3	Multilateral development banks	342	–	342	–	–	0%	366	–	366	–	–	0%
4	Financial institutions	1,081	4,771	1,081	244	820	62%	1,078	4,769	1,078	243	788	60%
5	Securities firms	–	–	–	–	–	0%	–	–	–	–	–	0%
6	Corporates	8,540	733	8,540	213	4,776	55%	8,577	639	8,577	141	4,967	57%
7	Regulatory retail portfolios	4,403	273	4,403	101	2,974	66%	5,677	272	5,677	91	3,667	64%
8	Secured by residential property	7,779	181	7,779	56	2,705	35%	7,164	165	7,164	52	2,631	36%
9	Secured by commercial real estate	311	–	311	–	311	100%	231	–	231	–	231	100%
10	Equity	–	–	–	–	–	0%	–	–	–	–	–	0%
11	Past-due loans	95	–	95	–	87	92%	66	–	66	–	54	82%
12	Higher-risk categories	–	–	–	–	–	0%	42	–	42	–	63	150%
13	Other assets[2]	4,884	–	4,884	–	3,464	71%	4,974	–	4,974	–	3,561	72%
14	**Total**	**29,755**	**6,786**	**29,755**	**614**	**16,353**	**54%**	**30,583**	**6,662**	**30,583**	**527**	**17,284**	**56%**

(1) Excluding items subject to securitization and counterparty credit risk frameworks.

(2) For completeness purposes, row 13 "Other assets" is populated with all other assets except exposures that are subject to direct capital deductions, those that are treated in the off-balance sheet calculations and exposures below the threshold for deduction.

CR5 – Standardised Approach - Exposures by Asset Classes and Risk Weights[1]

(millions of Canadian dollars)

The following tables present the breakdown of credit risk exposures under the standardised approach by asset class and risk weight (corresponding to the riskiness attributed to the exposure according to standardised approach).

		Q4 2022										Q3 2022									
		a	b	c	d	e	f	g	h	i	j	a	b	c	d	e	f	g	h	i	j
	Asset classes / Risk weight	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount[2]	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount[2]
1	Sovereigns and their central banks	1,133	–	–	–	–	–	1,425	–	–	2,558	1,097	–	–	–	–	–	1,212	–	–	2,309
2	Non-central government public sector entities	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3	Multilateral development banks	375	–	–	–	–	–	–	–	–	375	360	–	–	–	–	–	–	–	–	360
4	Financial institutions	158	–	451	–	14	–	585	–	–	1,208	155	–	567	–	15	–	573	–	–	1,310
5	Securities firms	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6	Corporates	3,990	–	–	–	–	–	5,440	–	–	9,430	3,944	–	–	–	–	–	4,902	–	–	8,846
7	Regulatory retail portfolios	487	–	–	–	–	4,497	–	–	–	4,984	506	–	–	–	–	4,188	–	–	–	4,694
8	Secured by residential property	1,222	–	–	6,440	38	1,600	10	–	–	9,310	1,086	–	–	6,166	33	901	18	–	–	8,204
9	Secured by commercial real estate	–	–	–	–	–	–	497	–	–	497	–	–	–	–	–	–	356	–	–	356
10	Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11	Past-due loans	11	–	–	–	–	–	176	4	–	191	10	–	–	–	–	–	48	76	–	134
12	Higher-risk categories	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
13	Other assets[3]	1,243	–	404	–	–	–	3,834	–	–	5,481	1,394	–	–	–	–	–	3,614	–	–	5,008
14	**Total**	**8,619**	**–**	**855**	**6,440**	**52**	**6,097**	**11,967**	**4**	**–**	**34,034**	**8,552**	**–**	**567**	**6,166**	**48**	**5,089**	**10,723**	**76**	**–**	**31,221**

		Q2 2022										Q1 2022									
		a	b	c	d	e	f	g	h	i	j	a	b	c	d	e	f	g	h	i	j
	Asset classes / Risk weight	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount[2]	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount[2]
1	Sovereigns and their central banks	1,104	–	–	–	–	–	1,216	–	–	2,320	1,087	–	–	–	–	–	1,321	–	–	2,408
2	Non-central government public sector entities	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3	Multilateral development banks	342	–	–	–	–	–	–	–	–	342	366	–	–	–	–	–	–	–	–	366
4	Financial institutions	145	–	442	–	13	–	725	–	–	1,325	158	–	459	–	13	–	691	–	–	1,321
5	Securities firms	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6	Corporates	3,977	–	–	–	–	–	4,776	–	–	8,753	3,751	–	–	–	–	–	4,967	–	–	8,718
7	Regulatory retail portfolios	539	–	–	–	–	3,965	–	–	–	4,504	879	–	–	–	–	4,889	–	–	–	5,768
8	Secured by residential property	975	–	–	6,087	36	719	18	–	–	7,835	630	–	–	5,760	30	785	11	–	–	7,216
9	Secured by commercial real estate	–	–	–	–	–	–	311	–	–	311	–	–	–	–	–	–	231	–	–	231
10	Equity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11	Past-due loans	11	–	–	–	–	–	77	7	–	95	12	–	–	–	–	–	54	–	–	66
12	Higher-risk categories	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	42	–	42
13	Other assets[3]	1,238	–	228	–	–	–	3,418	–	–	4,884	1,199	–	268	–	–	–	3,507	–	–	4,974
14	**Total**	**8,331**	**–**	**670**	**6,087**	**49**	**4,684**	**10,541**	**7**	**–**	**30,369**	**8,082**	**–**	**727**	**5,760**	**43**	**5,674**	**10,782**	**42**	**–**	**31,110**

(1) Excluding items subject to securitization and counterparty credit risk frameworks. In the wholesale portfolio, for sovereign and banks asset classes, risk weights are based on external credit ratings issued by independent rating agencies (Moody's, Standard & Poor's, Fitch or DBRS) approved by our supervisor, OSFI.

(2) Post-CCF and Post-CRM.

(3) For completeness purposes, row 13 "Other assets" is populated with all other assets except exposures that are subject to direct capital deductions, those that are treated in the off-balance sheet calculations and exposures below the threshold for deduction.

CR6 – IRB - Credit Risk Exposures by Portfolio and PD Range

(millions of Canadian dollars)

The following tables provide the main parameters used for the calculation of capital requirements for IRB models. The purpose of disclosing these parameters is to enhance the transparency of banks' RWA calculations and the reliability of regulatory measures.

		Q4 2022											
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale[(1)]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF[(2)]	Average CCF[(3)]	EAD post CRM and post-CCF	Average PD[(4)]	Number of obligors[(5)]	Average LGD[(6)]	Average maturity[(7)]	RWA[(8)]	RWA density[(9)]	EL[(10)]	Allowances for credit losses
Residential Mortgages – insured	0.00 to < 0.15	837	–	0%	837	0.08%	49,577	9.0%		15	1.8%	–	
	0.15 to < 0.25	170	–	0%	170	0.20%	11,532	8.1%		6	3.4%	–	
	0.25 to < 0.50	242	–	0%	242	0.35%	17,594	6.0%		9	3.8%	–	
	0.50 to < 0.75	134	–	0%	134	0.62%	6,352	6.2%		8	6.0%	–	
	0.75 to < 2.50	397	–	0%	397	1.32%	7,638	4.9%		31	7.5%	1	
	2.50 to < 10.00	163	–	0%	163	4.51%	2,806	3.7%		19	11.7%	–	
	10.00 to < 100.00	32	–	0%	32	14.97%	744	2.5%		4	13.8%	–	
	100.00 (Default)	12	–	0%	12	100.00%	216	3.0%		3	24.1%	–	
	Sub-total	1,987	–	0%	1,987	1.62%	96,459	7.0%		95	4.8%	1	3
Residential Mortgages and HELOCs – uninsured	0.00 to < 0.15	40,686	19,043	36%	47,565	0.07%	239,882	20.9%		1,841	3.9%	7	
	0.15 to < 0.25	6,797	1,324	41%	7,346	0.19%	28,227	24.2%		750	10.2%	4	
	0.25 to < 0.50	7,011	1,390	63%	7,890	0.34%	26,105	23.9%		1,161	14.7%	6	
	0.50 to < 0.75	2,023	175	58%	2,124	0.61%	8,724	24.0%		486	22.9%	3	
	0.75 to < 2.50	4,194	188	64%	4,315	1.13%	15,882	23.1%		1,404	32.5%	11	
	2.50 to < 10.00	891	36	72%	918	4.67%	4,536	21.7%		649	70.7%	9	
	10.00 to < 100.00	162	1	233%	164	17.66%	956	21.2%		192	117.1%	6	
	100.00 (Default)	72	3	67%	73	100.00%	507	19.9%		129	176.2%	5	
	Sub-total	61,836	22,160	39%	70,395	0.40%	324,819	21.8%		6,612	9.4%	51	48
Qualifying revolving retail	0.00 to < 0.15	769	7,198	76%	6,218	0.08%	914,238	79.8%		254	4.1%	4	
	0.15 to < 0.25	219	635	89%	784	0.20%	209,545	85.5%		77	9.8%	1	
	0.25 to < 0.50	307	371	83%	616	0.36%	122,943	81.2%		88	14.4%	2	
	0.50 to < 0.75	221	263	88%	453	0.64%	64,663	75.1%		97	21.5%	2	
	0.75 to < 2.50	535	286	88%	786	1.42%	210,781	83.2%		348	44.0%	10	
	2.50 to < 10.00	353	92	112%	457	4.47%	208,081	85.8%		457	100.1%	17	
	10.00 to < 100.00	63	13	75%	73	19.69%	34,391	86.2%		164	226.3%	13	
	100.00 (Default)	16	–	39%	16	100.00%	3,745	73.4%		19	120.0%	11	
	Sub-total	2,483	8,858	78%	9,403	0.78%	1,768,387	80.8%		1,504	16.0%	60	211
Other retail	0.00 to < 0.15	2,093	2,567	63%	3,718	0.08%	131,187	51.7%		438	11.8%	2	
	0.15 to < 0.25	967	396	63%	1,216	0.20%	52,489	53.2%		284	23.4%	1	
	0.25 to < 0.50	1,521	365	62%	1,749	0.37%	75,329	52.8%		585	33.4%	3	
	0.50 to < 0.75	1,353	326	83%	1,623	0.64%	60,280	55.8%		789	48.6%	6	
	0.75 to < 2.50	5,278	242	69%	5,445	1.32%	194,952	39.4%		2,535	46.5%	30	
	2.50 to < 10.00	1,095	87	69%	1,155	4.03%	58,426	50.9%		892	77.2%	24	
	10.00 to < 100.00	217	13	48%	223	27.60%	9,212	48.0%		265	118.9%	30	
	100.00 (Default)	95	4	27%	96	100.00%	7,580	51.6%		50	52.1%	56	
	Sub-total	12,619	4,000	65%	15,225	1.96%	589,455	47.8%		5,838	38.3%	152	178

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.
(2) Represents the exposure value without taking into account value adjustments and provisions, conversion factors and the effect of credit risk mitigation techniques.
(3) Represents the EAD post-CCF for off-balance sheet exposure to total off-balance sheet exposure pre CCF.
(4) Represents the obligor grade PD weighted by EAD.
(5) Represents the number of retail accounts.
(6) Represents the obligor grade LGD (net of any CRM effect) weighted by EAD.
(7) Represents the obligor maturity in years weighted by EAD. This parameter needs to be filled in only when it is used for the RWA calculation.
(8) Risk weighted assets including the 1.06 scaling factor.
(9) Total risk-weighted assets to EAD post-CRM.
(10) The expected losses (EL) as calculated according to paragraphs 375 - 379 of the Basel framework.

CR6 – IRB - Credit Risk Exposures by Portfolio and PD Range (continued)

(millions of Canadian dollars)

	Q4 2022												
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale[1]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF[2]	Average CCF[3]	EAD post CRM and post-CCF	Average PD[4]	Number of obligors[5]	Average LGD[6]	Average maturity[7]	RWA[8]	RWA density[9]	EL[10]	Allowances for credit losses
Corporate	0.00 to ‹ 0.15	3,154	9,175	85%	9,545	0.09%	813	45.3%	2.46	2,469	25.9%	4	
	0.15 to ‹ 0.25	15,815	17,451	90%	28,890	0.19%	3,376	38.0%	2.43	8,895	30.8%	20	
	0.25 to ‹ 0.50	12,350	7,033	90%	17,989	0.35%	2,520	36.0%	2.53	7,024	39.0%	22	
	0.50 to ‹ 0.75	13,589	5,647	91%	17,975	0.53%	2,675	35.5%	2.34	8,247	45.9%	34	
	0.75 to ‹ 2.50	22,730	7,263	88%	27,563	1.10%	6,246	34.4%	2.11	16,380	59.4%	103	
	2.50 to ‹ 10.00	3,830	820	75%	4,586	4.03%	883	35.4%	1.62	4,209	91.8%	65	
	10.00 to ‹ 100.00	135	17	88%	148	17.00%	50	43.5%	1.07	280	189.0%	11	
	100.00 (Default)	457	38	81%	484	100.00%	182	40.7%	1.34	718	148.0%	170	
	Sub-total	72,060	47,444	89%	107,180	1.14%	16,745	36.9%	2.31	48,222	45.0%	429	563
Sovereign	0.00 to ‹ 0.15	53,312	6,794	95%	59,410	0.01%	604	9.2%	2.16	539	0.9%	1	
	0.15 to ‹ 0.25	–	–	0%	–	0%	–	0%	–	–	0%	–	
	0.25 to ‹ 0.50	8	–	0%	8	0.44%	1	25.0%	1.11	2	29.3%	–	
	0.50 to ‹ 0.75	–	–	0%	–	0%	–	0%	–	–	0%	–	
	0.75 to ‹ 2.50	–	–	0%	–	0%	–	0%	–	–	0%	–	
	2.50 to ‹ 10.00	–	55	96%	49	7.63%	2	36.5%	1.00	66	135.0%	1	
	10.00 to ‹ 100.00	–	–	0%	–	0%	–	0%	–	–	0%	–	
	100.00 (Default)	–	–	0%	–	0%	–	0%	–	–	0%	–	
	Sub-total	53,320	6,849	95%	59,467	0.02%	607	9.2%	2.16	607	1.0%	2	6
Financial institutions	0.00 to ‹ 0.15	4,193	802	46%	4,677	0.07%	67	51.0%	1.46	1,099	23.5%	2	
	0.15 to ‹ 0.25	321	18	0%	339	0.18%	25	54.2%	1.30	152	44.9%	–	
	0.25 to ‹ 0.50	15	132	85%	147	0.35%	7	21.4%	1.11	42	28.5%	–	
	0.50 to ‹ 0.75	4	2	0%	6	0.53%	7	42.3%	1.00	4	62.2%	–	
	0.75 to ‹ 2.50	1,357	46	100%	1,744	1.80%	14	11.8%	1.67	447	25.6%	4	
	2.50 to ‹ 10.00	–	–	0%	–	9.12%	1	33.6%	1.00	–	146.0%	–	
	10.00 to ‹ 100.00	–	–	0%	–	0%	–	0%	–	–	0%	–	
	100.00 (Default)	–	–	0%	–	0%	–	0%	–	–	0%	–	
	Sub-total	5,890	1,000	52%	6,913	0.51%	121	40.6%	1.50	1,744	25.2%	6	11
Total (all portfolio)		**210,195**	**90,311**	**65%**	**270,570**	**0.72%**	**2,796,593**	**28.9%**	**2.00**	**64,622**	**23.9%**	**701**	**1,020**

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.
(2) Represents the exposure value without taking into account value adjustments and provisions, conversion factors and the effect of credit risk mitigation techniques.
(3) Represents the EAD post-CCF for off-balance sheet exposure to total off-balance sheet exposure pre CCF.
(4) Represents the obligor grade PD weighted by EAD.
(5) Represents the number of individual borrowers.
(6) Represents the obligor grade LGD (net of any CRM effect) weighted by EAD.
(7) Represents the obligor maturity in years weighted by EAD. This parameter needs to be filled in only when it is used for the RWA calculation.
(8) Risk weighted assets including the 1.06 scaling factor.
(9) Total risk-weighted assets to EAD post-CRM.
(10) The expected losses (EL) as calculated according to paragraphs 375 - 379 of the Basel framework.

CR6 – IRB - Credit Risk Exposures by Portfolio and PD Range (continued)

(millions of Canadian dollars)

	Q3 2022												
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale[1]	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF[2]	Average CCF[3]	EAD post CRM and post-CCF	Average PD[4]	Number of obligors[5]	Average LGD[6]	Average maturity[7]	RWA[8]	RWA density[9]	EL[10]	Allowances for credit losses
Residential Mortgages – insured	0.00 to ‹ 0.15	856	–	0%	856	0.08%	52,549	6.9%		13	1.5%	1	
	0.15 to ‹ 0.25	298	–	0%	298	0.19%	12,326	7.9%		11	3.2%	–	
	0.25 to ‹ 0.50	390	–	0%	390	0.36%	15,343	6.2%		16	4.0%	–	
	0.50 to ‹ 0.75	286	–	0%	286	0.60%	6,682	5.0%		13	4.6%	–	
	0.75 to ‹ 2.50	475	–	0%	475	1.23%	9,535	3.9%		26	5.7%	–	
	2.50 to ‹ 10.00	90	–	0%	90	4.43%	2,006	3.1%		9	9.9%	–	
	10.00 to ‹ 100.00	29	–	0%	29	30.42%	673	2.8%		5	16.4%	–	
	100.00 (Default)	14	–	0%	14	100.00%	240	2.8%		3	20.3%	–	
	Sub-total	2,438	–	0%	2,438	1.52%	99,354	5.9%		96	3.9%	1	4
Residential Mortgages and HELOCs – uninsured	0.00 to ‹ 0.15	40,809	18,750	36%	47,650	0.07%	243,636	19.6%		1,683	3.5%	6	
	0.15 to ‹ 0.25	7,250	1,323	44%	7,832	0.19%	29,808	20.9%		683	8.7%	3	
	0.25 to ‹ 0.50	7,091	1,287	63%	7,899	0.34%	25,773	21.8%		1,053	13.3%	6	
	0.50 to ‹ 0.75	1,892	178	59%	1,998	0.60%	7,615	22.5%		419	21.0%	3	
	0.75 to ‹ 2.50	3,078	186	71%	3,209	1.14%	11,933	21.2%		954	29.7%	8	
	2.50 to ‹ 10.00	575	31	69%	597	4.49%	3,122	19.4%		372	62.3%	5	
	10.00 to ‹ 100.00	125	1	211%	127	20.77%	797	19.8%		143	113.0%	5	
	100.00 (Default)	58	2	62%	59	100.00%	445	19.6%		104	176.1%	4	
	Sub-total	60,878	21,758	39%	69,371	0.34%	323,129	20.1%		5,411	7.8%	40	42
Qualifying revolving retail	0.00 to ‹ 0.15	741	7,103	76%	6,126	0.05%	922,977	79.9%		174	2.8%	3	
	0.15 to ‹ 0.25	221	637	89%	786	0.20%	214,370	85.7%		78	9.9%	1	
	0.25 to ‹ 0.50	304	390	84%	632	0.36%	128,165	81.4%		91	14.4%	2	
	0.50 to ‹ 0.75	216	255	88%	440	0.64%	64,251	75.3%		95	21.5%	2	
	0.75 to ‹ 2.50	513	254	94%	753	1.42%	195,807	83.3%		331	44.0%	9	
	2.50 to ‹ 10.00	325	88	113%	425	4.43%	201,664	85.9%		422	99.5%	16	
	10.00 to ‹ 100.00	53	10	79%	61	19.02%	30,300	86.8%		137	225.5%	10	
	100.00 (Default)	14	–	45%	14	100.00%	3,529	72.6%		17	121.9%	9	
	Sub-total	2,387	8,737	78%	9,237	0.70%	1,761,063	80.9%		1,345	14.6%	52	205
Other retail	0.00 to ‹ 0.15	2,022	2,522	64%	3,624	0.06%	129,787	51.7%		339	9.4%	1	
	0.15 to ‹ 0.25	1,037	396	62%	1,282	0.20%	55,355	53.5%		302	23.6%	1	
	0.25 to ‹ 0.50	1,600	368	63%	1,834	0.37%	77,880	52.5%		605	33.0%	4	
	0.50 to ‹ 0.75	1,315	324	82%	1,580	0.64%	59,278	55.8%		769	48.7%	6	
	0.75 to ‹ 2.50	5,573	214	77%	5,738	1.36%	190,170	38.2%		2,611	45.5%	31	
	2.50 to ‹ 10.00	1,044	85	74%	1,107	4.06%	56,690	50.5%		848	76.6%	23	
	10.00 to ‹ 100.00	284	13	52%	291	22.97%	11,213	52.9%		349	120.0%	34	
	100.00 (Default)	90	4	29%	91	100.00%	7,238	51.8%		53	58.0%	53	
	Sub-total	12,965	3,926	66%	15,547	1.95%	587,611	47.3%		5,876	37.8%	153	168

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.
(2) Represents the exposure value without taking into account value adjustments and provisions, conversion factors and the effect of credit risk mitigation techniques.
(3) Represents the EAD post-CCF for off-balance sheet exposure to total off-balance sheet exposure pre CCF.
(4) Represents the obligor grade PD weighted by EAD.
(5) Represents the number of retail accounts.
(6) Represents the obligor grade LGD (net of any CRM effect) weighted by EAD.
(7) Represents the obligor maturity in years weighted by EAD. This parameter needs to be filled in only when it is used for the RWA calculation.
(8) Risk weighted assets including the 1.06 scaling factor.
(9) Total risk-weighted assets to EAD post-CRM.
(10) The expected losses (EL) as calculated according to paragraphs 375 - 379 of the Basel framework.

CR6 – IRB - Credit Risk Exposures by Portfolio and PD Range (continued)

(millions of Canadian dollars)

	Q3 2022												
		a	b	c	d	e	f	g	h	i	j	k	l
	PD scale(1)	Original on-balance sheet gross exposure	Off-balance sheet exposures pre CCF(2)	Average CCF(3)	EAD post CRM and post-CCF	Average PD(4)	Number of obligors(5)	Average LGD(6)	Average maturity(7)	RWA(8)	RWA density(9)	EL(10)	Allowances for credit losses
Corporate	0.00 to ‹ 0.15	2,960	8,744	84%	9,127	0.09%	796	44.7%	2.42	2,343	25.7%	4	
	0.15 to ‹ 0.25	15,446	16,956	90%	27,936	0.20%	3,335	37.3%	2.42	8,656	31.0%	20	
	0.25 to ‹ 0.50	11,589	7,193	91%	17,212	0.36%	2,491	36.6%	2.55	7,174	41.7%	23	
	0.50 to ‹ 0.75	13,347	4,971	91%	17,191	0.56%	2,646	35.1%	2.26	7,902	46.0%	33	
	0.75 to ‹ 2.50	22,764	6,937	89%	27,453	1.13%	6,302	34.9%	2.17	16,942	61.7%	108	
	2.50 to ‹ 10.00	3,345	721	72%	3,943	4.42%	872	34.6%	1.53	3,645	92.4%	60	
	10.00 to ‹ 100.00	129	17	89%	140	16.60%	51	42.9%	1.09	257	184.0%	10	
	100.00 (Default)	432	45	94%	462	100.00%	162	40.0%	1.28	281	60.9%	172	
	Sub-total	70,012	45,584	89%	103,464	1.15%	16,655	36.8%	2.31	47,200	45.6%	430	561
Sovereign	0.00 to ‹ 0.15	60,260	6,950	98%	66,515	0.01%	617	8.8%	2.08	547	0.8%	1	
	0.15 to ‹ 0.25	68	–	0%	68	0.21%	1	14.5%	1.00	7	10.6%	–	
	0.25 to ‹ 0.50	–	–	0%	–	0%	–	0%	–	–	0%	–	
	0.50 to ‹ 0.75	–	–	0%	–	0%	–	0%	–	–	0%	–	
	0.75 to ‹ 2.50	–	–	0%	–	0%	–	0%	–	–	0%	–	
	2.50 to ‹ 10.00	–	55	96%	49	8.62%	2	16.6%	1.00	31	64.4%	1	
	10.00 to ‹ 100.00	–	–	0%	–	0%	–	0%	–	–	0%	–	
	100.00 (Default)	–	–	0%	–	0%	–	0%	–	–	0%	–	
	Sub-total	60,328	7,005	98%	66,632	0.02%	620	8.8%	2.08	585	0.9%	2	2
Financial institutions	0.00 to ‹ 0.15	3,743	785	44%	4,182	0.05%	67	49.5%	1.43	757	18.1%	1	
	0.15 to ‹ 0.25	141	17	0%	158	0.18%	25	57.2%	1.67	79	49.8%	–	
	0.25 to ‹ 0.50	8	132	85%	140	0.36%	8	26.7%	1.08	47	33.1%	–	
	0.50 to ‹ 0.75	20	2	0%	22	0.56%	8	48.9%	1.00	18	81.4%	–	
	0.75 to ‹ 2.50	954	6	100%	1,600	1.88%	10	19.1%	1.83	674	42.1%	6	
	2.50 to ‹ 10.00	–	–	0%	–	3.19%	2	29.9%	1.00	–	70.5%	–	
	10.00 to ‹ 100.00	–	–	0%	–	0%	–	0%	–	–	0%	–	
	100.00 (Default)	–	–	0%	–	0%	–	0%	–	–	0%	–	
	Sub-total	4,866	942	49%	6,102	0.54%	120	41.2%	1.53	1,575	25.8%	7	6
Total (all portfolio)		**213,874**	**87,952**	**72%**	**272,791**	**0.69%**	**2,788,552**	**27.7%**	**2.00**	**62,088**	**25.0%**	**685**	**988**

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.
(2) Represents the exposure value without taking into account value adjustments and provisions, conversion factors and the effect of credit risk mitigation techniques.
(3) Represents the EAD post-CCF for off-balance sheet exposure to total off-balance sheet exposure pre CCF.
(4) Represents the obligor grade PD weighted by EAD.
(5) Represents the number of individual borrowers.
(6) Represents the obligor grade LGD (net of any CRM effect) weighted by EAD.
(7) Represents the obligor maturity in years weighted by EAD. This parameter needs to be filled in only when it is used for the RWA calculation.
(8) Risk weighted assets including the 1.06 scaling factor.
(9) Total risk-weighted assets to EAD post-CRM.
(10) The expected losses (EL) as calculated according to paragraphs 375 - 379 of the Basel framework.

CR8 – RWA Flow Statements of Credit Risk

(millions of Canadian dollars)

The following table presents a flow statement explaining variations in the credit RWA.

		Q4 2022			Q3 2022		
			a			a	
		Non-counterparty credit risk	Of which determined under an IRB approach	Counterparty credit risk[1]	Non-counterparty credit risk	Of which determined under an IRB approach	Counterparty credit risk[1]
1	**RWA at beginning**	**83,049**	**63,260**	**8,180**	**79,537**	**60,489**	**9,341**
2	Book size[2]	2,377	1,222	28	3,450	2,663	(950)
3	Book quality[3]	257	257	(164)	226	226	(285)
4	Model updates[4]	162	162	138	(74)	(74)	87
5	Methodology and policy[5]	235	235	104	–	–	–
6	Acquisitions and disposals	–	–	–	–	–	–
7	Foreign exchange movements	1,574	721	201	(90)	(44)	(13)
8	Other[6]	–	–	–	–	–	–
9	**RWA at end**	**87,654**	**65,857**	**8,487**	**83,049**	**63,260**	**8,180**

		Q2 2022			Q1 2022		
			a			a	
		Non-counterparty credit risk	Of which determined under an IRB approach	Counterparty credit risk[1]	Non-counterparty credit risk	Of which determined under an IRB approach	Counterparty credit risk[1]
1	**RWA at beginning**	**79,504**	**59,639**	**9,385**	**77,755**	**58,831**	**9,458**
2	Book size[2]	1,561	1,356	219	1,174	541	(172)
3	Book quality[3]	(857)	(830)	(540)	(16)	(16)	(6)
4	Model updates[4]	(708)	233	42	29	29	–
5	Methodology and policy[5]	–	–	–	–	–	–
6	Acquisitions and disposals	–	–	–	–	–	–
7	Foreign exchange movements	37	91	235	562	254	105
8	Other[6]	–	–	–	–	–	–
9	**RWA at end**	**79,537**	**60,489**	**9,341**	**79,504**	**59,639**	**9,385**

(1) Counterparty credit risk is comprised of derivatives, SFTs, trades cleared through central counterparties, and CVA RWA.

(2) The Book size item reflects organic changes in book size and composition (including new loans and maturing loans). RWA movements attributable to book size include increases or decreases in exposures, measured by exposure at default, assuming a stable risk profile.

(3) The Book quality item is the Bank's best estimate of changes in book quality related to experience, such as underlying customer behaviour or demographics, including changes resulting from model recalibrations or realignments and also including risk mitigation factors.

(4) The Model updates item is used to reflect implementations of new models, changes in model scope, and any other change applied to address model malfunctions.

(5) The Methodology and policy item presents the impact of changes in calculation methods resulting from changes in regulatory policies as a result, for example, of new regulations.

(6) The Other item captures changes that cannot be attributed to any other category.

CR9 – IRB - Backtesting of probability of default (PD) per portfolio

(millions of Canadian dollars)

The following table provides backtesting data to validate the reliability of PD calculations. In particular, the template compares the PD used in IRB capital calculations with the effective default rates of bank obligors. A minimum five-year average annual default rate is required to compare the PD with a "more stable" default rate, although a bank may use a longer historical period that is consistent with its actual risk management practices.

	Q4 2022									
a	b	c		d	e	f		g	h	i
		External rating equivalent				Number of obligors[2]				
Portfolio	PD Range[1]	S&P	Moody's	Weighted average PD	Arithmetic average PD by obligors	End of previous year	End of the year	Defaulted obligors in the year	Of which new defaulted obligors in the year	Average historical annual default rate
Residential Mortgages – insured	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.08%	0.08%	56,924	49,577	22	–	0.06%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	13,587	11,532	4	–	0.11%
	0.25 to < 0.50	BBB-	Baa3	0.35%	0.35%	16,995	17,594	16	–	0.21%
	0.50 to < 0.75	BB+	Ba1	0.62%	0.62%	7,604	6,352	19	1	0.40%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.32%	1.27%	10,533	7,638	51	2	0.72%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.51%	4.71%	2,233	2,806	56	–	3.01%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	14.97%	14.72%	797	744	148	2	19.94%
Residential Mortgages and HELOCs – uninsured	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.07%	0.06%	223,803	239,882	107	8	0.04%
	0.15 to < 0.25	BBB	Baa2	0.19%	0.19%	34,977	28,227	36	13	0.13%
	0.25 to < 0.50	BBB-	Baa3	0.34%	0.35%	31,980	26,105	66	6	0.24%
	0.50 to < 0.75	BB+	Ba1	0.61%	0.61%	9,033	8,724	27	–	0.51%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.13%	1.21%	10,294	15,882	117	1	1.30%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.67%	4.69%	2,243	4,536	136	–	4.84%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	17.66%	17.63%	722	956	140	1	18.71%
Qualifying revolving retail	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.08%	0.08%	895,932	914,238	257	1	0.03%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	222,337	209,545	120	4	0.09%
	0.25 to < 0.50	BBB-	Baa3	0.36%	0.36%	124,348	122,943	306	20	0.19%
	0.50 to < 0.75	BB+	Ba1	0.64%	0.62%	60,117	64,663	211	2	0.34%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.42%	1.48%	194,991	210,781	2,095	94	1.13%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.47%	4.04%	201,684	208,081	4,971	445	3.16%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	19.69%	22.67%	29,254	34,391	6,743	67	26.58%
Other retail	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.08%	0.07%	129,478	131,187	85	–	0.06%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	53,364	52,489	66	5	0.11%
	0.25 to < 0.50	BBB-	Baa3	0.37%	0.38%	75,791	75,329	147	17	0.19%
	0.50 to < 0.75	BB+	Ba1	0.64%	0.62%	58,064	60,280	142	13	0.29%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.32%	1.32%	186,270	194,952	931	124	0.67%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.03%	4.01%	57,554	58,426	1,060	72	2.19%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	27.60%	28.03%	10,463	9,212	1,117	22	11.72%

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.
(2) Represents the number of retail accounts.

CR9 – IRB - Backtesting of probability of default (PD) per portfolio (continued)

(millions of Canadian dollars)

	Q4 2022									
a	b	c		d	e	f		g	h	i
		External rating equivalent				Number of obligors[2]				
Portfolio	PD Range[1]	S&P	Moody's	Weighted average PD	Arithmetic average PD by obligors	End of previous year	End of the year	Defaulted obligors in the year	Of which new defaulted obligors in the year	Average historical annual default rate
Corporate	0.00 to ‹ 0.15	AAA to BBB+	Aaa to Baa1	0.09%	0.09%	754	813	–	–	0.00%
	0.15 to ‹ 0.25	BBB+ to BBB	Baa1 to Baa2	0.19%	0.19%	3,105	3,376	–	–	0.04%
	0.25 to ‹ 0.50	BBB to BB+	Baa2 to Ba1	0.35%	0.35%	2,569	2,520	–	–	0.04%
	0.50 to ‹ 0.75	BB+	Ba1	0.53%	0.53%	2,513	2,675	4	–	0.16%
	0.75 to ‹ 2.50	BB+ to B+	Ba1 to B1	1.10%	1.07%	6,313	6,246	17	1	0.39%
	2.50 to ‹ 10.00	B+ to B-	B1 to B3	4.03%	4.41%	1,033	883	7	–	1.47%
	10.00 to ‹ 100.00	B- to CCC	B3 to Caa2	16.97%	16.95%	56	50	1	–	10.00%
Sovereign	0.00 to ‹ 0.15	AAA to BBB+	Aaa to Baa1	0.01%	0.01%	628	604	–	–	–
	0.15 to ‹ 0.25	BBB+ to BBB	Baa1 to Baa2	–	–	–	–	–	–	–
	0.25 to ‹ 0.50	BBB to BB+	Baa2 to Ba1	0.44%	0.44%	–	1	–	–	–
	0.50 to ‹ 0.75	BB+	Ba1	–	–	–	–	–	–	–
	0.75 to ‹ 2.50	BB+ to B+	Ba1 to B1	–	–	–	–	–	–	–
	2.50 to ‹ 10.00	B+ to B-	B1 to B3	7.63%	7.63%	2	2	–	–	–
	10.00 to ‹ 100.00	B- to CCC	B3 to Caa2	–	–	–	–	–	–	–
Financial institutions	0.00 to ‹ 0.15	AAA to BBB+	Aaa to Baa1	0.07%	0.07%	67	67	–	–	–
	0.15 to ‹ 0.25	BBB+ to BBB	Baa1 to Baa2	0.18%	0.20%	28	25	–	–	–
	0.25 to ‹ 0.50	BBB to BB+	Baa2 to Ba1	0.35%	0.35%	6	7	–	–	–
	0.50 to ‹ 0.75	BB+	Ba1	0.53%	0.53%	7	7	–	–	–
	0.75 to ‹ 2.50	BB+ to B+	Ba1 to B1	1.80%	1.54%	11	14	–	–	–
	2.50 to ‹ 10.00	B+ to B-	B1 to B3	9.12%	9.12%	2	1	–	–	–
	10.00 to ‹ 100.00	B- to CCC	B3 to Caa2	–	–	–	–	–	–	–

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.

(2) Represents the number of individual borrowers.

CR9 – IRB - Backtesting of probability of default (PD) per portfolio (continued)

(million of Canadian dollars)

	Q4 2021									
a	b	c		d	e	f		g	h	i
		External rating equivalent				Number of obligors[2]				
Portfolio	PD Range[1]	S&P	Moody's	Weighted average PD	Arithmetic average PD by obligors	End of previous year	End of the year	Defaulted obligors in the year	Of which new defaulted obligors in the year	Average historical annual default rate
Residential Mortgages – insured	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.08%	0.08%	54,469	56,924	23	–	0.06%
	0.15 to < 0.25	BBB	Baa2	0.19%	0.19%	17,623	13,587	11	–	0.13%
	0.25 to < 0.50	BBB-	Baa3	0.36%	0.36%	19,096	16,995	22	–	0.23%
	0.50 to < 0.75	BB+	Ba1	0.61%	0.62%	8,660	7,604	12	1	0.42%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.22%	1.21%	14,086	10,533	59	–	0.76%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.44%	4.53%	3,803	2,233	77	3	3.10%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	26.98%	26.88%	1,565	797	145	1	20.22%
Residential Mortgages and HELOCs – uninsured	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.07%	0.06%	206,549	223,803	58	3	0.04%
	0.15 to < 0.25	BBB	Baa2	0.19%	0.19%	32,699	34,977	28	6	0.14%
	0.25 to < 0.50	BBB-	Baa3	0.34%	0.34%	30,444	31,980	55	1	0.25%
	0.50 to < 0.75	BB+	Ba1	0.60%	0.60%	10,407	9,033	38	1	0.54%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.10%	1.16%	11,014	10,294	88	–	1.33%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.45%	4.63%	3,280	2,243	96	2	4.63%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	24.18%	24.23%	1,321	722	151	1	18.62%
Qualifying revolving retail	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.05%	0.06%	740,541	895,932	98	–	0.03%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	227,400	222,337	105	1	0.10%
	0.25 to < 0.50	BBB-	Baa3	0.35%	0.35%	193,442	124,348	190	6	0.19%
	0.50 to < 0.75	BB+	Ba1	0.63%	0.62%	73,795	60,117	197	22	0.34%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.42%	1.48%	237,019	194,991	2,190	284	1.15%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.39%	3.92%	187,694	201,684	4,108	43	3.31%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	19.60%	21.76%	20,557	29,254	5,716	28	27.21%
Other retail	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.06%	0.07%	123,434	129,478	69	–	0.06%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	51,576	53,364	56	6	0.11%
	0.25 to < 0.50	BBB-	Baa3	0.37%	0.37%	76,230	75,791	101	4	0.19%
	0.50 to < 0.75	BB+	Ba1	0.63%	0.62%	59,502	58,064	111	5	0.30%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.35%	1.30%	193,897	186,270	789	61	0.71%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.00%	3.98%	64,523	57,554	934	68	2.27%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	23.12%	23.96%	12,697	10,463	1,084	22	11.93%

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.

(2) Represents the number of individual borrowers.

CR9 – IRB - Backtesting of probability of default (PD) per portfolio (continued)

(millions of Canadian dollars)

	Q4 2021									
a	b	c		d	e	f		g	h	i
		External rating equivalent				Number of obligors[2]				
Portfolio	PD Range[1]	S&P	Moody's	Weighted average PD	Arithmetic average PD by obligors	End of previous year	End of the year	Defaulted obligors in the year	Of which new defaulted obligors in the year	Average historical annual default rate
Corporate	0.00 to ‹ 0.15	AAA to BBB+	Aaa to Baa1	0.09%	0.09%	467	754	–	–	0.01%
	0.15 to ‹ 0.25	BBB+ to BBB	Baa1 to Baa2	0.20%	0.21%	2,464	3,105	–	–	0.06%
	0.25 to ‹ 0.50	BBB to BB+	Baa2 to Ba1	0.36%	0.36%	2,245	2,569	–	–	0.06%
	0.50 to ‹ 0.75	BB+	Ba1	0.56%	0.56%	2,432	2,513	4	–	0.17%
	0.75 to ‹ 2.50	BB+ to B+	Ba1 to B1	1.14%	1.12%	6,487	6,313	15	4	0.47%
	2.50 to ‹ 10.00	B+ to B-	B1 to B3	4.38%	4.47%	1,339	1,033	15	–	1.52%
	10.00 to ‹ 100.00	B- to CCC	B3 to Caa2	17.00%	17.25%	59	56	10	–	10.45%
Sovereign	0.00 to ‹ 0.15	AAA to BBB+	Aaa to Baa1	0.01%	0.02%	610	628	–	–	–
	0.15 to ‹ 0.25	BBB+ to BBB	Baa1 to Baa2	–	–	–	–	–	–	–
	0.25 to ‹ 0.50	BBB to BB+	Baa2 to Ba1	–	–	–	–	–	–	–
	0.50 to ‹ 0.75	BB+	Ba1	–	–	–	–	–	–	–
	0.75 to ‹ 2.50	BB+ to B+	Ba1 to B1	–	–	–	–	–	–	–
	2.50 to ‹ 10.00	B+ to B-	B1 to B3	8.62%	8.62%	3	2	–	–	–
	10.00 to ‹ 100.00	B- to CCC	B3 to Caa2	–	–	–	–	–	–	–
Financial institutions	0.00 to ‹ 0.15	AAA to BBB+	Aaa to Baa1	0.05%	0.07%	62	67	–	–	–
	0.15 to ‹ 0.25	BBB+ to BBB	Baa1 to Baa2	0.16%	0.19%	28	28	–	–	–
	0.25 to ‹ 0.50	BBB to BB+	Baa2 to Ba1	0.36%	0.36%	4	6	–	–	–
	0.50 to ‹ 0.75	BB+	Ba1	0.56%	0.56%	6	7	–	–	–
	0.75 to ‹ 2.50	BB+ to B+	Ba1 to B1	1.78%	1.40%	9	11	–	–	–
	2.50 to ‹ 10.00	B+ to B-	B1 to B3	8.61%	6.05%	3	2	–	–	–
	10.00 to ‹ 100.00	B- to CCC	B3 to Caa2	–	–	–	–	–	–	–

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.

(2) Represents the number of individual borrowers.

AIRB Credit Risk Exposure - Backtesting[1]

(millions of Canadian dollars)

	2022 Q4 PD average estimated (%)	PD actual (%)	LGD average estimated (%)[2]	LGD actual (%)[3]	EAD estimated (%)[4]	EAD actual (%)[4]	2022 Q3 PD average estimated (%)	PD actual (%)	LGD average estimated (%)[2]	LGD actual (%)[3]	EAD estimated (%)[4]	EAD actual (%)[4]
Retail Portfolio[5]												
Insured residential mortgages[6]	0.57%	0.22%	2.64%	n.a.	n.a.	n.a.	0.64%	0.21%	2.64%	n.a.	n.a.	n.a.
Uninsured residential mortgages incl. HELOCs[7]	0.29%	0.15%	20.54%	3.94%	89.81%	88.52%	0.27%	0.13%	20.67%	4.29%	89.23%	88.15%
Qualifying revolving retail	0.99%	0.80%	87.42%	74.93%	106.91%	100.82%	0.96%	0.75%	87.97%	78.63%	106.58%	100.57%
Other retail	1.45%	0.78%	42.62%	29.22%	82.70%	77.17%	1.49%	0.73%	41.40%	30.54%	82.20%	76.35%
Non-Retail Portfolio[8]												
Corporate	0.98%	0.17%	29.50%	15.22%	83.79%	56.82%	1.00%	0.19%	31.26%	19.23%	96.31%	79.06%
Sovereign[9]	0.06%	0.00%	11.80%	n.a.	88.30%	n.a.	0.07%	0.00%	11.80%	n.a.	88.30%	n.a.
Financial Institutions[9]	0.68%	0.00%	39.00%	n.a.	100.00%	n.a.	0.51%	0.00%	39.00%	n.a.	100.00%	n.a.

	2022 Q2 PD average estimated (%)	PD actual (%)	LGD average estimated (%)[2]	LGD actual (%)[3]	EAD estimated (%)[4]	EAD actual (%)[4]	2022 Q1 PD average estimated (%)	PD actual (%)	LGD average estimated (%)[2]	LGD actual (%)[3]	EAD estimated (%)[4]	EAD actual (%)[4]
Retail Portfolio[5]												
Insured residential mortgages[6]	0.72%	0.21%	2.64%	n.a.	n.a.	n.a.	0.78%	0.18%	2.64%	n.a.	n.a.	n.a.
Uninsured residential mortgages incl. HELOCs[7]	0.28%	0.12%	21.48%	3.85%	91.03%	86.69%	0.31%	0.11%	21.53%	5.44%	91.33%	85.96%
Qualifying revolving retail	1.01%	0.73%	87.38%	78.74%	106.54%	100.60%	1.07%	0.73%	86.63%	77.97%	106.59%	100.56%
Other retail	1.53%	0.71%	41.29%	30.83%	79.82%	72.11%	1.60%	0.70%	42.34%	28.70%	78.76%	69.80%
Non-Retail Portfolio[8]												
Corporate	1.06%	0.20%	30.94%	19.45%	94.60%	74.37%	1.04%	0.24%	28.49%	15.89%	93.08%	67.48%
Sovereign[9]	0.07%	0.00%	11.80%	n.a.	88.30%	n.a.	0.06%	0.00%	11.80%	n.a.	88.30%	n.a.
Financial Institutions[9]	0.45%	0.00%	39.00%	n.a.	100.00%	n.a.	0.44%	0.00%	39.00%	n.a.	100.00%	n.a.

(1) Estimated PD and actual default rates are consistent with what is presented in table CR9 (presented annually). Actual and estimated LGD and EAD parameters are reported on a one-month lag. For example, for Q4 2022, estimated percentages are as of September 30, 2021 and actual percentages reflect experience in the following 12 months.
(2) Estimated LGD reflects loss estimates under a downturn economic scenario and is based on defaulted accounts.
(3) Actual LGD includes indirect costs and discount rate and is based on defaulted accounts on which recovery process is completed.
(4) Estimated and actual EAD are computed for revolving products only and are based on defaulted accounts.
(5) Retail PD and EAD are based on account weighted average whilst retail LGD is based on exposure weighted average.
(6) Actual LGD for insured residential mortgages is not applicable to reflect the credit risk mitigation from government backed entities.
(7) Actual and estimated EAD for residential mortgage is computed only for HELOCs since the conventional residential mortgages are non-revolving.
(8) Wholesale and Sovereign's PD is based on borrower weighted average whilst the LGD and EAD are based on facility weighted average.
(9) Actual LGD for the financial institutions and sovereign are not applicable because no defaulted facilities recovery were completed during the period. Actual EAD are not applicable because no default was observed during the period.

CR10 – IRB - Specialised Lending and Equities Under the Simple Risk Weight Method

(millions of Canadian dollars)

	Q4 2022					Q3 2022				
	On-balance sheet amount	Off-balance sheet amount	RW	Exposure amount	RWA	On-balance sheet amount	Off-balance sheet amount	RW	Exposure amount	RWA
Equities under the materiality exemption	732	111	100%	788	835	707	118	100%	766	812

	Q2 2022					Q1 2022				
	On-balance sheet amount	Off-balance sheet amount	RW	Exposure amount	RWA	On-balance sheet amount	Off-balance sheet amount	RW	Exposure amount	RWA
Equities under the materiality exemption	772	126	100%	835	885	782	125	100%	845	896

CCR1 – Analysis of Counterparty Credit Risk (CCR) Exposure by Approach[1]

(millions of Canadian dollars)

The following tables provide a comprehensive view of the methods used to calculate counterparty credit risk regulatory requirements and the main parameters used within each method.

		Q4 2022					
		a	b	c	d	e	f
		Replacement cost	Potential future exposure	EEPE[2]	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
1	SA-CCR (for derivatives)	2,592	7,466		1.4	14,081	4,131
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)					–	–
5	VaR for SFTs					10,864	1,438
6	**Total**						**5,569**

		Q3 2022					
		a	b	c	d	e	f
		Replacement cost	Potential future exposure	EEPE[2]	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
1	SA-CCR (for derivatives)	2,480	7,142		1.4	13,471	4,155
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)					–	–
5	VaR for SFTs					13,223	1,557
6	**Total**						**5,712**

		Q2 2022					
		a	b	c	d	e	f
		Replacement cost	Potential future exposure	EEPE[2]	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
1	SA-CCR (for derivatives)	4,933	7,649		1.4	17,615	5,010
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)					–	–
5	VaR for SFTs					11,825	1,591
6	**Total**						**6,601**

		Q1 2022					
		a	b	c	d	e	f
		Replacement cost	Potential future exposure	EEPE[2]	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
1	SA-CCR (for derivatives)	4,163	8,007		1.4	17,038	5,205
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)					–	–
5	VaR for SFTs					15,937	1,646
6	**Total**						**6,851**

(1) Excluding exposure and RWA for qualified central counterparties (QCCPs) and credit valuation adjustment (CVA).
(2) EEPE: Effective Expected Positive Exposure.

CCR2 – Credit Valuation Adjustment (CVA) Capital Charge

(millions of Canadian dollars)

The following table provides the CVA regulatory calculations (with a breakdown by standardised and advanced approaches).

		Q4 2022		Q3 2022		Q2 2022		Q1 2022		Q4 2021	
		a	b	a	b	a	b	a	b	a	b
		EAD post-CRM	RWA	EAD post-CRM	RWA	EAD post-CRM	RWA	EAD post-CRM	RWA	EAD post-CRM	RWA
	Total portfolios subject to the Advanced CVA capital charge										
1	(i) VaR component (including the 3 x multiplier)		–		–		–		–		–
2	(ii) Stressed VaR component (including the 3 x multiplier)		–		–		–		–		–
3	All portfolios subject to the Standardised CVA capital charge	9,838	2,677	9,105	2,230	10,971	2,304	10,453	2,115	10,582	2,112
4	**Total subject to the CVA capital charge**	**9,838**	**2,677**	**9,105**	**2,230**	**10,971**	**2,304**	**10,453**	**2,115**	**10,582**	**2,112**

CCR3 – Standardised Approach - CCR Exposures by Regulatory Portfolio and Risk Weights

(millions of Canadian dollars)

The following tables provide a breakdown of counterparty credit risk exposures calculated according to the standardised approach: by portfolio (type of counterparties) and by risk weights (riskiness attributed according to standardised approach).

	Q4 2022									Q3 2022								
	a	b	c	d	e	f	g	h	i	a	b	c	d	e	f	g	h	i
Regulatory portfolio / Risk weight	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Sovereigns	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Non-central government public sector entities (PSEs)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Multilateral development banks (MDBs)	141	–	–	–	–	–	–	–	141	68	–	–	–	–	–	–	–	68
Financial institutions	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Securities firms	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Corporates	–	–	–	–	–	694	–	–	694	–	–	–	–	–	663	–	–	663
Regulatory retail portfolios	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other assets[1]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	**141**	**–**	**–**	**–**	**–**	**694**	**–**	**–**	**835**	**68**	**–**	**–**	**–**	**–**	**663**	**–**	**–**	**731**

	Q2 2022									Q1 2022								
	a	b	c	d	e	f	g	h	i	a	b	c	d	e	f	g	h	i
Regulatory portfolio / Risk weight	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Sovereigns	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Non-central government public sector entities (PSEs)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Multilateral development banks (MDBs)	75	–	–	–	–	–	–	–	75	39	–	–	–	–	–	–	–	39
Financial institutions	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Securities firms	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Corporates	–	–	–	–	–	677	–	–	677	–	–	–	–	–	667	–	–	667
Regulatory retail portfolios	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other assets[1]	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	**75**	**–**	**–**	**–**	**–**	**677**	**–**	**–**	**752**	**39**	**–**	**–**	**–**	**–**	**667**	**–**	**–**	**706**

(1) Excluding the exposures to CCPs, which are reported in CCR8.

CCR4 – IRB - CCR Exposures by Portfolio and PD Scale

(millions of Canadian dollars)

The following tables provide all relevant parameters used for the calculation of counterparty credit risk capital requirements for IRB models.

		Q4 2022						
		a	b	c	d	e	f	g
	PD scale[1]	EAD post-CRM	Average PD[2]	Number of obligors[3]	Average LGD[4]	Average maturity[5]	RWA	RWA density[6]
Corporate	0.00 to ‹ 0.15	3,505	0.07%	581	43.8%	1.18	733	20.9%
	0.15 to ‹ 0.25	2,847	0.17%	489	42.5%	1.21	876	30.8%
	0.25 to ‹ 0.50	559	0.35%	241	36.0%	1.39	230	41.1%
	0.50 to ‹ 0.75	747	0.53%	202	41.0%	2.40	286	38.3%
	0.75 to ‹ 2.50	1,242	0.86%	729	36.5%	1.57	790	63.6%
	2.50 to ‹ 10.00	171	3.53%	76	50.6%	1.09	231	135.1%
	10.00 to ‹ 100.00	6	15.10%	4	57.5%	1.00	15	250.0%
	100.00 (Default)	1	100.00%	4	38.2%	2.00	1	100.0%
	Sub-total	9,078	0.35%	2,326	41.8%	1.35	3,162	34.8%
Sovereign	0.00 to ‹ 0.15	8,501	0.02%	133	13.5%	1.28	130	1.5%
	0.15 to ‹ 0.25	199	0.25%	2	13.4%	0.13	16	8.0%
	0.25 to ‹ 0.50	–	0%	–	0%	–	–	0%
	0.50 to ‹ 0.75	–	0%	–	0%	–	–	0%
	0.75 to ‹ 2.50	–	0%	–	0%	–	–	0%
	2.50 to ‹ 10.00	–	0%	–	0%	–	–	0%
	10.00 to ‹ 100.00	–	0%	–	0%	–	–	0%
	100.00 (Default)	–	0%	–	0%	–	–	0%
	Sub-total	8,700	0.03%	135	13.5%	1.25	146	1.7%
Financial institutions	0.00 to ‹ 0.15	5,708	0.07%	71	50.3%	0.88	1,223	21.4%
	0.15 to ‹ 0.25	591	0.19%	39	50.3%	0.31	207	35.0%
	0.25 to ‹ 0.50	60	0.35%	11	48.9%	0.43	31	51.7%
	0.50 to ‹ 0.75	124	0.53%	16	47.3%	0.27	78	62.9%
	0.75 to ‹ 2.50	41	1.01%	19	48.5%	0.06	28	68.3%
	2.50 to ‹ 10.00	–	0%	–	0%	–	–	0%
	10.00 to ‹ 100.00	–	0%	–	0%	–	–	0%
	100.00 (Default)	–	0%	–	0%	–	–	0%
	Sub-total	6,524	0.10%	156	50.2%	0.81	1,567	24.0%
Total (sum of portfolios)		**24,302**	**0.17%**	**2,617**	**33.9%**	**1.08**	**4,875**	**20.1%**

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.
(2) Represents the obligor grade PD weighted by EAD.
(3) Represents the number of individual borrowers.
(4) Represents the obligor grade LGD (net of any CRM effect) weighted by EAD.
(5) Represents the obligor maturity in years weighted by EAD. This parameter needs to be filled in only when it is used for the RWA calculation.
(6) Total risk-weighted assets to EAD post-CRM.

CCR4 – IRB - CCR Exposures by Portfolio and PD Scale (continued)

(millions of Canadian dollars)

		Q4 2021						
		a	b	c	d	e	f	g
	PD scale[1]	EAD post-CRM	Average PD[2]	Number of obligors[3]	Average LGD[4]	Average maturity[5]	RWA	RWA density[6]
Corporate	0.00 to < 0.15	2,285	0.06%	497	47.4%	0.83	428	18.7%
	0.15 to < 0.25	2,887	0.19%	506	46.2%	1.52	1,114	38.6%
	0.25 to < 0.50	1,257	0.36%	246	47.7%	1.41	669	53.2%
	0.50 to < 0.75	2,220	0.56%	192	50.9%	3.43	576	25.9%
	0.75 to < 2.50	4,147	0.91%	710	43.4%	1.23	1,243	30.0%
	2.50 to < 10.00	221	3.58%	71	68.5%	1.16	398	180.1%
	10.00 to < 100.00	4	14.00%	4	61.0%	1.05	11	275.0%
	100.00 (Default)	1	100.00%	6	40.4%	1.25	1	100.0%
	Sub-total	13,022	0.55%	2,232	46.8%	1.62	4,440	34.1%
Sovereign	0.00 to < 0.15	9,903	0.03%	126	11.8%	1.15	177	1.8%
	0.15 to < 0.25	69	0.21%	1	13.1%	–	5	7.2%
	0.25 to < 0.50	25	0%	2	24.7%	1.00	5	20.0%
	0.50 to < 0.75	–	0%	–	0%	–	–	0%
	0.75 to < 2.50	–	0%	–	0%	–	–	0%
	2.50 to < 10.00	–	8.62%	1	14.5%	1.00	–	100.0%
	10.00 to < 100.00	–	0%	–	0%	–	–	0%
	100.00 (Default)	–	0%	–	0%	–	–	0%
	Sub-total	9,997	0.03%	130	11.8%	1.14	187	1.9%
Financial institutions	0.00 to < 0.15	7,764	0.06%	68	49.3%	0.71	1,310	16.9%
	0.15 to < 0.25	695	0.17%	34	49.6%	0.52	233	33.5%
	0.25 to < 0.50	77	0.36%	11	50.2%	0.24	36	46.8%
	0.50 to < 0.75	161	0.56%	15	46.3%	0.39	89	55.3%
	0.75 to < 2.50	62	1.03%	22	48.0%	0.20	45	72.6%
	2.50 to < 10.00	–	0%	–	0%	–	–	0%
	10.00 to < 100.00	–	0%	–	0%	–	–	0%
	100.00 (Default)	–	0%	–	0%	–	–	0%
	Sub-total	8,759	0.09%	150	49.2%	0.68	1,713	19.6%
Total (sum of portfolios)		**31,778**	**0.26%**	**2,512**	**36.0%**	**1.17**	**6,340**	**20.0%**

(1) Prescribed PD bands based on BIS document on Revised Pillar 3 disclosure requirements issued in January 2015.
(2) Represents the obligor grade PD weighted by EAD.
(3) Represents the number of individual borrowers.
(4) Represents the obligor grade LGD (net of any CRM effect) weighted by EAD.
(5) Represents the obligor maturity in years weighted by EAD. This parameter needs to be filled in only when it is used for the RWA calculation.
(6) Total risk-weighted assets to EAD post-CRM.

CCR5 – Composition of Collateral for CCR Exposure

(millions of Canadian dollars)

The following tables provide a breakdown of all types of collateral posted or received by banks to support or reduce the counterparty credit risk exposures related to derivative transactions or to SFTs, including transactions cleared through a CCP.

	Q4 2022						Q3 2022					
	a	b	c	d	e	f	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs		Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received[1]	Fair value of posted collateral[1]	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received[1]	Fair value of posted collateral[1]
	Segregated	Unsegregated	Segregated	Unsegregated			Segregated	Unsegregated	Segregated	Unsegregated		
Cash	–	11,827	–	3,794	39,121	32,134	–	12,172	–	2,601	37,435	24,121
Securities issued or guaranteed by												
Canadian government	185	290	75	774	24,708	22,321	84	93	268	344	24,805	23,816
Canadian provincial and municipal governments	40	1,117	189	165	11,276	12,806	4	741	369	282	10,180	15,918
U.S. Treasury, other U.S. agencies and other foreign governments	1,315	104	775	5	34,591	33,543	2,179	29	670	5	32,213	28,853
Other debt securities	752	24	452	–	2,893	1,888	526	23	27	–	2,954	1,489
Equity securities	571	–	1,247	–	57,167	71,373	514	–	1,614	–	63,081	81,100
Total	**2,863**	**13,362**	**2,738**	**4,738**	**169,756**	**174,065**	**3,307**	**13,058**	**2,948**	**3,232**	**170,668**	**175,297**

	Q2 2022						Q1 2022					
	a	b	c	d	e	f	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs		Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received[1]	Fair value of posted collateral[1]	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received[1]	Fair value of posted collateral[1]
	Segregated	Unsegregated	Segregated	Unsegregated			Segregated	Unsegregated	Segregated	Unsegregated		
Cash	–	14,028	–	3,628	32,172	19,622	–	11,205	–	2,993	29,241	20,502
Securities issued or guaranteed by												
Canadian government	391	132	149	281	23,197	20,825	24	346	–	417	15,153	14,817
Canadian provincial and municipal governments	246	938	502	216	10,213	13,400	213	282	250	116	15,462	15,042
U.S. Treasury, other U.S. agencies and other foreign governments	935	27	373	57	32,551	26,254	1,471	30	524	47	35,613	26,085
Other debt securities	502	23	45	–	2,557	1,795	219	29	61	1	2,043	1,499
Equity securities	756	–	1,412	–	62,216	85,130	378	–	1,233	–	56,428	82,024
Total	**2,830**	**15,148**	**2,481**	**4,182**	**162,906**	**167,026**	**2,305**	**11,892**	**2,068**	**3,574**	**153,940**	**159,969**

(1) Excluding collateral from repurchase agreements guaranteed by bearer deposit notes issued by the Bank and covered bonds issued by the Bank.

CCR6 – Credit Derivatives Exposures

(millions of Canadian dollars)

The following tables illustrate the extent of a bank's exposures to credit derivative transactions broken down between derivatives purchased or sold.

	Q4 2022		Q3 2022		Q2 2022		Q1 2022		Q4 2021	
	a	b	a	b	a	b	a	b	a	b
	Protection purchased	Protection sold	Protection purchased	Protection sold	Protection purchased	Protection sold	Protection purchased	Protection sold	Protection purchased	Protection sold
Notionals										
Credit default swaps										
Indices, singles names and other	3,010	1,555	2,464	1,263	2,142	997	2,755	1,371	2,565	638
Tranches on indices	–	–	–	–	–	–	–	–	–	–
Total return swaps	122	–	125	–	83	–	83	–	92	–
Credit options	–	–	–	–	–	–	–	–	–	–
Other credit derivatives	–	–	–	–	–	–	–	–	–	–
Total notionals	**3,132**	**1,555**	**2,589**	**1,263**	**2,225**	**997**	**2,838**	**1,371**	**2,657**	**638**
Fair values										
Positive fair value (asset)	7	16	1	14	10	13	2	29	9	17
Negative fair value (liability)	(24)	(2)	(29)	(2)	(23)	(3)	(54)	(1)	(64)	–

CCR8 – Exposures to Central Counterparties (CCP)[1]

(millions of Canadian dollars)

The following table provides a comprehensive picture of the bank's exposures to central counterparties. In particular, the template includes all types of exposures and related capital requirements.

		Q4 2022		Q3 2022		Q2 2022		Q1 2022		Q4 2021	
		a	b	a	b	a	b	a	b	a	b
		EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA
1	**Exposures to QCCPs (total)**		**241**		**238**		**436**		**419**		**452**
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	1,194	24	2,218	45	5,214	104	3,432	68	2,658	54
3	(i) OTC derivatives	94	2	192	4	204	4	400	8	386	8
4	(ii) Exchange-traded derivatives	959	19	1,516	31	4,557	91	2,386	47	1,738	35
5	(iii) Securities financing transactions	141	3	510	10	453	9	646	13	534	11
6	(iv) Netting sets where cross-product netting has been approved	–	–	–	–	–	–	–	–	–	–
7	Segregated initial margin	3,235		4,120		4,563		4,725		6,535	
8	Non-segregated initial margin	274	–	384	–	351	–	460	–	582	–
9	Pre-funded default fund contributions	378	217	419	193	684	332	646	351	520	398
10	Unfunded default fund contributions	–	–	–	–	–	–	–	–	–	–

(1) The Bank has no exposure to non-qualifying central counterparties.

SEC1 – Securitization Exposures in the Banking Book

(millions of Canadian dollars)

The following tables present the bank's securitization exposures in its banking book.

		Q4 2022								
		a	b	c	e	f	g	i	j	k
		Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]		
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**1,271**	**–**	**1,271**	**3,970**	**–**	**3,970**	**1,994**	**–**	**1,994**
	Of which :									
2	Residential mortgages	–	–	–	3,347	–	3,347	–	–	–
3	Credit card	1,271	–	1,271	–	–	–	143	–	143
4	Other retail exposures	–	–	–	623	–	623	1,851	–	1,851
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**705**	**–**	**705**	**842**	**–**	**842**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	170	–	170	2	–	2
9	Lease and receivables	–	–	–	528	–	528	840	–	840
10	Other wholesale	–	–	–	7	–	7	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

		Q3 2022								
		a	b	c	e	f	g	i	j	k
		Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]		
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**1,271**	**–**	**1,271**	**3,366**	**–**	**3,366**	**2,192**	**–**	**2,192**
	Of which :									
2	Residential mortgages	–	–	–	2,699	–	2,699	–	–	–
3	Credit card	1,271	–	1,271	–	–	–	154	–	154
4	Other retail exposures	–	–	–	667	–	667	2,038	–	2,038
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**720**	**–**	**720**	**829**	**–**	**829**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	167	–	167	2	–	2
9	Lease and receivables	–	–	–	547	–	547	827	–	827
10	Other wholesale	–	–	–	6	–	6	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

(1) Represents the investment positions purchased in third-party deals.
(2) The Bank has no synthetic securitization exposure.

SEC1 – Securitization Exposures in the Banking Book (continued)

(millions of Canadian dollars)

		Q2 2022								
		a	b	c	e	f	g	i	j	k
				Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**1,271**	**–**	**1,271**	**3,066**	**–**	**3,066**	**2,151**	**–**	**2,151**
	Of which :									
2	Residential mortgages	–	–	–	2,294	–	2,294	–	–	–
3	Credit card	1,271	–	1,271	–	–	–	154	–	154
4	Other retail exposures	–	–	–	772	–	772	1,997	–	1,997
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**703**	**–**	**703**	**828**	**–**	**828**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	130	–	130	2	–	2
9	Lease and receivables	–	–	–	567	–	567	826	–	826
10	Other wholesale	–	–	–	6	–	6	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

		Q1 2022								
		a	b	c	e	f	g	i	j	k
				Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**1,271**	**–**	**1,271**	**2,524**	**–**	**2,524**	**1,880**	**–**	**1,880**
	Of which :									
2	Residential mortgages	–	–	–	1,759	–	1,759	29	–	29
3	Credit card	1,271	–	1,271	–	–	–	107	–	107
4	Other retail exposures	–	–	–	765	–	765	1,744	–	1,744
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**642**	**–**	**642**	**846**	**–**	**846**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	113	–	113	22	–	22
9	Lease and receivables	–	–	–	524	–	524	824	–	824
10	Other wholesale	–	–	–	5	–	5	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

(1) Represents the investment positions purchased in third-party deals.
(2) The Bank has no synthetic securitization exposure.

SEC2 – Securitization Exposures in the Trading Book

(millions of Canadian dollars)

The following tables present the bank's securitization exposures in its trading book.

		Q4 2022								
		a	b	c	e	f	g	i	j	k
		Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]		
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**–**	**–**	**–**	**27**	**–**	**27**	**20**	**–**	**20**
	Of which :									
2	Residential mortgages	–	–	–	20	–	20	1	–	1
3	Credit card	–	–	–	–	–	–	19	–	19
4	Other retail exposures	–	–	–	7	–	7	–	–	–
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**8**	**–**	**8**	**13**	**–**	**13**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	2	–	2	12	–	12
9	Lease and receivables	–	–	–	6	–	6	1	–	1
10	Other wholesale	–	–	–	–	–	–	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

		Q3 2022								
		a	b	c	e	f	g	i	j	k
		Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]		
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**–**	**–**	**–**	**6**	**–**	**6**	**29**	**–**	**29**
	Of which :									
2	Residential mortgages	–	–	–	4	–	4	10	–	10
3	Credit card	–	–	–	–	–	–	19	–	19
4	Other retail exposures	–	–	–	2	–	2	–	–	–
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**1**	**–**	**1**	**15**	**–**	**15**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	12	–	12
9	Lease and receivables	–	–	–	1	–	1	3	–	3
10	Other wholesale	–	–	–	–	–	–	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

(1) Represents the investment positions purchased in third-party deals.
(2) The Bank has no synthetic securitization exposure.

SEC2 – Securitization Exposures in the Trading Book (continued)

(millions of Canadian dollars)

		Q2 2022								
		a	b	c	e	f	g	i	j	k
		Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]		
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**–**	**–**	**–**	**8**	**–**	**8**	**20**	**–**	**20**
	Of which :									
2	Residential mortgages	–	–	–	5	–	5	–	–	–
3	Credit card	–	–	–	–	–	–	20	–	20
4	Other retail exposures	–	–	–	3	–	3	–	–	–
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**2**	**–**	**2**	**17**	**–**	**17**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	12	–	12
9	Lease and receivables	–	–	–	2	–	2	5	–	5
10	Other wholesale	–	–	–	–	–	–	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

		Q1 2022								
		a	b	c	e	f	g	i	j	k
		Bank acts as originator			Bank acts as sponsor			Banks acts as investor[1]		
		Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total	Traditional	Synthetic[2]	Sub-total
1	**Retail**	**–**	**–**	**–**	**13**	**–**	**13**	**12**	**–**	**12**
	Of which :									
2	Residential mortgages	–	–	–	8	–	8	–	–	–
3	Credit card	–	–	–	–	–	–	12	–	12
4	Other retail exposures	–	–	–	5	–	5	–	–	–
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	**Non-Retail**	**–**	**–**	**–**	**4**	**–**	**4**	**17**	**–**	**17**
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	12	–	12
9	Lease and receivables	–	–	–	4	–	4	5	–	5
10	Other wholesale	–	–	–	–	–	–	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

(1) Represents the investment positions purchased in third-party deals.
(2) The Bank has no synthetic securitization exposure.

SEC 3 – Securitization Exposures in the Banking Book and Associated Regulatory Capital Requirements[1] - Bank Acting as Originator or as Sponsor

(millions of Canadian dollars)

The following tables present securitization in the banking book when the bank acts as originator or sponsor and the associated capital requirements.

		Q4 2022																
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)[2]				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**5,946**	**–**	**–**	**–**	**–**	**1,771**	**3,925**	**250**	**–**	**177**	**393**	**25**	**–**	**14**	**31**	**2**	**–**
2	Traditional securitization	5,946	–	–	–	–	1,771	3,925	250	–	177	393	25	–	14	31	2	–
3	Of which securitization	5,946	–	–	–	–	1,771	3,925	250	–	177	393	25	–	14	31	2	–
4	Of which retail underlying	5,241	–	–	–	–	1,771	3,220	250	–	177	323	25	–	14	25	2	–
5	Of which wholesale	705	–	–	–	–	–	705	–	–	–	70	–	–	–	6	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

		Q3 2022																
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)[2]				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**5,357**	**–**	**–**	**–**	**–**	**1,271**	**3,836**	**250**	**–**	**127**	**384**	**25**	**–**	**10**	**30**	**2**	**–**
2	Traditional securitization	5,357	–	–	–	–	1,271	3,836	250	–	127	384	25	–	10	30	2	–
3	Of which securitization	5,357	–	–	–	–	1,271	3,836	250	–	127	384	25	–	10	30	2	–
4	Of which retail underlying	4,637	–	–	–	–	1,271	3,116	250	–	127	312	25	–	10	24	2	–
5	Of which wholesale	720	–	–	–	–	–	720	–	–	–	72	–	–	–	6	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(1) The Bank has no synthetic securitization exposure.

(2) RWA amounts do not include the transitional arrangement related amount.

SEC 3 – Securitization Exposures in the Banking Book and Associated Regulatory Capital Requirements[1] - Bank Acting as Originator or as Sponsor (continued)

(millions of Canadian dollars)

Q2 2022

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)[2]				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**5,040**	**–**	**–**	**–**	**–**	**1,771**	**3,269**	**–**	**–**	**177**	**352**	**–**	**–**	**14**	**29**	**–**	**–**
2	Traditional securitization	5,040	–	–	–	–	1,771	3,269	–	–	177	352	–	–	14	29	–	–
3	Of which securitization	5,040	–	–	–	–	1,771	3,269	–	–	177	352	–	–	14	29	–	–
4	Of which retail underlying	4,337	–	–	–	–	1,771	2,566	–	–	177	282	–	–	14	23	–	–
5	Of which wholesale	703	–	–	–	–	–	703	–	–	–	70	–	–	–	6	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Q1 2022

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)[2]				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**4,437**	**–**	**–**	**–**	**–**	**1,771**	**2,666**	**–**	**–**	**177**	**266**	**–**	**–**	**14**	**22**	**–**	**–**
2	Traditional securitization	4,437	–	–	–	–	1,771	2,666	–	–	177	266	–	–	14	22	–	–
3	Of which securitization	4,437	–	–	–	–	1,771	2,666	–	–	177	266	–	–	14	22	–	–
4	Of which retail underlying	3,795	–	–	–	–	1,771	2,024	–	–	177	202	–	–	14	17	–	–
5	Of which wholesale	642	–	–	–	–	–	642	–	–	–	64	–	–	–	5	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(1) The Bank has no synthetic securitization exposure.

(2) RWA amounts do not include the transitional arrangement related amount.

SEC 4 – Securitization Exposures in the Banking Book and Associated Capital Requirements[1] - Bank Acting as Investor

(millions of Canadian dollars)

The following tables present securitization exposures in the banking book where the bank acts as investor and the associated capital requirements.

		Q4 2022																
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)[2]				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**2,779**	**21**	**36**	**–**	**–**	**–**	**861**	**1,975**	**–**	**–**	**104**	**309**	**–**	**–**	**9**	**25**	**–**
2	Traditional securitization	2,779	21	36	–	–	–	861	1,975	–	–	104	309	–	–	9	25	–
3	Of which securitization	2,779	21	36	–	–	–	861	1,975	–	–	104	309	–	–	9	25	–
4	Of which retail underlying	1,975	19	–	–	–	–	259	1,735	–	–	44	253	–	–	4	21	–
5	Of which wholesale	804	2	36	–	–	–	602	240	–	–	60	56	–	–	5	4	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

		Q3 2022																
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)[2]				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**2,966**	**21**	**34**	**–**	**–**	**–**	**876**	**2,145**	**–**	**–**	**106**	**334**	**–**	**–**	**9**	**27**	**–**
2	Traditional securitization	2,966	21	34	–	–	–	876	2,145	–	–	106	334	–	–	9	27	–
3	Of which securitization	2,966	21	34	–	–	–	876	2,145	–	–	106	334	–	–	9	27	–
4	Of which retail underlying	2,173	19	–	–	–	–	273	1,919	–	–	45	281	–	–	4	23	–
5	Of which wholesale	793	2	34	–	–	–	603	226	–	–	61	53	–	–	5	4	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(1) The Bank has no synthetic securitization exposure.

(2) RWA amounts do not include the transitional arrangement related amount.

SEC 4 – Securitization Exposures in the Banking Book and Associated Capital Requirements(1) - Bank Acting as Investor (continued)

(millions of Canadian dollars)

		Q2 2022																
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)(2)				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**2,924**	**21**	**34**	**–**	**–**	**–**	**870**	**2,109**	**–**	**–**	**106**	**328**	**–**	**–**	**8**	**26**	**–**
2	Traditional securitization	2,924	21	34	–	–	–	870	2,109	–	–	106	328	–	–	8	26	–
3	Of which securitization	2,924	21	34	–	–	–	870	2,109	–	–	106	328	–	–	8	26	–
4	Of which retail underlying	2,132	19	–	–	–	–	268	1,883	–	–	45	275	–	–	4	22	–
5	Of which wholesale	792	2	34	–	–	–	602	226	–	–	61	53	–	–	4	4	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

		Q1 2022																
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)(2)				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%	IRBA	ERBA/IAA	SA/SSFA	1250%
1	**Total exposures**	**2,666**	**27**	**33**	**–**	**–**	**29**	**685**	**2,012**	**–**	**4**	**80**	**316**	**–**	**–**	**6**	**25**	**–**
2	Traditional securitization	2,666	27	33	–	–	29	685	2,012	–	4	80	316	–	–	6	25	–
3	Of which securitization	2,666	27	33	–	–	29	685	2,012	–	4	80	316	–	–	6	25	–
4	Of which retail underlying	1,861	19	–	–	–	29	63	1,788	–	4	15	264	–	–	1	21	–
5	Of which wholesale	805	8	33	–	–	–	622	224	–	–	65	52	–	–	5	4	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(1) The Bank has no synthetic securitization exposure.

(2) RWA amounts do not include the transitional arrangement related amount.

Glossary

Advanced Internal Ratings-Based (AIRB) approach	See risk-weighted assets below.
Banking Book Equities	Banking book equities comprise mainly exposures held for strategic and other reasons.
Capital Ratio	The Bank's capital divided by risk-weighted assets. The Bank's capital can be either CET1 Capital, Tier 1 capital or Total capital, producing three different capital ratios.
Common Equity Tier 1 (CET1) capital	Common Equity Tier 1 capital consists of common shareholders' equity less goodwill, intangible assets and other capital deductions. Common Equity Tier 1 capital ratio is calculated by dividing Common Equity Tier 1 capital by risk-weighted assets.
Corporate	All direct credit risk exposures to corporations, partnerships and proprietorships, exposures guaranteed by those entities.
Credit Risk	Credit risk is the risk of a financial loss if an obligor does not fully honor its contractual commitments to the Bank. Obligors may be borrowers, issuers, counterparties or guarantors. Credit risk is the most significant risk facing the Bank in the normal course of business. The Bank is exposed to credit risk not only through its direct lending activities and transactions but also through commitments to extend credit, letters of guarantee, letters of credit, over-the-counter derivatives trading, available-for-sale debt securities, securities purchased under reverse repurchase agreements, deposits with financial institutions, brokerage activities and transactions carrying a settlement risk for the Bank such as irrevocable fund transfers to third parties via electronic payment systems.
Drawn exposure	The amount of credit risk exposure resulting from loans already advanced to the customer.
Exposure at default (EAD)	An estimate of the amount of exposure to a customer at the event of, and at the time of, default.
Financial institutions	All direct credit risk exposures to deposit-taking institutions and regulated securities firms, and exposures guaranteed by those entities.
Leverage ratio	The leverage ratio is calculated by dividing the amount of Tier 1 capital by the total exposure. Total exposure is defined as the sum of on-balance-sheet assets (including derivative exposures and securities financing transaction exposures) and off-balance-sheet items. Assets deducted from Tier 1 capital are also deducted from the total exposure.
Loss given default (LGD)	An estimate of the amount of exposure to a customer that will not be recovered following a default by that customer, expressed as a percentage of the exposure at default.
Market risk	Market risk is the risk of financial loss resulting from adverse movements in underlying market factors. Market risk at the Bank arises from its participation in market-making, trading, investment and asset/liability management activities.
Operational risk	Operational risk is the risk of loss resulting from an inadequacy or a failure ascribable to people, processes, technology or external events. Operational risks are present in every activity of the Bank. Theft, fraud, unauthorized transactions, system errors, human error, amendments to or misinterpretation of acts and regulations, litigation or disputes with clients or property damage are just a few examples of events likely to cause financial loss, harm the Bank's reputation or result in regulatory penalties or sanctions.
Other off-balance sheet	Letters of guarantee, documentary letters of credit and securitized assets that represent the Bank's commitment to make payments in the event that a client cannot meet its financial obligations to third parties.
Other retail	This exposure class includes consumer loans, SME credit card receivables, SME loans (excluding mortgages of five units or more), and other personal loans.
Over-the-counter derivatives (OTC)	The amount of credit risk exposure resulting from derivatives that trade directly between two counterparties, rather than through exchanges.
Probability of default (PD)	An estimate of the likelihood of default for any particular customer which occurs when that customer is not able to repay its obligations as they become contractually due.
Qualifying revolving retail (QRR)	This exposure class includes lines of credit and credit card receivables.
Repo-style transactions	Financial obligations related to securities sold (repos) or repurchased (reverse repos) pursuant to an agreement under which the securities will be repurchased (repos) or resold (reverse repos) on a specified date and at a specified price. Such an agreement is a form of short-term funding (repos) or collateralized lending (reverse repos). Repo-style transactions also include loaned and borrowed securities that are off-balance sheet.
Retail Residential Mortgage	This exposure class includes loans to individuals against residential property (four units or less) and lines of credit secured by equity in residential property (HELOC).
Risk-weighted assets (RWA)	Assets are risk weighted according to the guidelines established by the Office of the Superintendent of Financial Institutions. In the standardized calculation approach, factors are applied to the face value of certain assets in order to reflect comparable risk levels. In the advanced approach, risk-weighted assets are derived from the Bank's internal models which represents the Bank's own assessment of the risks it incurs. Off-balance sheet instruments are converted to balance sheet (or credit) equivalents by adjusting the notional values before applying the appropriate risk-weighting factors.
Scaling Factor	An add-on of 6% is applied as a calibration adjustment to the risk weighted assets amount for credit risk assessed under the AIRB approach.
Sovereign	All direct credit risk exposures to governments, central banks and certain public sector entities, and exposures guaranteed by those entities.
Standardized approach	See risk-weighted assets.
Tier 1 capital	Tier 1 capital ratio consists of Common Equity Tier 1 capital and Additional Tier 1 instruments, namely, eligible non-cumulative preferred shares and the eligible amount of innovative instruments. Tier 1 capital ratio is calculated by dividing Tier 1 capital by risk-weighted assets.
Tier 2 capital	Tier 2 capital mainly includes the qualifying portion of the subordinated debentures and the collective allowance on non-impaired loans eligible for credit risk.
Total capital	Total capital is the sum of Tier 1 and Tier 2 capital. Total capital ratio is calculated by dividing total capital, less adjustments or regulatory deductions, by risk-weighted assets.
Undrawn commitments	The amount of credit risk exposure resulting from loans that have not been advanced to a customer, but which a customer may be entitled to draw in the future.