



SUPPLEMENTARY REGULATORY CAPITAL AND PILLAR 3 DISCLOSURE

THIRD QUARTER 2019

(unaudited)

For more information:

Ghislain Parent, Chief Financial Officer and Executive Vice-President Finance, Tel: 514 394-6807

Jean Dagenais, Senior Vice-President Finance, Tel: 514 394-6233

Linda Boulanger, Vice-President Investor Relations, Tel: 514 394-0296

Claude Breton, Vice-President Public Affairs and Corporate Social Responsibility, Tel: 514 394-8644

This document is available via the Bank's web site: www.nbc.ca

Notes to users

- 1) This *Supplementary Regulatory Capital and Pillar 3 Disclosure* document is unaudited and should be read in conjunction with the 2018 Annual Report. All amounts are in millions of Canadian dollars, unless otherwise stated.
- 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 2019 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) For certain prescribed tables formats where line or column items have zero balances, such items have not been presented.

Table of Contents

Location of Pillar 3 Disclosure	page 4
Overview of risk management and risk-weight assets	
KM2 - Key Metrics - TLAC Requirements	page 5
OV1 - Overview of RWA	page 6
Linkages between financial statements and regulatory exposures	
LI1 - Differences Between Accounting and Regulatory Scopes of Consolidation and Mapping of Financial Statements with Regulatory Risk Categories	page 7
LI2 - Main Sources of Differences Between Regulatory Exposure Amounts and Carrying Values in Financial Statements	page 8
Composition of capital and TLAC	
CC1 - Composition of Regulatory Capital	pages 9-11
CC2 - Reconciliation of Regulatory Capital to Balance Sheet	pages 12-13
TLAC1 - TLAC Composition	page 14
TLAC3 - Creditor Ranking at Legal Entity Level	page 15
Leverage Ratio	
LR1 - Summary Comparison of Accounting Assets vs Leverage Ratio Exposure Measure	page 16
LR2 - Leverage Ratio Common Disclosure Template	page 17
Credit risk	
CR1 - Credit Quality of Assets	page 18
CR2 - Changes in Stock of Defaulted Loans and Debt Securities	page 19
CR3 - Credit Risk Mitigation Techniques - Overview	page 20
Distribution of Gross Credit Risk Exposure (Non-Retail Portfolio by Industries)	pages 21-22
Gross Credit Risk Exposure at Default in Europe	page 23
CR4 - Standardised Approach - Credit Risk Exposure and Credit Risk Mitigation (CRM) Effects	page 24
CR5 - Standardised Approach - Exposures by Asset Classes and Risk Weights	page 25
CR6 - IRB - Credit Risk Exposures by Portfolio and PD Range	pages 26-29
CR8 - RWA Flow Statements of Credit Risk Exposures Under IRB	page 30
AIRB Credit Risk Exposure - Back-Testing	page 31
CR10 - IRB - Specialised Lending and Equities Under the Simple Risk Weight Method	page 32
Counterparty credit risk	
CCR1 - Analysis of Counterparty Credit Risk (CCR) Exposure by Approach	page 33
CCR2 - Credit Valuation Adjustment (CVA) Capital Charge	page 34
CCR3 - Standardised Approach - CCR Exposures by Regulatory Portfolio and Risk Weights	page 35
CCR4 - IRB - CCR Exposures by Portfolio and PD Scale	pages 36-37
CCR5 - Composition of Collateral for CCR Exposure	page 38
CCR6 - Credit Derivatives Exposures	page 39
CCR8 - Exposures to Central Counterparties (CCP)	page 40
Securitization	
SEC1 - Securitization Exposures in the Banking Book	pages 41-42
SEC2 - Securitization Exposures in the Trading Book	pages 43-44
SEC3 - Securitization Exposures in the Banking Book and Associated Regulatory Capital Requirements - Bank Acting as Originator or as Sponsor	pages 45-46
SEC4 - Securitization Exposures in the Banking Book and Associated Regulatory Capital Requirements - Bank Acting as Investor	pages 47-48
Glossary	page 49

Location of Pillar 3 Disclosure

	2018 Annual Report	Supplementary Regulatory Capital and Pillar 3 Disclosure	Pages
Overview of Risk Management and Risk-weight Assets			
KM1 - Key Metrics (at consolidated group level)			5
KM2 - Key Metrics - TLAC Requirements			6
OVA - Bank Risk Management Approach	51, 56 to 58 and 64		6
OV1 - Overview of RWA			6
Linkages between financial statements and regulatory exposures			
LI1 - Differences Between Accounting and Regulatory Scopes of Consolidation and Mapping of Financial Statements with Regulatory Risk Categories			7
LI2 - Main Sources of Differences Between Regulatory Exposure Amounts and Carrying Values in Financial Statements			8
LIA - Explanations of Differences Between Accounting and Regulatory Exposure Amounts	88-89		8
Composition of Capital and TLAC			
CC1 - Composition of Regulatory Capital			9-11
CC2 - Reconciliation of Regulatory Capital to Balance Sheet			12-13
CCA - Main Features of Regulatory Capital Instruments and of other TLAC-Eligible Instruments ⁽¹⁾			14
TLAC1 - TLAC Composition			15
TLAC3 - Creditor Ranking at Legal Entity Level			15
Leverage Ratio			
LR1 - Summary Comparison of Accounting Assets vs Leverage Ratio Exposure Measure			16
LR2 - Leverage Ratio Common Disclosure Template			17
Credit risk			
CRA - General Information About Credit Risk	56 and 60-61		18
CR1 - Credit Quality of Assets			19
CR2 - Changes in Stock of Defaulted Loans and Debt Securities			19
CRB - Additional Disclosure Related to the Credit Quality of Assets	90 and 154 to 162	21-22 and 26 ⁽²⁾	20
CRC - Qualitative Disclosure Requirements Related to Credit Risk Mitigation Techniques	64 to 66 and 173		20
CR3 - Credit Risk Mitigation Techniques - Overview			24
CRD - Qualitative Disclosures on Banks' Use of External Credit Ratings Under the Standardised Approach for Credit Risk	61 to 63		25
CR4 - Standardised Approach - Credit Risk Exposure and Credit Risk Mitigation (CRM effects)			25
CR5 - Standardised Approach - Exposures by Asset Classes and Risk Weights			26-29
CRE - Qualitative Disclosures Related to IRB Models	61 to 63		n.a.
CR6 - IRB - Credit Risk Exposures by Portfolio and PD Range			30
CR7 - IRB - Effect on RWA of Credit Derivatives Used as CRM Techniques	n.a.		25 and 26 ⁽³⁾
CR8 - RWA Flow Statements of Credit Risk Exposures Under IRB			32
CR9 - IRB - Backtesting of Probability of Default (PD) per Portfolio			32
CR10 - IRB Specialised Lending and Equities Under the simple Risk Weight Method			32
Counterparty credit risk			
CCRA - Qualitative Disclosure Related to Counterparty Credit Risk	66 and 173		33
CCR1 - Analysis of Counterparty Credit Risk (CCR) Exposure by Approach			34
CCR2 - Credit Valuation Adjustment (CVA) Capital Charge			35
CCR3 - Standardised Approach of CCR Exposures by Regulatory Portfolio and Risk Weights			36-37
CCR4 - IRB - CCR Exposures by Portfolio and PD Scale			38
CCR5 - Composition of Collateral for CCR Exposure			39
CCR6 - Credit Derivatives Exposures			n.a.
CCR7 - RWA Flow Statements of CCR Exposures Under the Internal Model Method (IMM)	n.a.		n.a.
CCR8 - Exposures to Central Counterparties (CCP)			40
Securitization			
SECA - Qualitative Disclosure Requirements Related to Securitization Exposures	41, 44, 124 and 199-200		41-42
SEC1 - Securitization Exposures in the Banking Book			43-44
SEC2 - Securitization Exposures in the Trading Book			45-46
SEC3 - Securitization Exposures in the Banking Book and Associated Regulatory Capital Requirements - Bank Acting as Originator or as Sponsor			47-48
SEC4 - Securitization Exposures in the Banking Book and Associated Capital Requirements - Bank Acting as Investor			47-48
Market risk			
MRA - Qualitative Disclosure Requirements Related to Market Risk			The Bank continues to apply the market risk disclosures under Basel 2.5 framework as permitted by OSFI.
MRB - Qualitative Disclosures for Banks Using the Internal Models Approach (IMA)			
MR1 - Market Risk Under Standardised Approach			
MR2 - RWA Flow Statements of Market Risk Exposures Under an IMA			
MR3 - IMA Values for Trading Portfolios			
MR4 - Comparison of VaR Estimates with Gains/Losses			

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 - Third Quarter 2019*

(3) This page is included in the *Supplementary Regulatory Capital and Pillar 3 Disclosure - Fourth Quarter 2018*

KM2 – Key Metrics - TLAC Requirements⁽¹⁾

(unaudited) (millions of Canadian dollars)

		2019		
		Q3	Q2	Q1
		a		
1	Total loss-absorbing capacity (TLAC) available	15,378	13,977	12,547
2	Total RWA at the level of the resolution group	80,984	79,008	77,036
3	TLAC ratio: TLAC as a percentage of RWA (row 1 / row 2) (%)	19.0%	17.7%	16.3%
4	Leverage ratio exposure measure at the level of the resolution group	303,961	296,118	286,655
5	TLAC Leverage Ratio: TLAC as a percentage of leverage ratio exposure measure (row1 / row4) (%)	5.1%	4.7%	4.4%
6a	Does the subordination exemption in the antepenultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?	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
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.

(1) Minimum TLAC ratios will be required starting November 1, 2021.

OV1 – Overview of RWA⁽¹⁾

(unaudited) (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.

		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2019
		a	b	b	b	c
		RWA ⁽¹⁾	RWA ⁽¹⁾	RWA ⁽¹⁾	RWA ⁽¹⁾	Minimum capital requirement ⁽²⁾
1	Credit risk (excluding counterparty credit risk)	57,539	56,069	55,090	54,467	4,603
2	Of which: standardised approach (SA)	10,144	10,251	9,588	9,341	811
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	47,395	45,818	45,502	45,126	3,792
6	Counterparty credit risk (CCR)	5,332	5,234	4,443	3,044	426
7	Of which: standardised approach for counterparty credit risk ⁽³⁾	4,060	4,087	3,405	2,245	325
8	Of which: internal model method (IMM)	–	–	–	–	–
9	Of which: other CCR	1,079	966	762	601	86
9a	Of which: exposures to central counterparties	193	181	276	198	15
10	Credit valuation adjustment (CVA)	1,139	1,151	1,020	405	91
11	Equity positions under the simple risk weight approach⁽⁴⁾	1,074	943	924	926	86
12	Equity investments in funds – look-through approach	121	108	101	105	10
13	Equity investments in funds – mandate-based approach	–	–	–	–	–
14	Equity investments in funds – fall-back approach	–	86	75	70	–
15	Settlement risk	33	94	41	46	3
16	Securitization exposures in banking book	455	439	468	413	36
16a	Of which: subject to the transitional arrangement	(188)	(188)	(543)	–	(15)
17	Of which: securitization IRB approach (SEC-IRBA) ⁽⁵⁾	40	50	45	390	3
18	Of which: securitisation external ratings-based approach (SEC-ERBA), including internal assessment approach (IAA) ⁽⁶⁾	477	449	966	23	38
19	Of which: securitisation standardised approach (SEC-SA)	126	128	–	–	10
20	Market risk	3,972	3,788	3,964	3,435	318
21	Of which: standardised approach (SA)	983	927	1,041	1,072	79
22	Of which: internal model approach (IMA)	2,989	2,861	2,923	2,363	239
23	Capital charge for switch between trading book and banking book	–	–	–	–	–
24	Operational risk	11,319	11,096	10,910	10,743	906
25	Amounts below the thresholds for deduction (subject to 250% risk weight)	–	–	–	–	–
26	Floor adjustment	–	–	–	–	–
27	Total (1+6+10+11+12+13+14+15+16+20+23+24+25+26)	80,984	79,008	77,036	73,654	6,479

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

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

(3) Standardised approach (SA-CCR) for measuring exposure at default for counterparty credit risk is applicable in Q1-2019. Before it entered into force, NBC reported information corresponding to the Current Exposures Method.

(4) 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.

(5) Q4 2018 values represent the IRB rating based approach (RBA) method applicable at this point in time.

(6) Q4 2018 values represent the IRB supervisory Formula Approach (SFA) method applicable at this point in time.

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

(unaudited) (millions of Canadian dollars)

For the following tables 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.

	Q3 2019						
	a	b	c	d	e	f	g
	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	Carrying values of items ⁽²⁾ Not subject to capital requirements or subject to deduction from capital
Assets							
Cash and deposits with financial institutions	11,552	11,552	11,552	–	–	255	–
Securities							
At fair value through profit or loss	67,444	69,253	3,551	–	12	65,690	–
At fair value through other comprehensive income	9,091	17,933	17,924	–	9	–	–
At amortized cost	8,197	8,482	7,071	–	1,411	–	–
	84,732	95,668	28,546	–	1,432	65,690	–
Securities purchased under reverse repurchase agreements and securities borrowed	13,928	14,355	–	14,355	–	–	–
Loans and acceptances							
Residential mortgage	55,982	35,424	30,392	–	–	–	–
Personal	36,947	36,947	36,947	–	–	–	–
Credit card	2,322	757	757	–	–	–	–
Business and government	49,950	49,950	49,950	–	–	237	–
Customers' liability under acceptances	145,201	123,078	118,046	–	–	237	–
Allowances for credit losses	6,834	6,834	6,834	–	–	–	–
	(687)	(183)	(183)	–	–	–	–
	151,348	129,729	124,697	–	–	237	–
Other							
Derivative financial instruments ⁽³⁾	8,515	8,610	–	8,610	–	7,629	–
Investments in associates and joint ventures	379	437	437	–	–	–	–
Premises and equipment	468	468	468	–	–	–	–
Goodwill	1,413	1,510	–	–	–	–	1,510
Intangible assets	1,364	1,111	–	–	–	–	1,111
Other assets	2,613	2,556	2,551	–	–	–	5
	14,752	14,692	3,456	8,610	–	7,629	2,626
Total assets	276,312	265,996	168,251	22,965	1,432	73,811	2,626
Liabilities							
Deposits	187,219	187,219	–	–	–	9,813	177,406
Other							
Acceptances	6,834	6,834	–	–	–	–	6,834
Obligations related to securities sold short	13,917	13,917	–	–	–	13,917	–
Obligations related to securities sold under repurchase agreements and securities loaned	19,764	19,639	–	19,639	–	–	125
Derivative financial instruments ⁽³⁾	6,211	6,558	–	6,558	–	5,406	–
Liabilities related to transferred receivables	20,549	20,549	–	–	–	–	20,549
Other liabilities	6,150	6,150	–	–	–	25	6,125
	73,425	73,647	–	26,197	–	19,348	33,633
Subordinated debt	773	773	–	–	–	–	773
Total liabilities	261,417	261,639	–	26,197	–	29,161	211,812

(1) The basis of consolidation used for financial accounting purposes, described in note 1 to the 2018 Annual Report audited consolidated financial statements, 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.

L12 – Main Sources of Differences Between Regulatory Exposure Amounts and Carrying Values in Financial Statements

(unaudited) (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 L11) between the financial statements' carrying value amounts and the exposure amounts used for regulatory purposes.

		Q3 2019				
		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 L11)	263,370	168,251	1,432	22,965	73,811
2	Liabilities carrying value amount under scope of regulatory consolidation (as per template L11)	49,827	–	–	26,197	29,161
3	Total net amount under regulatory scope of consolidation	213,543	168,251	1,432	(3,232)	44,650
4	<i>Gross-up for repo-style transactions⁽²⁾</i>	39,278	–	–	39,278	–
5	<i>Potential future exposures (PFE)⁽³⁾</i>	10,638	–	–	10,638	–
6	<i>Off-balance sheet amounts⁽⁴⁾</i>	189,506	43,715	3,784	115,582	–
7	<i>Differences due to different netting rules, other than those already included in row 2 including collateral</i>	1,086	–	–	1,086	–
8	VaR amounts for Securities Financing Transactions (SFTs)	3,584	–	–	3,584	–
9	<i>Differences in valuations</i>	–	–	–	–	–
10	<i>Collateral for SFTs</i>	(145,576)	–	–	(145,576)	–
11	Exposure amounts considered for regulatory purposes⁽⁵⁾	312,059	211,966	5,216	21,360	44,650

(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) Is equal to two times the Obligations related to securities sold under repurchase agreements and securities loaned subject to counterparty credit risk framework from table L11.

(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

(unaudited) (millions of Canadian dollars)

		2019			2018				
		Q3	Q2	Q1	Q4	Q3	Q2	Q1	
		Reference ⁽¹⁾							
Common Equity Tier 1 capital: instruments and reserves									
1	Directly issued qualifying common share capital plus related contributed surplus ⁽²⁾	a + a'	2,967	2,953	2,933	2,879	2,878	2,920	2,913
2	Retained earnings	b	9,044	8,889	8,695	8,472	8,404	8,018	7,785
3	Accumulated other comprehensive income and other reserves	c	59	50	65	175	159	139	110
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	22	18	15	13	10	10	8
6	Common Equity Tier 1 capital before regulatory adjustments		12,092	11,910	11,708	11,539	11,451	11,087	10,816
Regulatory adjustments to Common Equity Tier 1 capital									
7	Prudential valuation adjustments		–	–	–	–	–	–	–
8	Goodwill (net of related tax liability)	e - w	(1,510)	(1,675)	(1,671)	(1,671)	(1,668)	(1,671)	(1,662)
9	Intangible assets other than mortgage-servicing rights	f - x	(1,111)	(1,177)	(1,139)	(1,121)	(1,099)	(1,100)	(1,073)
10	Deferred tax assets excluding those arising from temporary differences (net of related tax liability)	g	–	–	–	–	–	–	–
11	Accumulated other comprehensive income related to cash flow hedges	h	(32)	6	(48)	(151)	(138)	(137)	(152)
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	41	35	(23)	32	39	62	81
15	Defined benefit pension plan assets (net of related tax liability)	k - y	(5)	(7)	(5)	(11)	(93)	(4)	(3)
16	Investments in own shares (if not already netted off contributed surplus on reported balance sheet)		–	–	–	(9)	(3)	(1)	(5)
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%)	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)		–	–	–	–	–	–	–
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		(2,617)	(2,818)	(2,886)	(2,931)	(2,962)	(2,851)	(2,814)
29	Common Equity Tier 1 capital (CET1)		9,475	9,092	8,822	8,608	8,489	8,236	8,002
Additional Tier 1 capital: instruments									
30	Directly issued qualifying Additional Tier 1 instruments plus related contributed surplus ⁽²⁾		2,450	2,450	2,450	2,450	2,450	2,150	2,150
31	of which: classified as equity under applicable accounting standards	v + z	2,450	2,450	2,450	2,450	2,450	2,150	2,150
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'	350	350	350	350	350	750	750
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	5	4	3	3	2	2	2
35	of which: instruments issued by subsidiaries subject to phase out		–	–	–	–	–	–	–
36	Additional Tier 1 capital before regulatory adjustments		2,805	2,804	2,803	2,803	2,802	2,902	2,902

(1) Reconciliation with Balance Sheet is presented on pages 12 to 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)

(unaudited) (millions of Canadian dollars)

		2019			2018			
		Q3	Q2	Q1	Q4	Q3	Q2	Q1
		Reference ⁽¹⁾						
Additional Tier 1 capital: regulatory adjustments								
37	Investments in own Additional Tier 1 instruments	-	-	-	-	-	-	-
38	Reciprocal cross holdings in Additional Tier 1 instruments	-	-	-	-	-	-	-
39	Non-significant investments in the capital of banking, financial and insurance entities, net of eligible short positions (amount above 10% net of eligible short positions)	-	-	-	-	-	-	-
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)	(1)	(1)	(1)	(1)
41a	of which: Reverse mortgages	-	-	(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	-	-	(1)	(1)	(1)	(1)	(1)
44	Additional Tier 1 capital (AT1)	2,805	2,804	2,802	2,802	2,801	2,901	2,901
45	Tier 1 capital (T1 = CET1 + AT1)	12,280	11,896	11,624	11,410	11,290	11,137	10,903
Tier 2 capital: instruments and allowances								
46	Directly issued qualifying Tier 2 instruments plus related contributed surplus ⁽²⁾	r	750	750	750	750	750	-
47	Directly issued capital instruments subject to phase out from Tier 2 ⁽²⁾	r'	9	9	9	9	9	8
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	6	5	4	4	3	2
49	of which: instruments issued by subsidiaries subject to phase out	-	-	-	-	-	-	-
50	Allowances for credit losses	t	183	185	188	179	164	154
51	Tier 2 capital before regulatory adjustments		948	949	951	942	917	164
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)	(35)	(55)	(28)	-	-	-	-
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	(35)	(55)	(28)	-	-	-	-
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	(35)	(55)	(28)	-	-	-	-
58	Tier 2 capital (T2)	913	894	923	942	917	926	164
59	Total capital (TC = T1 + T2)	13,193	12,790	12,547	12,352	12,207	12,063	11,067

(1) Reconciliation with Balance Sheet is presented on pages 12 to 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)

(unaudited) (millions of Canadian dollars)

		2019			2018			
		Q3	Q2	Q1	Q4	Q3	Q2	Q1
60	Total risk-weighted assets	80,984	79,008	77,036	73,685	73,331	72,895	71,362
60a	Common Equity Tier 1 Capital RWA (CET1)	80,984	79,008	77,036	73,654	73,268	72,834	71,179
60b	Tier 1 Capital RWA	80,984	79,008	77,036	73,670	73,300	72,865	71,271
60c	Total capital RWA	80,984	79,008	77,036	73,685	73,331	72,895	71,362
Capital ratios								
61	Common Equity Tier 1 (as a percentage of risk weighted assets)	11.7%	11.5%	11.5%	11.7%	11.6%	11.3%	11.2%
62	Tier 1 (as a percentage of risk weighted assets)	15.2%	15.1%	15.1%	15.5%	15.4%	15.3%	15.3%
63	Total capital (as a percentage of risk weighted assets)	16.3%	16.2%	16.3%	16.8%	16.7%	16.6%	15.5%
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%
65	of which: capital conservation buffer requirement	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%
67	of which: G-SIB buffer requirement	n.a.						
67a	of which: D-SIBs buffer requirement	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)	11.7%	11.5%	11.5%	11.7%	11.6%	11.3%	11.2%
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%
70	Tier 1 capital all-in target ratio	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%
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	530	551	549	311	366	481	658
73	Significant investments in the common stock of financials	339	301	287	270	255	241	235
74	Mortgage servicing rights (net of related tax liability)	–	–	–	–	–	–	–
75	Deferred tax assets arising from temporary differences (net of related tax liabilities)	154	37	42	38	43	58	50
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)	71	71	70	67	66	68	61
77	Cap on inclusion of allowances in Tier 2 under standardised approach	103	102	97	90	89	90	83
78	Allowance eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)	112	114	118	112	89	96	93
79	Cap on inclusion of allowances in Tier 2 under internal ratings-based approach	345	336	326	314	307	308	310
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	581	581	581	775	775	775	775
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	715	715	715	953	953	953	953
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	–	–	–	–	–	–	–

(1) Do not include the domestic stability buffer.

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

(unaudited) (millions of Canadian dollars)

	Q3 2019		
	Cross - Reference to Definition of Capital ⁽²⁾	As in Report to Shareholders	Under scope of regulatory consolidation
Assets			
Cash and deposits with financial institutions		11,552	11,552
Securities		84,732	95,668
Non-significant investments in capital of other financial institutions reflected in regulatory capital	l	–	–
Other securities		84,732	95,668
Assets purchased under reverse repurchase agreements and securities borrowed		13,928	14,355
Loans			
Residential mortgage		55,982	35,424
Personal		36,947	36,947
Credit card		2,322	757
Business and government		49,950	49,950
Customers' liability under acceptances		6,834	6,834
Less: Allowances for credit losses		(687)	(183)
Allowance reflected in Tier 2 regulatory capital	t	–	(183)
Shortfall of allowances to expected loss	i	–	–
Allowances not reflected in regulatory capital		–	(504)
Other assets			
Derivative financial instruments		8,515	8,610
Other		6,237	6,082
Goodwill	e	–	1,510
Intangibles assets	f	–	1,364
Deferred tax assets		–	645
Deferred tax assets excluding those arising from temporary differences	g	–	–
Deferred tax assets arising from temporary differences exceeding regulatory thresholds	o	–	–
Deferred tax assets - realize through loss carrybacks		–	491
Deferred tax assets - other temporary differences		–	154
Defined-benefit pension fund net assets	k	–	7
Significant investments in other financial institutions		–	339
Significant investments exceeding regulatory thresholds	m + n	–	–
Significant investments not exceeding regulatory thresholds		–	339
Other		–	2,217
Total assets		276,312	265,996

(1) The basis of consolidation used for financial accounting purposes, described in note 1 to the 2018 Annual Report audited consolidated financial statements, 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. Total assets of National Bank Life Insurance Company and other insurance subsidiaries are \$170 million and \$16 million respectively.

(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)

(unaudited) (millions of Canadian dollars)

	Q3 2019		
	Cross - Reference to Definition of Capital ⁽²⁾	As in Report to Shareholders	Under scope of regulatory consolidation
Liabilities			
Deposits		187,219	187,219
Derivatives financial instruments		6,211	6,558
Other liabilities		67,214	67,089
Gains and losses due to changes in own credit risk on fair value liabilities	j	-	(41)
Deferred tax liabilities		-	166
Related to goodwill	w	-	-
Related to intangibles	x	-	253
Related to pensions	y	-	2
Other deferred tax liabilities		-	(89)
Other		-	66,964
Subordinated debt		773	773
Regulatory capital amortization of maturing debentures		-	-
Fair value adjustment and unamortized issuance cost		-	14
Subordinated debentures not allowed for regulatory capital	s	-	-
Subordinated debentures used for regulatory capital		-	759
Allowed for inclusion in Tier 2 capital	r	-	750
Subject to phase out	r'	-	9
Total liabilities		261,417	261,639
Equity Attributable to Shareholders		14,520	14,520
Common shares	a	-	2,914
Contributed surplus	a'	-	53
Retained earnings	b	-	9,044
Accumulated Other Comprehensive Income (loss)	c	-	59
Net gains (losses) on instruments designated as cash flow hedges	h	-	32
Net foreign currency translation adjustments		-	15
Other		-	12
Preferred shares		-	2,450
of which: are qualifying	v	-	2,450
of which: are subject to phase out	v'	-	-
Non-controlling interest		375	385
Innovative instruments		-	352
of which: are qualifying		-	-
of which: are subject to phase out	p'	-	350
Other		-	2
Portion allowed for inclusion into CET1	d	-	22
Portion allowed for inclusion into Tier 1 capital	q	-	5
Portion allowed for inclusion into Tier 2 capital	s	-	6
Portion not allowed for regulatory capital		-	-
Total Equity		14,895	14,905
Total Liabilities and Equity		276,312	276,544

(1) The basis of consolidation used for financial accounting purposes, described in note 1 to the 2018 Annual Report audited consolidated financial statements, 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. Total assets of National Bank Life Insurance Company and other insurance subsidiaries are \$172 million and \$16 million respectively.

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

TLAC1 – TLAC Composition⁽¹⁾

(unaudited) (millions of Canadian dollars)

		2019		
		Q3	Q2	Q1
Regulatory capital elements of TLAC and adjustments				
1	Common Equity Tier 1 capital (CET1)	9,475	9,092	8,822
2	Additional Tier 1 capital (AT1) before TLAC adjustments	2,805	2,804	2,803
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties ⁽²⁾	–	–	–
4	Other adjustments	–	–	(1)
5	AT1 instruments eligible under the TLAC framework	2,805	2,804	2,802
6	Tier 2 capital (T2) before TLAC adjustments	948	949	951
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	(35)	(55)	(28)
10	T2 instruments eligible under the TLAC framework	913	894	923
11	TLAC arising from regulatory capital	13,193	12,790	12,547
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	2,185	1,196	–
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	2,185	1,196	–
Non-regulatory capital elements of TLAC: adjustments				
18	TLAC before deductions	15,378	13,986	12,547
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	–	(9)	–
21	Other adjustments to TLAC	–	–	–
22	TLAC available after deductions	15,378	13,977	12,547
Risk-weighted assets and leverage exposure measure for TLAC purposes				
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	80,984	79,008	77,036
24	Leverage exposure measure	303,961	296,118	286,655
TLAC ratios and buffers				
25	TLAC ratio (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	19.0%	17.7%	16.3%
26	TLAC Leverage ratio (as a percentage of leverage exposure)	5.1%	4.7%	4.4%
27	CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	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%
29	Of which: capital conservation buffer	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) Minimum TLAC ratios will be required starting November 1st, 2021.

(2) AT1 and T2 capital issued out of subsidiaries to third parties will be eligible as TLAC up to January 1st, 2022.

TLAC3 – Creditor Ranking at Legal Entity Level⁽¹⁾

(unaudited) (millions of Canadian dollars)

		Q3 2019					Q2 2019						
		Creditor ranking				Sum (1 to 5)	Creditor ranking				Sum (1 to 5)		
		1		3	4 ⁽²⁾	5 ⁽³⁾		1		3	4 ⁽²⁾	5 ⁽³⁾	
		Most junior	2		Most senior			Most junior	2		Most senior		
1	Description of creditor ranking	Common shares	Preferred shares	Subordinated debt	Bail-in debt	Other liabilities excluding Bail-in debt		Common shares	Preferred shares	Subordinated debt	Bail-in debt	Other liabilities excluding Bail-in debt	
2	Total capital and liabilities net of credit risk mitigation	2,914	2,450	759	2,185	–	8,308	2,901	2,450	759	1,196	–	7,306
3	Subset of row 2 that are excluded liabilities	–	–	–	–	–	–	–	–	–	9	–	9
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	2,914	2,450	759	2,185	–	8,308	2,901	2,450	759	1,187	–	7,297
5	Subset of row 4 that are potentially eligible as TLAC	2,914	2,450	759	2,185	–	8,308	2,901	2,450	759	1,187	–	7,297
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	–	–	–	682	–	682	–	–	–	696	–	696
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	–	–	–	1,503	–	1,503	–	–	–	491	–	491
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	–	–	750	–	–	750	–	–	750	–	–	750
9	Subset of row 5 residual maturity ≥ 10 years, but excluding perpetual securities	–	–	9	–	–	9	–	–	9	–	–	9
10	Subset of row 5 that is perpetual securities	2,914	2,450	–	–	–	5,364	2,901	2,450	–	–	–	5,351

		Q1 2019					
		Creditor ranking				Sum (1 to 5)	
		1		3	4 ⁽²⁾	5 ⁽³⁾	
		Most junior	2		Most senior		
1	Description of creditor ranking	Common shares	Preferred shares	Subordinated debt	Bail-in debt	Other liabilities excluding Bail-in debt	
2	Total capital and liabilities net of credit risk mitigation	2,880	2,450	759	–	–	6,089
3	Subset of row 2 that are excluded liabilities	–	–	–	–	–	–
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	2,880	2,450	759	–	–	6,089
5	Subset of row 4 that are potentially eligible as TLAC	2,880	2,450	759	–	–	6,089
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	–	–	–	–	–	–
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	–	–	–	–	–	–
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	–	–	750	–	–	750
9	Subset of row 5 residual maturity ≥ 10 years, but excluding perpetual securities	–	–	9	–	–	9
10	Subset of row 5 that is perpetual securities	2,880	2,450	–	–	–	5,330

(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

(unaudited) (millions of Canadian dollars)

	2019			2018			
	Q3	Q2	Q1	Q4	Q3	Q2	Q1
Accounting assets vs. leverage ratio exposure							
1 Total consolidated assets as per published financial statements	276,312	269,106	263,355	262,471	257,637	256,259	251,065
2 Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	28	4	(3)	(15)	(33)	(58)	(68)
3 Adjustment for securitized exposures that meet the operational requirements for the recognition of risk transference ⁽¹⁾	(894)	(890)	(904)	–	–	–	–
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⁾	5,237	5,814	3,808	2,684	2,939	3,090	3,635
6 Adjustment for securities financing transactions (i.e. repos and similar secured lending) ⁽²⁾	4,052	3,278	1,920	1,123	3,062	2,516	(488)
7 Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	23,436	22,940	23,050	22,163	21,492	21,795	20,713
8 Other adjustments	(4,210)	(4,134)	(4,571)	(4,089)	(4,401)	(4,776)	(5,298)
9 Leverage Ratio Exposure	303,961	296,118	286,655	284,337	280,696	278,826	269,559

(1) OSFI's October 2018 Leverage Requirements Guideline now allows for the exclusion of securitized exposures that meet the operational requirements for risk transference. This exclusion is not applicable for prior quarters.

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

LR2 – Leverage Ratio Common Disclosure Template

(unaudited) (millions of Canadian dollars)

		2019			2018			
		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)	251,451	242,471	238,422	234,603	232,327	228,798	223,550
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)	-	-	-	-	-	-	-
4	(Asset amounts deducted in determining Basel III Tier 1 capital)	(2,659)	(2,852)	(2,865)	(3,003)	(3,003)	(2,914)	(2,897)
5	Total on-balance sheet exposures (excluding derivatives and SFTs) (sum of rows 1 to 4)	248,792	239,619	235,557	231,600	229,324	225,884	220,653
Derivative exposures								
6	Replacement cost associated with all derivative transactions (where applicable net of eligible cash variation margin and/or with bilateral netting)	3,095	3,007	2,483	3,897	4,034	4,270	3,991
7	Add-on amounts for PFE associated with all derivative transactions	10,638	10,058	8,463	7,373	6,502	6,725	8,166
8	(Exempted CCP leg of client-cleared trade exposures)	-	-	-	-	-	-	-
9	Adjusted effective notional amount of written credit derivatives	20	23	20	22	29	-	4
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-	-	-	-	-	-	-
11	Total derivative exposures (sum of rows 6 to 10)	13,753	13,088	10,966	11,292	10,565	10,995	12,161
Securities financing transaction exposures								
12	Gross SFT assets (with no recognition of netting), after adjusting for sale accounting transactions	13,928	17,193	15,162	18,159	16,253	17,636	16,520
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(883)	(662)	(2,063)	(2,974)	(1,127)	(2,196)	(4,637)
14	CCR exposure for SFTs assets	4,935	3,940	3,983	4,097	4,189	4,712	4,149
15	Agent transaction exposures	-	-	-	-	-	-	-
16	Total securities financing transaction exposures (sum of rows 12 to 15)	17,980	20,471	17,082	19,282	19,315	20,152	16,032
Other off-balance sheet exposures								
17	Off-balance sheet exposure at gross notional amount	72,873	71,962	71,491	70,091	68,195	68,811	66,194
18	(Adjustments for conversion to credit equivalent amounts)	(49,437)	(49,022)	(48,441)	(47,928)	(46,703)	(47,016)	(45,481)
19	Off-balance sheet items (sum of rows 17 and 18)	23,436	22,940	23,050	22,163	21,492	21,795	20,713
Capital and Total Exposures								
20	Tier 1 capital	12,280	11,896	11,624	11,410	11,290	11,137	10,903
21	Total Exposures (sum of rows 5, 11, 16 and 19)	303,961	296,118	286,655	284,337	280,696	278,826	269,559
Leverage Ratio								
22	Basel III leverage ratio	4.0%	4.0%	4.1%	4.0%	4.0%	4.0%	4.0%

CR1 – Credit Quality of Assets⁽¹⁾

(unaudited) (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.

		Q3 2019				Q2 2019			
		a	b	c	d	a	b	c	d
		Gross carrying values ⁽²⁾ of		Allowances for credit losses ⁽⁴⁾	Net values (a+b-c)	Gross carrying values ⁽²⁾ of		Allowances for credit losses ⁽⁴⁾	Net values (a+b-c)
		Default exposures ⁽³⁾	Non-default exposures			Default exposures ⁽³⁾	Non-default exposures		
1	Loans ⁽⁵⁾	636	133,921	688	133,869	596	129,857	684	129,769
2	Debt Securities	–	18,382	1	18,381	–	16,360	1	16,359
3	Off-balance-sheet commitments ⁽⁶⁾	14	70,027	76	69,965	24	69,391	62	69,353
4	Total	650	222,330	765	222,215	620	215,608	747	215,481

		Q1 2019				Q4 2018			
		a	b	c	d	a	b	c	d
		Gross carrying values ⁽²⁾ of		Allowances for credit losses ⁽⁴⁾	Net values (a+b-c)	Gross carrying values ⁽²⁾ of		Allowances for credit losses ⁽⁴⁾	Net values (a+b-c)
		Default exposures ⁽³⁾	Non-default exposures			Default exposures ⁽³⁾	Non-default exposures		
1	Loans ⁽⁵⁾	572	129,558	665	129,465	593	129,888	659	129,822
2	Debt Securities	–	16,791	1	16,790	–	15,723	1	15,722
3	Off-balance-sheet commitments ⁽⁶⁾	22	68,892	62	68,852	19	67,419	54	67,384
4	Total	594	215,241	728	215,107	612	213,030	714	212,928

(1) Excludes 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 CAR guidelines.

(4) Represent allowances for credit losses according to IFRS 9.

(5) Includes deposits with financial institutions.

(6) For completeness purposes, revocable commitments are included.

CR2 – Changes in Stock of Defaulted Loans and Debt Securities

(unaudited) (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.

		Q3 2019	Q2 2019	Q1 2019
		a	a	a
1	Defaulted loans ⁽¹⁾ and debt securities at beginning	596	572	593
2	Loans and debt securities that have defaulted since the last reporting period	246	200	226
3	Returned to non-defaulted status since the last reporting period	(48)	(32)	(47)
4	Amounts written off	(78)	(80)	(85)
5	Other changes ⁽²⁾	(80)	(64)	(115)
6	Defaulted loans⁽¹⁾ and debt securities at end	636	596	572

(1) Includes deposits with financial institutions

(2) Includes net repayments and foreign exchange movements.

CR3 – Credit Risk Mitigation Techniques - Overview

(unaudited) (millions of Canadian dollars)

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

		Q3 2019					Q2 2019				
		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⁾	70,646	63,885	58,392	5,388	–	68,496	61,937	56,564	5,279	–
2	Debt securities	18,382	–	–	–	–	16,360	–	–	–	–
3	Total	89,028	63,885	58,392	5,388	–	84,856	61,937	56,564	5,279	–
4	Of which defaulted	339	227	195	30	–	332	239	206	31	–

		Q1 2019					Q4 2018				
		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⁾	68,659	61,438	56,140	5,220	–	69,401	61,049	55,526	5,436	–
2	Debt securities	16,791	–	–	–	–	15,723	–	–	–	–
3	Total	85,450	61,438	56,140	5,220	–	85,124	61,049	55,526	5,436	–
4	Of which defaulted	290	243	204	36	–	255	299	260	37	–

(1) Carrying amounts of on-balance sheet exposures are net of all three ECL Stages.

(2) Includes deposits with financial institutions.

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

(unaudited) (millions of Canadian dollars)

	2019																	
	Q3						Q2						Q1					
	EAD - Gross Exposure ⁽¹⁾																	
	Drawn	Undrawn commitments	Other	Repo-style transactions	OTC Derivatives	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	OTC Derivatives	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	OTC Derivatives	Total
Non-Retail Portfolio																		
Agriculture	5,294	327	4	-	-	5,625	5,080	316	4	-	-	5,400	4,919	288	4	-	-	5,211
Oil & Gas and Pipelines ⁽²⁾	4,249	3,554	283	-	-	8,086	3,974	3,557	275	-	-	7,806	4,445	3,402	253	-	-	8,100
<i>Oil and Gas</i>	2,819	2,194	143	-	-	5,156	2,659	2,158	147	-	-	4,964	2,792	2,035	147	-	-	4,974
<i>Pipelines & Other</i>	1,430	1,360	140	-	-	2,930	1,315	1,399	128	-	-	2,842	1,653	1,367	106	-	-	3,126
Mining	770	917	153	-	-	1,840	687	937	135	-	-	1,759	915	976	146	-	-	2,037
Utilities	3,444	2,274	786	-	-	6,504	3,672	2,169	790	-	-	6,631	3,239	1,910	774	-	-	5,923
Construction Non-Real Estate ⁽²⁾⁽³⁾	1,442	983	102	-	-	2,527	1,393	867	118	-	-	2,378	1,215	585	109	-	-	1,909
Manufacturing ⁽²⁾	6,086	2,101	207	-	-	8,394	5,878	2,151	218	-	-	8,247	5,294	1,999	217	-	-	7,510
Wholesale	2,217	739	54	-	-	3,010	2,593	603	56	-	-	3,252	2,092	700	55	-	-	2,847
Retail	3,214	1,259	45	-	-	4,518	3,333	1,162	44	-	-	4,539	3,349	1,018	46	-	-	4,413
Transportation ⁽²⁾	1,581	750	74	14	-	2,419	1,537	775	71	8	-	2,391	1,514	1,066	69	19	-	2,668
Communications	1,634	856	200	-	-	2,690	1,394	882	627	-	-	2,903	1,560	816	819	-	-	3,195
Finance and Insurance	26,933	4,069	1,582	135,303	1,676	169,563	23,261	3,706	1,732	113,243	1,572	143,514	26,530	3,665	1,444	105,098	3,418	140,155
Real Estate and Construction																		
Real Estate ⁽²⁾⁽⁴⁾	11,198	2,889	250	-	-	14,337	11,092	2,813	236	-	-	14,141	10,484	2,747	244	-	-	13,475
Professional Services	1,809	683	356	-	-	2,848	1,668	623	354	-	-	2,645	1,519	774	360	-	-	2,653
Education & Health Care ⁽²⁾	3,352	1,318	8	1	-	4,679	3,242	1,401	8	2	-	4,653	3,326	1,318	7	2	-	4,653
Other Services	4,691	1,313	381	6	-	6,391	4,420	1,406	356	-	-	6,182	4,497	1,473	348	15	-	6,333
Government	4,150	1,322	3	16,780	205	22,460	4,596	1,353	3	15,269	197	21,418	4,489	1,438	3	20,389	232	26,551
Other	4,828	33	342	1,056	-	6,259	4,726	33	128	1,268	-	6,155	3,839	32	482	822	-	5,175
Total - Non-retail⁽⁵⁾	86,892	25,387	4,830	153,160	1,881	272,150	82,546	24,754	5,155	129,790	1,769	244,014	83,226	24,207	5,380	126,345	3,650	242,808

(1) EAD amounts are after securitization and exclude trading related portfolio.

(2) The presentation of certain borrower categories has been changed in Q1 2019. Comparative figures have been revised.

(3) Includes civil engineering, public private partnership and project finance loans.

(4) Includes residential mortgages 5 units and more.

(5) This total excludes SME retail exposure.

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

(unaudited) (millions of Canadian dollars)

	2018																	
	Q4						Q3						Q2					
	EAD - Gross Exposure ⁽¹⁾																	
	Drawn	Undrawn commitments	Other	Repo-style transactions	OTC Derivatives	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	OTC Derivatives	Total	Drawn	Undrawn commitments	Other	Repo-style transactions	OTC Derivatives	Total
Non-Retail Portfolio																		
Agriculture	4,794	321	4	-	-	5,119	4,657	327	6	-	-	4,990	4,338	417	6	-	-	4,761
Oil & Gas and Pipelines ⁽²⁾	4,131	3,384	245	-	-	7,760	3,850	3,490	225	8	-	7,573	3,457	3,874	217	-	-	7,548
<i>Oil and Gas</i>	2,582	2,058	151	-	-	4,791	2,458	2,148	131	8	-	4,745	2,302	2,146	129	-	-	4,577
<i>Pipelines & Other</i>	1,549	1,326	94	-	-	2,969	1,392	1,342	94	-	-	2,828	1,155	1,728	88	-	-	2,971
Mining	959	878	137	-	-	1,974	808	838	120	-	-	1,766	764	861	120	-	-	1,745
Utilities	3,145	1,861	754	-	-	5,760	2,905	1,866	720	-	1	5,492	2,544	1,964	677	-	1	5,186
Construction Non-Real Estate ⁽²⁾⁽³⁾	1,236	427	122	-	-	1,785	1,388	370	91	-	-	1,849	1,502	449	96	-	-	2,047
Manufacturing ⁽²⁾	5,283	1,878	233	-	-	7,394	5,029	1,751	242	-	-	7,022	4,614	1,919	256	-	-	6,789
Wholesale	2,102	693	52	-	-	2,847	2,128	578	56	-	-	2,762	2,090	580	43	-	-	2,713
Retail	2,970	1,052	43	-	-	4,065	2,973	1,128	41	-	-	4,142	3,068	1,119	46	-	-	4,233
Transportation ⁽²⁾	1,488	1,070	71	31	-	2,660	1,446	1,013	67	30	-	2,556	1,487	835	66	32	-	2,420
Communications	1,608	644	193	-	-	2,445	1,627	646	194	-	-	2,467	1,567	778	193	-	-	2,538
Finance and Insurance	28,673	3,606	1,118	113,436	4,138	150,971	25,243	3,295	846	115,720	3,614	148,718	23,236	3,494	601	125,811	4,167	157,309
Real Estate and Construction																		
Real Estate ⁽²⁾⁽⁴⁾	11,107	2,748	204	-	-	14,059	10,312	2,405	194	-	-	12,911	10,431	2,329	202	51	-	13,013
Professional Services	1,384	704	372	-	-	2,460	1,365	653	345	-	-	2,363	1,315	653	360	-	-	2,328
Education & Health Care ⁽²⁾	3,153	1,219	8	3	-	4,383	3,175	1,030	7	6	-	4,218	3,042	1,264	8	3	-	4,317
Other Services	4,481	1,320	350	1	1	6,153	4,602	1,236	331	3	-	6,172	4,621	1,199	279	3	-	6,102
Government	2,119	1,288	3	19,979	46	23,435	5,448	1,183	12	19,611	447	26,701	4,480	1,349	18	18,584	-	24,431
Other	3,355	32	471	410	13	4,281	3,089	32	505	1,081	-	4,707	2,966	32	566	1,542	22	5,128
Total – Non-retail⁽⁵⁾	81,988	23,125	4,380	133,860	4,198	247,551	80,045	21,841	4,002	136,459	4,062	246,409	75,522	23,116	3,754	146,026	4,190	252,608

(1) EAD amounts are after securitization and exclude trading related portfolio.

(2) The presentation of certain borrower categories has been changed in Q1 2019. Comparative figures have been revised.

(3) Includes civil engineering, public private partnership and project finance loans.

(4) Includes residential mortgages 5 units and more.

(5) This total excludes SME retail exposure.

Gross Credit Risk Exposure at Default in Europe⁽¹⁾

(unaudited) (millions of Canadian dollars)

	2019																	
	Q3						Q2						Q1					
	Drawn	Undrawn commitments	Repo-style transactions ⁽²⁾	OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Repo-style transactions ⁽²⁾	OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Repo-style transactions ⁽²⁾	OTC derivatives	Other off-balance sheet items ⁽³⁾	Total
Greece	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ireland	72	20	252	1	–	345	61	37	257	–	–	355	52	22	317	–	1	392
Italy	–	1	–	–	1	2	–	–	–	–	2	2	–	–	–	–	–	–
Portugal	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	40
Spain	–	38	–	2	38	78	–	–	14	–	40	54	1	–	14	–	–	15
Total GIIPS	72	59	252	3	39	425	61	37	271	–	42	411	53	22	331	–	41	447
France	22	98	1,706	–	51	1,877	25	52	1,325	1	49	1,452	22	36	1,349	1	29	1,437
Germany	166	10	–	35	–	211	152	44	19	28	23	266	148	45	–	24	253	470
United Kingdom	495	3	27,546	1,960	1	30,005	513	21	17,154	1,722	1	19,411	786	–	16,612	941	4	18,343
Other Europe	218	22	2,939	227	11	3,417	118	3	1,999	176	11	2,307	100	4	1,643	169	9	1,925
Total – Credit Risk	973	192	32,443	2,225	102	35,935	869	157	20,768	1,927	126	23,847	1,109	107	19,935	1,135	336	22,622

Adjustment to exposure for collateral	Drawn	Undrawn commitments	Net Repo-Style transactions and OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Net Repo-Style transactions and OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Net Repo-Style transactions and OTC derivatives	Other off-balance sheet items ⁽³⁾	Total
	Total – Net Credit Risk⁽⁴⁾	973	192	750	102	2,017	869	157	671	126	1,823	1,109	107	587	336

	2018																	
	Q4						Q3						Q2					
	Drawn	Undrawn commitments	Repo-style transactions ⁽²⁾	OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Repo-style transactions ⁽²⁾	OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Repo-style transactions ⁽²⁾	OTC derivatives	Other off-balance sheet items ⁽³⁾	Total
Greece	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ireland	54	19	6,578	6	–	6,657	49	14	6,135	3	–	6,201	66	–	6,232	10	–	6,308
Italy	–	–	99	–	1	100	–	–	200	–	1	201	–	–	100	–	1	101
Portugal	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Spain	1	–	–	1	42	44	1	–	–	3	40	44	2	–	–	1	47	50
Total GIIPS	55	19	6,677	7	43	6,801	50	14	6,335	6	41	6,446	68	–	6,332	11	48	6,459
France	14	39	1,579	2	262	1,896	13	41	1,300	2	250	1,606	31	43	1,326	207	243	1,850
Germany	143	51	–	8	27	229	140	59	–	8	37	244	141	64	–	7	41	253
United Kingdom	538	–	18,101	3,015	3	21,657	384	–	18,156	1,733	2	20,275	565	1	16,137	1,837	2	18,542
Other Europe	87	4	1,837	102	9	2,039	51	4	153	98	9	315	86	4	2,182	112	9	2,393
Total – Credit Risk	837	113	28,194	3,134	344	32,622	638	118	25,944	1,847	339	28,886	891	112	25,977	2,174	343	29,497

Adjustment to exposure for collateral	Drawn	Undrawn commitments	Net Repo-Style transactions and OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Net Repo-Style transactions and OTC derivatives	Other off-balance sheet items ⁽³⁾	Total	Drawn	Undrawn commitments	Net Repo-Style transactions and OTC derivatives	Other off-balance sheet items ⁽³⁾	Total
	Total – Net Credit Risk⁽⁴⁾	837	113	2,185	344	3,479	638	118	1,291	339	2,386	891	112	2,088	343

(1) Exposure at default is the expected gross exposure upon the default of an obligor. This amount is before any specific allowance or partial write-offs and does not reflect the impact of credit risk mitigation and collateral held. This table excludes Equity exposures.

(2) Represents securities purchased under reverse repurchase agreements and sold under repurchase agreements, and securities borrowed and loaned.

(3) Letters of guarantee and 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) For drawn, undrawn and Other off-balance sheet 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⁾

(unaudited) (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.

		Q3 2019						Q2 2019					
		a	b	c	d	e	f	a	b	c	d	e	f
		Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA	RWA density	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA	RWA density
Assets classes		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount			On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount		
1	Sovereigns and their central banks	1,444	49	1,444	–	496	34%	1,293	47	1,293	–	786	61%
2	Non-central government public sector entities	–	–	–	–	–	0%	–	–	–	–	–	0%
3	Multilateral development banks	95	–	95	–	–	0%	20	–	20	–	–	0%
4	Financial institutions	667	2,583	667	237	452	50%	444	2,546	444	202	496	77%
5	Securities firms	–	–	–	–	–	0%	–	–	–	–	–	0%
6	Corporates	3,058	645	3,058	109	1,986	63%	3,022	570	3,022	95	1,933	62%
7	Regulatory retail portfolios	4,821	92	4,821	18	1,987	41%	4,943	86	4,943	17	2,000	40%
8	Secured by residential property	4,782	38	4,782	19	1,802	38%	4,406	39	4,406	19	1,669	38%
9	Secured by commercial real estate	118	–	118	–	118	100%	108	–	108	–	108	100%
10	Equity	–	–	–	–	–	0%	–	–	–	–	–	0%
11	Past-due loans	35	3	35	–	24	69%	32	16	32	–	21	66%
12	Higher-risk categories	4	–	4	–	6	150%	4	–	4	–	7	175%
13	Other assets ⁽²⁾	3,329	–	3,329	–	3,273	98%	3,223	–	3,223	–	3,231	100%
14	Total	18,353	3,410	18,353	383	10,144	54%	17,495	3,304	17,495	333	10,251	57%

		Q1 2019						Q4 2018					
		a	b	c	d	e	f	a	b	c	d	e	f
		Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA	RWA density	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA	RWA density
Assets classes		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount			On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount		
1	Sovereigns and their central banks	998	48	998	–	648	65%	800	46	800	–	516	65%
2	Non-central government public sector entities	–	–	–	–	–	0%	–	–	–	–	–	0%
3	Multilateral development banks	20	–	20	–	–	0%	20	–	20	–	–	0%
4	Financial institutions	433	2,752	433	364	635	80%	257	3,235	257	503	623	82%
5	Securities firms	–	–	–	–	–	0%	–	–	–	–	–	0%
6	Corporates	2,817	474	2,817	39	1,700	60%	2,221	545	2,221	87	1,511	65%
7	Regulatory retail portfolios	5,150	–	5,150	–	2,102	41%	5,837	–	5,837	–	2,301	39%
8	Secured by residential property	4,049	39	4,049	20	1,548	38%	3,875	39	3,875	20	1,486	38%
9	Secured by commercial real estate	75	–	75	–	75	100%	70	–	70	–	70	100%
10	Equity	–	–	–	–	–	0%	–	–	–	–	–	0%
11	Past-due loans	33	14	33	–	21	64%	38	11	38	–	26	68%
12	Higher-risk categories	4	–	4	–	6	150%	4	–	4	–	6	150%
13	Other assets ⁽²⁾	2,910	–	2,910	–	2,853	98%	2,874	–	2,874	–	2,802	97%
14	Total	16,489	3,327	16,489	423	9,588	57%	15,996	3,876	15,996	610	9,341	56%

(1) Excludes 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 and those that are treated in the off-balance sheet calculations.

CR5 – Standardised Approach - Exposures by Asset Classes and Risk Weights⁽¹⁾

(unaudited) (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).

		Q3 2019										Q2 2019									
		a	b	c	d	e	f	g	h	i	j	a	b	c	d	e	f	g	h	i	j
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⁾
Asset classes		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	948	-	-	-	-	-	496	-	-	1,444	507	-	-	-	-	-	786	-	-	1,293
2	Non-central government public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Multilateral development banks	95	-	-	-	-	-	-	-	-	95	20	-	-	-	-	-	-	-	-	20
4	Financial institutions	-	-	564	-	-	-	340	-	-	904	-	-	188	-	-	-	458	-	-	646
5	Securities firms	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Corporates	1,181	-	-	-	-	-	1,986	-	-	3,167	1,183	-	-	-	-	-	1,934	-	-	3,117
7	Regulatory retail portfolios	2,191	-	-	-	-	2,648	-	-	-	4,839	2,292	-	-	-	2,668	-	-	-	-	4,960
8	Secured by residential property	678	-	-	3,244	9	833	37	-	-	4,801	620	-	-	2,986	11	758	50	-	-	4,425
9	Secured by commercial real estate	-	-	-	-	-	-	118	-	-	118	-	-	-	-	-	108	-	-	-	108
10	Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Past-due loans	11	-	-	-	-	-	23	1	-	35	11	-	-	-	-	-	20	1	-	32
12	Higher-risk categories	-	-	-	-	-	-	-	4	-	4	-	-	-	-	-	-	-	4	-	4
13	Other assets ⁽³⁾	657	-	174	-	-	-	2,005	-	493	3,329	499	-	-	-	-	-	2,387	-	338	3,223
14	Total	5,761	-	738	3,244	9	3,481	5,005	5	493	18,736	5,132	-	188	2,986	11	3,426	5,743	5	338	17,828

		Q1 2019										Q4 2018									
		a	b	c	d	e	f	g	h	i	j	a	b	c	d	e	f	g	h	i	j
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⁾
Asset classes		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	347	-	-	-	5	-	646	-	-	998	283	-	-	-	4	-	513	-	-	800
2	Non-central government public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Multilateral development banks	20	-	-	-	-	-	-	-	-	20	20	-	-	-	-	-	-	-	-	20
4	Financial institutions	-	-	202	-	-	-	595	-	-	797	-	-	170	-	1	-	589	-	-	760
5	Securities firms	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Corporates	1,156	-	-	-	-	-	1,700	-	-	2,856	797	-	-	-	-	-	1,511	-	-	2,308
7	Regulatory retail portfolios	2,347	-	-	-	-	2,803	-	-	-	5,150	2,769	-	-	-	3,068	-	-	-	-	5,837
8	Secured by residential property	547	-	-	2,751	11	721	39	-	-	4,069	608	-	-	2,465	13	770	39	-	-	3,895
9	Secured by commercial real estate	-	-	-	-	-	-	75	-	-	75	-	-	-	-	-	-	70	-	-	70
10	Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	Past-due loans	12	-	-	-	-	-	20	1	-	33	12	-	-	-	-	-	25	1	-	38
12	Higher-risk categories	-	-	-	-	-	-	-	4	-	4	-	-	-	-	-	-	-	4	-	4
13	Other assets ⁽³⁾	550	-	-	-	-	-	2,031	-	329	2,910	534	-	-	-	-	-	2,032	-	308	2,874
14	Total	4,979	-	202	2,751	16	3,524	5,106	5	329	16,912	5,023	-	170	2,465	18	3,838	4,779	5	308	16,606

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

(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 and those that are treated in the off-balance sheet calculations.

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

(unaudited) (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.

Q3 2019												
	a	b	c	d	e	f	g	h	i	j	k	l
	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
PD scale ⁽¹⁾												
Residential Mortgages and HELOCs – Insured	0.00 to < 0.15	746	–	–	746	0.07%	54,086	5.8%		8	1.0%	–
	0.15 to < 0.25	337	–	–	337	0.20%	17,949	4.7%		6	1.9%	–
	0.25 to < 0.50	480	–	–	480	0.36%	20,653	4.0%		12	2.4%	–
	0.50 to < 0.75	288	–	–	288	0.60%	9,217	3.7%		9	3.2%	–
	0.75 to < 2.50	530	–	–	530	1.17%	14,692	9.2%		58	10.9%	–
	2.50 to < 10.00	132	–	–	132	4.62%	4,002	3.3%		13	10.1%	–
	10.00 to < 100.00	60	–	–	60	29.14%	1,410	2.9%		10	16.1%	1
	100.00 (Default)	39	–	–	39	100.00%	590	2.8%		6	15.8%	1
	Sub-total	2,612	–	–	2,612	2.81%	122,599	5.5%		122	4.7%	2
Residential Mortgages and HELOCs – uninsured	0.00 to < 0.15	24,213	14,251	50%	31,295	0.07%	196,068	20.2%		1,099	3.5%	4
	0.15 to < 0.25	6,171	954	67%	6,814	0.19%	30,489	22.7%		612	9.0%	3
	0.25 to < 0.50	5,718	885	70%	6,341	0.34%	25,517	22.9%		850	13.4%	5
	0.50 to < 0.75	2,305	189	73%	2,442	0.61%	9,815	23.1%		505	20.7%	3
	0.75 to < 2.50	2,194	215	69%	2,342	1.28%	10,579	22.7%		766	32.7%	7
	2.50 to < 10.00	670	48	66%	702	4.51%	3,759	21.9%		467	66.5%	7
	10.00 to < 100.00	183	3	124%	187	23.44%	1,212	23.3%		232	124.2%	11
	100.00 (Default)	91	3	120%	94	100.00%	705	22.1%		137	145.4%	11
	Sub-total	41,545	16,548	52%	50,217	0.54%	278,144	21.2%		4,668	9.3%	51
Qualifying revolving retail	0.00 to < 0.15	722	5,316	41%	2,894	0.05%	696,364	78.6%		79	2.7%	1
	0.15 to < 0.25	191	402	77%	500	0.19%	218,734	84.3%		45	9.0%	1
	0.25 to < 0.50	312	337	74%	561	0.36%	180,285	81.3%		76	13.6%	2
	0.50 to < 0.75	214	159	77%	337	0.63%	74,886	77.8%		70	20.8%	2
	0.75 to < 2.50	609	259	80%	817	1.43%	259,996	82.8%		339	41.5%	10
	2.50 to < 10.00	417	52	109%	474	4.52%	223,626	85.6%		450	95.0%	17
	10.00 to < 100.00	71	4	62%	73	22.49%	30,430	84.3%		154	212.3%	14
	100.00 (Default)	24	–	28%	24	100.00%	3,884	72.7%		34	143.5%	15
	Sub-total	2,560	6,529	48%	5,680	1.40%	1,688,205	80.6%		1,247	22.0%	62
Other retail	0.00 to < 0.15	2,141	2,023	45%	3,059	0.06%	120,379	50.6%		266	8.7%	1
	0.15 to < 0.25	794	210	67%	934	0.20%	45,280	55.3%		212	22.7%	1
	0.25 to < 0.50	1,362	236	70%	1,526	0.36%	76,037	57.4%		516	33.8%	3
	0.50 to < 0.75	1,052	217	82%	1,230	0.63%	53,542	58.6%		591	48.0%	5
	0.75 to < 2.50	3,042	223	75%	3,209	1.39%	200,185	62.6%		2,279	71.0%	29
	2.50 to < 10.00	911	63	77%	960	4.33%	67,384	66.0%		916	95.4%	27
	10.00 to < 100.00	279	3	73%	281	18.11%	15,305	64.7%		376	133.6%	33
	100.00 (Default)	99	3	65%	101	100.00%	6,762	57.3%		195	193.4%	45
	Sub-total	9,680	2,978	54%	11,300	2.26%	584,874	57.9%		5,351	47.4%	144

(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-credit conversion factor (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 before applying 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)

(unaudited) (millions of Canadian dollars)

Q3 2019													
	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	1,504	3,567	77%	5,335	0.08%	757	45.9%	2.55	1,365	25.6%	2	
	0.15 to < 0.25	11,448	8,152	83%	21,638	0.20%	3,623	36.7%	2.58	6,671	30.8%	16	
	0.25 to < 0.50	10,079	5,204	86%	16,376	0.36%	2,391	35.3%	2.47	6,551	40.0%	21	
	0.50 to < 0.75	7,506	2,031	91%	10,322	0.56%	2,604	32.8%	2.24	4,306	41.7%	19	
	0.75 to < 2.50	14,287	2,901	85%	18,610	1.13%	6,137	33.5%	1.96	10,363	55.7%	72	
	2.50 to < 10.00	2,310	395	77%	2,922	4.65%	1,267	29.5%	1.78	2,249	77.0%	41	
	10.00 to < 100.00	179	13	61%	191	17.59%	64	30.5%	1.01	250	130.7%	10	
	100.00 (Default)	317	197	1%	519	100.00%	191	25.6%	1.03	343	66.0%	126	
Sub-total	47,630	22,460	83%	75,913	1.40%	17,034	35.4%	2.31	32,098	42.3%	307	347	
Sovereign	0.00 to < 0.15	26,504	4,463	97%	32,405	0.01%	574	9.0%	2.45	515	1.6%	-	
	0.15 to < 0.25	-	-	-	-	-	-	-	-	-	-	-	
	0.25 to < 0.50	-	-	-	-	-	-	-	-	-	-	-	
	0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
	0.75 to < 2.50	-	-	-	-	-	-	-	-	-	-	-	
	2.50 to < 10.00	64	14	93%	78	5.07%	4	14.1%	1.02	33	41.5%	1	
	10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
	100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	26,568	4,477	97%	32,483	0.02%	578	9.0%	2.45	548	1.7%	1	1	
Financial institutions	0.00 to < 0.15	1,382	328	-	1,788	0.05%	68	42.6%	1.75	244	13.6%	-	
	0.15 to < 0.25	687	255	98%	943	0.22%	19	38.9%	1.34	340	36.0%	1	
	0.25 to < 0.50	52	81	92%	182	0.36%	11	27.8%	1.21	54	29.4%	-	
	0.50 to < 0.75	-	22	58%	22	0.56%	5	50.5%	1.53	13	62.2%	-	
	0.75 to < 2.50	13	6	100%	32	0.86%	12	50.7%	1.00	26	81.4%	-	
	2.50 to < 10.00	1	-	-	1	3.14%	3	46.1%	1.00	1	139.0%	-	
	10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
	100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	2,135	692	50%	2,968	0.14%	118	40.6%	1.58	678	22.8%	1	1	
Total (all portfolio)	132,730	53,684	68%	181,173	0.97%	2,691,552	29.2%	2.30	44,712	24.7%	568	711	

(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-credit conversion factor (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 before applying 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)

(unaudited) (millions of Canadian dollars)

Q4 2018													
		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 Mortgage and HELOCs – insured	0.00 to < 0.15	781	–	–	781	0.08%	51,552	6.8%		10	1.3%	–	
	0.15 to < 0.25	368	–	–	368	0.20%	19,669	6.9%		10	2.8%	–	
	0.25 to < 0.50	505	–	–	505	0.36%	22,937	6.2%		19	3.7%	–	
	0.50 to < 0.75	293	–	–	293	0.61%	10,021	5.3%		14	4.7%	–	
	0.75 to < 2.50	455	–	–	455	1.34%	16,044	4.0%		26	5.8%	–	
	2.50 to < 10.00	157	–	–	157	4.58%	4,588	3.4%		16	10.3%	–	
	10.00 to < 100.00	73	–	–	73	29.33%	1,618	3.0%		12	16.3%	1	
	100.00 (Default)	45	–	–	45	100.00%	741	2.8%		4	7.9%	2	
	Sub-total		2,677	–	–	2,677	3.17%	127,170	5.7%		111	4.2%	3
Residential Mortgage and HELOCs – uninsured	0.00 to < 0.15	22,074	13,509	50%	28,788	0.07%	186,609	23.0%		1,148	4.0%	5	
	0.15 to < 0.25	6,131	909	68%	6,749	0.19%	30,702	24.5%		653	9.7%	3	
	0.25 to < 0.50	5,675	850	70%	6,274	0.35%	26,260	24.6%		908	14.5%	5	
	0.50 to < 0.75	2,226	201	72%	2,371	0.61%	9,714	25.0%		531	22.4%	4	
	0.75 to < 2.50	2,281	220	71%	2,436	1.27%	11,040	24.6%		864	35.4%	8	
	2.50 to < 10.00	680	42	76%	712	4.54%	3,891	23.8%		513	71.9%	8	
	10.00 to < 100.00	195	2	111%	197	23.95%	1,355	25.0%		266	135.0%	11	
	100.00 (Default)	90	2	138%	92	100.00%	655	22.6%		150	162.8%	10	
	Sub-total		39,352	15,735	53%	47,619	0.57%	270,226	23.6%		5,033	10.6%	54
Qualifying revolving retail	0.00 to < 0.15	768	5,966	43%	3,332	0.05%	895,632	81.5%		88	2.6%	1	
	0.15 to < 0.25	208	413	55%	435	0.20%	117,492	83.7%		39	9.0%	1	
	0.25 to < 0.50	350	495	58%	636	0.36%	148,785	83.6%		89	14.0%	2	
	0.50 to < 0.75	241	184	64%	359	0.63%	71,453	79.5%		76	21.2%	2	
	0.75 to < 2.50	701	282	67%	889	1.45%	236,145	84.1%		379	42.7%	11	
	2.50 to < 10.00	455	62	99%	516	4.47%	234,061	86.5%		491	95.1%	20	
	10.00 to < 100.00	83	4	84%	86	24.58%	32,158	85.7%		189	219.3%	19	
	100.00 (Default)	23	–	2%	23	100.00%	3,898	69.2%		33	142.1%	14	
	Sub-total		2,829	7,406	47%	6,276	1.39%	1,739,624	82.6%		1,384	22.0%	70
Other retail	0.00 to < 0.15	2,153	1,871	44%	2,986	0.07%	109,622	48.4%		252	8.4%	1	
	0.15 to < 0.25	807	198	70%	946	0.20%	43,211	52.7%		204	21.6%	1	
	0.25 to < 0.50	1,358	241	72%	1,531	0.37%	75,981	56.9%		517	33.8%	3	
	0.50 to < 0.75	1,075	197	81%	1,235	0.63%	53,529	58.2%		589	47.7%	5	
	0.75 to < 2.50	2,929	327	76%	3,172	1.38%	206,716	63.4%		2,263	71.3%	28	
	2.50 to < 10.00	958	67	74%	1,008	4.33%	70,018	65.3%		954	94.6%	29	
	10.00 to < 100.00	213	4	65%	216	20.39%	13,355	66.5%		309	143.2%	29	
	100.00 (Default)	105	2	56%	106	100.00%	7,063	58.0%		197	186.4%	49	
	Sub-total		9,598	2,907	55%	11,200	2.27%	579,495	57.2%		5,285	47.2%	145

(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-credit conversion factor (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 before applying 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)

(unaudited) (millions of Canadian dollars)

Q4 2018												
	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	1,813	2,117	81%	4,153	0.09%	749	48.3%	2.04	967	23.3%	2	
0.15 to < 0.25	12,930	8,423	87%	23,291	0.20%	3,664	36.7%	2.84	7,426	31.9%	17	
0.25 to < 0.50	8,489	4,884	76%	14,395	0.36%	2,234	36.0%	2.39	5,651	39.3%	19	
0.50 to < 0.75	6,108	1,698	86%	8,309	0.56%	2,493	33.9%	2.08	3,525	42.4%	16	
0.75 to < 2.50	12,836	2,358	87%	16,258	1.14%	6,221	34.9%	2.00	9,377	57.7%	64	
2.50 to < 10.00	2,021	291	67%	2,467	4.80%	1,163	28.7%	1.95	1,933	78.4%	36	
10.00 to < 100.00	194	10	97%	205	16.72%	69	32.9%	1.12	281	137.3%	11	
100.00 (Default)	356	5	70%	367	100.00%	202	21.1%	1.24	221	60.4%	104	
Sub-total	44,747	19,786	83%	69,445	1.23%	16,795	36.1%	2.36	29,381	42.3%	269	277
Sovereign												
0.00 to < 0.15	26,125	4,487	97%	31,607	0.01%	583	9.2%	2.38	502	1.6%	-	
0.15 to < 0.25	-	-	-	-	-	-	-	-	-	-	-	
0.25 to < 0.50	-	-	-	-	-	-	-	-	-	-	-	
0.50 to < 0.75	-	-	-	-	-	-	-	-	-	-	-	
0.75 to < 2.50	-	-	-	-	-	-	-	-	-	-	-	
2.50 to < 10.00	74	2	62%	77	5.07%	1	14.1%	1.00	32	41.5%	1	
10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	26,199	4,489	97%	31,684	0.02%	584	9.2%	2.37	534	1.7%	1	2
Financial institutions												
0.00 to < 0.15	2,146	301	-	2,585	0.06%	72	42.4%	1.48	397	15.4%	1	
0.15 to < 0.25	1,247	7	-	1,254	0.23%	15	13.0%	1.02	148	11.8%	-	
0.25 to < 0.50	238	130	87%	368	0.36%	16	33.7%	1.19	153	41.6%	-	
0.50 to < 0.75	76	12	100%	88	0.53%	3	45.4%	1.00	55	61.7%	-	
0.75 to < 2.50	86	1	100%	87	1.31%	17	49.3%	1.00	89	102.7%	1	
2.50 to < 10.00	1	-	-	1	3.15%	4	47.3%	1.00	1	142.1%	-	
10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	3,794	451	28%	4,383	0.17%	127	33.4%	1.30	843	19.2%	2	2
Total (all portfolio)	129,196	50,774	67%	173,284	0.90%	2,734,021	30.3%	2.30	42,571	24.6%	544	645

(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-credit conversion factor (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 before applying 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 Exposures Under IRB

(unaudited) (millions of Canadian dollars)

The following table presents a flow statement explaining variations in the credit risk-weighted assets (RWA) determined under an IRB approach.

		Q3 2019	Q2 2019	Q1 2019	Q4 2018
		a	a	a	a
		RWA	RWA	RWA	RWA
1	RWA at beginning	47,395	47,097	46,640	44,971
2	Book size ⁽¹⁾	1,511	93	721	1,479
3	Book quality ⁽²⁾	(127)	49	(254)	195
4	Model updates ⁽³⁾	397	30	–	(72)
5	Methodology and policy ⁽⁴⁾	–	–	–	–
6	Acquisitions and disposals ⁽⁵⁾	–	–	–	–
7	Foreign exchange movements ⁽⁶⁾	(131)	126	(10)	67
8	Other ⁽⁷⁾	–	–	–	–
9	RWA at end	49,045	47,395	47,097	46,640

(1) Organic changes in book size and composition (including origination of new businesses and maturing loans) excluding acquisitions and disposal of entities.

(2) Changes in the assessed quality of the bank's assets due to changes in borrower risk, such as rating grade migration, parameter recalibration, or similar effects.

(3) Changes due to model implementation, changes in model scope, or any changes intended to address model weaknesses.

(4) Changes due to methodological changes in calculations driven by regulatory policy changes, including both revisions to existing regulations and new regulations.

(5) Changes in book size due to acquisitions and/or divestitures.

(6) Changes driven by market movements such as foreign exchange movements.

(7) This category captures changes that cannot be attributed to any other category.

AIRB Credit Risk Exposure - Back-Testing⁽¹⁾

(unaudited) (millions of Canadian dollars)

	2019											
	Q3						Q2					
	Average estimated (PD %)	Actual default rate (%)	Average estimated (LGD %) ⁽²⁾	Actual (LGD %) ⁽³⁾	Estimated (EAD %) ⁽⁴⁾	Actual (EAD %) ⁽⁴⁾	Average estimated (PD %)	Actual default rate (%)	Average estimated (LGD %) ⁽²⁾	Actual (LGD %) ⁽³⁾	Estimated (EAD %) ⁽⁴⁾	Actual (EAD %) ⁽⁴⁾
Retail portfolio⁽⁵⁾												
Insured residential mortgages ⁽⁶⁾	0.77%	0.64%	2.64%	n.a.	n.a.	n.a.	0.80%	0.66%	2.64%	n.a.	n.a.	n.a.
Uninsured residential mortgages incl. HELOCs ⁽⁷⁾	0.33%	0.33%	21.11%	7.92%	94.97%	92.74%	0.34%	0.31%	21.51%	8.16%	95.95%	78.17%
Qualifying revolving retail	1.36%	1.23%	78.04%	70.21%	105.23%	102.40%	1.34%	1.20%	79.88%	73.65%	100.40%	102.32%
Other retail	1.60%	1.08%	66.58%	60.99%	95.66%	87.34%	1.63%	1.07%	66.80%	59.42%	94.94%	88.39%
Non-Retail Portfolio⁽⁸⁾												
Corporate	1.02%	0.33%	36.58%	31.11%	81.15%	83.54%	1.01%	0.37%	34.65%	30.41%	84.18%	85.45%
Sovereign ⁽⁹⁾	0.05%	0.00%	11.54%	n.a.	88.30%	n.a.	0.07%	0.00%	11.54%	n.a.	88.30%	n.a.
Financial Institutions ⁽⁹⁾	0.36%	0.00%	40.75%	n.a.	100.00%	n.a.	0.35%	0.00%	40.75%	n.a.	100.00%	n.a.

	2019						2018					
	Q1						Q4					
	Average estimated (PD %)	Actual default rate (%)	Average estimated (LGD %) ⁽²⁾	Actual (LGD %) ⁽³⁾	Estimated (EAD %) ⁽⁴⁾	Actual (EAD %) ⁽⁴⁾	Average estimated (PD %)	Actual default rate (%)	Average estimated (LGD %) ⁽²⁾	Actual (LGD %) ⁽³⁾	Estimated (EAD %) ⁽⁴⁾	Actual (EAD %) ⁽⁴⁾
Retail portfolio⁽⁵⁾												
Insured residential mortgages ⁽⁶⁾	0.84%	0.65%	2.64%	n.a.	n.a.	n.a.	0.85%	0.64%	2.64%	n.a.	n.a.	n.a.
Uninsured residential mortgages incl. HELOCs ⁽⁷⁾	0.35%	0.34%	21.43%	9.04%	92.60%	80.58%	0.36%	0.32%	21.57%	9.43%	93.02%	84.32%
Qualifying revolving retail	1.35%	1.18%	75.00%	75.80%	100.37%	102.00%	1.36%	1.15%	74.64%	75.40%	100.18%	101.60%
Other retail	1.59%	1.10%	67.01%	62.45%	95.78%	87.90%	1.63%	1.05%	67.53%	59.30%	95.65%	88.31%
Non-Retail Portfolio⁽⁸⁾												
Corporate	1.01%	0.40%	36.57%	29.40%	79.91%	76.06%	1.01%	0.46%	35.57%	32.01%	79.10%	71.09%
Sovereign ⁽⁹⁾	0.04%	0.00%	11.54%	n.a.	88.30%	n.a.	0.03%	0.00%	11.54%	n.a.	88.30%	n.a.
Financial Institutions ⁽⁹⁾	0.35%	0.00%	40.75%	n.a.	100.00%	n.a.	0.41%	0.00%	40.75%	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 Q3 2019, estimated percentages are as of June 30, 2018 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

(unaudited) (millions of Canadian dollars)

	Q3 2019					Q2 2019				
	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	964	98	100%	1,014	1,074	839	102	100%	890	943

	Q1 2019					Q4 2018				
	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	816	110	100%	871	924	823	102	100%	874	926

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

(unaudited) (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.

		Q3 2019						Q2 2019					
		a	b	c	d	e	f	a	b	c	d	e	f
		Replacement cost	Potential future exposure	EEPE ⁽²⁾	Alpha used for computing regulatory EAD	EAD post-CRM	RWA	Replacement cost	Potential future exposure	EEPE ⁽²⁾	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
1	SA-CCR (for derivatives) ⁽³⁾	2,242	7,599		1.4	13,776	4,060	2,193	7,184		1.4	13,128	4,087
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					7,501	1,079					7,142	966
6	Total						5,139						5,053

		Q1 2019						Q4 2018					
		a	b	c	d	e	f	a	b	c	d	e	f
		Replacement cost	Potential future exposure	EEPE ⁽²⁾	Alpha used for computing regulatory EAD	EAD post-CRM	RWA	Replacement cost	Potential future exposure	EEPE ⁽²⁾	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
1	SA-CCR (for derivatives) ⁽³⁾	1,811	6,046		1.4	10,999	3,405	5,132	4,887		–	7,045	2,245
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					6,670	762					6,313	601
6	Total						4,167						2,846

(1) Excludes exposure and RWA for qualified central counterparties (QCCPs) and credit valuation adjustment (CVA).

(2) EEPE: Effective Expected Positive Exposure.

(3) Standardised approach (SA-CCR) for measuring exposure at default for counterparty credit risk is applicable starting Q1-2019. In Q4-2018, NBC reported in row 1

CCR2 – Credit Valuation Adjustment (CVA) Capital Charge

(unaudited) (millions of Canadian dollars)

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

		Q3 2019		Q2 2019		Q1 2019		Q4 2018	
		a	b	a	b	a	b	a	b
		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	8,652	1,139	8,340	1,151	6,845	1,020	6,018	405
4	Total subject to the CVA capital charge	8,652	1,139	8,340	1,151	6,845	1,020	6,018	405

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

(unaudited) (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 weight (riskiness attributed according to standardised approach).

		Q3 2019									Q2 2019								
		a	b	c	d	e	f	g	h	i	a	b	c	d	e	f	g	h	i
Risk weight		0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Regulatory portfolio		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)		11	-	-	-	-	-	-	-	11	18	-	-	-	-	-	-	-	18
Financial institutions		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Securities firms		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corporates		-	-	-	-	-	648	-	-	648	-	-	-	-	-	436	-	-	436
Regulatory retail portfolios		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other assets ⁽¹⁾		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		11	-	-	-	-	648	-	-	659	18	-	-	-	-	436	-	-	454

		Q1 2019									Q4 2018								
		a	b	c	d	e	f	g	h	i	a	b	c	d	e	f	g	h	i
Risk weight		0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Regulatory portfolio		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)		13	-	-	-	-	-	-	-	13	15	-	-	-	-	-	-	-	15
Financial institutions		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Securities firms		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corporates		-	-	-	-	-	349	-	-	349	-	-	-	-	-	248	-	-	248
Regulatory retail portfolios		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other assets ⁽¹⁾		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		13	-	-	-	-	349	-	-	362	15	-	-	-	-	248	-	-	263

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

CCR4 – IRB - CCR Exposures by Portfolio and PD Scale

(unaudited) (millions of Canadian dollars)

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

		Q3 2019						
PD scale ⁽¹⁾		a	b	c	d	e	f	g
		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	961	0.06%	411	42.3%	0.01	84	8.7%
	0.15 to < 0.25	362	0.18%	234	50.7%	0.03	104	28.7%
	0.25 to < 0.50	15	0.36%	53	40.5%	–	5	33.3%
	0.50 to < 0.75	3	0.56%	26	39.1%	–	1	33.3%
	0.75 to < 2.50	103	0.86%	102	43.6%	0.01	45	43.7%
	2.50 to < 10.00	–	–	–	–	–	–	–
	10.00 to < 100.00	–	–	–	–	–	–	–
	100.00 (Default)	–	–	–	–	–	–	–
Sub-total	1,444	0.15%	826	44.5%	0.02	239	16.6%	
Sovereign	0.00 to < 0.15	3,739	0.04%	95	11.1%	0.38	45	1.2%
	0.15 to < 0.25	28	0.21%	1	11.6%	–	2	7.1%
	0.25 to < 0.50	–	–	–	–	–	–	–
	0.50 to < 0.75	–	–	–	–	–	–	–
	0.75 to < 2.50	–	–	–	–	–	–	–
	2.50 to < 10.00	–	–	–	–	–	–	–
	10.00 to < 100.00	–	–	–	–	–	–	–
	100.00 (Default)	–	–	–	–	–	–	–
Sub-total	3,767	0.04%	96	11.1%	0.38	47	1.2%	
Financial institutions	0.00 to < 0.15	1,909	0.06%	12	48.1%	0.45	198	10.4%
	0.15 to < 0.25	247	0.17%	19	50.7%	0.10	82	33.2%
	0.25 to < 0.50	95	0.36%	13	50.3%	0.23	48	50.5%
	0.50 to < 0.75	130	0.56%	10	50.8%	–	81	62.3%
	0.75 to < 2.50	144	1.13%	18	45.7%	0.04	101	70.1%
	2.50 to < 10.00	–	0	1	1	–	–	–
	10.00 to < 100.00	–	–	–	–	–	–	–
	100.00 (Default)	–	–	–	–	–	–	–
Sub-total	2,525	0.17%	73	48.4%	0.36	510	20.2%	
Total (sum of portfolios)	7,736	0.10%	995	30.0%	0.61	796	10.3%	

(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)

(unaudited) (millions of Canadian dollars)

Q4 2018									
	PD scale ⁽¹⁾	a	b	c	d	e	f	g	
		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	595	0.06%	392	42.6%	0.06	52	8.7%	
	0.15 to < 0.25	202	0.18%	250	46.6%	0.14	51	25.2%	
	0.25 to < 0.50	24	0.36%	70	40.7%	0.01	8	33.3%	
	0.50 to < 0.75	9	0.56%	30	39.1%	–	4	44.4%	
	0.75 to < 2.50	43	0.86%	72	43.5%	0.27	23	53.5%	
	2.50 to < 10.00	–	–	–	–	–	–	–	
	10.00 to < 100.00	–	–	–	–	–	–	–	
	100.00 (Default)	–	–	–	–	–	–	–	
Sub-total		873	0.14%	814	43.5%	0.09	138	15.2%	
Sovereign	0.00 to < 0.15	3,509	0.04%	94	1.2%	0.12	46	1.3%	
	0.15 to < 0.25	–	0.21%	1	11.6%	–	–	–	
	0.25 to < 0.50	–	–	–	–	–	–	–	
	0.50 to < 0.75	–	–	–	–	–	–	–	
	0.75 to < 2.50	–	–	–	–	–	–	–	
	2.50 to < 10.00	–	–	–	–	–	–	–	
	10.00 to < 100.00	–	–	–	–	–	–	–	
	100.00 (Default)	–	–	–	–	–	–	–	
Sub-total		3,509	0.04%	95	11.2%	0.12	46	1.3%	
Financial institutions	0.00 to < 0.15	1,832	0.06%	18	47.3%	0.51	192	10.5%	
	0.15 to < 0.25	206	0.17%	16	50.7%	0.13	63	30.6%	
	0.25 to < 0.50	75	0.36%	10	50.4%	0.36	40	53.3%	
	0.50 to < 0.75	48	0.56%	12	50.7%	0.13	29	60.4%	
	0.75 to < 2.50	40	1.14%	19	50.1%	0.01	33	82.5%	
	2.50 to < 10.00	3	3.09%	3	46.1%	–	3	100.0%	
	10.00 to < 100.00	–	–	–	–	–	–	–	
	100.00 (Default)	–	–	–	–	–	–	–	
Sub-total		2,204	0.11%	78	47.9%	0.45	360	16.3%	
Total (sum of portfolios)		6,586	0.08%	987	28.0%	0.70	544	8.2%	

(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

(unaudited) (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.

	Q3 2019						Q2 2019					
	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	Fair value of posted collateral	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
Segregated	Unsegregated	Segregated	Unsegregated	Segregated			Unsegregated	Segregated	Unsegregated			
Cash	–	5,732	–	545	–	–	–	5,020	–	660	–	–
Securities issued or guaranteed by												
Canadian government	–	35	–	1,106	2,661	1,155	7	58	–	956	2,936	1,276
Canadian provincial and municipal governments	–	75	–	66	1,611	381	–	32	–	51	2,966	1,660
U.S. Treasury, other U.S. agencies and other foreign governments	63	71	–	–	592	767	64	63	–	7	100	719
Other debt securities	–	15	–	–	75	41	–	15	–	–	82	396
Equity securities	–	–	–	–	9,298	18,059	–	–	–	–	11,443	16,481
Total	63	5,928	–	1,717	14,237	20,403	71	5,188	–	1,674	17,527	20,532

	Q1 2019						Q4 2018					
	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	Fair value of posted collateral	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
Segregated	Unsegregated	Segregated	Unsegregated	Segregated			Unsegregated	Segregated	Unsegregated			
Cash	–	5,012	–	1,308	4	–	–	5,366	–	1,023	1	–
Securities issued or guaranteed by												
Canadian government	2	47	–	662	3,160	508	3	52	–	474	5,759	2,281
Canadian provincial and municipal governments	–	80	–	136	3,395	5,017	–	366	–	33	3,861	2,748
U.S. Treasury, other U.S. agencies and other foreign governments	63	59	–	–	548	3,409	63	50	–	5	534	1,392
Other debt securities	–	14	–	–	88	481	–	20	–	–	82	256
Equity securities	–	–	–	–	8,350	12,239	–	–	–	–	8,297	13,742
Total	65	5,212	–	2,106	15,545	21,654	66	5,854	–	1,535	18,534	20,419

CCR6 – Credit Derivatives Exposures

(unaudited) (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.

	Q3 2019		Q2 2019		Q1 2019		Q4 2018	
	a	b	a	b	a	b	a	b
	Protection purchased	Protection sold						
Notionals								
Credit default swaps								
Indices, singles names and other	3,481	1,255	3,005	936	1,943	252	1,784	88
Tranches on indices	–	–	–	–	–	–	–	–
Total return swaps	150	–	162	–	161	–	162	–
Credit options	–	–	–	–	–	–	–	–
Other credit derivatives	–	–	–	–	–	–	–	–
Total notionals	3,631	1,255	3,167	936	2,104	252	1,946	88
Fair values								
Positive fair value (asset)	–	34	1	27	5	7	10	1
Negative fair value (liability)	(93)	–	(78)	–	(42)	–	(36)	–

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

(unaudited) (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.

	Q3 2019		Q2 2019		Q1 2019		Q4 2018			
	a	b	a	b	a	b	a	b		
	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA		
1	Exposures to QCCPs (total)			193		181		276		198
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which		1,401	29	1,182	24	1,088	21	3,356	67
3	(i) OTC derivatives		25	1	36	1	51	1	1,002	20
4	(ii) Exchange-traded derivatives		1,292	26	1,077	22	917	18	2,304	46
5	(iii) Securities financing transactions		84	2	69	1	120	2	50	1
6	(iv) Netting sets where cross-product netting has been approved		–	–	–	–	–	–	–	–
7	Segregated initial margin		764		2,117		2,123		2,125	
8	Non-segregated initial margin		44	–	45	–	127	–	88	2
9	Pre-funded default fund contributions		235	164	389	157	482	255	503	129
10	Unfunded default fund contributions		–	–	–	–	–	–	–	–

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

SEC1 – Securitization Exposures in the Banking Book

(unaudited) (millions of Canadian dollars)

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

Q3 2019										
		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	671	–	671	2,452	–	2,452	1,082	–	1,082
	Of which :									
2	Residential mortgages	–	–	–	1,940	–	1,940	270	–	270
3	Credit card	671	–	671	–	–	–	12	–	12
4	Other retail exposures	–	–	–	512	–	512	800	–	800
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	Non-Retail	–	–	–	282	–	282	729	–	729
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	9	–	9
9	Lease and receivables	–	–	–	270	–	270	720	–	720
10	Other wholesale	–	–	–	12	–	12	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

Q2 2019										
		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	675	–	675	2,162	–	2,162	1,148	–	1,148
	Of which :									
2	Residential mortgages	–	–	–	1,850	–	1,850	336	–	336
3	Credit card	675	–	675	–	–	–	12	–	12
4	Other retail exposures	–	–	–	312	–	312	800	–	800
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	Non-Retail	–	–	–	282	–	282	730	–	730
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	10	–	10
9	Lease and receivables	–	–	–	270	–	270	720	–	720
10	Other wholesale	–	–	–	12	–	12	–	–	–
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)

(unaudited) (millions of Canadian dollars)

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

		Q1 2019								
		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	661	–	661	2,188	–	2,188	1,111	–	1,111
	Of which :									
2	Residential mortgages	–	–	–	1,870	–	1,870	299	–	299
3	Credit card	661	–	661	–	–	–	12	–	12
4	Other retail exposures	–	–	–	318	–	318	800	–	800
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	Non-Retail	–	–	–	278	–	278	672	–	672
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	12	–	12
9	Lease and receivables	–	–	–	270	–	270	660	–	660
10	Other wholesale	–	–	–	8	–	8	–	–	–
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

(unaudited) (millions of Canadian dollars)

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

		Q3 2019								
		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	–	1	2	–	2	19	–	19
	Of which :									
2	Residential mortgages	–	–	–	2	–	2	13	–	13
3	Credit card	1	–	1	–	–	–	6	–	6
4	Other retail exposures	–	–	–	–	–	–	–	–	–
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	Non-Retail	–	–	–	–	–	–	21	–	21
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	12	–	12
9	Lease and receivables	–	–	–	–	–	–	9	–	9
10	Other wholesale	–	–	–	–	–	–	–	–	–
11	Re-securitization	–	–	–	–	–	–	–	–	–

		Q2 2019								
		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	–	–	–	–	–	–	36	–	36
	Of which :									
2	Residential mortgages	–	–	–	–	–	–	28	–	28
3	Credit card	–	–	–	–	–	–	8	–	8
4	Other retail exposures	–	–	–	–	–	–	–	–	–
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	Non-Retail	–	–	–	–	–	–	17	–	17
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	12	–	12
9	Lease and receivables	–	–	–	–	–	–	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.

SEC2 – Securitization Exposures in the Trading Book (continued)

(unaudited) (millions of Canadian dollars)

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

		Q1 2019								
		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	–	–	–	–	–	–	20	–	20
	Of which :									
2	Residential mortgages	–	–	–	–	–	–	8	–	8
3	Credit card	–	–	–	–	–	–	12	–	12
4	Other retail exposures	–	–	–	–	–	–	–	–	–
5	Re-securitization	–	–	–	–	–	–	–	–	–
6	Non-Retail	–	–	–	–	–	–	49	–	49
	Of which :									
7	Loans to corporates	–	–	–	–	–	–	–	–	–
8	Commercial mortgage	–	–	–	–	–	–	12	–	12
9	Lease and receivables	–	–	–	–	–	–	37	–	37
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 -

(unaudited) (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.

		Q3 2019																
		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	3,351	–	28	26	–	–	3,405	–	–	–	398	–	–	–	32	–	–
2	Traditional securitization	3,351	–	28	26	–	–	3,405	–	–	–	398	–	–	–	32	–	–
3	Of which securitization	3,351	–	28	26	–	–	3,405	–	–	–	398	–	–	–	32	–	–
4	Of which retail underlying	3,069	–	28	26	–	–	3,123	–	–	–	370	–	–	–	30	–	–
5	Of which wholesale	282	–	–	–	–	–	282	–	–	–	28	–	–	–	2	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

		Q2 2019																
		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	3,065	–	28	26	–	–	3,119	–	–	–	369	–	–	–	30	–	–
2	Traditional securitization	3,065	–	28	26	–	–	3,119	–	–	–	369	–	–	–	30	–	–
3	Of which securitization	3,065	–	28	26	–	–	3,119	–	–	–	369	–	–	–	30	–	–
4	Of which retail underlying	2,783	–	28	26	–	–	2,837	–	–	–	341	–	–	–	28	–	–
5	Of which wholesale	282	–	–	–	–	–	282	–	–	–	28	–	–	–	2	–	–
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)

(unaudited) (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.

		Q1 2019																
		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	3,074	–	28	25	–	–	3,127	–	–	–	371	–	–	–	29	–	–
2	Traditional securitization	3,074	–	28	25	–	–	3,127	–	–	–	371	–	–	–	29	–	–
3	Of which securitization	3,074	–	28	25	–	–	3,127	–	–	–	371	–	–	–	29	–	–
4	Of which retail underlying	2,795	–	28	25	–	–	2,848	–	–	–	343	–	–	–	27	–	–
5	Of which wholesale	279	–	–	–	–	–	279	–	–	–	28	–	–	–	2	–	–
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 -

(unaudited) (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.

		Q3 2019																
		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	1,802	–	9	–	–	254	757	800	–	40	79	126	–	3	6	10	–
2	Traditional securitization	1,802	–	9	–	–	254	757	800	–	40	79	126	–	3	6	10	–
3	Of which securitization	1,802	–	9	–	–	254	757	800	–	40	79	126	–	3	6	10	–
4	Of which retail underlying	1,082	–	–	–	–	254	28	800	–	40	2	126	–	3	–	10	–
5	Of which wholesale	720	–	9	–	–	–	729	–	–	–	77	–	–	6	–	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

		Q2 2019																
		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	1,868	–	10	–	–	320	758	800	–	50	80	128	–	4	6	10	–
2	Traditional securitization	1,868	–	10	–	–	320	758	800	–	50	80	128	–	4	6	10	–
3	Of which securitization	1,868	–	10	–	–	320	758	800	–	50	80	128	–	4	6	10	–
4	Of which retail underlying	1,148	–	–	–	–	320	28	800	–	50	2	128	–	4	–	10	–
5	Of which wholesale	720	–	10	–	–	–	730	–	–	–	78	–	–	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 4 – Securitization Exposures in the Banking Book and Associated Capital Requirements⁽¹⁾ - Bank Acting as Investor - (continued)

(unaudited) (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.

		Q1 2019																
		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	971	–	812	–	–	300	1,483	–	–	45	595	–	–	4	48	–	–
2	Traditional securitization	971	–	812	–	–	300	1,483	–	–	45	595	–	–	4	48	–	–
3	Of which securitization	971	–	812	–	–	300	1,483	–	–	45	595	–	–	4	48	–	–
4	Of which retail underlying	311	–	800	–	–	300	811	–	–	45	522	–	–	4	42	–	–
5	Of which wholesale	660	–	12	–	–	–	672	–	–	–	73	–	–	–	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.

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.