



SUPPLEMENTARY REGULATORY CAPITAL AND PILLAR 3 DISCLOSURE

FOURTH QUARTER 2018

(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

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Notes to users

- 1) This *Supplementary Regulatory Capital and Pillar 3 Disclosure* document is unaudited and should be read in conjunction with the 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 2018 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.

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Regulatory Capital and Capital Ratios under Basel III⁽¹⁾

		2018				2017	
		Q4	Q3	Q2	Q1	Q4	
(unaudited) (millions of Canadian dollars)		Reference ⁽²⁾	All-in basis				
Common Equity Tier 1 capital: Instruments and reserves							
1	Directly issued qualifying common share capital plus related contributed surplus ⁽³⁾	a + a'	2,879	2,878	2,920	2,913	2,826
2	Retained earnings	b	8,472	8,404	8,018	7,785	7,706
3	Accumulated other comprehensive income and other reserves	c	175	159	139	110	168
5	Common share capital issued by subsidiaries and held by third parties (amount allowed in group CET1)	d	13	10	10	8	8
6	Common Equity Tier 1 capital before regulatory adjustments		11,539	11,451	11,087	10,816	10,708
Regulatory adjustments to Common Equity Tier 1 capital							
8	Goodwill (net of related tax liability)	e	1,671	1,668	1,671	1,662	1,668
9	Intangible assets other than mortgage-servicing rights	f - x	1,121	1,099	1,100	1,073	1,067
11	Accumulated other comprehensive income related to cash flow hedges	h	151	138	137	152	146
12	Shortfall of total provisions to expected losses	i	–	–	–	–	–
14	Gains (losses) due to changes in own credit risk on fair valued liabilities	j	(32)	(39)	(62)	(81)	(39)
15	Defined benefit pension plan assets (net of related tax liability)	k - y	11	93	4	3	4
16	Investments in own shares (if not already netted off contributed surplus on reported balance sheet)		9	3	1	5	6
22	Amount exceeding the 15% threshold		–	–	–	–	–
23	of which: significant investments in the common stock of financials	n	–	–	–	–	–
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)		–	–	–	–	–
28	Total regulatory adjustments to Common equity Tier 1		2,931	2,962	2,851	2,814	2,852
29	Common Equity Tier 1 capital (CET1)		8,608	8,489	8,236	8,002	7,856
Additional Tier 1 capital: instruments							
30	Directly issued qualifying Additional Tier 1 instruments plus related contributed surplus ⁽³⁾	v	2,450	2,450	2,150	2,150	1,850
31	of which: classified as equity under applicable accounting standards	v + z	2,450	2,450	2,150	2,150	1,850
32	of which: classified as liabilities under applicable accounting standards	p	–	–	–	–	–
33	Directly issued capital instruments subject to phase out from Additional Tier 1 ⁽³⁾⁽⁴⁾	p' + v'	350	350	750	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	3	2	2	2	2
36	Additional Tier 1 capital before regulatory adjustments		2,803	2,802	2,902	2,902	2,602
Additional Tier 1 capital: regulatory adjustments							
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
43	Total regulatory adjustments to Additional Tier 1 capital		1	1	1	1	1
44	Additional Tier 1 capital (AT1)		2,802	2,801	2,901	2,901	2,601
45	Tier 1 capital (T1 = CET1 + AT1)		11,410	11,290	11,137	10,903	10,457
Tier 2 capital: instruments and allowances							
46	Directly issued qualifying Tier 2 instruments plus related contributed surplus ⁽³⁾	r	750	750	750	–	–
47	Directly issued capital instruments subject to phase out from Tier 2 ⁽³⁾	r'	9	9	9	8	9
48	Tier 2 instruments (and CET1 and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties (amount allowed in group Tier 2)	s	4	3	3	2	2
50	Allowances for credit losses	t	179	155	164	154	193
51	Tier 2 capital before regulatory adjustments		942	917	926	164	204
Tier 2 capital: regulatory adjustments							
57	Total regulatory adjustments to Tier 2 capital		–	–	–	–	–
58	Tier 2 capital (T2)		942	917	926	164	204
59	Total capital (TC = T1 + T2)		12,352	12,207	12,063	11,067	10,661

(1) As requested by the Office of the Superintendent of Financial Institutions (Canada) (OSFI), all the Domestic Systemically Important Banks (D-SIBs) in Canada must fully apply the Basel III deductions and must disclose the all-in-ratios.

(2) Reconciliation with Balance Sheet is presented on page 7.

(3) 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*.

(4) Figures as at October 31, 2017 include the redemption of the Series 28 preferred shares on November 15, 2017.

Regulatory Capital and Capital Ratios under Basel III⁽¹⁾ (continued)

(unaudited) (millions of Canadian dollars)		2018				2017
		Q4	Q3	Q2	Q1	Q4
		All-in basis				
60a	Common Equity Tier 1 Capital RWA (CET1)	73,654	73,268	72,834	71,179	70,173
60b	Tier 1 Capital RWA	73,670	73,300	72,865	71,271	70,327
60c	Total capital RWA	73,685	73,331	72,895	71,362	70,451
Capital ratios						
61	Common Equity Tier 1 (as a percentage of risk weighted assets)	11.7%	11.6%	11.3%	11.2%	11.2%
62	Tier 1 (as a percentage of risk weighted assets) ⁽²⁾	15.5%	15.4%	15.3%	15.3%	14.9%
63	Total capital (as a percentage of risk weighted assets) ⁽²⁾	16.8%	16.7%	16.6%	15.5%	15.1%
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%
67	of which: G-SIB buffer requirement	na	na	na	na	na
67a	of which: D-SIBs buffer requirement	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%	11.6%	11.3%	11.2%	11.2%
OSFI all-in target⁽³⁾						
69	Common Equity Tier 1 all-in target ratio	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%
71	Total capital all-in target ratio	11.5%	11.5%	11.5%	11.5%	11.5%
Amounts below the thresholds for deduction (before risk weighting)						
72	Non-significant investments in the capital of other financial institutions	311	366	481	658	466
73	Significant investments in the common stock of financial institutions	270	255	241	235	221
75	Deferred tax assets arising from temporary differences (net of related tax liabilities)	38	43	58	50	54
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)	67	66	68	61	59
77	Cap on inclusion of allowances in Tier 2 under standardised approach	90	89	90	83	79
78	Allowance eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)	112	89	96	93	134
79	Cap on inclusion of allowances in Tier 2 under internal ratings-based approach	314	307	308	310	309
Capital instruments subject to phase-out arrangements (only applicable between Jan 1, 2018 and Jan 1, 2022)						
82	Current cap on AT1 instruments subject to phase out arrangements	775	775	775	775	968
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	953	953	953	953	1,191
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	-	-	-	-

(1) As requested by the Office of the Superintendent of Financial Institutions (Canada) (OSFI), all the Domestic Systemically Important Banks (D-SIBs) in Canada must fully apply the Basel III deductions and must disclose the all-in-ratios.

(2) Figures as at October 31, 2017 include the redemption of the Series 28 preferred shares on November 15, 2017.

(3) Include the conservation buffer and the surcharge applicable to D-SIBs but do not include the domestic stability buffer.

Leverage Ratio under Basel III

		2018			
		Q4	Q3	Q2	Q1
(unaudited) (millions of Canadian dollars)					
Accounting assets vs. leverage ratio exposure		All-in basis			
1	Total consolidated assets as per published financial statements	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	(15)	(33)	(58)	(68)
3	Adjustment for fiduciary assets recognised on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure	-	-	-	-
4	Adjustment for derivative financial instruments ⁽¹⁾	2,684	2,939	3,090	3,635
5	Adjustment for securities financing transactions ⁽¹⁾	1,122	3,062	2,516	(487)
6	Adjustment for off balance-sheet items	22,162	21,492	21,796	20,713
7	Other adjustments	(4,087)	(4,401)	(4,777)	(5,299)
8	Leverage Ratio Exposure	284,337	280,696	278,826	269,559
Leverage ratio common disclosure		All-in basis			
On-balance sheet exposures					
1	On-balance sheet items (excluding derivatives, SFTs and grandfathered securitization exposures but including collateral)	234,603	232,327	228,798	223,550
2	(Asset amounts deducted in determining Basel III Tier 1 capital)	(3,003)	(3,003)	(2,914)	(2,897)
3	Total on-balance sheet exposures (excluding derivatives and SFTs) (sum of lines 1 and 2)	231,600	229,324	225,884	220,653
Derivative exposures					
4	Replacement cost associated with all derivative transactions (i.e., net of eligible cash variation margin)	3,897	4,034	4,270	3,991
5	Add-on amounts for PFE associated with all derivative transactions	7,373	6,502	6,725	8,166
6	Gross up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	-	-	-	-
7	(Deductions of receivables assets for cash variation margin provided in derivative transactions)	-	-	-	-
8	(Exempted CCP-leg of client cleared trade exposures)	-	-	-	-
9	Adjusted effective notional amount of written credit derivatives	22	29	-	4
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-	-	-	-
11	Total derivative exposures (sum of lines 4 to 10)	11,292	10,565	10,995	12,161
Securities financing transaction exposures					
12	Gross SFT assets recognised for accounting purposes (with no recognition of netting), after adjusting for sale accounting transactions	18,159	16,253	17,636	16,520
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(2,974)	(1,127)	(2,196)	(4,637)
14	Counterparty credit risk (CCR) exposure for SFTs	4,097	4,189	4,712	4,149
15	Agent transaction exposures	-	-	-	-
16	Total securities financing transaction exposures (sum of lines 12 to 15)	19,282	19,315	20,152	16,032
Other off-balance sheet exposures					
17	Off-balance sheet exposure at gross notional amount	70,091	68,195	68,811	66,194
18	(Adjustments for conversion to credit equivalent amounts)	(47,928)	(46,703)	(47,016)	(45,481)
19	Off-balance sheet items (sum of lines 17 and 18)	22,163	21,492	21,795	20,713
Capital and Total Exposures					
20	Tier 1 capital	11,410	11,290	11,137	10,903
21	Total Exposures (sum of lines 3, 11, 16 and 19)	284,337	280,696	278,826	269,559
Leverage Ratio					
22	Basel III leverage ratio	4.0%	4.0%	4.0%	4.0%

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

Reconciliation between Financial Accounting and Regulatory Capital Balance Sheets⁽¹⁾

(unaudited) (millions of Canadian dollars)	Q4 2018				
	Cross - Reference to Definition of Capital ⁽²⁾	As In Report to Shareholders	Deconsolidation of Insurance ⁽³⁾ and other entities ⁽⁴⁾	Under scope of regulatory consolidation	Of which
Assets					
Cash and deposits with financial institutions		12,756	-	12,756	
Securities		69,783	10,719	80,502	
Assets purchased under reverse repurchase agreements and securities borrowed		18,159	(839)	17,320	
Loans					
Residential mortgage		53,651	(25,427)	28,224	
Personal		37,357	-	37,357	
Credit card		2,325	(1,389)	936	
Business and government		46,606	-	46,606	
Customers' liability under acceptances		6,801	-	6,801	
Less: Allowances for credit losses		(658)	-	(658)	
Allowances reflected in Tier 2 regulatory capital	t				(179)
Shortfall of allowances to expected loss	i				-
Allowances reflected in regulatory capital					(479)
Other assets					
Derivative financial instruments		8,608	809	9,417	
Other		7,083	(267)	6,816	
Goodwill	e				1,671
Intangibles assets	f				1,314
Deferred tax assets					520
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					482
Deferred tax assets - other temporary differences					38
Defined-benefit pension fund net assets	k				15
Significant Investments in other financial Institutions					270
Significant investments exceeding regulatory thresholds	m + n				-
Significant investments not exceeding regulatory thresholds					270
Other					3,026
Total assets		262,471	(16,394)	246,077	
Liabilities					
Deposits		170,830	-	170,830	
Derivatives financial instruments		6,036	514	6,550	
Other liabilities		70,503	(16,908)	53,595	
Gains and losses due to changes in own credit risk on fair value liabilities	j				(32)
Deferred tax liabilities					172
Related to goodwill	w				-
Related to intangibles	x				193
Related to pensions	y				4
Other deferred tax liabilities					(25)
Other					53,455
Subordinated debt		747	-	747	
Regulatory capital amortization of maturing debentures					-
Fair value adjustment and unamortized issuance cost					(12)
Subordinated debentures used for regulatory capital					759
Allowed for inclusion in Tier 2 capital	r				750
Subject to phase out	r'				9
Ineligible additional Tier 2 capital					-
Excluded from Tier 2 capital due to cap					-
Total liabilities		248,116	(16,394)	231,722	
Equity Attributable to Shareholders		13,976	-	13,976	
Common shares	a				2,822
Contributed surplus	a'				57
Retained Earnings	b				8,472
Accumulated Other Comprehensive Income (loss)	c				175
Net gains (losses) on instruments designated as cash flow hedges	h				151
Other					24
Preferred shares					2,450
Allowed for inclusion in additional Tier 1 capital					2,450
Subject to phase out	v'				-
Ineligible additional Tier 1 capital					-
Excluded from additional Tier 1 capital due to cap					-
Non-controlling interests		379	-	379	
Innovative Instruments					359
Allowed for inclusion in additional Tier 1 capital					-
Subject to phase out	p'				350
Excluded from additional Tier 1 capital due to cap					-
Other					9
Portion allowed for inclusion into CET1	d				13
Portion allowed for inclusion into Tier 1 capital	q				3
Portion allowed for inclusion into Tier 2 capital	s				4
Portion not allowed for regulatory capital					-
Total Equity		14,355	-	14,355	
Total Liabilities and Equity		262,471	(16,394)	246,077	

(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 references identify balance sheet components which are used in calculation of regulatory capital on page 4.

(3) Total assets related to Insurance activities and National Bank Life Insurance Company, and other are \$160 million and \$16 million respectively.

(4) The amount is mainly due to securitization entities. For more information on structured entities, please see pages 198 to 200 of the 2018 Annual Report.

AIRB Credit Risk Exposure - Back-Testing⁽¹⁾

2018												
	Q4						Q3					
	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⁾
(unaudited) (millions of Canadian dollars)												
Retail portfolio⁽⁶⁾												
Insured residential mortgages ⁽⁶⁾	0.85%	0.64%	2.64%	n.a.	n.a.	n.a.	1.06%	0.62%	2.64%	n.a.	n.a.	n.a.
Uninsured residential mortgages incl. HELOCs ⁽⁷⁾	0.36%	0.32%	21.57%	9.43%	93.02%	84.32%	0.37%	0.26%	22.15%	11.08%	91.49%	84.43%
Qualifying revolving retail	1.36%	1.15%	74.64%	75.40%	100.18%	101.60%	1.26%	1.16%	77.45%	78.68%	99.24%	100.62%
Other retail	1.63%	1.05%	67.53%	59.30%	95.65%	88.31%	1.68%	1.30%	66.64%	58.90%	95.59%	88.62%
Non-Retail Portfolio⁽⁸⁾												
Corporate	1.01%	0.46%	35.57%	32.01%	79.10%	71.09%	1.27%	0.50%	37.11%	28.10%	77.64%	68.47%
Sovereign ⁽⁹⁾	0.03%	0.00%	11.54%	n.a.	88.30%	n.a.	0.06%	0.00%	11.54%	n.a.	88.30%	n.a.
Financial Institutions ⁽⁹⁾	0.41%	0.00%	40.75%	n.a.	100.00%	n.a.	0.59%	0.00%	40.75%	n.a.	100.00%	n.a.

2018												
	Q2						Q1					
	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⁾
(unaudited) (millions of Canadian dollars)												
Retail portfolio⁽⁶⁾												
Insured residential mortgages ⁽⁶⁾	1.12%	0.61%	2.64%	n.a.	n.a.	n.a.	1.20%	0.71%	2.65%	n.a.	n.a.	n.a.
Uninsured residential mortgages incl. HELOCs ⁽⁷⁾	0.39%	0.24%	22.81%	12.17%	91.85%	84.85%	0.39%	0.24%	22.90%	11.12%	90.99%	83.21%
Qualifying revolving retail	1.28%	1.17%	71.01%	79.68%	99.52%	99.71%	1.31%	1.19%	71.95%	82.05%	99.57%	99.15%
Other retail	1.77%	1.31%	69.95%	63.37%	95.59%	89.17%	1.78%	1.39%	70.31%	61.65%	95.66%	90.60%
Non-Retail Portfolio⁽⁸⁾												
Corporate	1.26%	0.48%	37.49%	27.23%	83.64%	75.83%	1.26%	0.45%	38.26%	27.94%	83.99%	82.90%
Sovereign ⁽⁹⁾	0.06%	0.00%	11.54%	n.a.	88.30%	n.a.	0.06%	0.00%	11.54%	n.a.	88.30%	n.a.
Financial Institutions ⁽⁹⁾	0.56%	0.00%	40.75%	n.a.	100.00%	n.a.	0.56%	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. Actual and estimated LGD and EAD parameters are reported on a one month lag.

For example, for Q4 2018, estimated percentages are as of September 30th, 2017 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.

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

2018																		
Q4						Q3						Q2						
EAD - Gross Exposure ⁽¹⁾																		
(unaudited) (millions of Canadian dollars)	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 and Gas	2,582	2,058	151	–	–	4,791	2,458	2,148	131	8	–	4,745	2,302	2,146	129	–	–	4,577
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 ⁽²⁾	2,869	1,667	300	–	–	4,836	2,848	1,438	264	–	–	4,550	2,857	1,441	278	–	–	4,576
Manufacturing	5,515	1,962	268	–	–	7,745	5,227	1,825	277	–	–	7,329	4,788	1,981	288	–	–	7,057
Wholesale Trade	2,102	693	52	–	–	2,847	2,128	578	56	–	–	2,762	2,090	580	43	–	–	2,713
Retail Trade	2,970	1,052	43	–	–	4,065	2,973	1,128	41	–	–	4,142	3,068	1,119	46	–	–	4,233
Transportation	2,805	2,312	131	31	–	5,279	2,640	2,281	125	30	–	5,076	2,469	2,501	123	32	–	5,125
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 ⁽³⁾	9,769	1,508	25	–	–	11,302	9,130	1,337	22	–	–	10,489	9,315	1,337	19	51	–	10,722
Professional Services	1,384	704	372	–	–	2,460	1,365	653	345	–	–	2,363	1,315	653	360	–	–	2,328
Education & Health Care	2,858	1,219	8	3	–	4,088	2,897	1,030	7	6	–	3,940	2,802	1,264	8	3	–	4,077
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⁽⁴⁾	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

2018																		
Q1						Q4						Q3						
EAD - Gross Exposure ⁽¹⁾																		
(unaudited) (millions of Canadian dollars)	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	4,156	268	7	–	–	4,431	4,017	310	6	–	–	4,333	3,895	314	8	–	–	4,217
Oil and Gas	2,244	1,972	117	–	–	4,333	2,211	1,957	56	–	–	4,224	2,079	2,013	51	–	–	4,143
Mining	385	833	45	–	–	1,263	411	817	52	–	–	1,280	439	723	46	–	–	1,208
Utilities	2,604	1,848	601	–	–	5,053	2,723	1,737	515	–	–	4,975	3,036	1,579	479	–	–	5,094
Construction ⁽²⁾	2,730	1,199	238	–	–	4,167	2,676	1,154	216	–	–	4,046	2,506	1,129	203	–	–	3,838
Manufacturing	4,428	2,071	248	–	–	6,747	4,156	1,961	239	–	–	6,356	4,097	2,005	251	–	–	6,353
Wholesale Trade	1,936	589	37	–	–	2,562	1,981	753	38	–	–	2,772	2,063	700	39	–	–	2,802
Retail Trade	3,126	1,106	45	–	–	4,277	2,933	1,158	40	–	–	4,131	2,821	1,220	42	–	–	4,083
Transportation	2,541	2,229	120	29	–	4,919	2,416	2,365	111	22	–	4,914	2,331	2,076	108	11	–	4,526
Communications	1,408	832	190	–	–	2,430	1,555	810	207	–	–	2,572	1,629	699	260	–	–	2,588
Finance and Insurance	22,533	3,222	597	127,147	4,427	157,926	23,780	2,289	838	114,967	3,592	145,466	21,690	2,023	794	98,932	3,790	127,229
Real Estate ⁽³⁾	9,103	1,345	27	58	–	10,533	8,745	850	25	56	–	9,676	8,443	908	31	53	–	9,435
Professional Services	1,210	661	360	–	–	2,231	1,232	565	414	–	–	2,211	1,193	566	389	–	–	2,148
Education & Health Care	2,851	1,162	9	5	–	4,027	2,615	987	8	9	–	3,619	2,672	826	7	7	–	3,512
Other Services	4,427	1,248	285	–	–	5,960	4,604	999	310	1	–	5,914	4,559	1,114	291	–	–	5,964
Government	4,450	1,376	16	19,100	–	24,942	4,750	1,414	17	14,592	–	20,773	4,724	1,431	10	17,247	–	23,412
Other	2,652	34	584	112	5	3,387	2,579	93	629	97	15	3,413	2,303	36	666	103	4	3,112
Total - Non-retail⁽⁴⁾	72,784	21,995	3,526	146,451	4,432	249,188	73,384	20,219	3,721	129,744	3,607	230,675	70,480	19,362	3,675	116,353	3,794	213,664

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

(2) Includes some public private partnership and project finance loans.

(3) Includes residential mortgages 5 units and more.

(4) This total excludes SME retail exposure.

Gross Credit Risk Exposure at Default in Europe⁽¹⁾

2018																			
(unaudited) (millions of Canadian dollars)	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	837	113	2,185	344	3,479	638	118	1,291	339	2,386	891	112	2,088	343

2018										2017									
(unaudited) (millions of Canadian dollars)	Q1						Q4						Q3						
	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	–	–	4,467	4	–	4,471	1	–	1,091	5	–	1,097	–	–	1,130	6	–	1,136	
Italy	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	
Portugal	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Spain	–	–	–	7	46	53	–	–	–	–	68	68	–	–	–	2	63	65	
Total GIIPS	–	–	4,467	11	46	4,524	1	–	1,091	5	69	1,166	–	–	1,130	8	63	1,201	
France	147	34	768	206	315	1,470	88	41	902	136	363	1,530	13	32	784	115	340	1,284	
Germany	–	–	–	2	37	39	–	–	–	2	55	57	–	–	–	4	56	60	
United Kingdom	721	7	16,657	1,510	4	18,899	302	5	13,891	950	4	15,152	257	5	13,415	1,109	5	14,791	
Other Europe	45	4	2,388	140	53	2,630	54	–	2,917	108	3	3,082	36	–	1,502	116	7	1,661	
Total - Credit Risk	913	45	24,280	1,869	455	27,562	445	46	18,801	1,201	494	20,987	306	37	16,831	1,352	471	18,997	

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	913	45	1,575	455	2,988	445	46	984	494	1,969	306	37	1,674	471

(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.

Derivatives Financial Instruments According to Basel Definition

(unaudited) (millions of Canadian dollars)	2018				2017
	Q4	Q3	Q2	Q1	Q4
	Under Basel III				
Foreign Exchange Related Contracts					
Swaps	201,116	209,335	203,973	182,228	182,196
Options					
- purchased	9,516	7,664	9,324	7,258	8,515
- sold	11,121	8,016	8,055	6,532	8,940
Exchange traded and OTC futures contracts	34,488	29,495	30,853	29,000	29,509
Total notional amount	256,241	254,510	252,205	225,018	229,160
Replacement cost					
- gross	3,425	3,308	3,586	4,515	4,368
- net ⁽¹⁾	1,994	1,804	2,181	2,302	2,512
Future credit risk	1,949	1,863	1,995	1,895	1,892
Credit equivalent ⁽²⁾	3,943	3,667	4,176	4,197	4,404
Risk-weighted equivalent ⁽³⁾	1,215	1,169	1,456	1,388	1,374
Interest Rate Related Contracts					
Swaps ⁽⁴⁾	558,757	519,116	487,593	460,603	503,421
Options					
- purchased	38,243	39,281	30,577	28,113	20,747
- sold	8,835	22,510	14,488	10,350	5,044
Exchange traded and OTC futures contracts	5,254	5,201	4,958	5,269	4,733
Total notional amount	611,089	586,108	537,616	504,335	533,945
Replacement cost ⁽⁴⁾					
- gross	4,602	5,285	5,127	4,538	3,705
- net ⁽¹⁾	1,324	2,128	1,987	1,548	1,012
Future credit risk	1,672	1,841	1,859	3,318	2,395
Credit equivalent ⁽²⁾	2,996	3,969	3,846	4,866	3,407
Risk-weighted equivalent ⁽³⁾	406	359	405	566	620
Financial Futures					
Total notional amount	75,518	80,369	86,407	90,467	122,714
Equity and Commodity Contracts					
Total notional amount	79,003	63,930	64,736	69,357	53,923
Replacement cost					
- gross	4,034	2,518	2,565	2,484	1,908
- net ⁽¹⁾	3,110	1,854	1,906	1,937	1,441
Future credit risk	3,701	2,745	2,817	2,889	2,314
Credit equivalent ⁽²⁾	6,811	4,599	4,723	4,826	3,755
Risk-weighted equivalent ⁽³⁾	549	472	467	442	306
Credit Derivatives					
Total notional amount (trading only)	1,872	2,315	2,389	1,737	8,442
Total Return Swap Notional Amount ⁽⁴⁾	162	171	173	191	150
Replacement cost					
- gross	12	13	10	11	111
- net ⁽¹⁾	11	6	7	9	8
Future credit risk	57	67	54	72	16
Credit equivalent ⁽²⁾	68	73	61	81	24
Risk-weighted equivalent ⁽³⁾	23	46	44	2	7
Total Derivatives					
Total notional amount	1,023,885	987,403	943,526	891,105	948,334
Replacement cost					
- gross	12,073	11,124	11,288	11,548	10,092
- net ⁽¹⁾	6,439	5,792	6,081	5,796	4,973
Future credit risk	7,379	6,516	6,725	8,174	6,617
Credit equivalent ⁽²⁾	13,818	12,308	12,806	13,970	11,590
Risk-weighted equivalent ⁽³⁾	2,193	2,046	2,372	2,398	2,307

(1) Net replacement cost is gross positive replacement cost with consideration of master netting agreements without consideration of collateral.

(2) Includes the impact of master netting agreements but excludes collateral.

(3) Risk weighted amounts reported are net of impact of collaterals and master netting agreements and before applying the scaling factor of 6%.

(4) Securitised exposure recognized for capital ratio but not for consolidated balance sheet purposes due to IFRS standards.

Over The Counter Derivatives Financial Instruments Settled by Central Counterparties⁽¹⁾

	2018								
	Q4			Q3			Q2		
	Exchange-traded contracts	OTC-Traded		Exchange-traded contracts	OTC-Traded		Exchange-traded contracts	OTC-Traded	
		Settled by central counterparties	Not settled by central counterparties		Settled by central counterparties	Not settled by central counterparties		Settled by central counterparties	Not settled by central counterparties
(unaudited) (millions of Canadian dollars)									
Interest rate contracts	86,483	413,172	186,952	104,705	375,829	185,943	117,926	349,366	156,731
Foreign exchange contracts	308	–	255,933	540	–	253,970	153	–	252,052
Equity, commodity and credit derivative contracts	20,764	2,767	57,506	19,345	2,734	44,337	21,586	2,418	43,294

	2018			2017					
	Q1			Q4			Q3		
	Exchange-traded contracts	OTC-Traded		Exchange-traded contracts	OTC-Traded		Exchange-traded contracts	OTC-Traded	
		Settled by central counterparties	Not settled by central counterparties		Settled by central counterparties	Not settled by central counterparties		Settled by central counterparties	Not settled by central counterparties
(unaudited) (millions of Canadian dollars)									
Interest rate contracts	122,334	316,141	156,327	143,394	359,969	153,296	83,753	333,309	157,408
Foreign exchange contracts	351	–	224,667	153	–	229,007	194	–	223,838
Equity, commodity and credit derivative contracts	22,715	2,148	46,422	21,188	8,893	32,434	22,658	5,703	27,595

(1) Notional amounts.

Location of Pillar 3 Disclosure

		Pages
	2018 Annual Report	Supplementary Regulatory Capital and Pillar 3 Disclosure
Overview of Risk Management and Risk-weight Assets		
OVA - Bank risk management approach	51, 55, 57, 58 and 64	
OV1 - Overview of RWA		14
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		15
LI2 - Main sources of differences between regulatory exposure amounts and carrying values in financial statements		16
LIA - Explanations of differences between accounting and regulatory exposure amounts	88-89	16
Credit risk		
CRA - General information about credit risk	56 and 60-61	
CR1 - Credit quality of assets		17
CR2 - Changes in stock of defaulted loans and debt securities		
CRB - Additional disclosure related to the credit quality of assets	90 and 154 to 162	9-10 and 19 and 22 ⁽¹⁾
CRC - Qualitative disclosure requirements related to credit risk mitigation techniques	65-66 and 173	
CR3 - Credit risk mitigation techniques - overview		18
CRD - Qualitative disclosures on banks' use of external credit ratings under the standardised approach for credit risk	61 to 63	
CR4 - Standardised approach - credit risk exposure and Credit Risk Mitigation (CRM effects)		19
CR5 - Standardised approach - exposures by asset classes and risk weights		20
CRE - Qualitative disclosures related to IRB models	61 to 63	
CR6 - IRB - Credit risk exposures by portfolio and PD range		21-22
CR7 - IRB - Effect on RWA of credit derivatives used as CRM techniques	n.a.	n.a.
CR8 - RWA flow statements of credit risk exposures under IRB		23
CR9 - IRB - Backtesting of probability of default (PD) per portfolio		24-25
CR10 - IRB (specialised lending and equities under the simple risk weight method)		26
Counterparty credit risk		
CCRA - Qualitative disclosure related to counterparty credit risk	66, 173	
CCR1 - Analysis of counterparty credit risk (CCR) exposure by approach		27
CCR2 - Credit valuation adjustment (CVA) capital charge		28
CCR3 - Standardised approach of CCR exposures by regulatory portfolio and risk weights		29
CCR4 - IRB - CCR exposures by portfolio and PD scale		30
CCR5 - Composition of collateral for CCR exposure		31
CCR6 - Credit derivatives exposures		32
CCR7 - RWA flow statements of CCR exposures under the Internal Model Method (IMM)	n.a.	n.a.
CCR8 - Exposures to central counterparties		33
Securitization		
SECA - Qualitative disclosure requirements related to securitization exposures	41, 44, 124 and 199-200	
SEC1 - Securitization exposures in the banking book		34
SEC2 - Securitization exposures in the trading book		35
SEC3 - Securitization exposures in the banking book and associated regulatory capital requirements - bank acting as originator or as sponsor		36
SEC4 - Securitization exposures in the banking book and associated capital requirements - bank acting as investor		37
Market risk		
MRA - Qualitative disclosure requirements related to market risk		
MRB - Qualitative disclosures for banks using the Internal Models Approach (IMA)		
MR1 - Market risk under standardised approach	The Bank continues to apply the market risk disclosures under Basel 2.5 framework as permitted by OSFI.	
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⁾ These pages are included in the document entitled *Supplementary Financial Information - Fourth Quarter 2018*.

OV1 – Overview of RWA⁽¹⁾

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

		Q4 2018	Q3 2018	Q4 2018
		a	b	c
		RWA ⁽²⁾	RWA ⁽²⁾	Minimum capital requirement ⁽³⁾
(unaudited) (millions of Canadian dollars)				
1	Credit risk (excluding counterparty credit risk) (CCR)	54,467	52,668	4,357
2	Of which standardised approach (SA)	9,341	9,150	747
3	Of which internal rating-based (IRB) approach	45,126	43,518	3,610
4	Counterparty credit risk	3,449	3,820	276
5	Of which standardised approach for counterparty credit risk (SA-CCR) ⁽⁴⁾	3,449	3,820	276
6	Of which internal model method (IMM)	–	–	–
7	Equity positions in banking book under market-based approach⁽⁵⁾	926	938	74
8	Equity investments in funds – look-through approach	105	98	8
9	Equity investments in funds – mandate-based approach	–	–	–
10	Equity investments in funds – fall-back approach	70	–	6
11	Settlement risk	46	34	4
12	Securitization exposures in banking book	413	416	33
13	Of which IRB ratings-based approach (RBA)	390	393	31
14	Of which IRB Supervisory Formula Approach (SFA)	23	23	2
15	Of which SA/simplified supervisory formula approach (SSFA)	–	–	–
16	Market risk	3,435	4,755	275
17	Of which standardised approach (SA)	1,072	1,215	86
18	Of which internal model approaches (IMM)	2,363	3,540	189
19	Operational risk	10,743	10,539	859
20	Of which Basic Indicator Approach	–	–	–
21	Of which Standardised Approach	10,743	10,539	859
22	Of which Advanced Measurement Approach	–	–	–
23	Amounts below the thresholds for deduction (subject to 250% risk weight)	–	–	–
24	Floor adjustment	–	–	–
25	Total (1+4+7+8+9+10+11+12+16+19+23+24)	73,654	73,268	5,892

(1) Figures are presented on an "all-in" basis and represents the Bank's CET1 RWA.

(2) Including the 1,06 regulatory scaling factor.

(3) The minimum capital requirement is equal to 8% of risk-weighted assets.

(4) Standardised approach (SA-CCR) for measuring exposure at default for counterparty credit risk will be applicable from Q1-2019. Before it enters into force, NBC reports information corresponding to the Current Exposure Method.

(5) Banking Book Equity that are not equity investments in funds (EIF) are treated under the materiality exemption and consequently reported in OV1 row 7 as the materiality exemption is available for AIRB banks.

LI1 – Differences between accounting and regulatory scopes of consolidation and mapping of financial statements with regulatory risk categories⁽¹⁾

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

	Q4 2018						
	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
(unaudited) (millions of Canadian dollars)							
Assets							
Cash and deposits with financial institutions	12,756	12,756	12,756	–	–	226	–
Securities							
At fair value through profit or loss	55,817	57,617	4,176	–	11	53,430	–
At fair value through other comprehensive income	5,668	14,310	14,296	–	14	–	–
At amortized cost	8,298	8,575	7,126	–	1,449	–	–
	69,783	80,502	25,598	–	1,474	53,430	–
Securities purchased under reverse repurchase agreements and securities borrowed	18,159	17,320	–	17,320	–	–	–
Loans and acceptances							
Residential mortgage	53,651	28,224	28,224	–	–	186	–
Personal	37,357	37,357	37,357	–	–	–	–
Credit card	2,325	936	936	–	–	–	–
Business and government	46,606	46,606	46,606	–	–	250	–
Customers' liability under acceptances	139,939	113,123	113,123	–	–	436	–
Allowances for credit losses	6,801	6,801	6,801	–	–	–	–
	(658)	(658)	(179)	–	–	–	(479)
	146,082	119,266	119,745	–	–	436	(479)
Other							
Derivative financial instruments ⁽³⁾	8,608	9,417	–	9,417	–	7,625	–
Investments in associates and joint ventures	645	368	368	–	–	–	–
Premises and equipment	601	601	601	–	–	–	–
Goodwill	1,412	1,671	–	–	–	–	1,671
Intangible assets	1,314	1,121	–	–	–	–	1,121
Other assets	3,111	3,055	3,044	–	–	–	11
	15,691	16,233	4,013	9,417	–	7,625	2,803
Total assets	262,471	246,077	162,112	26,737	1,474	61,717	2,324
Liabilities							
Deposits	170,830	170,830	–	–	–	7,187	163,643
Other							
Acceptances	6,801	6,801	–	–	–	–	6,801
Obligations related to securities sold short	17,780	17,780	–	–	–	17,780	–
Obligations related to securities sold under repurchase agreements and securities loaned	19,998	20,630	–	20,630	–	–	–
Derivative financial instruments ⁽³⁾	6,036	6,550	–	6,550	–	4,807	–
Liabilities related to transferred receivables	20,100	–	–	–	–	–	–
Other liabilities	5,824	8,384	–	–	–	21	8,363
	76,539	60,145	–	27,180	–	22,608	15,164
Subordinated debt	747	747	–	–	–	–	747
Total liabilities	248,116	231,722	–	27,180	–	29,795	179,554

(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 the counterparty credit risk and the market risk frameworks.

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

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

		Q4 2018				
		a	b	c	d	e
		Total	Credit risk framework	Securitization framework	Counterparty credit risk framework	Items subject to ⁽¹⁾ : Market risk framework
(unaudited) (millions of Canadian dollars)						
1	Asset carrying value amount under scope of regulatory consolidation (as per template LI1)	243,753	162,112	1,474	26,737	61,717
2	Liabilities carrying value amount under scope of regulatory consolidation (as per template LI1)	52,168	–	–	27,180	29,795
3	Total net amount under regulatory scope of consolidation	191,585	162,112	1,474	(443)	31,922
4	<i>Gross-up for repo-style transactions⁽²⁾</i>	41,260	–	–	41,260	–
5	<i>Potential future exposures</i>	7,379	–	–	7,379	–
6	<i>Off-balance sheet amounts⁽³⁾</i>	164,037	40,894	3,272	93,224	–
7	<i>Differences due to different netting rules, other than those already included in row 2</i>	3,414	–	–	3,414	–
8	VaR amounts for SFTs	2,844	–	–	2,844	–
9	<i>Differences in valuations</i>	–	–	–	–	–
10	<i>Collateral</i>	(130,963)	–	–	(130,963)	–
11	Exposure amounts considered for regulatory purposes⁽⁴⁾	279,556	203,006	4,746	16,715	31,922

(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 LI1.

(3) 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).

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

CR1 - Credit quality of assets⁽¹⁾

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

		Q4 2018			
		a	b	c	d
(unaudited) (millions of Canadian dollars)		Gross carrying values ⁽²⁾ of		Allowances for credit losses ⁽⁴⁾	Net values (a+b-c)
		Default exposures ⁽³⁾	Non-default exposures		
1	Loans ⁽⁵⁾	593	129,888	226	130,255
2	Debt Securities	–	15,723	–	15,723
3	Off-balance-sheet commitments ⁽⁶⁾	19	67,419	1	67,437
4	Total	612	213,030	227	213,415

(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 on impaired loans (Stage 3) according to IFRS 9.

(5) Includes deposits with financial institutions.

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

CR3 - Credit risk mitigation techniques - overview

The following table discloses the extent of use of credit risk mitigation techniques.

		Q4 2018				
		a	b1	b	d	f
(unaudited) (millions of Canadian dollars)		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⁾	69,401	61,049	55,526	5,436	–
2	Debt securities	15,723	–	–	–	–
3	Total	85,124	61,049	55,526	5,436	–
4	Of which defaulted	255	299	260	37	–

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

(2) Includes deposits with financial institutions.

CR4 - Standardised approach - credit risk exposure and Credit Risk Mitigation (CRM) effects⁽¹⁾

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

(unaudited) (millions of Canadian dollars)		Q4 2018						
		a	b	c		d	e	f
		Exposures before CCF and CRM		Exposures post-CCF and CRM				
Assets classes	On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount		RWA	RWA density	
1	Sovereigns and their central banks	800	46	800	–	516	65%	
2	Non-central government public sector entities	–	–	–	–	–	0%	
3	Multilateral development banks	20	–	20	–	–	0%	
4	Financial institutions	257	3,235	257	503	623	82%	
5	Securities firms	–	–	–	–	–	0%	
6	Corporates	2,221	545	2,221	87	1,511	65%	
7	Regulatory retail portfolios	5,837	–	5,837	–	2,301	39%	
8	Secured by residential property	3,875	39	3,875	20	1,486	38%	
9	Secured by commercial real estate	70	–	70	–	70	100%	
10	Equity	–	–	–	–	–	0%	
11	Past-due loans	38	11	38	–	26	68%	
12	Higher-risk categories	4	–	4	–	6	150%	
13	Other assets ⁽²⁾	14,495	–	14,495	–	2,802	19%	
14	Total	27,617	3,876	27,617	610	9,341	33%	

(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 the ones involved in settlement risk, CVA, CCPs and non-significant investments in financials.

CR5 - Standardised approach - exposures by assets classes and risk weights⁽¹⁾

The following table presents 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).

(unaudited) (millions of Canadian dollars)		Q4 2018									Total credit exposures amount (post-CCF and post-CRM)
		a	b	c	d	e	f	g	h	i	
Risk weight	Asset classes	0%	10%	20%	35%	50%	75%	100%	150%	Others	
1	Sovereigns and their central banks	283	–	–	–	4	–	513	–	–	800
2	Non-central government public sector entities (PSEs)	–	–	–	–	–	–	–	–	–	–
3	Multilateral development banks (MDBs)	20	–	–	–	–	–	–	–	–	20
4	Financial institutions	–	–	170	–	1	–	589	–	–	760
5	Securities firms	–	–	–	–	–	–	–	–	–	–
6	Corporates	797	–	–	–	–	–	1,511	–	–	2,308
7	Regulatory retail portfolios	2,769	–	–	–	–	3,068	–	–	–	5,837
8	Secured by residential property	608	–	–	2,465	13	770	39	–	–	3,895
9	Secured by commercial real estate	–	–	–	–	–	–	70	–	–	70
10	Equity	–	–	–	–	–	–	–	–	–	–
11	Past-due loans	12	–	–	–	–	–	25	1	–	38
12	Higher-risk categories	–	–	–	–	–	–	–	4	–	4
13	Other assets ⁽²⁾	12,155	–	–	–	–	–	2,032	–	308	14,495
14	Total	16,644	–	170	2,465	18	3,838	4,779	5	308	28,227

(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 the ones involved in settlement risk, CVA, CCPs and non-significant investments in financials.

CR6 - IRB - Credit risk exposures by portfolio and PD range

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

Q4 2018													
(unaudited) (millions of Canadian dollars)	PD scale ⁽¹⁾	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	RWA density ⁽⁸⁾	EL ⁽⁹⁾	Provisions for credit losses
Residential Mortgages 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 Mortgages 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	3
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	7
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	34

(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) Total risk-weighted assets to EAD post-CRM.

(9) 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)

Q4 2018													
(unaudited) (millions of Canadian dollars)	PD scale ⁽¹⁾	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	RWA density ⁽⁸⁾	EL ⁽⁹⁾	Provisions 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	10
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	-
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	0.56%	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	142.5%	-	
	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	-
Total (all portfolio)		129,196	50,774	67%	173,284	0.90%	2,734,021	30.3%	2.30	42,571	24.6%	544	54

(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) Total risk-weighted assets to EAD post-CRM.

(9) 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

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

		Q4 2018 ⁽¹⁾
		a
		RWA
(unaudited) (millions of Canadian dollars)		
1	RWA at beginning	44,971
2	Book size ⁽²⁾	1,479
3	Book quality ⁽³⁾	195
4	Model updates ⁽⁴⁾	(72)
5	Methodology and policy ⁽⁵⁾	–
6	Acquisitions and disposals ⁽⁶⁾	–
7	Foreign exchange movements ⁽⁷⁾	67
8	Other ⁽⁸⁾	–
9	RWA at end	46,640

(1) Figures are presented on an "all-in" basis.

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

(3) 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.

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

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

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

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

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

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

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

(unaudited) (millions of Canadian dollars)		Q4 2018								
a	b	c		d	e	f		g	h	i
Portfolio	PD Range ⁽¹⁾	External rating equivalent		Weighted average PD	Arithmetic average PD by obligors	Number of obligors ⁽²⁾		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate
		S&P	Moody's			End of previous year	End of the year			
Retail portfolio										
Residential Mortgages and HELOCs – insured	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.08%	0.08%	52,984	51,552	34	1	0.05%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	20,202	19,669	19	–	0.16%
	0.25 to < 0.50	BBB-	Baa3	0.36%	0.35%	23,727	22,937	54	–	0.31%
	0.50 to < 0.75	BB+	Ba1	0.61%	0.61%	10,829	10,021	52	–	0.52%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.34%	1.31%	16,869	16,044	136	3	0.91%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.58%	4.52%	5,570	4,588	176	2	3.58%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	29.33%	27.21%	1,744	1,618	387	4	21.31%
Residential Mortgages and HELOCs – uninsured	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.07%	0.06%	172,779	186,609	55	–	0.04%
	0.15 to < 0.25	BBB	Baa2	0.19%	0.19%	30,968	30,702	55	8	0.11%
	0.25 to < 0.50	BBB-	Baa3	0.35%	0.35%	26,887	26,260	73	4	0.16%
	0.50 to < 0.75	BB+	Ba1	0.61%	0.61%	10,288	9,714	49	1	0.46%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.27%	1.28%	12,149	11,040	177	3	1.24%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.54%	4.69%	3,827	3,891	181	1	4.53%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	23.95%	24.08%	1,369	1,355	247	3	18.87%
Qualifying revolving retail	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.05%	0.05%	873,273	895,632	354	2	0.04%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	118,620	117,492	147	4	0.13%
	0.25 to < 0.50	BBB-	Baa3	0.36%	0.35%	152,351	148,785	324	9	0.24%
	0.50 to < 0.75	BB+	Ba1	0.63%	0.62%	73,886	71,453	335	9	0.50%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.45%	1.50%	311,603	236,145	4,169	333	1.15%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.47%	4.08%	160,765	234,061	6,776	173	3.84%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	24.58%	27.32%	31,441	32,158	8,263	31	24.58%
Other retail	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.07%	0.07%	80,266	109,622	45	–	0.05%
	0.15 to < 0.25	BBB	Baa2	0.20%	0.20%	52,191	43,211	75	–	0.13%
	0.25 to < 0.50	BBB-	Baa3	0.37%	0.37%	87,132	75,981	226	6	0.25%
	0.50 to < 0.75	BB+	Ba1	0.63%	0.62%	60,263	53,529	310	10	0.51%
	0.75 to < 2.50	BB to BB-	Ba2 to Ba3	1.38%	1.33%	199,148	206,716	1,967	213	0.99%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.33%	4.21%	65,725	70,018	1,811	137	3.43%
	10.00 to < 100.00	CCC+ to CCC-	Caa1 to Caa3	20.39%	21.45%	13,834	13,355	1,875	63	15.35%

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

(2) Represents the number of retail accounts.

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

(unaudited) (millions of Canadian dollars)		Q4 2018								
a	b	c		d	e	f		g	h	i
Portfolio	PD Range ⁽¹⁾	External rating equivalent		Weighted average PD	Arithmetic average PD by obligors	Number of obligors ⁽²⁾		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate
		S&P	Moody's			End of previous year	End of the year			
Non-Retail portfolio										
Corporate	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.09%	0.09%	2,026	749	–	–	0.06%
	0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	0.20%	0.21%	2,294	3,664	1	–	0.09%
	0.25 to < 0.50	BBB to BB+	Baa2 to Ba1	0.36%	0.36%	2,188	2,234	2	–	0.16%
	0.50 to < 0.75	BB+	Ba1	0.56%	0.56%	2,496	2,493	4	–	0.16%
	0.75 to < 2.50	BB+ to B+	Ba1 to B1	1.14%	1.14%	5,052	6,221	32	4	0.79%
	2.50 to < 10.00	B+ to B-	B1 to B3	4.80%	4.76%	2,068	1,163	29	1	1.47%
	10.00 to < 100.00	B- to CCC	B3 to Caa2	16.72%	16.39%	207	69	12	–	6.33%
Sovereign	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.01%	0.02%	551	583	–	–	–
	0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	–	–	–	–	–	–	–
	0.25 to < 0.50	BBB to BB+	Baa2 to Ba1	–	–	–	–	–	–	–
	0.50 to < 0.75	BB+	Ba1	–	–	–	–	–	–	–
	0.75 to < 2.50	BB+ to B+	Ba1 to B1	–	–	–	–	–	–	–
	2.50 to < 10.00	B+ to B-	B1 to B3	5.07%	5.07%	1	1	–	–	–
	10.00 to < 100.00	B- to CCC	B3 to Caa2	–	–	–	–	–	–	–
Financial Institutions	0.00 to < 0.15	AAA to BBB+	Aaa to Baa1	0.06%	0.07%	77	72	–	–	–
	0.15 to < 0.25	BBB+ to BBB	Baa1 to Baa2	0.23%	0.19%	7	15	–	–	–
	0.25 to < 0.50	BBB to BB+	Baa2 to Ba1	0.36%	0.36%	19	16	–	–	–
	0.50 to < 0.75	BB+	Ba1	0.56%	0.56%	16	3	–	–	–
	0.75 to < 2.50	BB+ to B+	Ba1 to B1	1.31%	1.13%	14	17	–	–	–
	2.50 to < 10.00	B+ to B-	B1 to B3	3.15%	4.57%	7	4	–	–	–
	10.00 to < 100.00	B- to CCC	B3 to Caa2	–	–	1	–	–	–	–

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

(2) Represents the number of individual borrowers.

CR10 - IRB (specialised lending and equities under the simple risk-weight method)

Q4 2018					
	On-balance sheet amount	Off-balance sheet amount	RW	Exposure amount	RWA
(unaudited) (millions of Canadian dollars)					
Equities under the materiality exemption	823	102	100%	874	926

CCR1 – Analysis of counterparty credit risk (CCR) exposure by approach⁽¹⁾

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

		Q4 2018					
		a	b	c	d	e	f
(unaudited) (millions of Canadian dollars)		Replacement cost	Potential future exposure	EEPE ⁽²⁾	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
1	SA-CCR (for derivatives) ⁽³⁾	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					6,313	601
6	Total						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 will be applicable from Q1-2019. Before it enters into force, NBC reports in row 1 information corresponding to the Current Exposures Method.

CCR2 – Credit valuation adjustment (CVA) capital charge

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

		Q4 2018	
		a	b
(unaudited) (millions of Canadian dollars)		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	6,018	405
4	Total subject to the CVA capital charge	6,018	405

CCR3 – Standardised approach - CCR exposures by regulatory portfolio and risk weights

The following table provides 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).

(unaudited) (millions of Canadian dollars)		Q4 2018								
		a	b	c	d	e	f	g	h	i
Regulatory portfolio	Risk weight	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Sovereigns		-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)		-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)		15	-	-	-	-	-	-	-	15
Financial institutions		-	-	-	-	-	-	-	-	-
Securities firms		-	-	-	-	-	-	-	-	-
Corporates		-	-	-	-	-	248	-	-	248
Regulatory retail portfolios		-	-	-	-	-	-	-	-	-
Other assets ⁽¹⁾		-	-	-	-	-	-	-	-	-
Total		15	-	-	-	-	248	-	-	263

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

CCR4 - IRB - CCR exposures by portfolio and PD scale

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

		Q4 2018						
(unaudited) (millions of Canadian dollars)	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
Sovereign	0.00 to < 0.15	3,509	0.04%	94	11.2%	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
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
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

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

Q4 2018						
	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
(unaudited) (millions of Canadian dollars)	Segregated	Unsegregated	Segregated	Unsegregated		
Cash	-	5,366	-	1,023	1	-
Securities issued or guaranteed by	-	-	-	-	-	-
Canadian government	3	52	-	474	5,759	2,281
Canadian provincial and municipal governments	-	366	-	33	3,861	2,748
U.S. Treasury, other U.S. agencies and other foreign governments	63	50	-	5	534	1,392
Other debt securities	-	20	-	-	82	256
Equity securities	-	-	-	-	8,297	13,742
Total	66	5,854	-	1,535	18,534	20,419

CCR6 - Credit derivatives exposures

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

(unaudited) (millions of Canadian dollars)	Q4 2018					
	Protection purchased			Protection sold		
	Credit portfolio ⁽¹⁾	Trading portfolio	Total (a)	Credit portfolio ⁽¹⁾	Trading portfolio	Total (b)
Notionals						
Credit default swaps						
Indices, singles names and other	50	1,734	1,784	20	68	88
Tranches on indices	-	-	-	-	-	-
Total return swaps	-	162	162	-	-	-
Credit options	-	-	-	-	-	-
Other credit derivatives	-	-	-	-	-	-
Total notionals	50	1,896	1,946	20	68	88
Fair values						
Positive fair value (asset)	-	10	10	-	1	1
Negative fair value (liability)	(1)	(35)	(36)	-	-	-

(1) Protection sold solely for the purpose of reducing protection purchased.

CCR8 - Exposures to central counterparties⁽¹⁾

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

		Q4 2018	
		a	b
(unaudited) (millions of Canadian dollars)		EAD (post-CRM)	RWA
1	Exposures to QCCPs (total)		198
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which		
3	(i) OTC derivatives	1,002	20
4	(ii) Exchange-traded derivatives	2,304	46
5	(iii) Securities financing transactions	50	1
6	(iv) Netting sets where cross-product netting has been approved	-	-
7	Segregated initial margin	2,125	
8	Non-segregated initial margin	88	2
9	Pre-funded default fund contributions	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⁽¹⁾

The following table presents the bank's securitization exposures in its banking book.

		Q4 2018								
		a	b	c	e	f	g	i	j	k
		Bank acts as originator ⁽²⁾			Bank acts as sponsor			Banks acts as investor ⁽³⁾		
(unaudited) (millions of Canadian dollars)		Traditional	Synthetic ⁽⁴⁾	Sub-total	Traditional	Synthetic ⁽⁴⁾	Sub-total	Traditional	Synthetic ⁽⁴⁾	Sub-total
1	Retail (total)	6,983	-	6,983	-	-	-	11,125	-	11,125
	Of which :									
2	residential mortgages	6,983	-	6,983	-	-	-	10,425	-	10,425
3	credit card	-	-	-	-	-	-	11	-	11
4	other retail exposures	-	-	-	-	-	-	689	-	689
5	re-securitization	-	-	-	-	-	-	-	-	-
6	Non-Retail (total)	-	-	-	-	-	-	640	-	640
	Of which :									
7	loans to corporates	-	-	-	-	-	-	-	-	-
8	commercial mortgage	-	-	-	-	-	-	14	-	14
9	lease and receivables	-	-	-	-	-	-	626	-	626
10	other wholesale	-	-	-	-	-	-	-	-	-
11	re-securitization	-	-	-	-	-	-	-	-	-

(1) Carrying values of securitization exposures even where criteria for recognition of risk transferred are not met.

(2) Represents the retained positions.

(3) Represents the investment positions purchased in third-party deals.

(4) The Bank has no synthetic securitization exposure.

SEC2 – Securitization exposures in the trading book

The following table presents the bank's securitization exposures in its trading book.

Q4 2018										
		a	b	c	e	f	g	i	j	k
		Bank acts as originator ⁽¹⁾			Bank acts as sponsor			Banks acts as investor ⁽²⁾		
(unaudited) (millions of Canadian dollars)		Traditional	Synthetic ⁽³⁾	Sub-total	Traditional	Synthetic ⁽³⁾	Sub-total	Traditional	Synthetic ⁽³⁾	Sub-total
1	Retail (total)	2,337	–	2,337	6	–	6	6,163	–	6,163
	Of which :									
2	residential mortgages	2,337	–	2,337	5	–	5	6,154	–	6,154
3	credit card	–	–	–	–	–	–	9	–	9
4	other retail exposures	–	–	–	1	–	1	–	–	–
5	re-securitization	–	–	–	–	–	–	–	–	–
6	Non-Retail (total)	–	–	–	1	–	1	19	–	19
	Of which :									
7	loans to corporates	–	–	–	–	–	–	–	–	–
8	commercial mortgage	–	–	–	–	–	–	12	–	12
9	lease and receivables	–	–	–	1	–	1	7	–	7
10	other wholesale	–	–	–	–	–	–	–	–	–
11	re-securitization	–	–	–	–	–	–	–	–	–

(1) Represents the retained positions.

(2) Represents the investment positions purchased in third-party deals.

(3) 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 -

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

		Q4 2018																
		a	b	c	f	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%
1	Total exposures	3,028	–	–	–	–	3,028	–	–	–	246	–	–	–	20	–	–	–
2	Traditional securitization	3,028	–	–	–	–	3,028	–	–	–	246	–	–	–	20	–	–	–
3	Of which securitization	3,028	–	–	–	–	3,028	–	–	–	246	–	–	–	20	–	–	–
4	Of which retail underlying	2,746	–	–	–	–	2,746	–	–	–	225	–	–	–	18	–	–	–
5	Of which wholesale	282	–	–	–	–	282	–	–	–	21	–	–	–	2	–	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(1) The Bank has no synthetic securitization exposure.

SEC 4 – Securitization exposures in the banking book and associated capital requirements⁽¹⁾ - bank acting as investor -

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

		Q4 2018																
		a	b	c	f	e	f	g	h	i	j	k	l	m	n	o	p	q
		Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)				Capital charge after cap			
		≤ 20% RW	> 20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%
(unaudited) (millions of Canadian dollars)																		
1	Total exposures	1,718	–	–	–	–	1,410	308	–	–	144	23	–	–	11	2	–	–
2	Traditional securitization	1,718	–	–	–	–	1,410	308	–	–	144	23	–	–	11	2	–	–
3	Of which securitization	1,718	–	–	–	–	1,410	308	–	–	144	23	–	–	11	2	–	–
4	Of which retail underlying	1,044	–	–	–	–	736	308	–	–	93	23	–	–	7	2	–	–
5	Of which wholesale	674	–	–	–	–	674	–	–	–	51	–	–	–	4	–	–	–
6	Of which re-securitization	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Of which senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
8	Of which non-senior	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

(1) The Bank has no synthetic securitization exposure.

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 is mainly comprised of subordinated debentures and the collective allowance.
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.