

Supplementary Regulatory Capital Information

For the Quarter Ended – July 31, 2019

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This report is unaudited and all amounts are in millions of Canadian dollars, unless otherwise indicated.

Use of this Document

The supplemental information contained in this package is designed to improve the readers' understanding of the capital requirements of BMO Financial Group (the Bank). This information should be used in conjunction with the Bank's Third Quarter 2019 Report to Shareholders and the 2018 Annual Report.

Additional financial information is also available in the Q3 2019 Supplementary Financial Information, Q3 2019 Investor Presentation as well as the Conference Call Webcast which can be accessed at our website at www.bmo.com/investorrelations.

This report is unaudited and all amounts are in millions of Canadian dollars, unless indicated otherwise.

Items indicated n.a. were not applicable.

Changes

For institutions using advanced approaches for credit risk or operational risk, there is a Capital Floor as prescribed in OSFI's CAR Guideline. OSFI revised its approach for calculating the Capital Floor effective Q2 2018. Changes include a shift to the Basel II standardized approach, as well as a reduction of the floor factor to 70% in Q2 2018, 72.5% in Q3 2018 and 75% in Q4 2018 and onward.

In May 2018, OSFI released the Total Loss Absorbing Capacity (TLAC) Disclosure Requirements for Canadian D-SIBs which have been adopted prospectively effective January 31, 2019.

On November 20, 2018, OSFI released the revised Leverage Ratio Disclosure Requirements Guideline. The revisions, which reflect the recent changes to the Leverage Requirements Guideline and OSFI's CAR Guideline, incorporate a new line to capture the treatment of securitized assets that meet the operational requirements for recognition of significant risk transfer. The new guideline has been adopted prospectively effective January 31, 2019.

On April 20, 2017, OSFI released the final version of the Pillar 3 Disclosure Requirements, setting OSFI's expectations for Domestic Systemically Important Banks (D-SIBs) for the Revised Pillar 3 Disclosure Requirements issued by the Basel Committee on Banking Supervision in January 2015. We have adopted this guidance prospectively effective October 31, 2018. For information prior to Q4 2018, please refer to Q3 2018 and prior Supplementary Financial Information Packages.

Users may provide their comments and suggestions on the Supplementary Regulatory Capital Information document by contacting Tom Little at (416) 867-7834 or tom.little@bmo.com

PILLAR 3 DISCLOSURE REQUIREMENTS INDEX

Tables and Templates		Frequency	Q3 2019 Supplementary Financial Information	Q3 2019 Supplementary Regulatory Capital Information	2018 Annual MD&A	2018 Annual Financial Statements
			Page Reference			
Overview of Risk Management, Key Prudential Metrics and RWA	KM2 - Key metrics - TLAC requirements	Quarterly		7		
	OVA - Bank risk management approach	Annual			69-75, 78-116	
	OV1 - Overview of RWA	Quarterly		11		
Linkages between Financial Statements and Regulatory Exposures	LI1 - Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories	Quarterly		12		
	LI2 - Main sources of differences between regulatory exposure amounts and carrying values in financial statements	Quarterly		13		
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Composition of Capital and TLAC	CC1 - Composition of regulatory capital	Quarterly		3-4		
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	TLAC1 - TLAC composition	Quarterly		8		
	TLAC2 - Material subgroup entity - creditor ranking at legal entity level		Not applicable to BMO			
Leverage Ratio	TLAC3 - Resolution entity - creditor ranking at legal entity level	Quarterly		9		
	LR1 - Summary comparison of accounting assets vs leverage ratio exposure measure	Quarterly		10		
	LR2 - Leverage ratio common disclosure	Quarterly		10		
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	CR2 - Changes in stock of defaulted loans and debt securities	Quarterly		15		
	CRB - Additional disclosure related to the credit quality of assets	Annual	20-26, 30	31-32		157-164
	CR3 - Credit risk mitigation techniques - overview	Annual			88-89	173, 185
	CR3 - Credit risk mitigation techniques - overview	Quarterly		16		
	CRD - Qualitative disclosures on banks' use of external credit ratings under the standardized approach for credit risk	Annual		19-20		
	CR4 - Standardized approach - credit risk exposure and Credit Risk Mitigation (CRM) effects	Quarterly		17-18		
	CR5 - Standardized approach - exposures by asset classes and risk weights	Quarterly		19-20		
	CR6 - IRB - Credit risk exposures by portfolio and PD range	Annual			89-90, 111-112	
	CR6 - IRB - Credit risk exposures by portfolio and PD range	Quarterly		21-28		
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CR9 - IRB - Backtesting of probability of default (PD) per portfolio (1)	Annual			88-90, 112		
CR10 - IRB (specialized lending and equities under the simple risk-weight method)		Not applicable to BMO				
Counterparty Credit Risk	CCRA - Qualitative disclosure related to counterparty credit risk	Annual			87-88, 106	
	CCR1 - Analysis of counterparty credit risk (CCR) exposure by approach	Quarterly		33		
	CCR2 - Credit valuation adjustment (CVA) capital charge	Quarterly		34		
	CCR3 - Standardized approach - CCR exposures by regulatory portfolio and risk weights	Quarterly		35-36		
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	CCR5 - Composition of collateral for CCR exposure	Quarterly		41		
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	CCR7 - RWA flow statements of CCR exposures under Internal Model Method (IMM)		Not applicable to BMO			
CCR8 - Exposures to central counterparties	Quarterly		43			
Securitization	SECA - Qualitative disclosure requirements related to securitization exposures	Annual			76, 89	148, 165-167
	SEC1 - Securitization exposures in the banking book	Quarterly		45		
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	SEC4 - Securitization exposures in the banking book and associated capital requirements (bank acting as investor)	Quarterly		48		
Market Risk	MRA - Qualitative disclosure requirements related to market risk		BMO has deferred these disclosures as allowed per OSFI's Pillar 3 guidance issued April 2017			
	MRB - Qualitative disclosures for banks using the Internal Models Approach (IMA)					
	MR1 - Market risk under standardized 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						
Operational Risk	ORA - General qualitative information on a bank's operational risk framework	Annual			109-110	
Interest Rate Risk in the Banking Book	IRRBBA - IRRBB risk management objective and policies	Annual			98-99	
	IRRBB1 - Quantitative information on IRRBB	Annual			99	

(1) Refer to Q4 2018 Supplementary Financial Information for CR9 - IRB - Backtesting of probability of default (PD) per portfolio quantitative disclosure.

CC1 - COMPOSITION OF REGULATORY CAPITAL (1) (2)

	Cross reference (3)	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3
Common Equity Tier 1 Capital: instruments and reserves						
1	Directly issued qualifying common share capital plus related stock surplus	a+b	13,261	13,246	13,222	13,229
2	Retained earnings	c	28,241	27,405	26,599	25,856
3	Accumulated other comprehensive income (and other reserves)	d	3,793	4,054	3,188	2,302
4	Directly issued capital subject to phase out from CET1		n.a.	n.a.	n.a.	n.a.
5	Common share capital issued by subsidiaries and held by third parties (amount allowed in group CET1)		-	-	-	-
6	Common Equity Tier 1 Capital before regulatory adjustments		45,295	44,705	43,009	41,387
Common Equity Tier 1 Capital: regulatory adjustments						
7	Prudential valuation adjustments		141	163	156	203
8	Goodwill (net of related tax liability)	e+p1-f	6,181	6,353	6,280	6,283
9	Other intangibles other than mortgage-servicing rights (net of related tax liability)	g-h	2,046	2,044	1,989	1,978
10	Deferred tax assets excluding those arising from temporary differences (net of related tax liability)	i-j	478	646	785	907
11	Cash flow hedge reserve	k	528	202	(280)	(1,074)
12	Shortfall of provisions to expected losses	k1	196	267	-	-
13	Securitization gain on sale		-	-	-	-
14	Gains or losses due to changes in own credit risk on fair valued liabilities (4)		(152)	(182)	(71)	(153)
15	Defined benefit pension fund net assets (net of related tax liability)	l-m	214	430	424	522
16	Investments in own shares (if not already netted off paid-in capital on reported balance sheet)	n	-	6	-	-
17	Reciprocal cross holdings in common equity		-	-	-	-
18	Non-significant investments in the capital of banking, financial and insurance entities, net of eligible short positions (amount above 10% threshold)		-	-	-	-
19	Significant investments in the common stock of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions (amount above 10% threshold)		-	-	-	-
20	Mortgage servicing rights (amount above 10% threshold)		-	-	-	-
21	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability)		-	-	-	-
22	Amount exceeding the 15% threshold		-	-	-	-
23	of which: significant investments in the common stock financials	h1	-	-	-	-
24	of which: mortgage servicing rights	j1	-	-	-	-
25	of which: deferred tax assets arising from temporary differences	i1	-	-	-	-
26	Other deductions or regulatory adjustments to CET1 as determined by OSFI		-	-	-	-
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 Capital		9,632	9,929	9,283	8,666
29	Common Equity Tier 1 Capital (CET1)		35,663	34,776	33,726	32,721
Additional Tier 1 Capital: instruments						
30	Directly issued qualifying Additional Tier 1 instruments plus related stock surplus	o1	5,058	4,400	4,050	4,050
31	of which: classified as equity under applicable accounting standards		5,058	4,400	4,050	4,050
32	of which: classified as liabilities under applicable accounting standards		-	-	-	-
33	Directly issued capital instruments subject to phase out from Additional Tier 1 (5)	p	290	290	290	740
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)		-	-	-	-
35	of which: instruments issued by subsidiaries subject to phase out		-	-	-	-
36	Additional Tier 1 Capital before regulatory adjustments		5,348	4,690	4,340	4,790
Additional Tier 1 Capital: regulatory adjustments						
37	Investments in own Additional Tier 1 instruments	n1	4	6	6	78
38	Reciprocal cross holdings in Additional Tier 1 instruments		-	-	-	-
39	Non-significant investments in the capital of banking, financial and insurance entities, net of eligible short positions (amount above 10% threshold)		-	-	-	-
40	Significant investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions	t	213	213	213	213
41	Other deductions from Tier 1 Capital as determined by OSFI		-	-	-	-
41a	of which: Reverse mortgages		-	-	-	-
42	Regulatory adjustments applied to Additional Tier 1 due to insufficient Tier 2 to cover deductions		-	-	-	-
43	Total regulatory adjustments applied to Additional Tier 1 Capital		217	219	219	291
44	Additional Tier 1 Capital (AT1)		5,131	4,471	4,121	4,499
45	Tier 1 Capital (T1 = CET1 + AT1)		40,794	39,247	37,847	37,220
Tier 2 Capital: instruments and provisions						
46	Directly issued qualifying Tier 2 instruments plus related stock surplus	m1	6,731	6,809	6,676	6,639
47	Directly issued capital instruments subject to phase out from Tier 2 Capital	u	145	144	144	143
48	Tier 2 instruments (and CET1 and AT1 instruments not included in row 5 or 34) issued by subsidiaries and held by third parties (amount allowed in group Tier 2 Capital)	v	-	-	-	-
49	of which: instruments issued by subsidiaries subject to phase out		-	-	-	-
50	General allowances	w	194	187	248	235
51	Tier 2 Capital before regulatory adjustments		7,070	7,140	7,068	7,017

(1) Regulatory capital assumes that all Basel III regulatory adjustments are applied effective January 1, 2013 and that the capital value of instruments which no longer qualify as regulatory capital under Basel III rules will be phased out at a rate of 10% per year from January 1, 2013 and continuing to January 1, 2022.

(2) Row numbering, as per OSFI May 2018 advisory, is provided for consistency and comparability in the disclosure of elements of capital among banks and across jurisdictions. Banks are required to maintain the same row numbering per OSFI advisory. Where there is no value in a row, institutions should report n.a. or nil and the row number must not change.

(3) Cross reference to CC2 - Reconciliation of Regulatory Capital to Balance Sheet (page 5).

(4) For regulatory capital purposes only.

(5) \$450MM of capital trust securities that were deconsolidated under IFRS and qualified as Additional Tier 1 Capital were redeemed on December 31, 2018.

CC1 - COMPOSITION OF REGULATORY CAPITAL (CONTINUED)

	Cross reference	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3
Tier 2 Capital: regulatory adjustments						
52	Investments in own Tier 2 instruments	q1	25	29	76	91
53	Reciprocal cross holdings in Tier 2 instruments and Other TLAC-eligible instruments		-	-	-	-
54	Non-significant investments in the capital of banking, financial and insurance entities and Other TLAC-eligible instruments issued by G-SIBs and Canadian D-SIBs that are outside the scope of regulatory consolidation, where the institution does not own more than 10% of the issued common share capital of the entity (amount above 10% threshold)		-	-	-	-
54a	Non-significant investments in the other TLAC-eligible instruments issued by G-SIBs and Canadian D-SIBs, where the institution does not own more than 10% of the issued common share capital of the entity: amount previously designated for the 5% threshold but that no longer meets the conditions		-	-	-	-
55	Significant investments in the capital of banking, financial and insurance entities and Other TLAC-eligible instruments issued by G-SIBs and Canadian D-SIBs that are outside the scope of regulatory consolidation, net of eligible short positions	x	50	50	50	50
56	Other deductions from Tier 2 capital		-	-	-	-
57	Total regulatory adjustments to Tier 2 Capital		75	79	126	141
58	Tier 2 Capital (T2)		6,995	7,061	6,942	5,708
59	Total Capital (TC = T1 + T2)		47,789	46,308	44,789	41,433
60	Total Risk-Weighted Assets					
60a	Common Equity Tier 1 (CET 1) Capital RWA (1)		313,003	308,844	296,987	277,506
60b	Tier 1 Capital RWA (1)		313,003	308,844	296,987	277,681
60c	Total Capital RWA (1)		313,003	308,844	296,987	277,857
Capital Ratios						
61	Common Equity Tier 1 (as percentage of risk-weighted assets)		11.4%	11.3%	11.4%	11.4%
62	Tier 1 (as percentage of risk-weighted assets)		13.0%	12.7%	12.7%	12.9%
63	Total Capital (as percentage of risk-weighted assets)		15.3%	15.0%	15.1%	14.9%
64	Buffer (minimum CET1 plus capital conservation buffer plus G-SIB buffer plus D-SIB buffer requirement, expressed as a percentage of risk-weighted assets)		8.0%	8.0%	8.0%	8.0%
65	of which: capital conservation buffer		2.5%	2.5%	2.5%	2.5%
66	of which: bank specific countercyclical buffer		0.0%	0.0%	0.0%	0.0%
67	of which: G-SIB buffer		n.a.	n.a.	n.a.	n.a.
67a	of which: D-SIB buffer		1.0%	1.0%	1.0%	1.0%
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk weighted assets)		11.4%	11.3%	11.4%	11.4%
OSFI target (minimum + capital conservation buffer + D-SIB buffer (if applicable))						
69	Common Equity Tier 1 target ratio		8.0%	8.0%	8.0%	8.0%
70	Tier 1 capital target ratio		9.5%	9.5%	9.5%	9.5%
71	Total capital target ratio		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 financial entities	y - z	998	702	759	534
73	Significant investments in the common stock of financials	a1	1,875	1,863	1,739	1,694
74	Mortgage servicing rights (net of related tax liability)	b1	45	49	50	51
75	Deferred tax assets arising from temporary differences (net of related tax liability)	c1 - d1	1,628	1,651	1,558	1,675
Applicable caps on the inclusion of provisions in Tier 2						
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to standardized approach (prior to application of cap)		194	187	213	204
77	Cap on inclusion of provisions in Tier 2 under standardized approach		194	187	213	204
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings based approach (prior to application of cap)		1,165	1,119	1,286	1,277
79	Cap on inclusion of provisions in Tier 2 under internal ratings-based approach		-	-	35	27
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)						
80	Current cap on CET1 instruments subject to phase out arrangements		-	-	-	-
81	Amounts excluded from CET1 due to cap (excess over cap after redemptions and maturities)		-	-	-	-
82	Current cap on AT1 instruments subject to phase out arrangements		1,296	1,296	1,296	1,729
83	Amounts excluded from AT1 due to cap (excess over cap after redemptions and maturities)		-	-	-	-
84	Current cap on T2 instruments subject to phase out arrangements		1,540	1,540	1,540	2,054
85	Amounts excluded from T2 due to cap (excess over cap after redemptions and maturities)		-	-	-	-

(1) Under OSFI's CAR Guideline, which governs advanced approaches, the Bank calculates a Basel Capital Floor and increases its risk-weighted assets to the extent such floor applies. Based on these requirements, there was no capital floor applicable for Q3 2018 through Q3 2019.

CC2 - RECONCILIATION OF REGULATORY CAPITAL TO BALANCE SHEET

(\$ millions)	LINE #	Balance sheet as in	Under regulatory	Cross	LINE #	Balance sheet as in	Under regulatory	Cross	
		Report to Shareholders Q3 2019	scope of consolidation (1) Q3 2019	Reference (2)		Report to Shareholders Q3 2019	scope of consolidation (1) Q3 2019	Reference (2)	
Assets					Liabilities and Equity				
Cash and Cash Equivalents					Total Deposits				
Interest Bearing Deposits with Banks					Other Liabilities				
Securities					Derivative instruments				
Investments in own shares CET1 (if not already netted off paid-in capital on reported balance sheet)					Acceptances				
Investments in own Additional Tier 1 instruments not derecognized for accounting purposes					Securities sold but not yet purchased				
Investments in own Tier 2 instruments not derecognized for accounting purposes					Non-significant investments in the capital and other TLAC-eligible instruments of other financial entities				
Non-significant investments in the capital and other TLAC-eligible instruments of other financial entities (3)					Securities lent or sold under repurchase agreement				
Significant investments in deconsolidated subsidiaries and other financial institutions (4)					Securitization and structured entities' liabilities				
Significant investments in capital of other financial institutions reflected in regulatory capital					Current tax liabilities				
Amount exceeding the 15% threshold					Deferred tax liabilities (5)				
Significant investment in common stock of financials below threshold					related to goodwill				
Goodwill embedded in significant investments					related to intangibles				
Securities Borrowed or Purchased Under Resale Agreements					related to deferred tax assets excluding those arising from temporary differences				
Loans					related to defined-benefit pension fund net assets				
Residential mortgages					related to deferred tax assets arising from temporary differences, excluding those realizable through net operating loss carryback				
Consumer installment and other personal					Other				
Credit cards					of which: liabilities of subsidiaries, other than deposits				
Business and governments					Less: amount (of liabilities of subsidiaries) phased out				
Allowance for credit losses					Liabilities of subsidiaries after phase out				
Allowance reflected in Tier 2 regulatory capital					Total other liabilities				
Shortfall of provisions to expected loss					Subordinated debt				
Total net loans and acceptances					Subordinated debt				
					Qualifying subordinated debt				
Other Assets					Non qualifying subordinated debt				
Derivative instruments					of which redemption has been announced (in the last month of the quarter)				
Customers' liability under acceptances					Less: regulatory amortization				
Premises and equipment					Non qualifying subordinated debt subject to phase out				
Goodwill					Less: amount phased out				
Intangible assets					Non qualifying subordinated debt after phase out				
Current tax assets					Equity				
Deferred tax assets (5)					Preferred shares and other equity instruments				
Deferred tax assets excluding those arising from temporary differences					Directly issued qualifying Additional Tier 1 instruments				
Deferred tax assets arising from temporary differences					Non-qualifying preferred shares for accounting purposes				
of which Deferred tax assets arising from temporary differences below the threshold					Non-qualifying preferred shares subject to phase out				
of which amount exceeding 15% threshold					Less amount (of preferred shares) phased out				
Other					Non qualifying preferred shares after phase out				
Defined-benefit pension fund net assets					Common shares				
Mortgage servicing rights					Directly issued qualifying CET1				
of which Mortgage servicing rights under the threshold					Contributed surplus				
of which amount exceeding the 15% threshold					Retained earnings				
Total Assets					Accumulated other comprehensive income				
					of which: Cash flow hedges				
					Other AOCI				
					Total equity				
					Total Liabilities and Equity				

(1) Balance sheet under regulatory scope does not include the following entities: BMO Life Insurance Company and BMO Reinsurance Limited. BMO Life Insurance Company (\$11,290 million assets and nominal equity) covers the development and marketing of individual and group life, accident and health insurance and annuity products in Canada. BMO Reinsurance Limited (\$419 million assets and nominal equity) covers the reinsurance of life, health and disability insurance risks as well as property & casualty insurance risks, including catastrophe risks. The business reinsured is written by insurers and reinsurers principally in North America and Europe.

(2) Cross reference to CC1 - Composition of Regulatory Capital (pages 3 and 4).

(3) Includes synthetic holdings of non-significant capital investments in banking, financial and insurance entities.

(4) Under Basel III, significant investments in financial services entities that are outside the scope of regulatory consolidation are deducted from the Bank's capital using the corresponding deduction approach (e.g. investments in non-common Tier 1 are deducted from the Bank's non-common Tier 1 capital) except that investments in common equity capital of a significant investment which represents less than 10% of the Bank's CET1 are risk weighted at 250% and are not deducted provided the sum of such investments, deferred tax assets related to timing differences and mortgage servicing rights are less than 15% of the Bank's CET1. Goodwill embedded in significant investments is separated and is shown in the corresponding line below.

(5) Deferred tax assets and liabilities are presented on the balance sheet net by legal jurisdiction.

FLOW STATEMENT OF BASEL III REGULATORY CAPITAL

(\$ millions)	LINE #	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3
Common Equity Tier 1 Capital						
Opening Balance	1	34,776	33,726	32,721	31,688	30,793
New capital issues	2	19	25	5	26	18
Redeemed capital	3	-	-	(90)	(107)	(102)
Gross dividends (deduction)	4	(717)	(687)	(691)	(657)	(664)
Profit for the quarter (attributable to shareholders of the parent company)	5	1,557	1,497	1,510	1,695	1,536
Removal of own credit spread (net of tax)	6	(29)	110	(82)	13	(28)
Movements in other comprehensive income						
– Currency translation differences	7	(483)	453	(12)	241	102
– Fair value through other comprehensive income securities	8	98	31	173	(71)	9
– Other (1)	9	(202)	(100)	(69)	(60)	230
Goodwill and other intangible assets (deduction, net of related tax liability)	10	170	(128)	(8)	(155)	(37)
Other, including regulatory adjustments and transitional arrangements						
– Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	11	168	139	122	(65)	4
– Prudential valuation adjustments	12	22	(7)	47	(55)	(3)
– Other (2)	13	284	(283)	100	228	(170)
Closing Balance	14	35,663	34,776	33,726	32,721	31,688
Other non-core Tier 1 (Additional Tier 1) Capital						
Opening Balance	15	4,471	4,121	4,499	4,037	4,421
New non-core tier 1 (Additional Tier 1) eligible capital issues	16	658	350	-	400	-
Redeemed capital	17	-	-	(450)	-	(300)
Other, including regulatory adjustments and transitional arrangements (3)	18	2	-	72	62	(84)
Closing Balance	19	5,131	4,471	4,121	4,499	4,037
Total Tier 1 Capital	20	40,794	39,247	37,847	37,220	35,725
Tier 2 Capital						
Opening Balance	21	7,061	6,942	6,896	5,708	5,727
New Tier 2 eligible capital issues	22	-	-	-	1,119	-
Redeemed capital	23	-	-	-	-	-
Amortization adjustments	24	-	-	-	-	-
Other, including regulatory adjustments and transitional arrangements (4)	25	(66)	119	46	69	(19)
Closing Balance	26	6,995	7,061	6,942	6,896	5,708
Total Regulatory Capital	27	47,789	46,308	44,789	44,116	41,433

(1) Includes: AOCI on pension and other post-employment benefits and on own credit risk financial liabilities designated at fair value.

(2) Includes: Capital deductions for expected loss in excess of allowances, defined benefit pension assets (net of related deferred tax liability), investment in own shares, changes in contributed surplus and threshold deductions.

(3) Includes: Changes in non-qualifying capital instruments.

(4) Includes: Changes in non-qualifying capital instruments and eligible allowances.

CAPITAL RATIOS FOR SIGNIFICANT BANK SUBSIDIARIES

	LINE #	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3
Bank of Montreal Mortgage Corporation - Basel III (1)						
Common Equity Tier 1 ratio	1	22.7%	23.6%	22.0%	21.6%	21.8%
Tier 1 ratio	2	22.7%	23.6%	22.0%	21.6%	21.8%
Total capital ratio	3	23.1%	24.0%	22.4%	22.1%	22.3%
BMO Harris Bank N.A. - Basel III (2)						
Tier 1 ratio	4	11.4%	11.7%	12.0%	12.5%	12.5%
Total capital ratio	5	12.5%	12.9%	13.1%	13.7%	13.7%

(1) Capital ratios assume that all Basel III regulatory adjustments are applied effective January 1, 2013 and that the capital value of instruments which no longer qualify as regulatory capital under Basel III rules will be phased out at a rate of 10% per year from January 1, 2013, continuing to January 1, 2022.

(2) Calculated using U.S. Basel III guidelines currently in effect for U.S. regulatory purposes and based on BMO Harris N.A.'s calendar quarter ends: June 2019, March 2019, December 2018, September 2018, and June 2018.

KM2 - KEY METRICS – TLAC REQUIREMENTS (1)

(\$ millions except as noted)

	Q3 2019	Q2 2019	Q1 2019
	a	b	c
1 Total loss-absorbing capacity (TLAC) available	60,723	55,389	45,491
2 Total RWA at the level of the resolution group	313,003	308,844	296,987
3 TLAC ratio: TLAC as a percentage of RWA (row 1 / row 2) (%)	19.4 %	17.9 %	15.3 %
4 Leverage ratio exposure measure at the level of the resolution group	943,275	931,500	902,532
5 TLAC Leverage Ratio: TLAC as a percentage of leverage ratio exposure measure (row 1 / row 4) (%)	6.4 %	5.9 %	5.0 %
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 recognized as external TLAC, divided by funding issued that ranks pari passu with Excluded Liabilities and that would be recognized as external TLAC if no cap was applied (%)	n.a.	n.a.	n.a.

(1) BMO Financial Group uses the Single Point of Entry approach whereby the parent bank is the single resolution entity on which the resolution measures are applied. KM2 is reported on a consolidated basis excluding insurance subsidiaries.

TLAC1 - TLAC COMPOSITION (1)

(\$ millions except as noted)

	Q3 2019	Q2 2019	Q1 2019
	a	b	c
Regulatory capital elements of TLAC and adjustments			
1 Common Equity Tier 1 capital (CET1)	35,663	34,776	33,726
2 Additional Tier 1 capital (AT1) before TLAC adjustments	5,131	4,471	4,121
3 AT1 ineligible as TLAC as issued out of subsidiaries to third parties	-	-	-
4 Other adjustments	-	-	-
5 AT1 instruments eligible under the TLAC framework	5,131	4,471	4,121
6 Tier 2 capital (T2) before TLAC adjustments	6,995	7,061	6,942
7 Amortized portion of T2 instruments where remaining maturity > 1 year	-	-	-
8 T2 capital ineligible as TLAC as issued out of subsidiaries to third parties	-	-	-
9 Other adjustments	-	-	-
10 T2 instruments eligible under the TLAC framework	6,995	7,061	6,942
11 TLAC arising from regulatory capital	47,789	46,308	44,789
Non-regulatory capital elements of TLAC			
12 External TLAC instruments issued directly by the Bank and subordinated to excluded liabilities	-	-	-
13 External TLAC instruments issued directly by the Bank which are not subordinated to excluded liabilities but meet all other TLAC term sheet requirements	12,992	9,164	706
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 recapitalize a G-SIB in resolution	-	-	-
17 TLAC arising from non-regulatory capital instruments before adjustments	12,992	9,164	706
Non-regulatory capital elements of TLAC: adjustments			
18 TLAC before deductions	60,781	55,472	45,495
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	(58)	(83)	(4)
21 Other adjustments to TLAC	-	-	-
22 TLAC available after deductions	60,723	55,389	45,491
Risk-weighted assets and leverage exposure measure for TLAC purposes			
23 Total risk-weighted assets adjusted as permitted under the TLAC regime	313,003	308,844	296,987
24 Leverage exposure measure	943,275	931,500	902,532
TLAC ratios and buffers			
25 TLAC Ratio (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	19.4 %	17.9 %	15.3 %
26 TLAC Leverage Ratio (as a percentage of leverage exposure)	6.4 %	5.9 %	5.0 %
27 CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements (2)	n.a.	n.a.	n.a.
28 Institution-specific buffer (capital conservation buffer plus countercyclical buffer plus higher loss absorbency, expressed as a percentage of risk-weighted assets)	3.5 %	3.5 %	3.5 %
29 Of which: capital conservation buffer	2.5 %	2.5 %	2.5 %
30 Of which: bank specific countercyclical buffer	0.0 %	0.0 %	0.0 %
31 Of which: D-SIB / G-SIB buffer	1.0 %	1.0 %	1.0 %

(1) BMO Financial Group uses the Single Point of Entry approach whereby the parent bank is the single resolution entity on which the resolution measures are applied. TLAC1 is reported on a consolidated basis excluding insurance subsidiaries.

(2) Completion of this row is not required by OSFI at this time.

TLAC3 - RESOLUTION ENTITY - CREDITOR RANKING AT LEGAL ENTITY LEVEL (1)

(\$ millions)

		Q3 2019						
		Creditor ranking						
		1	2	3	4	5	6	Sum
		(most junior)					(most senior)	1 to 6
1	Description of creditor ranking			Additional Tier 1				
2	Total capital and liabilities net of credit risk mitigation	Common shares	Preferred shares	Instruments	Subordinated debt	Bail-in debt (2)	Other liabilities (3)	38,225
3	Subset of row 2 that are excluded liabilities	12,958	4,690	658	7,021	12,898	-	85
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	-	4	-	23	58	-	38,140
5	Subset of row 4 that are potentially eligible as TLAC	12,958	4,686	658	6,998	12,840	-	38,140
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	12,958	4,686	658	6,998	12,840	-	1,125
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	-	-	-	-	1,125	-	9,591
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	-	-	-	5,248	1,847	-	7,095
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities	-	-	-	1,750	277	-	2,027
10	Subset of row 5 that is perpetual securities	12,958	4,686	658	-	-	-	18,302

(1) Instruments are reported at nominal values.

(2) 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) Completion of this column is not required by OSFI at this time.

LR1 - SUMMARY COMPARISON OF ACCOUNTING ASSETS VS. LEVERAGE RATIO EXPOSURE MEASURE (1)

(\$ millions)	2019	2019	2019	2018	2018
	Q3	Q2	Q1	Q4	Q3
1 Total consolidated assets as per published financial statements	839,180	830,470	806,597	774,048	765,318
2 Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(11,583)	(10,966)	(10,552)	(9,757)	(9,480)
3 Adjustment for securitized exposures that meet the operational requirements for the recognition of risk transference (2)	(7,956)	(8,159)	(6,543)	-	-
4 Adjustment for fiduciary assets recognized on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure	-	-	-	-	-
5 Adjustments for derivative financial instruments	9,405	11,836	9,880	3,761	1,506
6 Adjustment for securities financing transactions (i.e. repo assets and similar secured lending)	4,725	2,137	1,058	8,347	3,069
7 Adjustment for off-balance sheet items (i.e. credit equivalent amounts of off-balance sheet exposures)	119,506	116,512	111,665	108,817	102,792
8 Other adjustments	(10,002)	(10,330)	(9,573)	(9,110)	(9,320)
9 Leverage Ratio Exposure Measure	943,275	931,500	902,532	876,106	853,885

LR2 - LEVERAGE RATIO COMMON DISCLOSURE (1)

(\$ millions except as noted)	Leverage ratio framework				
	2019	2019	2019	2018	2018
	Q3	Q2	Q1	Q4	Q3
On-balance sheet exposures					
1 On-balance sheet items (excluding derivatives, SFTs and grandfathered securitization exposures but including collateral)	690,830	680,314	667,174	653,039	629,354
2 Gross up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	-	-	-	-	-
3 (Deductions of receivables assets for cash variation margin provided in derivative transactions)	(3,784)	(4,152)	(3,042)	(2,624)	(3,050)
4 (Asset amounts deducted in determining transitional Tier 1 capital)	(10,002)	(10,330)	(9,573)	(9,110)	(9,320)
5 Total on-balance sheet exposures (excluding derivatives and SFTs) (sum of lines 1 to 4)	677,044	665,832	654,559	641,305	616,984
Derivative exposures					
6 Replacement cost associated with all derivative transactions (3)	14,502	14,792	14,224	6,515	6,169
7 Add-on amounts for potential future exposure associated with all derivative transactions (4)	22,488	24,369	22,674	27,114	23,943
8 (Exempted central counterparty-leg of client cleared trade exposures)	(1,602)	(2,557)	(2,347)	(1,044)	(751)
9 Adjusted effective notional amount of written credit derivatives	7,608	5,038	1,921	1,200	142
10 (Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(7,608)	(5,028)	(1,921)	(1,200)	(142)
11 Total derivative exposures (sum of lines 6 to 10)	35,388	36,614	34,551	32,585	29,361
Securities financing transaction exposures					
12 Gross SFT assets recognized for accounting purposes (with no recognition of netting), after adjusting for sale accounting transactions	107,488	111,825	101,314	95,159	103,311
13 (Netted amounts of cash payables and cash receivables of gross SFT assets)	(2,411)	(5,661)	(5,107)	(7,675)	(3,591)
14 Counterparty credit risk (CCR) exposure for SFTs	6,260	6,378	5,550	5,914	5,028
15 Agent transaction exposures	-	-	-	-	-
16 Total securities financing transaction exposures (sum of lines 12 to 15)	111,337	112,542	101,757	93,398	104,748
Other off-balance sheet exposures					
17 Off-balance sheet exposure at gross notional amount	372,363	363,391	353,732	343,144	326,819
18 (Adjustments for conversion to credit equivalent amounts)	(252,857)	(246,879)	(242,067)	(234,326)	(224,027)
19 Off-balance sheet items (sum of lines 17 and 18)	119,506	116,512	111,665	108,818	102,792
Capital and Total Exposures					
20 Tier 1 capital	40,794	39,247	37,847	37,220	35,725
21 Total Exposures (sum of lines 5, 11, 16 and 19)	943,275	931,500	902,532	876,106	853,885
Leverage Ratios					
22 Basel III leverage ratio	4.3%	4.2%	4.2%	4.2%	4.2%

(1) Q1 2019 through Q3 2019 results are disclosed in accordance with OSFI's new Leverage Ratio Disclosure Requirements guideline.

(2) Represents the reduction of the leverage ratio exposure measure due to the exclusion of securitized exposures that meet the operational requirement for the recognition of risk transference.

(3) Effective Q1 2019, represents replacement cost after applying alpha equal to 1.4.

(4) Effective Q1 2019, represents potential future exposure after applying alpha equal to 1.4.

OV1 - OVERVIEW OF RWA (1) (2)

(\$ millions)		RWA (3)				Minimum capital requirements
		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2019
		a	b	c	d	e
1	Credit risk (excluding counterparty credit risk (CCR))	237,432	231,966	219,367	215,193	18,994
2	Of which standardized approach (SA)	43,843	42,281	40,403	39,288	3,507
3	Of which internal rating-based (IRB) approach	193,589	189,685	178,964	175,905	15,487
4	Counterparty credit risk	15,494	15,861	15,278	13,481	1,239
5	Of which standardized approach for counterparty credit risk (SA-CCR) (4)	6,866	6,827	6,227	4,746	549
6	Of which internal model method (IMM)	-	-	-	-	-
6a	Of which comprehensive approach for credit risk mitigation (for SFTs)	2,761	2,877	2,594	3,171	221
6b	Of which CVA capital charge	5,350	5,622	5,889	4,900	428
6c	Of which exposures to QCCP	517	535	568	664	41
7	Equity positions in banking book under market-based approach	-	-	-	-	-
8	Equity investments in funds – look-through approach	40	77	89	87	3
9	Equity investments in funds – mandate-based approach	1,018	909	831	731	81
10	Equity investments in funds – fall-back approach	122	139	161	118	10
11	Settlement risk	37	3	-	15	3
12	Securitization exposures in banking book	3,133	2,770	2,448	2,404	251
12a	Of which subject to the transitional arrangement (5)	(1,304)	(1,304)	(1,304)	-	(104)
13	Of which securitization internal ratings-based approach (SEC-IRBA) (6)	3,545	3,136	3,192	1,860	283
14	Of which securitization external ratings-based approach (SEC-ERBA), including internal assessment approach (IAA) (7)	231	221	226	544	19
15	Of which securitization standardized approach (SEC-SA)	661	717	334	-	53
16	Market risk	10,713	12,332	14,820	13,532	857
17	Of which standardized approach (SA) (8)	799	251	211	258	64
18	Of which internal model approaches (IMM)	9,914	12,081	14,609	13,274	793
19	Operational risk	36,143	35,877	35,624	35,205	2,892
20	Of which Basic Indicator Approach	51	51	50	49	4
21	Of which Standardized Approach	2,057	2,058	2,032	2,019	165
22	Of which Advanced Measurement Approach	34,035	33,768	33,542	33,137	2,723
23	Amounts below the thresholds for deduction (subject to 250% risk weight)	8,871	8,910	8,369	8,471	710
24	Floor adjustment (9)	-	-	-	-	-
25	Total	313,003	308,844	296,987	289,237	25,040

- (1) RWA was \$313.0 billion at July 31, 2019, up from \$308.8 billion at April 30, 2019, mainly due to business growth, partially offset by the impact of foreign exchange movements and book quality changes.
- (2) On October 30, 2018, OSFI released the final version of the CAR Guideline for implementation in Q1 2019. The main revisions relate to the domestic implementation of the standardized approach to counterparty credit risk (SA-CCR), capital requirements for bank exposures to central counterparties (CCPs) and the securitization framework. The Guideline has been implemented prospectively effective Q1 2019.
- (3) The scaling factor is applied to the risk-weighted asset amounts as applicable.
- (4) Q3 2019 through Q1 2019 reflect RWA calculated under SA-CCR while Q4 2018 reflects CEM.
- (5) OSFI has provided grandfathering of the revised securitization capital treatment for one year through a negative adjustment to risk-weighted assets that effectively eliminates the initial increase in risk weights.
- (6) Q4 2018 reflects SFA.
- (7) Q4 2018 reflects RBA.
- (8) Standardized approach market risk RWA reflects specific interest rate risk on securitization positions.
- (9) Under OSFI's CAR Guideline, which governs advanced approaches, the Bank calculates a Capital Floor and may be required to increase its risk-weighted assets if the Capital Floor applies. Based on these requirements, there was no capital floor applicable for Q4 2018 through Q3 2019.

COMMON EQUITY TIER 1 (CET 1) CAPITAL RISK-WEIGHTED ASSETS BY OPERATING GROUPS

(\$ millions)	LINE #	2019	2019	2019	2018	2018
		Q3	Q2	Q1	Q4	Q3
Personal and Commercial Banking	1	190,915	187,792	179,421	178,313	173,039
Wealth Management	2	21,066	20,381	19,239	19,069	18,560
BMO Capital Markets	3	88,762	89,790	87,246	80,606	74,663
Corporate Services, including Technology and Operations	4	12,260	10,881	11,081	11,249	11,244
Total Common Equity Tier 1 Capital Risk-Weighted Assets	5	313,003	308,844	296,987	289,237	277,506

LI1 - DIFFERENCES BETWEEN ACCOUNTING AND REGULATORY SCOPES OF CONSOLIDATION AND MAPPING OF FINANCIAL STATEMENTS WITH REGULATORY RISK CATEGORIES

		Q3 2019						
		Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation (1)	Carrying values of items:				
LINE #	a			b	Subject to credit risk framework	Subject to counterparty credit risk framework	Subject to the securitization framework	Subject to the market risk framework
(\$ millions)				c	d	e	f	g
Assets								
Cash and Cash Equivalents	1	38,938	38,797	35,715	3,082	-	-	-
Interest Bearing Deposits with Banks	2	6,899	6,892	6,892	-	-	-	-
Securities	3	191,725	181,673	85,327	-	1,168	94,934	244
Securities Borrowed or Purchased Under Resale Agreements	4	106,612	106,612	-	106,612	-	-	-
Loans								
Residential mortgages	6	122,054	122,054	121,137	-	882	-	35
Consumer instalment and other personal	7	65,989	65,989	62,374	-	78	-	3,537
Credit cards	8	8,749	8,749	1,927	-	2,204	-	4,618
Businesses and governments	9	222,857	222,646	209,351	2,566	10,729	-	-
Allowance for credit losses	10	(1,802)	(1,802)	(66)	-	-	-	(1,736)
Other Assets								
Derivative instruments	11	22,200	22,198	-	22,198	-	19,919	-
Customers' liability under acceptances	12	24,741	24,741	24,741	-	-	-	-
Premises and equipment	13	1,989	1,867	1,867	-	-	-	-
Goodwill	14	6,329	6,329	-	-	-	-	6,329
Intangible assets	15	2,319	2,319	-	-	-	-	2,319
Current tax assets	16	1,257	1,211	1,211	-	-	-	-
Deferred tax assets	17	1,662	1,662	1,628	-	-	-	34
Other	18	16,662	15,534	14,970	-	-	311	253
Total assets	19	839,180	827,471	567,074	134,458	15,061	115,164	15,633
Liabilities								
Deposits	20	553,383	553,383	-	-	-	16,005	537,378
Other Liabilities								
Derivative instruments	21	23,613	23,382	-	23,382	-	20,419	-
Acceptances	22	24,741	24,741	-	-	-	-	24,741
Securities sold but not yet purchased	23	27,375	27,375	-	-	-	27,375	-
Securities lent or sold under repurchase agreements	24	89,829	89,829	-	89,829	-	-	-
Securitization and liabilities related to structured entities	25	25,544	25,544	-	-	-	-	25,544
Current tax liabilities	26	32	32	-	-	-	-	32
Deferred tax liabilities	27	74	72	-	-	-	-	72
Other	28	37,070	25,594	-	-	-	-	25,594
Subordinated Debt	29	6,876	6,876	-	-	-	-	6,876
Total liabilities	30	788,537	776,828	-	113,211	-	63,799	620,237

(1) Balance sheet under regulatory scope does not include the following entities: BMO Life Insurance Company and BMO Reinsurance Limited. BMO Life Insurance Company (\$11,290 million assets and nominal equity) covers the development and marketing of individual and group life, accident and health insurance and annuity products in Canada. BMO Reinsurance Limited (\$419 million assets and nominal equity) covers the reinsurance of life, health and disability insurance risks as well as property & casualty insurance risks, including catastrophe risks. The business reinsured is written by insurers and reinsurers principally in North America and Europe.

L12 - MAIN SOURCES OF DIFFERENCES BETWEEN REGULATORY EXPOSURE AMOUNTS AND CARRYING VALUES IN FINANCIAL STATEMENTS

(\$ millions)		Q3 2019				
		Total	Items subject to:			
			Credit risk framework	Counterparty credit risk framework	Securitization framework	Market risk framework
a	b	c	d	e		
1	Asset carrying value amount under scope of regulatory consolidation (as per template L11) (1)	811,838	567,074	134,458	15,061	115,164
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template L11) (1)	156,591	-	113,211	-	63,799
3	Total net amount under regulatory scope of consolidation	655,247	567,074	21,247	15,061	51,365
4	Off-balance sheet amounts	235,651	177,800	44,480	13,371	-
5	Differences due to different netting rules, other than those already included in row 2	20,926	-	20,926	-	-
6	Differences due to consideration of provisions	220	220	-	-	-
7	Exposures related to liability repo-style transactions	179,658	-	179,658	-	-
8	Potential future exposure on derivatives	15,645	-	15,645	-	-
9	Differences due to consideration of CRM	(223,582)	-	(222,711)	(871)	-
10	Exposure amounts considered for regulatory purposes (2)	883,765	745,094	59,245	27,561	51,365

(1) Carrying value under scope of regulatory consolidation (column b from L11) less amounts not subject to capital requirements or subject to deduction from capital (column g from L11).

(2) Exposure amounts considered for regulatory purposes represent the exposure at default amounts post-CRM and post-CCF, with the exception of the Market Risk framework that is reported at accounting carrying value.

Explanations of differences between accounting and regulatory exposure amounts

The table above illustrates the main sources of differences between the financial statements' carrying value amounts and the exposure at default post-CRM and post-CCF used for regulatory purposes.

Off-balance sheet amounts include credit exposures on committed undrawn amounts of loans and other off-balance sheet arrangements, other than derivatives, such as undrawn commitments related to Standby Letters of Credit and Documentary Credits.

Differences due to different netting rules relate to the grossing up of derivatives to reflect legally enforceable bilateral netting arrangements recognized for regulatory capital purposes.

Differences due to consideration of provisions relate to amounts for AIRB exposures reported gross of partial write-offs.

Exposures related to liability repo-style transactions relate to the grossing up of liability repo-style transactions.

Potential future exposure consists of the add-on factors for the expected volatility of the price, rate or index underlying derivative instruments.

Differences due to consideration of CRM consist of the application of credit risk mitigation techniques to arrive at the net exposure at default in accordance with OSFI's CAR Guideline, Chapter 5, Credit Risk Mitigation.

CR1 - CREDIT QUALITY OF ASSETS (1)

(\$ millions)		LINE #	Q3 2019			
			Gross carrying values of		Allowances / impairments	Net values (a + b - c)
			Defaulted exposures (2) (3)	Non-defaulted exposures		
			a	b	c	d
Loans	1	2,593	416,937	1,567	417,963	
Debt securities	2	-	80,828	4	80,824	
Off-balance sheet exposures	3	316	170,948	251	171,013	
Total	4	2,909	668,713	1,822	669,800	

CR1 - CREDIT QUALITY OF ASSETS (1)

(\$ millions)		LINE #	Q2 2019			
			Gross carrying values of		Allowances / impairments	Net values (a + b - c)
			Defaulted exposures (2) (3)	Non-defaulted exposures		
			a	b	c	d
Loans	1	2,515	412,035	1,481	413,069	
Debt securities	2	-	74,925	4	74,921	
Off-balance sheet exposures	3	319	167,423	243	167,499	
Total	4	2,834	654,383	1,728	655,489	

CR1 - CREDIT QUALITY OF ASSETS (1)

(\$ millions)		LINE #	Q1 2019			
			Gross carrying values of		Allowances / impairments	Net values (a + b - c)
			Defaulted exposures (2) (3)	Non-defaulted exposures		
			a	b	c	d
Loans	1	2,188	396,941	1,416	397,713	
Debt securities	2	-	72,682	3	72,679	
Off-balance sheet exposures	3	331	162,957	248	163,040	
Total	4	2,519	632,580	1,667	633,432	

CR1 - CREDIT QUALITY OF ASSETS (1)

(\$ millions)		LINE #	Q4 2018			
			Gross carrying values of		Allowances / impairments	Net values (a + b - c)
			Defaulted exposures (2) (3)	Non-defaulted exposures		
			a	b	c	d
Loans	1	2,038	383,712	1,465	384,285	
Debt securities	2	-	67,599	2	67,597	
Off-balance sheet exposures	3	241	154,558	229	154,570	
Total	4	2,279	605,869	1,696	606,452	

(1) Excludes positions subject to Counterparty Credit Risk and Securitization regulatory frameworks.

(2) Exposures are considered to be in default when they are 90 days past due with the following exceptions: (i) credit card loans which are immediately written off when principal or interest payments are 180 days past due; and (ii) residential mortgages guaranteed by the Government of Canada that are less than one year past due.

(3) There are no defaulted debt securities.

CR2 - CHANGES IN STOCK OF DEFAULTED LOANS AND DEBT SECURITIES (1) (2)

(\$ millions)

Q3 2019

a

1	Defaulted loans and debt securities at end of the previous financial reporting period	2,515
2	Loans and debt securities that have defaulted since the last reporting period	613
3	Returned to non-defaulted status	(127)
4	Amounts written off	(138)
5	Other charges	(270)
6	Defaulted loans and debt securities at end of the reporting period	2,593

CR2 - CHANGES IN STOCK OF DEFAULTED LOANS AND DEBT SECURITIES (1) (2)

(\$ millions)

Q2 2019

a

1	Defaulted loans and debt securities at end of the previous financial reporting period	2,188
2	Loans and debt securities that have defaulted since the last reporting period	696
3	Returned to non-defaulted status	(131)
4	Amounts written off	(111)
5	Other charges	(127)
6	Defaulted loans and debt securities at end of the reporting period	2,515

CR2 - CHANGES IN STOCK OF DEFAULTED LOANS AND DEBT SECURITIES (1) (2)

(\$ millions)

Q1 2019

a

1	Defaulted loans and debt securities at end of the previous financial reporting period	2,038
2	Loans and debt securities that have defaulted since the last reporting period	432
3	Returned to non-defaulted status	(129)
4	Amounts written off	(119)
5	Other charges	(34)
6	Defaulted loans and debt securities at end of the reporting period	2,188

CR2 - CHANGES IN STOCK OF DEFAULTED LOANS AND DEBT SECURITIES (1) (2)

(\$ millions)

Q4 2018

a

1	Defaulted loans and debt securities at end of the previous financial reporting period	2,169
2	Loans and debt securities that have defaulted since the last reporting period	417
3	Returned to non-defaulted status	(174)
4	Amounts written off	(191)
5	Other charges	(183)
6	Defaulted loans and debt securities at end of the reporting period	2,038

(1) There are no defaulted debt securities.

(2) Defaulted balances exclude off-balance sheet exposures.

CR3 - CREDIT RISK MITIGATION TECHNIQUES - OVERVIEW (1) (2) (3) (4) (5)		Q3 2019				
		Unsecured exposures: carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
		a	b1	b	d	f
(\$ millions)						
1	Loans	360,300	57,663	-	48,924	-
2	Debt securities	80,824	-	-	-	-
3	Total	441,124	57,663	-	48,924	-
4	Of which: defaulted	1,985	164	-	156	-

CR3 - CREDIT RISK MITIGATION TECHNIQUES - OVERVIEW (1) (2) (3) (4) (5)		Q2 2019				
		Unsecured exposures: carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
		a	b1	b	d	f
(\$ millions)						
1	Loans	350,802	62,267	-	50,752	3
2	Debt securities	74,921	-	-	-	-
3	Total	425,723	62,267	-	50,752	3
4	Of which: defaulted	1,942	171	-	160	-

CR3 - CREDIT RISK MITIGATION TECHNIQUES - OVERVIEW (1) (2) (3) (4) (5)		Q1 2019				
		Unsecured exposures: carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
		a	b1	b	d	f
(\$ millions)						
1	Loans	336,560	61,153	-	50,593	7
2	Debt securities	72,679	-	-	-	-
3	Total	409,239	61,153	-	50,593	7
4	Of which: defaulted	1,663	154	-	149	-

CR3 - CREDIT RISK MITIGATION TECHNIQUES - OVERVIEW (1) (2) (3) (4) (5)		Q4 2018				
		Unsecured exposures: carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
		a	b1	b	d	f
(\$ millions)						
1	Loans	325,209	59,076	-	50,801	22
2	Debt securities	67,597	-	-	-	-
3	Total	392,806	59,076	-	50,801	22
4	Of which: defaulted	1,513	155	-	149	-

(1) Excludes positions subject to Counterparty Credit Risk and Securitization regulatory frameworks.

(2) There are no defaulted debt securities.

(3) Secured exposures include exposures where credit risk mitigation techniques are used to reduce capital requirement in accordance with OSFI's CAR Guideline, Chapter 5, Credit Risk Mitigation. Where collateral is reflected in the risk parameters (PDs and LGDs) for AIRB exposures and risk weights for exposures under standardized approach, the carrying amount is reported as an unsecured exposure.

(4) Loans and Debt Securities balances are net of allowance for credit losses on performing loans and impaired loans (excluding those related to off-balance sheet instruments and undrawn commitments).

(5) Defaulted balances are net of allowance for credit losses on impaired loans, excluding off-balance sheet instruments and undrawn commitments.

CR4 - STANDARDIZED APPROACH - CREDIT RISK EXPOSURE AND CREDIT RISK MITIGATION (CRM) EFFECTS (1) (2)

(\$ millions)

Asset classes		Q3 2019					
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RWA density	
		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
		a	b	c	d	e	f
1	Sovereigns and their central banks	1	1	1	1	-	0.00%
2	Non-central government public sector entities	207	35	207	16	47	20.83%
3	Multilateral development banks	-	-	-	-	-	0.00%
4	Banks	4	346	4	164	34	20.00%
5	Securities firms	5	52	5	19	5	20.00%
6	Corporates	18,743	9,278	18,743	4,068	22,584	99.01%
7	Regulatory retail portfolios	9,713	4,125	9,713	87	7,192	73.39%
8	Secured by residential property	4,210	176	4,210	71	1,623	37.92%
9	Secured by commercial real estate	570	108	570	56	626	100.00%
10	Equity	1,726	295	1,726	147	1,178	62.87%
11	Defaulted exposures	663	48	663	1	936	140.98%
12	Higher-risk categories (3)	157	313	157	150	460	150.00%
13	Other assets	9,578	-	9,578	-	9,158	95.62%
14	Total	45,577	14,777	45,577	4,780	43,843	87.07%

CR4 - STANDARDIZED APPROACH - CREDIT RISK EXPOSURE AND CREDIT RISK MITIGATION (CRM) EFFECTS (1) (2)

(\$ millions)

Asset classes		Q2 2019					
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RWA density	
		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
		a	b	c	d	e	f
1	Sovereigns and their central banks	15	8	15	4	-	0.00%
2	Non-central government public sector entities	158	11	158	5	34	20.69%
3	Multilateral development banks	-	-	-	-	-	0.00%
4	Banks	77	299	77	138	43	20.00%
5	Securities firms	7	50	7	18	5	20.00%
6	Corporates	18,666	8,851	18,666	3,571	21,986	98.87%
7	Regulatory retail portfolios	9,762	4,080	9,762	-	7,136	73.10%
8	Secured by residential property	4,319	187	4,319	75	1,672	38.06%
9	Secured by commercial real estate	617	115	617	59	676	100.00%
10	Equity	1,715	320	1,715	160	1,168	62.29%
11	Defaulted exposures	633	58	633	3	899	141.49%
12	Higher-risk categories (3)	133	204	133	99	348	150.00%
13	Other assets	8,907	-	8,907	-	8,314	93.34%
14	Total	45,009	14,183	45,009	4,132	42,281	86.04%

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.

(2) Exposure amounts are net of stage 3 allowance for credit losses.

(3) Non-defaulted exposures with risk weights equal to 150% (e.g. rated BB- or lower).

CR4 - STANDARDIZED APPROACH - CREDIT RISK EXPOSURE AND CREDIT RISK MITIGATION (CRM) EFFECTS (1) (2)

(\$ millions)

Asset classes		Q1 2019					
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RWA density	
		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
		a	b	c	d	e	f
1	Sovereigns and their central banks	11	7	11	4	-	0.00%
2	Non-central government public sector entities	165	7	165	3	34	20.39%
3	Multilateral development banks	-	-	-	-	-	0.00%
4	Banks	3	186	3	90	19	20.00%
5	Securities firms	10	46	10	15	5	20.00%
6	Corporates	17,513	8,586	17,513	3,391	20,719	99.12%
7	Regulatory retail portfolios	9,018	3,936	9,018	-	6,556	72.69%
8	Secured by residential property	4,403	188	4,403	76	1,715	38.28%
9	Secured by commercial real estate	675	128	675	62	736	100.00%
10	Equity	1,603	329	1,603	164	1,120	63.38%
11	Defaulted exposures	600	42	600	19	849	137.10%
12	Higher-risk categories (3)	127	183	127	89	323	150.00%
13	Other assets	8,305	-	8,305	-	8,327	100.26%
14	Total	42,433	13,638	42,433	3,913	40,403	87.17%

CR4 - STANDARDIZED APPROACH - CREDIT RISK EXPOSURE AND CREDIT RISK MITIGATION (CRM) EFFECTS (1) (2)

(\$ millions)

Asset classes		Q4 2018					
		Exposures before CCF and CRM		Exposures post CCF and CRM		RWA and RWA density	
		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
		a	b	c	d	e	f
1	Sovereigns and their central banks	12	7	12	3	-	0.00%
2	Non-central government public sector entities	150	23	150	12	32	20.00%
3	Multilateral development banks	-	-	-	-	-	0.00%
4	Banks	59	207	59	80	28	20.00%
5	Securities firms	7	51	7	18	5	20.00%
6	Corporates	16,450	8,850	16,450	3,450	19,722	99.11%
7	Regulatory retail portfolios	9,131	3,923	9,131	4	6,687	73.19%
8	Secured by residential property	4,408	192	4,408	74	1,728	38.54%
9	Secured by commercial real estate	694	128	694	62	756	100.00%
10	Equity	1,749	290	1,749	145	1,153	60.88%
11	Defaulted exposures	468	26	468	11	647	135.12%
12	Higher-risk categories (3)	96	129	96	65	241	150.00%
13	Other assets	8,800	-	8,800	-	8,289	94.20%
14	Total	42,024	13,826	42,024	3,924	39,288	85.51%

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.

(2) Exposure amounts are net of stage 3 allowance for credit losses.

(3) Non-defaulted exposures with risk weights equal to 150% (e.g. rated BB- or lower).

CR5 - STANDARDIZED APPROACH - EXPOSURES BY ASSET CLASSES AND RISK WEIGHTS (1) (2) (3)

(\$ millions)		Q3 2019									Total credit exposures amount (post-CCF and post-CRM)	
		Risk Weight										
		0%	10%	20%	35%	50%	75%	100%	150%	Others		
		a	b	c	d	e	f	g	h	i		j
Asset classes												
1	Sovereigns and their central banks	2	-	-	-	-	-	-	-	-	-	2
2	Non-central government public sector entities	-	-	217	-	6	-	-	-	-	-	223
3	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-
4	Banks	-	-	168	-	-	-	-	-	-	-	168
5	Securities firms	-	-	24	-	-	-	-	-	-	-	24
6	Corporates	-	-	268	-	21	-	22,522	-	-	-	22,811
7	Regulatory retail portfolios	433	-	-	-	-	8,703	664	-	-	-	9,800
8	Secured by residential property	-	-	4	3,963	-	314	-	-	-	-	4,281
9	Secured by commercial real estate	-	-	-	-	-	-	626	-	-	-	626
10	Equity	477	-	357	-	-	-	1,039	-	-	-	1,873
11	Defaulted exposures	-	-	16	-	-	-	121	527	-	-	664
12	Higher-risk categories (4)	-	-	-	-	-	-	-	307	-	-	307
13	Other assets	2,403	-	1,439	-	-	-	5,463	-	273	-	9,578
14	Total	3,315	-	2,493	3,963	27	9,017	30,435	834	273	-	50,357

CR5 - STANDARDIZED APPROACH - EXPOSURES BY ASSET CLASSES AND RISK WEIGHTS (1) (2) (3)

(\$ millions)		Q2 2019									Total credit exposures amount (post-CCF and post-CRM)	
		Risk Weight										
		0%	10%	20%	35%	50%	75%	100%	150%	Others		
		a	b	c	d	e	f	g	h	i		j
Asset classes												
1	Sovereigns and their central banks	19	-	-	-	-	-	-	-	-	-	19
2	Non-central government public sector entities	-	-	159	-	4	-	-	-	-	-	163
3	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-
4	Banks	-	-	215	-	-	-	-	-	-	-	215
5	Securities firms	-	-	25	-	-	-	-	-	-	-	25
6	Corporates	-	-	300	-	22	-	21,915	-	-	-	22,237
7	Regulatory retail portfolios	448	-	-	-	-	8,719	595	-	-	-	9,762
8	Secured by residential property	-	-	5	4,051	-	338	-	-	-	-	4,394
9	Secured by commercial real estate	-	-	-	-	-	-	676	-	-	-	676
10	Equity	484	-	362	-	-	-	1,029	-	-	-	1,875
11	Defaulted exposures	-	-	16	-	-	-	115	505	-	-	636
12	Higher-risk categories (4)	-	-	-	-	-	-	-	232	-	-	232
13	Other assets	1,928	-	2,059	-	-	-	4,661	-	259	-	8,907
14	Total	2,879	-	3,141	4,051	26	9,057	28,991	737	259	-	49,141

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.

(2) Exposure amounts are net of stage 3 allowance for credit losses.

(3) Credit assessments by external credit rating agencies, including S&P, Moody's and DBRS, are used to determine standardized risk weights based on guidelines issued by OSFI.

(4) Non-defaulted exposures with risk weights equal to 150% (e.g. rated BB- or lower).

CR5 - STANDARDIZED APPROACH - EXPOSURES BY ASSET CLASSES AND RISK WEIGHTS (1) (2) (3)

(\$ millions)		Q1 2019									Total credit exposures amount (post-CCF and post-CRM)	
		Risk Weight										
		0%	10%	20%	35%	50%	75%	100%	150%	Others		
		a	b	c	d	e	f	g	h	i		j
Asset classes												
1	Sovereigns and their central banks	15	-	-	-	-	-	-	-	-	-	15
2	Non-central government public sector entities	-	-	166	-	2	-	-	-	-	-	168
3	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-
4	Banks	-	-	93	-	-	-	-	-	-	-	93
5	Securities firms	-	-	25	-	-	-	-	-	-	-	25
6	Corporates	-	-	217	-	22	-	20,665	-	-	-	20,904
7	Regulatory retail portfolios	435	-	-	-	-	8,117	466	-	-	-	9,018
8	Secured by residential property	-	-	6	4,105	-	364	4	-	-	-	4,479
9	Secured by commercial real estate	-	-	-	-	-	-	737	-	-	-	737
10	Equity	474	-	296	-	-	-	997	-	-	-	1,767
11	Defaulted exposures	-	-	17	-	-	-	116	486	-	-	619
12	Higher-risk categories (4)	-	-	-	-	-	-	-	216	-	-	216
13	Other assets	1,975	-	1,388	-	-	-	4,672	-	270	-	8,305
14	Total	2,899	-	2,208	4,105	24	8,481	27,657	702	270	-	46,346

CR5 - STANDARDIZED APPROACH - EXPOSURES BY ASSET CLASSES AND RISK WEIGHTS (1) (2) (3)

(\$ millions)		Q4 2018									Total credit exposures amount (post-CCF and post-CRM)	
		Risk Weight										
		0%	10%	20%	35%	50%	75%	100%	150%	Others		
		a	b	c	d	e	f	g	h	i		j
Asset classes												
1	Sovereigns and their central banks	15	-	-	-	-	-	-	-	-	-	15
2	Non-central government public sector entities	-	-	162	-	-	-	-	-	-	-	162
3	Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-
4	Banks	-	-	139	-	-	-	-	-	-	-	139
5	Securities firms	-	-	25	-	-	-	-	-	-	-	25
6	Corporates	-	-	212	-	17	-	19,671	-	-	-	19,900
7	Regulatory retail portfolios	409	-	-	-	-	8,165	561	-	-	-	9,135
8	Secured by residential property	-	-	10	4,072	-	398	2	-	-	-	4,482
9	Secured by commercial real estate	-	-	-	-	-	-	756	-	-	-	756
10	Equity	476	-	413	-	-	-	1,005	-	-	-	1,894
11	Defaulted exposures	-	-	16	-	-	-	102	361	-	-	479
12	Higher-risk categories (4)	-	-	-	-	-	-	-	161	-	-	161
13	Other assets	2,430	-	1,404	-	-	-	4,701	-	265	-	8,800
14	Total	3,330	-	2,381	4,072	17	8,563	26,798	522	265	-	45,948

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.

(2) Exposure amounts are net of stage 3 allowance for credit losses.

(3) Credit assessments by external credit rating agencies, including S&P and Moody's, are used to determine standardized risk weights based on guidelines issued by OSFI.

(4) Non-defaulted exposures with risk weights equal to 150% (e.g. rated BB- or lower).

CR6 - IRB - CREDIT EXPOSURE BY PORTFOLIO AND PD RANGE - WHOLESALE (1) (2) (3)

(\$ millions except as noted)

Risk Profile	BMO Rating	PD Scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Q3 2019											
						Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Average CCF (4)	EAD post-CRM and post-CCF	Average PD (5)	Number of obligors (6)	Average LGD (7)	Average maturity (years) (8)	RWA	RWA density	EL	Provisions (9)
						a	b	c	d	e	f	g	h	i	j	k	l
Corporate																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	56	42,772	80,070	50.67 %	91,141	0.08 %	5,697	34.63 %	2.34	18,847	20.68 %	26	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	57	29,301	39,306	47.97 %	46,424	0.20 %	5,134	37.98 %	2.39	17,703	38.13 %	36	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	58	41,102	38,255	48.71 %	58,082	0.32 %	9,055	37.02 %	2.50	27,804	47.87 %	69	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	59	39,865	29,603	45.59 %	51,933	0.62 %	8,522	34.98 %	2.49	30,686	59.09 %	113	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	60	40,747	29,604	46.54 %	52,540	1.23 %	11,795	36.11 %	2.58	40,724	77.51 %	232	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	61	6,216	6,230	47.85 %	8,331	3.59 %	2,780	31.79 %	2.07	7,459	89.53 %	94	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	62	1,734	1,082	51.36 %	2,173	14.44 %	783	29.10 %	2.20	2,941	135.35 %	92	
Default	Default	100.00 (Default)	C	C to D	63	1,120	292	100.00 %	1,399	100.00 %	356	35.42 %	2.49	4,070	291.05 %	268	
Sub-total					64	202,857	224,442		312,023		44,122			150,234		930	
Sovereign																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	65	112,534	7,892	61.93 %	117,682	0.02 %	3,292	5.90 %	2.74	3,720	3.16 %	3	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	66	603	340	76.35 %	698	0.20 %	329	20.18 %	1.36	113	16.15 %	-	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	67	126	177	45.50 %	153	0.32 %	119	39.38 %	2.39	74	48.06 %	-	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	68	703	55	38.38 %	717	0.63 %	83	48.39 %	2.50	598	83.31 %	2	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	69	129	62	40.39 %	127	1.26 %	89	30.80 %	1.69	82	64.30 %	1	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	70	41	16	44.43 %	45	2.74 %	40	46.37 %	1.22	56	124.31 %	1	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	71	2	-	44.73 %	1	14.66 %	4	65.00 %	1.00	2	311.58 %	-	
Default	Default	100.00 (Default)	C	C to D	72	-	-	100.00 %	-	100.00 %	-	15.00 %	1.00	-	198.75 %	-	
Sub-total					73	114,138	8,542		119,423		3,956			4,645		7	
Bank																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	74	11,824	4,799	75.24 %	16,144	0.07 %	172	17.66 %	1.27	1,393	8.63 %	2	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	75	4,468	4,398	60.67 %	7,021	0.19 %	76	12.65 %	1.55	712	10.14 %	2	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	76	1,703	1,184	62.06 %	2,353	0.32 %	74	14.67 %	1.14	373	15.85 %	1	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	77	573	852	64.75 %	962	0.56 %	47	15.94 %	0.96	214	22.22 %	1	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	78	1,598	155	98.45 %	1,402	1.10 %	45	16.13 %	0.36	413	29.44 %	3	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	79	119	4	97.78 %	122	2.82 %	15	16.79 %	0.50	54	43.95 %	1	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	80	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Default	Default	100.00 (Default)	C	C to D	81	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Sub-total					82	20,285	11,392		28,004		429			3,159		10	
Total (all wholesale portfolios)					83	337,280	244,376		459,450		48,507			158,038		947	

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.

(2) Columns "a" and "b" are grouped by the obligor's PD and columns "d" onwards are grouped by the guarantor, where applicable.

(3) PD bands in the table are as prescribed in revised Pillar 3 guidance and used for comparative purposes across banks.

(4) Calculated as EAD post-conversion factor for off-balance sheet exposure divided by total off-balance sheet exposure preconversion factor.

(5) Calculated as the obligor PD or guarantor PD, where applicable, weighted by EAD.

(6) Obligor count for Wholesale portfolios is at the borrower level.

(7) Calculated as the obligor LGD or guarantor, where applicable, weighted by EAD.

(8) Calculated as the effective maturity in years weighted by EAD.

(9) Includes stage 3 allowances and partial write-offs.

CR6 - IRB - CREDIT EXPOSURE BY PORTFOLIO AND PD RANGE - WHOLESALE (1) (2) (3)

(\$ millions except as noted)

Risk Profile	BMO Rating	PD Scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Q2 2019											
						Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Average CCF (4)	EAD post-CRM and post-CCF	Average PD (5)	Number of obligors (6)	Average LGD (7)	Average maturity (years) (8)	RWA	RWA density	EL	Provisions (9)
						a	b	c	d	e	f	g	h	i	j	k	l
Corporate																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	56	38,065	78,260	51.32 %	85,658	0.08 %	5,615	34.85 %	2.31	18,269	21.33 %	25	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	57	29,084	38,923	48.64 %	46,093	0.20 %	5,034	37.75 %	2.40	17,281	37.49 %	35	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	58	40,677	36,490	48.59 %	57,149	0.32 %	9,034	37.11 %	2.47	26,785	46.87 %	68	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	59	41,085	28,669	45.10 %	52,550	0.62 %	8,475	34.80 %	2.48	30,708	58.44 %	114	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	60	41,232	27,994	46.47 %	52,235	1.22 %	12,389	36.32 %	2.47	40,011	76.60 %	232	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	61	5,714	5,795	46.26 %	7,886	3.58 %	3,009	32.28 %	2.10	7,153	90.71 %	92	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	62	1,715	1,398	52.46 %	2,187	14.19 %	811	29.31 %	2.26	2,984	136.44 %	92	
Default	Default	100.00 (Default)	C	C to D	63	1,034	301	100.00 %	1,321	100.00 %	393	36.13 %	2.35	3,918	296.59 %	256	
Sub-total					64	198,606	217,830		305,079		44,760			147,109		914	256
Sovereign																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	65	104,347	8,015	60.89 %	109,548	0.02 %	3,149	6.31 %	2.71	3,471	3.17 %	3	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	66	661	375	71.94 %	711	0.20 %	325	20.22 %	1.33	114	16.03 %	-	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	67	113	293	50.88 %	207	0.32 %	118	33.65 %	1.72	78	37.68 %	-	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	68	17	66	45.19 %	31	0.63 %	78	164.14 %	1.15	72	232.26 %	-	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	69	995	51	43.30 %	994	1.77 %	134	27.98 %	3.08	770	77.46 %	5	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	70	35	27	37.34 %	41	3.38 %	44	47.78 %	1.24	55	134.15 %	1	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	71	1	-	0.00 %	-	0.00 %	3	0.00 %	-	-	0.00 %	-	
Default	Default	100.00 (Default)	C	C to D	72	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Sub-total					73	106,169	8,827		111,532		3,851			4,560		9	-
Bank																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	74	11,862	4,452	77.76 %	16,583	0.07 %	176	17.25 %	1.24	1,335	8.05 %	2	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	75	4,747	3,679	59.47 %	6,642	0.19 %	81	13.63 %	1.53	718	10.81 %	2	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	76	2,328	1,901	61.73 %	3,257	0.32 %	78	14.00 %	0.97	454	13.94 %	1	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	77	1,105	769	61.62 %	1,345	0.55 %	50	15.36 %	0.72	283	21.04 %	1	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	78	1,781	190	99.65 %	1,488	1.09 %	47	15.37 %	0.40	418	28.09 %	3	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	79	37	2	50.76 %	34	2.85 %	12	14.74 %	0.19	11	32.35 %	-	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	80	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Default	Default	100.00 (Default)	C	C to D	81	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Sub-total					82	21,860	10,993		29,349		444			3,219		9	-
Total (all wholesale portfolios)					83	326,635	237,650		445,960		49,055			154,888		932	256

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.
(2) Columns "a" and "b" are grouped by the obligor's PD and columns "d" onwards are grouped by the guarantor, where applicable.
(3) PD bands in the table are as prescribed in revised Pillar 3 guidance and used for comparative purposes across banks.
(4) Calculated as EAD post-conversion factor for off-balance sheet exposure divided by total off-balance sheet exposure preconversion factor.
(5) Calculated as the obligor PD or guarantor PD, where applicable, weighted by EAD.
(6) Obligor count for Wholesale portfolios is at the borrower level.
(7) Calculated as the obligor LGD or guarantor, where applicable, weighted by EAD.
(8) Calculated as the effective maturity in years weighted by EAD.
(9) Includes stage 3 allowances and partial write-offs.

CR6 - IRB - CREDIT EXPOSURE BY PORTFOLIO AND PD RANGE - WHOLESALE (1) (2) (3)

(\$ millions except as noted)

Risk Profile	BMO Rating	PD Scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Q1 2019											
						Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Average CCF (4)	EAD post-CRM and post-CCF	Average PD (5)	Number of obligors (6)	Average LGD (7)	Average maturity (years) (8)	RWA	RWA density	EL	Provisions (9)
						a	b	c	d	e	f	g	h	i	j	k	l
Corporate																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	56	36,061	74,145	50.44 %	80,903	0.08 %	5,598	35.32 %	2.27	16,691	20.63 %	24	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	57	26,946	37,972	49.03 %	43,478	0.20 %	5,003	37.79 %	2.42	16,434	37.80 %	33	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	58	38,532	35,645	49.21 %	54,979	0.32 %	8,941	36.66 %	2.53	25,676	46.70 %	65	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	59	36,895	28,190	46.16 %	48,477	0.62 %	8,240	35.64 %	2.48	28,988	59.80 %	107	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	60	38,253	29,077	46.84 %	49,743	1.22 %	12,328	36.24 %	2.48	37,931	76.25 %	220	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	61	5,563	5,157	43.67 %	7,302	3.64 %	3,071	31.49 %	1.95	6,342	86.85 %	83	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	62	1,279	679	58.96 %	1,507	14.02 %	800	32.28 %	1.71	2,166	143.73 %	69	
Default	Default	100.00 (Default)	C	C to D	63	826	325	99.99 %	1,134	100.00 %	396	35.82 %	2.57	3,099	273.28 %	240	
Sub-total					64	184,355	211,190		287,523		44,377			137,327		841	240
Sovereign																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	65	107,760	8,112	61.53 %	112,952	0.02 %	3,104	4.24 %	2.58	3,092	2.74 %	2	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	66	740	406	74.16 %	898	0.20 %	321	19.92 %	1.20	137	15.26 %	-	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	67	217	279	50.52 %	345	0.32 %	125	20.49 %	1.75	82	23.77 %	-	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	68	194	50	49.33 %	202	0.59 %	75	24.14 %	1.55	73	36.14 %	-	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	69	914	56	42.32 %	914	0.97 %	99	33.36 %	3.00	696	76.15 %	3	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	70	34	14	48.90 %	37	3.44 %	35	45.08 %	1.30	47	127.03 %	1	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	71	1	-	0.00 %	-	0.00 %	2	0.00 %	-	-	0.00 %	-	
Default	Default	100.00 (Default)	C	C to D	72	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Sub-total					73	109,860	8,917		115,348		3,761			4,127		6	-
Bank																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	74	11,287	4,444	77.80 %	16,109	0.07 %	178	16.67 %	1.20	1,188	7.37 %	2	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	75	5,045	3,438	59.95 %	6,676	0.19 %	87	12.99 %	1.50	697	10.44 %	2	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	76	2,267	2,063	63.07 %	3,287	0.32 %	77	14.72 %	0.75	459	13.96 %	2	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	77	1,298	878	60.58 %	1,610	0.55 %	53	13.86 %	0.70	292	18.14 %	1	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	78	1,967	168	86.66 %	1,686	1.07 %	50	15.23 %	0.39	479	28.41 %	3	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	79	57	1	51.60 %	53	3.02 %	15	14.82 %	0.14	18	33.96 %	-	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	80	-	-	100.00 %	-	14.66 %	1	30.00 %	1.00	-	0.00 %	-	
Default	Default	100.00 (Default)	C	C to D	81	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Sub-total					82	21,921	10,992		29,421		461			3,133		10	-
Total (all wholesale portfolios)					83	316,136	231,099		432,292		48,599			144,587		857	240

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.

(2) Columns "a" and "b" are grouped by the obligor's PD and columns "d" onwards are grouped by the guarantor, where applicable.

(3) PD bands in the table are as prescribed in revised Pillar 3 guidance and used for comparative purposes across banks.

(4) Calculated as EAD post-conversion factor for off-balance sheet exposure divided by total off-balance sheet exposure preconversion factor.

(5) Calculated as the obligor PD or guarantor PD, where applicable, weighted by EAD.

(6) Obligor count for Wholesale portfolios is at the borrower level.

(7) Calculated as the obligor LGD or guarantor, where applicable, weighted by EAD.

(8) Calculated as the effective maturity in years weighted by EAD.

(9) Includes stage 3 allowances and partial write-offs.

CR6 - IRB - CREDIT EXPOSURE BY PORTFOLIO AND PD RANGE - WHOLESALE (1) (2) (3)

(\$ millions except as noted)

						Q4 2018											
Risk Profile	BMO Rating	PD Scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Average CCF (4)	EAD post-CRM and post-CCF	Average PD (5)	Number of obligors (6)	Average LGD (7)	Average maturity (years) (8)	RWA	RWA density	EL	Provisions (9)
						a	b	c	d	e	f	g	h	i	j	k	l
Corporate																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	56	33,904	71,858	49.85 %	76,384	0.08 %	5,499	35.28 %	2.21	16,097	21.07 %	22	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	57	24,088	35,589	49.47 %	40,204	0.20 %	4,902	37.73 %	2.48	15,836	39.39 %	31	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	58	35,523	33,948	49.16 %	50,999	0.32 %	8,852	36.39 %	2.47	23,659	46.39 %	60	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	59	35,093	27,744	46.75 %	46,631	0.66 %	8,034	36.10 %	2.46	29,290	62.81 %	112	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	60	37,629	27,247	46.83 %	49,010	1.25 %	12,227	36.83 %	2.54	39,077	79.73 %	225	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	61	5,533	5,501	48.42 %	7,203	3.65 %	3,119	32.66 %	2.07	6,583	91.39 %	87	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	62	1,462	793	51.95 %	1,736	14.29 %	825	32.06 %	1.62	2,483	143.06 %	81	
Default	Default	100.00 (Default)	C	C to D	63	907	266	99.99 %	1,161	100.00 %	451	39.21 %	2.64	3,459	298.05 %	270	
Sub-total					64	174,139	202,946		273,328		43,909			136,484		888	270
Sovereign																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	65	105,767	7,799	59.56 %	110,569	0.02 %	2,956	3.99 %	2.49	2,980	2.70 %	2	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	66	672	389	73.83 %	926	0.20 %	307	21.15 %	1.18	149	16.07 %	-	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	67	218	367	53.86 %	335	0.34 %	126	21.81 %	1.78	88	26.39 %	-	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	68	1,520	30	32.85 %	1,514	0.63 %	83	2.19 %	1.31	44	2.92 %	-	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	69	124	35	42.93 %	117	1.09 %	93	39.28 %	1.80	93	79.92 %	1	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	70	41	4	42.71 %	39	4.33 %	42	31.03 %	1.58	39	99.26 %	1	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	71	-	-	0.00 %	-	0.00 %	1	0.00 %	-	-	0.00 %	-	
Default	Default	100.00 (Default)	C	C to D	72	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Sub-total					73	108,342	8,624		113,500		3,608			3,393		4	-
Bank																	
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	74	12,226	3,918	77.60 %	15,705	0.07 %	189	24.64 %	1.11	1,833	11.67 %	2	
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	75	2,813	2,692	62.46 %	4,494	0.19 %	82	16.42 %	0.73	519	11.55 %	1	
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	76	1,151	2,131	61.37 %	2,429	0.32 %	72	16.23 %	0.61	394	16.24 %	1	
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	77	1,390	634	62.17 %	1,765	0.55 %	56	13.73 %	0.53	292	16.52 %	1	
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	78	1,832	32	98.38 %	1,479	1.16 %	47	15.20 %	0.34	421	28.49 %	3	
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	79	63	3	91.03 %	61	3.31 %	13	14.91 %	0.17	22	35.91 %	-	
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	80	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Default	Default	100.00 (Default)	C	C to D	81	-	-	0.00 %	-	0.00 %	-	0.00 %	-	-	0.00 %	-	
Sub-total					82	19,475	9,410		25,933		459			3,481		8	-
Total (all wholesale portfolios)					83	301,956	220,980		412,761		47,976			143,358		900	270

(1) Credit Risk excludes Counterparty Credit Risk, Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.

(2) Columns "a" and "b" are grouped by the obligor's PD and columns "d" onwards are grouped by the guarantor, where applicable.

(3) PD bands in the table are as prescribed in revised Pillar 3 guidance and used for comparative purposes across banks.

(4) Calculated as EAD post-conversion factor for off-balance sheet exposure divided by total off-balance sheet exposure preconversion factor.

(5) Calculated as the obligor PD or guarantor PD, where applicable, weighted by EAD.

(6) Obligor count for Wholesale portfolios is at the borrower level.

(7) Calculated as the obligor LGD or guarantor, where applicable, weighted by EAD.

(8) Calculated as the effective maturity in years weighted by EAD.

(9) Includes stage 3 allowances and partial write-offs.

CR7 - IRB - EFFECT ON RWA OF CREDIT DERIVATIVES USED AS CRM TECHNIQUES

(\$ millions)

		Q3 2019	
		Pre-credit Derivatives RWA	Actual RWA
		a	b
	Portfolio		
1	Corporate - AIRB	5	3
2	Sovereign - AIRB	-	-
3	Bank - AIRB	-	-
4	Total	5	3

CR7 - IRB - EFFECT ON RWA OF CREDIT DERIVATIVES USED AS CRM TECHNIQUES

(\$ millions)

		Q2 2019	
		Pre-credit Derivatives RWA	Actual RWA
		a	b
	Portfolio		
1	Corporate - AIRB	13	8
2	Sovereign - AIRB	-	-
3	Bank - AIRB	-	-
4	Total	13	8

CR7 - IRB - EFFECT ON RWA OF CREDIT DERIVATIVES USED AS CRM TECHNIQUES

(\$ millions)

		Q1 2019	
		Pre-credit Derivatives RWA	Actual RWA
		a	b
	Portfolio		
1	Corporate - AIRB	25	16
2	Sovereign - AIRB	-	-
3	Bank - AIRB	-	-
4	Total	25	16

CR7 - IRB - EFFECT ON RWA OF CREDIT DERIVATIVES USED AS CRM TECHNIQUES

(\$ millions)

		Q4 2018	
		Pre-credit Derivatives RWA	Actual RWA
		a	b
	Portfolio		
1	Corporate - AIRB	43	26
2	Sovereign - AIRB	-	-
3	Bank - AIRB	-	-
4	Total	43	26

CR8 - RWA FLOW STATEMENTS OF CREDIT RISK AND COUNTERPARTY CREDIT RISK EXPOSURES (1)

(\$ millions)

	Q3 2019		
	Credit risk, of which		Counterparty credit risk (6)
	AIRB	Standardized	
a	b	c	
1 RWA as at beginning of reporting period	189,685	42,281	15,861
2 Asset size (2)	6,175	1,972	(67)
3 Asset quality (3)	(1,505)	43	(139)
4 Model updates (4)	-	-	-
5 Methodology and policy (5)	849	-	73
6 Acquisitions and disposals	-	-	-
7 Foreign exchange movements	(1,615)	(453)	(234)
8 Other	-	-	-
9 RWA as at end of reporting period	193,589	43,843	15,494

CR8 - RWA FLOW STATEMENTS OF CREDIT RISK AND COUNTERPARTY CREDIT RISK EXPOSURES (1)

(\$ millions)

	Q2 2019		
	Credit risk, of which		Counterparty credit risk (6)
	AIRB	Standardized	
a	b	c	
1 RWA as at beginning of reporting period	178,964	40,403	15,278
2 Asset size (2)	8,588	1,273	963
3 Asset quality (3)	(81)	33	(209)
4 Model updates (4)	-	-	-
5 Methodology and policy (5)	253	-	(86)
6 Acquisitions and disposals	-	-	-
7 Foreign exchange movements	1,961	572	(85)
8 Other	-	-	-
9 RWA as at end of reporting period	189,685	42,281	15,861

CR8 - RWA FLOW STATEMENTS OF CREDIT RISK AND COUNTERPARTY CREDIT RISK EXPOSURES (1)

(\$ millions)

	Q1 2019		
	Credit risk, of which		Counterparty credit risk (6)
	AIRB	Standardized	
a	b	c	
1 RWA as at beginning of reporting period	175,905	39,288	13,481
2 Asset size (2)	9,195	1,126	(1,727)
3 Asset quality (3)	(2,443)	62	(74)
4 Model updates (4)	-	-	-
5 Methodology and policy (5)	(3,438)	-	3,558
6 Acquisitions and disposals	-	-	-
7 Foreign exchange movements	(255)	(73)	40
8 Other	-	-	-
9 RWA as at end of reporting period	178,964	40,403	15,278

CR8 - RWA FLOW STATEMENTS OF CREDIT RISK AND COUNTERPARTY CREDIT RISK EXPOSURES (1)

(\$ millions)

	Q4 2018		
	Credit risk, of which		Counterparty credit risk (6)
	AIRB	Standardized	
a	b	c	
1 RWA as at beginning of reporting period	169,612	38,071	12,978
2 Asset size (2)	6,497	911	28
3 Asset quality (3)	(2,206)	(96)	(301)
4 Model updates (4)	(29)	-	-
5 Methodology and policy (5)	866	-	135
6 Acquisitions and disposals	-	49	572
7 Foreign exchange movements	1,165	353	69
8 Other	-	-	-
9 RWA as at end of reporting period	175,905	39,288	13,481

- (1) Credit Risk excludes Securitization, Equity Investment in Funds, Settlement risk and amounts below the thresholds for deduction subject to 250% risk weight.
- (2) Asset size includes organic changes in book size and composition (including new business and maturing loans).
- (3) Asset quality captures the quality of book changes caused by experience such as underlying customer behaviour or demographics, including changes through model calibrations/realignments.
- (4) Model updates includes model implementation, change in model scope or any change to address model malfunctions.
- (5) Methodology and policy includes methodology changes to the calculations driven by regulatory policy changes, such as new or revised regulation.
- (6) Counterparty credit risk includes RWA for derivatives, SFTs, trades cleared through central counterparties and CVA adjustment.

EXPOSURE COVERED BY CREDIT RISK MITIGATION (1)

LINE #	Q3 2019				Q2 2019				Q1 2019				Q4 2018				
	Standardized		AIRB		Standardized		AIRB		Standardized		AIRB		Standardized		AIRB		
	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	EAD post-CRM and post-CCF	Of which exposure amount covered by guarantees or credit derivatives	
Corporate (incl specialized lending and SMEs treated as corporate)	1	24,122	236	312,023	10,663	23,505	262	305,079	10,225	22,182	183	287,523	10,037	21,002	178	273,328	9,592
Sovereign	2	225	-	119,423	396	182	-	111,532	462	183	-	115,348	395	178	-	113,500	330
Bank	3	191	-	28,004	871	239	-	29,349	1,565	119	-	29,421	1,791	164	-	25,933	660
Total Wholesale	4	24,538	236	459,450	11,930	23,926	262	445,960	12,252	22,484	183	432,292	12,223	21,344	178	412,761	10,582
Residential mortgages excluding home equity line of credits (HELOCs)	5	4,256	16	104,362	44,421	4,354	16	103,242	45,584	4,450	18	102,980	45,233	4,376	10	102,209	46,233
HELOCs	6	189	-	46,108	-	217	-	45,392	-	228	-	45,384	-	225	-	45,158	-
Other retail	7	3,234	437	36,163	1,732	3,033	-	34,798	1,815	2,478	437	35,223	1,882	2,724	422	34,867	1,952
Qualifying revolving retail	8	-	-	37,711	-	-	-	36,988	-	-	-	36,462	-	-	-	36,499	-
Retail SMEs	9	6,699	-	6,477	-	6,829	-	5,993	4	6,634	-	5,776	-	4	6,585	5,741	6
Total Retail	10	14,388	453	230,821	46,153	14,433	466	226,413	47,403	13,790	455	225,825	47,119	13,910	432	224,474	48,191
Other assets	11	9,578	-	-	-	8,907	-	-	-	8,305	-	-	-	8,800	-	-	-
Equity	12	1,873	-	-	-	1,875	-	-	-	1,767	-	-	-	1,894	-	-	-
Total Bank	13	50,357	689	690,271	58,083	49,141	728	672,373	59,655	46,346	638	658,117	59,342	45,948	610	637,235	58,773

CREDIT RISK EXPOSURE BY GEOGRAPHIC REGION

LINE #	Q3 2019				Q2 2019				Q1 2019				Q4 2018				
	Canada	U.S.	Other	Total	Canada	U.S.	Other	Total	Canada	U.S.	Other	Total	Canada	U.S.	Other	Total	
Corporate (incl specialized lending and SMEs treated as corporate)	1	144,025	182,411	9,709	336,145	137,554	181,744	9,286	328,584	133,840	168,723	7,142	309,705	128,517	158,498	7,315	294,330
Sovereign	2	32,620	72,134	14,894	119,648	32,433	62,160	17,121	111,714	31,595	68,202	15,734	115,531	31,795	71,150	10,733	113,678
Bank	3	4,775	6,613	16,807	28,195	4,292	6,864	18,432	29,588	4,853	6,826	18,061	29,540	1,613	9,106	15,378	28,097
Total Wholesale	4	181,420	261,158	41,410	483,988	174,279	250,768	44,839	469,886	170,288	243,551	40,937	454,776	161,925	238,754	33,426	434,105
Residential mortgages excluding home equity line of credits (HELOCs)	5	97,851	10,767	-	108,618	96,519	11,077	-	107,596	96,241	11,189	-	107,430	95,338	11,247	-	106,585
HELOCs	6	39,572	6,725	-	46,297	38,732	6,877	-	45,609	38,842	6,770	-	45,612	38,533	6,850	-	45,383
Other retail	7	28,591	10,272	534	39,397	27,775	9,491	565	37,831	28,693	8,553	455	37,701	29,098	8,035	458	37,591
Qualifying revolving retail	8	37,711	-	-	37,711	36,931	57	-	36,988	36,404	58	-	36,462	36,443	56	-	36,499
Retail SMEs	9	6,598	6,567	1	13,166	6,098	6,724	-	12,822	5,912	6,498	-	12,410	5,882	6,444	-	12,326
Total Retail	10	210,323	34,331	535	245,189	206,055	34,226	565	240,846	206,092	33,068	455	239,615	205,294	32,632	458	238,384
Other assets	11	5,610	3,681	287	9,578	5,340	3,285	282	8,907	4,631	3,415	259	8,305	4,537	4,001	262	8,800
Equity	12	59	1,613	201	1,873	51	1,611	213	1,875	43	1,524	200	1,767	68	1,582	244	1,894
Total Bank	13	397,412	300,783	42,433	740,628	385,725	289,890	45,899	721,514	381,054	281,558	41,851	704,463	371,824	276,969	34,390	683,183

(1) Credit risk mitigants herein include only credit derivatives and guarantees. Collateral is reflected in the risk parameters (PDs, LGDs) for AIRB exposures and risk weights for exposures under the Standardized approach.

CREDIT RISK EXPOSURE BY MAJOR ASSET CLASS

LINE #	Q3 2019				Q2 2019				Q1 2019	Q4 2018	
	Drawn	Commitments (undrawn) (1)	Other off-balance sheet items (2)	Total	Drawn	Commitments (undrawn) (1)	Other off-balance sheet items (2)	Total	Total	Total	
(\$ millions)											
Corporate (incl specialized lending and SMEs treated as corporate)	1	222,687	96,070	17,388	336,145	218,356	92,873	17,355	328,584	309,705	294,330
Sovereign	2	114,350	3,668	1,630	119,648	106,344	3,747	1,623	111,714	115,531	113,678
Bank	3	20,290	5,487	2,418	28,195	21,945	5,147	2,496	29,588	29,540	26,097
Total Wholesale	4	357,327	105,225	21,436	483,988	346,645	101,767	21,474	469,886	454,776	434,105
Residential mortgages excluding home equity line of credits (HELOCs)	5	108,495	72	51	108,618	107,447	98	51	107,596	107,430	106,585
HELOCs	6	31,519	14,778	-	46,297	31,009	14,600	-	45,609	45,612	45,383
Other retail	7	36,375	3,021	1	39,397	34,874	2,956	1	37,831	37,701	37,591
Qualifying revolving retail	8	8,040	29,671	-	37,711	7,697	29,291	-	36,988	36,462	36,499
Retail SMEs	9	10,161	2,963	42	13,166	10,378	2,399	45	12,822	12,410	12,326
Total Retail	10	194,590	50,505	94	245,189	191,405	49,344	97	240,846	239,615	238,384
Other assets	11	9,578	-	-	9,578	8,907	-	-	8,907	8,305	8,800
Equity	12	1,726	147	-	1,873	1,715	160	-	1,875	1,767	1,894
Total Bank	13	563,221	155,877	21,530	740,628	548,672	151,271	21,571	721,514	704,463	683,183

CREDIT RISK BY RESIDUAL CONTRACT MATURITY BREAKDOWN

LINE #	Q3 2019				Q2 2019				Q1 2019	Q4 2018	
	Drawn	Commitments (undrawn) (1)	Other off-balance sheet items (2)	Total	Drawn	Commitments (undrawn) (1)	Other off-balance sheet items (2)	Total	Total	Total	
(\$ millions)											
Up to 1 year	1	199,390	86,264	15,930	301,584	173,296	85,304	16,432	275,032	279,884	277,128
1 to 5 years	2	290,097	63,474	5,354	358,925	304,890	60,132	5,009	370,031	354,107	338,523
Greater than 5 years	3	73,734	6,139	246	80,119	70,486	5,835	130	76,451	70,472	67,532
Total Bank	4	563,221	155,877	21,530	740,628	548,672	151,271	21,571	721,514	704,463	683,183

CREDIT RISK EXPOSURE BY INDUSTRY

LINE #	Q3 2019				Q2 2019				Q1 2019	Q4 2018	
	Drawn	Commitments (undrawn) (1)	Other off-balance sheet items (2)	Total	Drawn	Commitments (undrawn) (1)	Other off-balance sheet items (2)	Total	Total	Total	
(\$ millions)											
Agriculture	1	12,348	2,140	39	14,527	12,224	2,016	38	14,278	13,662	13,398
Communications	2	838	1,218	279	2,335	928	1,174	309	2,411	2,362	1,982
Construction	3	4,342	2,975	1,156	8,473	4,125	3,023	1,229	8,377	7,670	7,533
Financial	4	105,348	24,059	5,770	135,177	102,407	23,410	6,156	131,973	133,686	129,218
Forest products	5	1,039	463	87	1,589	1,057	420	82	1,559	1,322	1,241
Government	6	51,239	1,986	693	53,918	47,409	2,093	688	50,190	49,612	47,337
Individual	7	194,594	50,503	95	245,192	191,405	49,344	97	240,846	239,611	238,384
Manufacturing	8	26,805	15,864	1,471	44,140	27,325	14,805	1,494	43,624	41,202	37,615
Mining	9	2,889	3,840	1,180	7,909	2,576	3,957	1,300	7,833	6,985	6,754
Oil and Gas	10	12,826	11,968	1,839	26,633	11,296	11,934	1,799	25,029	24,396	21,359
Other	11	17,869	474	709	19,052	16,636	494	345	17,475	16,732	18,877
Real estate	12	36,120	8,802	857	45,779	35,918	8,668	858	45,444	43,440	40,527
Retail trade	13	22,112	4,196	597	26,905	22,593	3,765	573	26,931	25,392	24,156
Service industries	14	45,089	13,214	3,011	61,314	43,984	13,307	2,653	59,944	55,951	54,163
Transportation	15	8,081	2,924	787	11,792	7,618	2,668	708	10,994	10,371	9,894
Utilities	16	4,914	6,088	2,441	13,443	4,767	5,627	2,687	13,081	11,371	11,073
Wholesale trade	17	16,768	5,163	519	22,450	16,404	4,566	555	21,525	20,698	19,672
Total Bank	18	563,221	155,877	21,530	740,628	548,672	151,271	21,571	721,514	704,463	683,183

(1) The EAD on the difference between the authorized and drawn amounts (e.g. the unused portion of a line of credit).

(2) All other off-balance sheet arrangements, other than derivatives and undrawn commitments, such as Standby Letters of Credit and Documentary Credits.

CCR1 - ANALYSIS OF COUNTERPARTY CREDIT RISK (CCR) EXPOSURE BY APPROACH (1)

		Q3 2019					
		Replacement cost	Potential future exposure	Effective Expected Positive Exposure (EEPE)	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
		a	b	c	d	e	f
(\$ millions except as noted)							
1	SA-CCR (for derivatives) (2)	6,703	13,318		1.4	27,910	6,866
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)					19,591	2,761
5	VaR for SFTs					-	-
6	Total						9,627

CCR1 - ANALYSIS OF COUNTERPARTY CREDIT RISK (CCR) EXPOSURE BY APPROACH (1)

		Q2 2019					
		Replacement cost	Potential future exposure	Effective Expected Positive Exposure (EEPE)	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
		a	b	c	d	e	f
(\$ millions except as noted)							
1	SA-CCR (for derivatives) (2)	6,286	14,472		1.4	28,940	6,827
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)					19,519	2,877
5	VaR for SFTs					-	-
6	Total						9,704

CCR1 - ANALYSIS OF COUNTERPARTY CREDIT RISK (CCR) EXPOSURE BY APPROACH (1)

		Q1 2019					
		Replacement cost	Potential future exposure	Effective Expected Positive Exposure (EEPE)	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
		a	b	c	d	e	f
(\$ millions except as noted)							
1	SA-CCR (for derivatives) (2)	5,747	13,679		1.4	27,061	6,227
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)					24,709	2,594
5	VaR for SFTs					-	-
6	Total						8,821

CCR1 - ANALYSIS OF COUNTERPARTY CREDIT RISK (CCR) EXPOSURE BY APPROACH (1)

		Q4 2018					
		Replacement cost	Potential future exposure	Effective Expected Positive Exposure (EEPE)	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
		a	b	c	d	e	f
(\$ millions except as noted)							
1	Current exposure method (CEM) (for derivatives)	9,112	17,855			26,370	4,746
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)					22,212	3,171
5	VaR for SFTs					-	-
6	Total						7,917

(1) Excludes credit valuation adjustment charges and exposures cleared through a central counterparty.

(2) Effective Q1 2019, CCR for derivatives is calculated using the SA-CCR in accordance with the CAR Guideline issued by OSFI on October 30, 2018.

**CCR2 - CREDIT VALUATION ADJUSTMENT (CVA)
CAPITAL CHARGE**

(\$ millions)

		Q3 2019	
		EAD post-CRM	RWA
		a	b
	Total portfolios subject to the Advanced CVA capital charge	-	-
1	(i) VaR component (including the 3×multiplier)	-	-
2	(ii) Stressed VaR component (including the 3×multiplier)	-	-
3	All portfolios subject to the Standardized CVA capital charge (1)	19,620	5,350
4	Total subject to the CVA capital charge	19,620	5,350

**CCR2 - CREDIT VALUATION ADJUSTMENT (CVA)
CAPITAL CHARGE**

(\$ millions)

		Q2 2019	
		EAD post-CRM	RWA
		a	b
	Total portfolios subject to the Advanced CVA capital charge	-	-
1	(i) VaR component (including the 3×multiplier)	-	-
2	(ii) Stressed VaR component (including the 3×multiplier)	-	-
3	All portfolios subject to the Standardized CVA capital charge (1)	20,343	5,622
4	Total subject to the CVA capital charge	20,343	5,622

**CCR2 - CREDIT VALUATION ADJUSTMENT (CVA)
CAPITAL CHARGE**

(\$ millions)

		Q1 2019	
		EAD post-CRM	RWA
		a	b
	Total portfolios subject to the Advanced CVA capital charge	-	-
1	(i) VaR component (including the 3×multiplier)	-	-
2	(ii) Stressed VaR component (including the 3×multiplier)	-	-
3	All portfolios subject to the Standardized CVA capital charge (1)	18,855	5,889
4	Total subject to the CVA capital charge	18,855	5,889

**CCR2 - CREDIT VALUATION ADJUSTMENT (CVA)
CAPITAL CHARGE**

(\$ millions)

		Q4 2018	
		EAD post-CRM	RWA
		a	b
	Total portfolios subject to the Advanced CVA capital charge	-	-
1	(i) VaR component (including the 3×multiplier)	-	-
2	(ii) Stressed VaR component (including the 3×multiplier)	-	-
3	All portfolios subject to the Standardized CVA capital charge (1)	22,272	4,900
4	Total subject to the CVA capital charge	22,272	4,900

(1) Effective Q1 2019 RWA for CVA is no longer scaled while Q4 2018 RWA reflects CET1 scalar of 80% adjustment for CVA phase-in.

CCR3 - STANDARDIZED APPROACH – CCR EXPOSURES BY REGULATORY PORTFOLIO AND RISK WEIGHTS (1)

(\$ millions)

		Q3 2019								
		Risk Weight								
		0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Regulatory portfolio	LINE #	a	b	c	d	e	f	g	h	i
Sovereigns	1	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	2	-	-	7	-	-	-	-	-	7
Multilateral development banks (MDBs)	3	-	-	-	-	-	-	-	-	-
Banks	4	-	-	144	-	-	1	-	-	145
Securities firms	5	-	-	17	-	-	-	-	-	17
Corporates	6	-	-	-	-	-	175	-	-	175
Regulatory retail portfolios	7	-	-	-	-	-	-	-	-	-
Secured by residential property	8	-	-	-	-	-	-	-	-	-
Secured by commercial real estate	9	-	-	-	-	-	4	-	-	4
Equity	10	-	-	-	-	-	-	-	-	-
Defaulted exposures	11	-	-	-	-	-	-	-	-	-
Higher-risk categories (2)	12	-	-	-	-	-	-	2	-	2
Other assets	13	-	-	-	-	-	-	-	-	-
Total	14	-	-	168	-	-	180	2	-	350

CCR3 - STANDARDIZED APPROACH – CCR EXPOSURES BY REGULATORY PORTFOLIO AND RISK WEIGHTS (1)

(\$ millions)

		Q2 2019								
		Risk Weight								
		0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Regulatory portfolio	LINE #	a	b	c	d	e	f	g	h	i
Sovereigns	1	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	2	-	-	1	-	-	-	-	-	1
Multilateral development banks (MDBs)	3	-	-	-	-	-	-	-	-	-
Banks	4	-	-	218	-	-	-	-	-	218
Securities firms	5	-	-	1	-	-	-	-	-	1
Corporates	6	-	-	-	-	-	149	-	-	149
Regulatory retail portfolios	7	-	-	-	-	-	-	-	-	-
Secured by residential property	8	-	-	-	-	-	-	-	-	-
Secured by commercial real estate	9	-	-	-	-	-	3	-	-	3
Equity	10	-	-	-	-	-	-	-	-	-
Defaulted exposures	11	-	-	-	-	-	-	-	-	-
Higher-risk categories (2)	12	-	-	-	-	-	-	1	-	1
Other assets	13	-	-	-	-	-	-	-	-	-
Total	14	-	-	220	-	-	152	1	-	373

(1) Excludes credit valuation adjustment charges and exposures cleared through a central counterparty.

(2) Non-defaulted exposures with risk weights equal to 150% (e.g. rated BB- or lower).

CCR3 - STANDARDIZED APPROACH – CCR EXPOSURES BY REGULATORY PORTFOLIO AND RISK WEIGHTS (1)

(\$ millions)

		Q1 2019								
		Risk Weight								
		0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Regulatory portfolio	LINE #	a	b	c	d	e	f	g	h	i
Sovereigns	1	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	2	-	-	1	-	-	-	-	-	1
Multilateral development banks (MDBs)	3	-	-	-	-	-	-	-	-	-
Banks	4	-	-	156	-	-	-	-	-	156
Securities firms	5	-	-	2	-	-	-	-	-	2
Corporates	6	-	-	-	-	-	195	-	-	195
Regulatory retail portfolios	7	-	-	-	-	-	-	-	-	-
Secured by residential property	8	-	-	-	-	-	-	-	-	-
Secured by commercial real estate	9	-	-	-	-	-	3	-	-	3
Equity	10	-	-	-	-	-	-	-	-	-
Defaulted exposures	11	-	-	-	-	-	-	-	-	-
Higher-risk categories (2)	12	-	-	-	-	-	-	1	-	1
Other assets	13	-	-	-	-	-	-	-	-	-
Total	14	-	-	159	-	-	198	1	-	358

CCR3 - STANDARDIZED APPROACH – CCR EXPOSURES BY REGULATORY PORTFOLIO AND RISK WEIGHTS (1)

(\$ millions)

		Q4 2018								
		Risk Weight								
		0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
Regulatory portfolio	LINE #	a	b	c	d	e	f	g	h	i
Sovereigns	1	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	2	-	-	2	-	-	-	-	-	2
Multilateral development banks (MDBs)	3	-	-	-	-	-	-	-	-	-
Banks	4	-	-	296	-	-	-	-	-	296
Securities firms	5	-	-	-	-	-	-	-	-	-
Corporates	6	-	-	-	-	-	581	-	-	581
Regulatory retail portfolios	7	-	-	-	-	-	-	-	-	-
Secured by residential property	8	-	-	-	-	-	-	-	-	-
Secured by commercial real estate	9	-	-	-	-	-	1	-	-	1
Equity	10	-	-	-	-	-	-	-	-	-
Defaulted exposures	11	-	-	-	-	-	-	-	-	-
Higher-risk categories (2)	12	-	-	-	-	-	-	1	-	1
Other assets	13	-	-	-	-	-	-	-	-	-
Total	14	-	-	298	-	-	582	1	-	881

(1) Excludes credit valuation adjustment charges and exposures cleared through a central counterparty.

(2) Non-defaulted exposures with risk weights equal to 150% (e.g. rated BB- or lower).

CCR4 - IRB - CCR EXPOSURES BY PORTFOLIO AND PD SCALE

(\$ millions except as noted)

Risk Profile	BMO Rating	PD scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Q3 2019						
						EAD post-CRM	Average PD (1)	Number of obligors (2)	Average LGD (3)	Average maturity (years) (4)	RWA	RWA density
						a	b	c	d	e	f	g
Corporate												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	1	12,068	0.05%	2,914	26.16%	1.15	1,216	10.07%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	2	1,169	0.19%	476	36.59%	1.94	391	33.44%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	3	3,820	0.32%	511	32.18%	1.50	1,450	37.96%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	4	1,852	0.61%	507	34.23%	1.68	1,046	56.46%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	5	1,776	1.32%	679	33.53%	1.45	1,322	74.44%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	6	609	3.10%	323	35.64%	1.78	624	102.58%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	7	34	13.16%	28	16.55%	1.37	26	77.25%
Default	Default	100.00 (Default)	C	C to D	8	13	100.00%	3	22.00%	1.00	39	291.54%
Sub-total					9	21,341		5,441			6,114	
Sovereign												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	10	9,052	0.04%	218	12.66%	2.22	358	3.95%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	11	22	0.19%	5	39.21%	0.95	6	26.50%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	12	139	0.32%	6	32.12%	0.61	40	28.61%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	13	-	0.59%	2	27.02%	1.00	-	35.50%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	14	44	0.98%	3	39.97%	1.00	30	68.02%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	15	-	5.16%	1	40.00%	1.00	-	125.81%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	16	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	17	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					18	9,257		235			434	
Bank												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	19	14,136	0.06%	266	34.46%	1.19	2,132	15.08%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	20	1,514	0.19%	114	34.21%	1.16	381	25.16%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	21	289	0.32%	49	35.07%	0.78	100	34.65%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	22	584	0.54%	24	35.35%	0.07	213	36.56%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	23	30	1.67%	12	52.23%	0.88	33	110.63%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	24	3	5.09%	3	35.00%	4.88	6	176.86%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	25	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	26	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					27	16,556		468			2,865	
Total (all wholesale portfolios)					28	47,154		6,144			9,413	

(1) Calculated as obligor PD weighted by EAD.

(2) Obligor count for Wholesale portfolios is at the borrower level.

(3) Calculated as the obligor LGD net of CRM weighted by EAD.

(4) Calculated as the obligor effective maturity in years weighted by EAD.

CCR4 - IRB - CCR EXPOSURES BY PORTFOLIO AND PD SCALE

(\$ millions except as noted)

Risk Profile	BMO Rating	PD scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Q2 2019						
						EAD post-CRM	Average PD (1)	Number of obligors (2)	Average LGD (3)	Average maturity (years) (4)	RWA	RWA density
						a	b	c	d	e	f	g
Corporate												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	1	12,818	0.05%	2,974	26.76%	1.10	1,233	9.62%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	2	1,590	0.19%	508	40.53%	2.15	609	38.30%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	3	1,557	0.32%	481	52.00%	2.53	980	62.94%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	4	2,186	0.62%	507	33.19%	1.49	1,141	52.20%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	5	1,849	1.35%	672	33.95%	1.50	1,414	76.47%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	6	553	3.12%	293	35.23%	1.63	546	98.73%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	7	67	13.05%	17	16.05%	1.35	50	74.63%
Default	Default	100.00 (Default)	C	C to D	8	-	100.00%	4	45.00%	1.63	-	0.00%
Sub-total					9	20,620		5,456			5,973	
Sovereign												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	10	8,586	0.04%	222	11.62%	2.37	340	3.96%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	11	19	0.19%	4	38.74%	0.96	5	26.32%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	12	97	0.32%	7	27.22%	0.41	23	23.71%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	13	-	0.00%	-	0.00%	0.00	-	0.00%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	14	7	0.92%	2	39.74%	1.01	5	71.43%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	15	1	5.16%	1	40.00%	1.00	1	100.00%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	16	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	17	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					18	8,710		236			374	
Bank												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	19	17,136	0.07%	256	34.33%	1.13	2,628	15.34%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	20	821	0.19%	99	39.08%	0.60	246	29.96%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	21	353	0.32%	53	34.97%	0.59	112	31.73%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	22	438	0.54%	27	36.26%	0.10	167	38.13%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	23	4	1.32%	11	48.03%	1.00	4	100.00%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	24	4	2.74%	7	35.00%	1.00	4	100.00%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	25	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	26	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					27	18,756		453			3,161	
Total (all wholesale portfolios)					28	48,086		6,145			9,508	

(1) Calculated as obligor PD weighted by EAD.

(2) Obligor count for Wholesale portfolios is at the borrower level.

(3) Calculated as the obligor LGD net of CRM weighted by EAD.

(4) Calculated as the obligor effective maturity in years weighted by EAD.

CCR4 - IRB - CCR EXPOSURES BY PORTFOLIO AND PD SCALE

(\$ millions except as noted)

Risk Profile	BMO Rating	PD scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Q1 2019						
						EAD post-CRM	Average PD (1)	Number of obligors (2)	Average LGD (3)	Average maturity (years) (4)	RWA	RWA density
						a	b	c	d	e	f	g
Corporate												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	1	13,808	0.05%	2,802	25.81%	0.95	1,216	8.81%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	2	1,484	0.19%	470	36.40%	1.72	480	32.35%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	3	2,473	0.32%	489	37.42%	1.81	1,152	46.58%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	4	1,562	0.61%	472	32.16%	1.64	824	52.75%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	5	1,362	1.42%	649	31.40%	1.51	1,015	74.52%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	6	254	3.01%	219	39.76%	2.64	312	122.83%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	7	7	13.15%	15	23.90%	1.24	7	100.00%
Default	Default	100.00 (Default)	C	C to D	8	-	100.00%	4	45.00%	2.74	-	0.00%
Sub-total					9	20,950		5,120			5,006	
Sovereign												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	10	9,300	0.04%	214	12.34%	2.57	422	4.54%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	11	43	0.20%	5	11.00%	1.63	4	9.30%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	12	82	0.32%	6	29.80%	0.50	21	25.61%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	13	6	0.54%	1	55.00%	1.00	4	66.67%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	14	6	0.91%	1	40.00%	1.00	4	66.67%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	15	-	0.00%	-	0.00%	0.00	-	0.00%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	16	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	17	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					18	9,437		227			455	
Bank												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	19	19,050	0.06%	261	33.38%	0.97	2,521	13.23%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	20	1,374	0.19%	110	31.88%	1.51	375	27.29%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	21	221	0.32%	48	35.00%	1.11	85	38.46%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	22	374	0.54%	33	35.67%	0.08	139	37.17%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	23	4	1.24%	14	45.80%	1.08	4	100.00%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	24	5	2.74%	6	36.10%	0.95	5	100.00%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	25	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	26	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					27	21,028		472			3,129	
Total (all wholesale portfolios)					28	51,415		5,819			8,590	

(1) Calculated as obligor PD weighted by EAD.

(2) Obligor count for Wholesale portfolios is at the borrower level.

(3) Calculated as the obligor LGD net of CRM weighted by EAD.

(4) Calculated as the obligor effective maturity in years weighted by EAD.

CCR4 - IRB - CCR EXPOSURES BY PORTFOLIO AND PD SCALE

(\$ millions except as noted)

Risk Profile	BMO Rating	PD scale (%)	Moody's Investors Service implied equivalent	Standard & Poor's implied equivalent	LINE #	Q4 2018						
						EAD post-CRM	Average PD (1)	Number of obligors (2)	Average LGD (3)	Average maturity (years) (4)	RWA	RWA density
						a	b	c	d	e	f	g
Corporate												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	1	9,747	0.05%	2,790	29.58%	0.99	854	8.76%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	2	2,074	0.19%	375	19.77%	1.16	339	16.32%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	3	1,169	0.32%	526	30.64%	2.05	723	61.86%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	4	1,103	0.66%	475	28.16%	1.33	764	69.27%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	5	1,328	1.43%	606	18.93%	0.94	912	68.71%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	6	321	2.81%	212	42.25%	0.79	356	110.99%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	7	23	12.96%	9	19.14%	1.00	20	87.70%
Default	Default	100.00 (Default)	C	C to D	8	0	100.00%	1	45.00%	2.99	0	533.33%
Sub-total					9	15,765		4,994			3,968	
Sovereign												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	10	9,904	0.04%	219	6.67%	2.38	268	2.71%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	11	15	0.20%	5	11.57%	1.97	2	12.21%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	12	104	0.33%	6	39.96%	0.51	28	26.81%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	13	3	0.63%	1	55.00%	1.00	2	76.38%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	14	7	1.21%	2	40.00%	0.90	4	67.37%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	15	1	2.74%	2	65.00%	4.29	2	225.33%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	16	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	17	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					18	10,034		235			306	
Bank												
Investment grade	I-1, I-2, I-3, I-4, I-5	0.00 to <0.15	Aaa to Baa1	AAA to BBB+	19	20,382	0.07%	253	29.25%	1.16	2,614	12.82%
Investment grade	I-5, I-6	0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	20	983	0.19%	85	28.33%	0.98	201	20.44%
Investment grade	I-6, I-7	0.25 to <0.50	Baa2 to Baa3	BBB to BBB-	21	101	0.32%	59	22.28%	1.86	14	13.86%
Investment grade to Non-investment grade	I-7, S-1	0.50 to <0.75	Baa3 to Ba1	BBB- to BB+	22	415	0.54%	28	29.17%	0.13	150	36.20%
Non-investment grade	S-1, S-2, S-3	0.75 to <2.50	Ba1 to Ba3	BB+ to BB-	23	16	0.91%	10	54.12%	0.67	15	96.06%
Non-investment grade to Watchlist	S-3, S-4, P-1, P-2	2.50 to <10.00	Ba3 to Caa1	BB- to B-	24	6	2.74%	7	35.00%	0.98	5	88.58%
Watchlist	P-2, P-3	10.00 to <100.00	Caa1 to Ca	B- to CC	25	-	0.00%	-	0.00%	0.00	-	0.00%
Default	Default	100.00 (Default)	C	C to D	26	-	0.00%	-	0.00%	0.00	-	0.00%
Sub-total					27	21,903		442			2,999	
Total (all wholesale portfolios)					28	47,702		5,671			7,273	

(1) Calculated as obligor PD weighted by EAD.

(2) Obligor count for Wholesale portfolios is at the borrower level.

(3) Calculated as the obligor LGD net of CRM weighted by EAD.

(4) Calculated as the obligor effective maturity in years weighted by EAD.

CCR5 - COMPOSITION OF COLLATERAL FOR CCR EXPOSURE (1)		Q3 2019					
		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
		Segregated	Unsegregated	Segregated	Unsegregated		
LINE #	a	b	c	d	e	f	
(\$ millions)							
Cash – domestic currency	1	-	1,837	-	1,115	20,218	37,525
Cash – other currencies	2	-	2,171	-	1,906	78,660	75,645
Domestic sovereign debt	3	-	181	-	1,299	49,470	31,246
Other sovereign debt	4	-	105	-	464	51,812	49,950
Government agency debt	5	-	1,018	-	1,135	8,361	17,819
Corporate bonds	6	-	-	-	205	13,893	11,663
Equity securities	7	-	-	-	2,289	31,654	50,136
Other collateral	8	-	-	-	-	-	-
Total	9	-	5,312	-	8,413	254,068	273,984

CCR5 - COMPOSITION OF COLLATERAL FOR CCR EXPOSURE (1)		Q2 2019					
		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
		Segregated	Unsegregated	Segregated	Unsegregated		
LINE #	a	b	c	d	e	f	
(\$ millions)							
Cash – domestic currency	1	-	1,556	-	1,970	18,029	36,767
Cash – other currencies	2	-	1,798	-	1,424	74,394	75,012
Domestic sovereign debt	3	-	261	-	1,307	49,366	28,351
Other sovereign debt	4	-	35	-	298	50,976	49,369
Government agency debt	5	-	698	-	696	5,276	15,873
Corporate bonds	6	-	49	-	196	4,209	11,284
Equity securities	7	-	4	-	1,469	33,461	46,143
Other collateral	8	-	-	-	-	-	-
Total	9	-	4,401	-	7,360	235,711	262,799

CCR5 - COMPOSITION OF COLLATERAL FOR CCR EXPOSURE (1)		Q1 2019					
		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
		Segregated	Unsegregated	Segregated	Unsegregated		
LINE #	a	b	c	d	e	f	
(\$ millions)							
Cash – domestic currency	1	-	1,921	-	1,510	20,198	36,045
Cash – other currencies	2	-	1,842	-	1,530	75,429	66,573
Domestic sovereign debt	3	-	305	-	786	53,207	30,672
Other sovereign debt	4	-	42	-	324	48,048	50,649
Government agency debt	5	-	619	-	423	4,003	11,685
Corporate bonds	6	-	35	-	37	7,916	19,249
Equity securities	7	-	-	-	931	29,748	45,156
Other collateral	8	-	-	-	-	1,068	-
Total	9	-	4,764	-	5,541	239,617	260,029

CCR5 - COMPOSITION OF COLLATERAL FOR CCR EXPOSURE (1)		Q4 2018					
		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
		Segregated	Unsegregated	Segregated	Unsegregated		
LINE #	a	b	c	d	e	f	
(\$ millions)							
Cash – domestic currency	1	-	1,487	-	908	20,636	40,936
Cash – other currencies	2	-	3,276	-	1,261	54,761	48,215
Domestic sovereign debt	3	-	164	-	636	54,622	28,312
Other sovereign debt	4	-	108	-	345	33,739	34,079
Government agency debt	5	-	640	-	350	1,909	8,921
Corporate bonds	6	-	33	-	-	7,735	16,459
Equity securities	7	-	-	-	-	23,106	39,832
Other collateral	8	-	-	-	-	1,074	-
Total	9	-	5,708	-	3,500	197,582	216,754

(1) Segregated refers to collateral which is held in a bankruptcy-remote manner whereas unsegregated refers to collateral that is not held in bankruptcy-remote manner.

CCR6 - CREDIT DERIVATIVES EXPOSURES (1)

(\$ millions)	LINE #	Q3 2019		Q2 2019		Q1 2019		Q4 2018	
		Protection bought	Protection sold	Protection bought	Protection sold	Protection bought	Protection sold	Protection bought	Protection sold
		a	b	c	d	e	f	g	h
Notionals									
	1	1,053	5	1,084	1	1,879	-	1,858	24
	2	10,192	7,655	7,703	5,328	4,358	1,877	1,977	797
	3	1,212	-	1,416	-	1,136	4	1,318	379
	4	660	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-
	6	13,117	7,660	10,203	5,329	7,373	1,881	5,153	1,200
Fair values									
	7	16	174	23	121	30	34	33	15
	8	255	-	197	-	111	-	53	1

(1) Long and short positions are reported separately and are not consolidated.

CCR8 - EXPOSURES TO CENTRAL COUNTERPARTIES (1)

(\$ millions)	Q3 2019		Q2 2019		Q1 2019		Q4 2018	
	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA
	a	b	c	d	e	f	g	h
1 Exposures to QCCPs (total)		517		535		568		664
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which								
2 (i) OTC derivatives	8,424	175	8,907	182	8,540	174	11,327	230
3 (ii) Exchange-traded derivatives	2,723	61	3,010	64	3,572	74	5,547	114
4 (iii) Securities financing transactions	4,635	93	4,532	91	3,783	76	4,534	91
5 (iv) Netting sets where cross-product netting has been approved	1,066	21	1,365	27	1,185	24	1,246	25
6 Segregated initial margin	-	-	-	-	-	-	-	-
7 Non-segregated initial margin	2,650	-	2,821	-	2,751	-	2,832	57
8 Pre-funded default fund contributions	670	342	640	353	702	394	695	377
9 Unfunded default fund contributions	-	-	-	-	-	-	-	-
11 Exposures to non-QCCPs (total)		-		-		-		-
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which								
12 (i) OTC derivatives	-	-	-	-	-	-	-	-
13 (ii) Exchange-traded derivatives	-	-	-	-	-	-	-	-
14 (iii) Securities financing transactions	-	-	-	-	-	-	-	-
15 (iv) Netting sets where cross-product netting has been approved	-	-	-	-	-	-	-	-
16 Segregated initial margin	-	-	-	-	-	-	-	-
17 Non-segregated initial margin	-	-	-	-	-	-	-	-
18 Pre-funded default fund contributions	-	-	-	-	-	-	-	-
19 Unfunded default fund contributions	-	-	-	-	-	-	-	-

(1) Effective Q1 2019, results reflect the new capital requirements for bank exposures to central counterparties as outlined in OSFI's CAR Guideline issued October 30, 2018.

DERIVATIVE INSTRUMENTS																					
LINE #	Q3 2019				Q2 2019				Q1 2019				Q4 2018				Q3 2018				
	Notional Amount	Replacement Cost (1)	Credit Risk Equivalent (1)	Risk-weighted Assets (2)	Notional Amount	Replacement Cost (1)	Credit Risk Equivalent (1)	Risk-weighted Assets (2)	Notional Amount	Replacement Cost (1)	Credit Risk Equivalent (1)	Risk-weighted Assets (2)	Notional Amount	Replacement Cost	Credit Risk Equivalent	Risk-weighted Assets	Notional Amount	Replacement Cost	Credit Risk Equivalent	Risk-weighted Assets	
Interest Rate Contracts																					
Over-the-counter Swaps (3)	1	4,135,002	3,335	8,132	2,001	4,198,293	2,733	7,454	1,503	3,956,228	2,760	7,652	1,358	3,831,997	8,514	10,699	3,555,230	8,236	10,970		
Forward rate agreements	2	314,127	76	1,041	224	497,011	60	900	172	566,076	373	1,227	215	411,573	36	34	297,845	24	24		
Purchased options	3	49,072	6	60	39	44,538	12	66	28	35,812	1	68	34	35,023	409	393	28,684	434	331		
Written options	4	40,492	35	148	95	33,615	41	185	104	44,529	29	176	96	48,721	-	-	39,650	-	-		
	5	4,538,693	3,452	9,381	2,359	4,773,457	2,846	8,605	1,907	4,602,645	3,163	9,123	1,703	4,327,314	8,959	11,126	704	3,921,409	8,694	11,325	669
Exchange traded																					
Futures	6	251,372	109	193	4	212,056	181	311	6	179,167	32	97	2	192,482	-	-	142,641	-	-		
Purchased options	7	8,551	-	-	-	9,725	4	8	-	12,530	13	24	1	26,629	-	-	15,405	-	-		
Written options	8	12,540	12	19	-	8,558	4	7	-	10,771	3	7	-	16,511	-	-	17,355	-	-		
	9	272,463	121	212	4	230,339	189	326	6	202,468	48	128	3	235,622	-	-	175,401	-	-		
Total Interest Rate Contracts	10	4,811,156	3,573	9,593	2,363	5,003,796	3,035	8,931	1,813	4,805,113	3,211	9,251	1,706	4,562,936	8,959	11,126	704	4,096,810	8,694	11,325	669
Foreign Exchange Contracts																					
Over-the-counter																					
Cross-currency swaps	11	587,889	1,064	5,642	904	594,386	1,454	6,555	1,087	570,412	1,257	6,482	1,134	548,148	8,305	22,741	532,287	8,747	22,789		
Forward foreign exchange contracts	12	406,872	1,971	7,415	1,335	443,439	1,644	7,273	1,248	412,838	1,807	6,729	1,100	472,323	4,453	8,373	450,962	3,661	6,818		
Purchased options	13	34,162	31	139	42	33,466	51	177	55	27,893	42	159	46	21,468	225	424	25,626	233	476		
Written options	14	32,393	10	98	28	31,325	11	100	29	32,308	6	84	25	24,018	-	-	28,138	-	-		
	15	1,061,316	3,076	13,294	2,309	1,102,616	3,160	14,105	2,419	1,043,451	3,112	13,454	2,305	1,065,957	12,983	31,538	2,544	1,037,013	12,641	30,083	2,302
Exchange traded																					
Futures	16	1,030	1	4	-	578	1	2	-	607	4	9	-	739	-	-	963	-	-		
Purchased options	17	1,783	21	32	1	2,401	7	14	-	3,516	17	32	1	2,625	-	-	2,493	-	-		
Written options	18	1,563	17	26	1	1,834	2	4	-	2,089	3	6	-	1,420	-	-	1,089	-	-		
	19	4,376	39	62	2	4,813	10	20	-	6,212	24	47	1	4,784	-	-	4,545	-	-		
Total Foreign Exchange Contracts	20	1,065,692	3,115	13,356	2,311	1,107,429	3,170	14,125	2,419	1,049,663	3,136	13,501	2,306	1,070,741	12,983	31,538	2,544	1,041,558	12,641	30,083	2,302
Commodity Contracts																					
Over-the-counter																					
Swaps	21	24,597	460	2,584	763	25,610	691	3,193	992	22,692	575	2,618	741	24,366	1,559	4,450	22,340	1,630	4,304		
Purchased options	22	6,607	40	444	109	6,969	68	496	131	6,098	32	327	85	6,182	335	1,108	6,143	434	1,185		
Written options	23	4,562	8	210	52	4,359	20	211	50	3,854	6	162	33	4,233	-	-	4,446	-	-		
	24	35,766	508	3,238	924	36,938	779	3,900	1,173	32,644	613	3,107	859	34,781	1,894	5,558	1,188	32,929	2,064	5,489	1,136
Exchange traded																					
Futures	25	32,026	762	1,620	32	33,628	838	1,781	36	30,999	728	1,511	30	33,104	-	-	31,279	-	-		
Purchased options	26	3,186	124	207	4	2,562	49	98	2	2,434	123	191	4	3,303	-	-	3,753	-	-		
Written options	27	4,897	190	318	6	4,938	77	160	3	4,369	46	97	2	4,909	-	-	5,143	-	-		
	28	40,109	1,076	2,145	42	41,128	964	2,039	41	37,802	897	1,799	36	41,316	-	-	40,175	-	-		
Total Commodity Contracts	29	75,875	1,584	5,383	966	78,066	1,743	5,939	1,214	70,446	1,510	4,906	895	76,097	1,894	5,558	1,188	73,104	2,064	5,489	1,136
Equity Contracts																					
Over-the-counter	30	53,695	258	4,338	1,304	59,819	336	5,062	1,402	46,765	256	4,712	1,351	53,107	1,585	4,332	50,793	840	3,431		
Exchange traded	31	30,663	907	2,216	44	32,684	982	2,147	43	29,194	715	1,808	36	33,687	-	-	31,580	-	-		
Total Equity Contracts	32	84,358	1,165	6,554	1,348	92,503	1,318	7,209	1,445	75,959	971	6,520	1,387	86,794	1,585	4,332	431	82,373	840	3,431	442
Credit Default Swaps (4)	33	8,918	193	382	32	7,741	123	278	91	4,508	85	238	83	3,490	10	55	83	2,430	5	55	63
Sub-total	34	6,045,999	9,630	35,268	7,020	6,289,535	9,389	38,482	6,982	6,005,689	8,913	34,416	6,377	5,800,058	25,431	52,609	4,950	5,296,275	24,244	50,383	4,612
Impact of master netting agreements	35	n.a.	-	-	-	n.a.	-	-	-	n.a.	-	-	-	n.a.	(15,575)	(29,170)	-	-	(15,454)	(28,614)	-
Total	36	6,045,999	9,630	35,268	7,020	6,289,535	9,389	38,482	6,982	6,005,689	8,913	34,416	6,377	5,800,058	9,856	23,439	4,950	5,296,275	8,790	21,769	4,612

(1) Effective Q1 2019, Replacement Cost and Credit Risk Equivalent are presented after the impact of master netting agreements and calculated using the SA-CCR in accordance with the CAR Guideline issued by OSFI on October 30, 2018. Prior periods have not been restated.

(2) Effective Q1 2019, results reflect the new capital requirements for bank exposures to central clearing counterparties in OSFI's CAR Guideline issued October 30, 2018.

(3) Risk-weighted assets are reported after the impact of master netting agreements and application of scaling factor where applicable.

(4) Interest Rate Contracts includes Interest Rate Netting Swaps.

(5) Long and short positions are reported consolidated.

SEC1 - SECURITIZATION EXPOSURES IN THE BANKING BOOK (1)

(\$ millions)	Q3 2019									
	Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
	a	b	c	d	e	f	g	h	i	
1	Total retail, of which:	3,488	-	3,488	10,406	-	10,406	8	-	8
2	Residential mortgage (2)	883	-	883	2,722	-	2,722	8	-	8
3	Credit card	2,204	-	2,204	957	-	957	-	-	-
4	Other retail exposures	401	-	401	6,727	-	6,727	-	-	-
5	Re-securitization	-	-	-	-	-	-	-	-	-
6	Total wholesale, of which:	72	8,620	8,692	6,111	-	6,111	40	-	40
7	Loans to corporates	72	8,620	8,692	208	-	208	-	-	-
8	Commercial mortgage	-	-	-	-	-	-	-	-	-
9	Lease and receivables	-	-	-	5,416	-	5,416	32	-	32
10	Other wholesale	-	-	-	487	-	487	8	-	8
11	Re-securitization	-	-	-	-	-	-	-	-	-

SEC1 - SECURITIZATION EXPOSURES IN THE BANKING BOOK (1)

(\$ millions)	Q2 2019									
	Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
	a	b	c	d	e	f	g	h	i	
1	Total retail, of which:	3,602	-	3,602	10,555	-	10,555	-	-	-
2	Residential mortgage (2)	975	-	975	2,791	-	2,791	-	-	-
3	Credit card	2,153	-	2,153	965	-	965	-	-	-
4	Other retail exposures	474	-	474	6,799	-	6,799	-	-	-
5	Re-securitization	-	-	-	-	-	-	-	-	-
6	Total wholesale, of which:	50	5,579	5,629	6,170	-	6,170	8	-	8
7	Loans to corporates	50	5,579	5,629	211	-	211	-	-	-
8	Commercial mortgage	-	-	-	-	-	-	-	-	-
9	Lease and receivables	-	-	-	5,468	-	5,468	-	-	-
10	Other wholesale	-	-	-	491	-	491	8	-	8
11	Re-securitization	-	-	-	-	-	-	-	-	-

SEC1 - SECURITIZATION EXPOSURES IN THE BANKING BOOK (1)

(\$ millions)	Q1 2019									
	Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
	a	b	c	d	e	f	g	h	i	
1	Total retail, of which:	4,225	-	4,225	10,239	-	10,239	-	-	-
2	Residential mortgage (2)	1,024	-	1,024	2,324	-	2,324	-	-	-
3	Credit card	2,204	-	2,204	729	-	729	-	-	-
4	Other retail exposures	997	-	997	7,186	-	7,186	-	-	-
5	Re-securitization	-	-	-	-	-	-	-	-	-
6	Total wholesale, of which:	49	5,786	5,835	6,127	-	6,127	8	-	8
7	Loans to corporates	49	5,786	5,835	207	-	207	-	-	-
8	Commercial mortgage	-	-	-	-	-	-	-	-	-
9	Lease and receivables	-	-	-	5,432	-	5,432	-	-	-
10	Other wholesale	-	-	-	488	-	488	8	-	8
11	Re-securitization	-	-	-	-	-	-	-	-	-

SEC1 - SECURITIZATION EXPOSURES IN THE BANKING BOOK (1)

(\$ millions)	Q4 2018									
	Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
	a	b	c	d	e	f	g	h	i	
1	Total retail, of which:	4,110	-	4,110	10,298	-	10,298	-	-	-
2	Residential mortgage (2)	1,079	-	1,079	2,803	-	2,803	-	-	-
3	Credit card	1,873	-	1,873	731	-	731	-	-	-
4	Other retail exposures	1,158	-	1,158	6,764	-	6,764	-	-	-
5	Re-securitization	-	-	-	-	-	-	-	-	-
6	Total wholesale, of which:	49	4,417	4,466	6,273	-	6,273	8	-	8
7	Loans to corporates	49	4,417	4,466	207	-	207	-	-	-
8	Commercial mortgage	-	-	-	-	-	-	-	-	-
9	Lease and receivables	-	-	-	5,578	-	5,578	-	-	-
10	Other wholesale	-	-	-	488	-	488	8	-	8
11	Re-securitization	-	-	-	-	-	-	-	-	-

(1) The amounts disclosed represent the carrying value of securitization exposures in the banking book, including securitization exposures where the criteria for recognition of risk transference are not met. As at July 31, 2019, \$312 million (\$379 million at April 30, 2019, \$978 million at January 31, 2019 and \$1,106 million at October 31, 2018) of securitization exposures did not qualify for risk transference. The table excludes securitization-related assets of \$8,190 million at July 31, 2019 (\$8,384 million at April 30, 2019, \$6,542 million at January 31, 2019 and \$5,977 million at October 31, 2018) that are not subject to capital requirements but consolidated on the balance sheet for accounting purposes.

(2) Excludes mortgage-backed securities that do not involve the tranching of credit risk (e.g. NHA MBS) which are not considered securitizations as per OSFI's CAR Guideline, Chapter 7, Structured Credit Products.

SEC2 - SECURITIZATION EXPOSURES IN THE TRADING BOOK

(\$ millions)		Q3 2019									
		Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
		a	b	c	d	e	f	g	h	i	
1	Total retail, of which:	-	-	-	-	-	-	-	454	-	454
2	Residential mortgage	-	-	-	-	-	-	-	158	-	158
3	Credit card	-	-	-	-	-	-	-	95	-	95
4	Auto loans/leases	-	-	-	-	-	-	-	164	-	164
5	Student loans	-	-	-	-	-	-	-	27	-	27
6	Other retail exposures	-	-	-	-	-	-	-	10	-	10
7	Re-securitization	-	-	-	-	-	-	-	-	-	-
8	Total wholesale, of which:	-	-	-	-	-	-	-	177	-	177
9	Loans to corporates	-	-	-	-	-	-	-	11	-	11
10	Commercial mortgage	-	-	-	-	-	-	-	85	-	85
11	Lease and receivables	-	-	-	-	-	-	-	58	-	58
12	Auto floorplan	-	-	-	-	-	-	-	19	-	19
13	Insurance premium	-	-	-	-	-	-	-	-	-	-
14	Other wholesale	-	-	-	-	-	-	-	4	-	4
15	Re-securitization	-	-	-	-	-	-	-	-	-	-

SEC2 - SECURITIZATION EXPOSURES IN THE TRADING BOOK

(\$ millions)		Q2 2019									
		Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
		a	b	c	d	e	f	g	h	i	
1	Total retail, of which:	-	-	-	-	-	-	-	252	-	252
2	Residential mortgage	-	-	-	-	-	-	-	80	-	80
3	Credit card	-	-	-	-	-	-	-	51	-	51
4	Auto loans/leases	-	-	-	-	-	-	-	105	-	105
5	Student loans	-	-	-	-	-	-	-	14	-	14
6	Other retail exposures	-	-	-	-	-	-	-	2	-	2
7	Re-securitization	-	-	-	-	-	-	-	-	-	-
8	Total wholesale, of which:	-	-	-	-	-	-	-	140	-	140
9	Loans to corporates	-	-	-	-	-	-	-	-	-	-
10	Commercial mortgage	-	-	-	-	-	-	-	47	-	47
11	Lease and receivables	-	-	-	-	-	-	-	59	-	59
12	Auto floorplan	-	-	-	-	-	-	-	6	-	6
13	Insurance premium	-	-	-	-	-	-	-	-	-	-
14	Other wholesale	-	-	-	-	-	-	-	28	-	28
15	Re-securitization	-	-	-	-	-	-	-	-	-	-

SEC2 - SECURITIZATION EXPOSURES IN THE TRADING BOOK

(\$ millions)		Q1 2019									
		Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
		a	b	c	d	e	f	g	h	i	
1	Total retail, of which:	-	-	-	-	-	-	-	371	-	371
2	Residential mortgage	-	-	-	-	-	-	-	61	-	61
3	Credit card	-	-	-	-	-	-	-	83	-	83
4	Auto loans/leases	-	-	-	-	-	-	-	210	-	210
5	Student loans	-	-	-	-	-	-	-	7	-	7
6	Other retail exposures	-	-	-	-	-	-	-	10	-	10
7	Re-securitization	-	-	-	-	-	-	-	-	-	-
8	Total wholesale, of which:	-	-	-	-	-	-	-	128	-	128
9	Loans to corporates	-	-	-	-	-	-	-	12	-	12
10	Commercial mortgage	-	-	-	-	-	-	-	19	-	19
11	Lease and receivables	-	-	-	-	-	-	-	46	-	46
12	Auto floorplan	-	-	-	-	-	-	-	4	-	4
13	Insurance premium	-	-	-	-	-	-	-	-	-	-
14	Other wholesale	-	-	-	-	-	-	-	47	-	47
15	Re-securitization	-	-	-	-	-	-	-	-	-	-

SEC2 - SECURITIZATION EXPOSURES IN THE TRADING BOOK

(\$ millions)		Q4 2018									
		Bank acts as originator			Bank acts as sponsor			Bank acts as investor			
		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	
		a	b	c	e	f	g	i	j	k	
1	Total retail, of which:	-	-	-	-	-	-	-	282	-	282
2	Residential mortgage	-	-	-	-	-	-	-	32	-	32
3	Credit card	-	-	-	-	-	-	-	126	-	126
4	Auto loans/leases	-	-	-	-	-	-	-	113	-	113
5	Student loans	-	-	-	-	-	-	-	10	-	10
6	Other retail exposures	-	-	-	-	-	-	-	1	-	1
7	Re-securitization	-	-	-	-	-	-	-	-	-	-
8	Total wholesale, of which:	-	-	-	-	-	-	-	87	-	87
9	Loans to corporates	-	-	-	-	-	-	-	15	-	15
10	Commercial mortgage	-	-	-	-	-	-	-	-	-	-
11	Lease and receivables	-	-	-	-	-	-	-	35	-	35
12	Auto floorplan	-	-	-	-	-	-	-	24	-	24
13	Insurance premium	-	-	-	-	-	-	-	7	-	7
14	Other wholesale	-	-	-	-	-	-	-	6	-	6
15	Re-securitization	-	-	-	-	-	-	-	-	-	-

SEC3 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS ORIGINATOR OR AS SPONSOR) (1) (2)

	Q3 2019																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	1250% RW	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	25,395	2,032	1	32	53	24,413	2,206	893	-	3,619	221	663	-	283	18	53	-
2 Traditional securitization	17,853	2,032	1	32	46	16,664	2,206	893	-	2,366	221	663	-	183	18	53	-
3 Of which securitization	17,853	2,032	1	32	46	16,664	2,206	893	-	2,366	221	663	-	183	18	53	-
4 Of which retail underlying	11,691	1,826	1	17	46	11,329	2,206	45	-	1,613	221	560	-	127	18	45	-
5 Of which wholesale	5,962	206	-	15	-	5,335	-	848	-	753	-	103	-	56	-	8	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	7,742	-	-	-	7	7,749	-	-	-	1,253	-	-	-	100	-	-	-
10 Of which securitization	7,742	-	-	-	7	7,749	-	-	-	1,253	-	-	-	100	-	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	7,742	-	-	-	7	7,749	-	-	-	1,253	-	-	-	100	-	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SEC3 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS ORIGINATOR OR AS SPONSOR) (1) (2)

	Q2 2019																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	1250% RW	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	22,802	2,043	1	28	58	22,006	2,156	770	-	3,197	216	719	-	251	18	57	-
2 Traditional securitization	17,875	2,043	1	28	51	17,072	2,156	770	-	2,365	216	719	-	184	18	57	-
3 Of which securitization	17,875	2,043	1	28	51	17,072	2,156	770	-	2,365	216	719	-	184	18	57	-
4 Of which retail underlying	11,873	1,835	1	18	51	11,572	2,156	50	-	1,624	216	626	-	127	18	50	-
5 Of which wholesale	6,002	208	-	10	-	5,500	-	720	-	741	-	93	-	57	-	7	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	4,927	-	-	-	7	4,934	-	-	-	832	-	-	-	67	-	-	-
10 Of which securitization	4,927	-	-	-	7	4,934	-	-	-	832	-	-	-	67	-	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	4,927	-	-	-	7	4,934	-	-	-	832	-	-	-	67	-	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SEC3 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS ORIGINATOR OR AS SPONSOR) (1) (2)

	Q1 2019																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	1250% RW	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	22,770	1,971	19	62	6	21,888	2,207	733	-	3,696	221	336	-	255	18	27	-
2 Traditional securitization	17,644	1,971	19	58	-	16,752	2,207	733	-	2,798	221	336	-	183	18	27	-
3 Of which securitization	17,644	1,971	19	58	-	16,752	2,207	733	-	2,798	221	336	-	183	18	27	-
4 Of which retail underlying	11,900	1,592	1	23	-	11,289	2,207	20	-	1,947	221	244	-	118	18	20	-
5 Of which wholesale	5,744	379	18	35	-	5,463	-	713	-	851	-	92	-	65	-	7	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	5,126	-	-	4	6	5,136	-	-	-	898	-	-	-	72	-	-	-
10 Of which securitization	5,126	-	-	4	6	5,136	-	-	-	898	-	-	-	72	-	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	5,126	-	-	4	6	5,136	-	-	-	898	-	-	-	72	-	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SEC3 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS ORIGINATOR OR AS SPONSOR) (1)

	Q4 2018																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	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%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	23,487	55	2	3	39	3,004	20,582	-	-	529	1,775	-	-	43	148	-	-
2 Traditional securitization	19,571	20	2	3	29	3,004	16,621	-	-	529	1,364	-	-	43	115	-	-
3 Of which securitization	19,571	20	2	3	29	3,004	16,621	-	-	529	1,364	-	-	43	115	-	-
4 Of which retail underlying	13,254	20	2	2	24	3,004	10,298	-	-	529	803	-	-	43	68	-	-
5 Of which wholesale	6,317	-	-	1	5	-	6,323	-	-	-	561	-	-	-	47	-	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	3,916	35	-	-	10	-	3,961	-	-	-	411	-	-	-	33	-	-
10 Of which securitization	3,916	35	-	-	10	-	3,961	-	-	-	411	-	-	-	33	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	3,916	35	-	-	10	-	3,961	-	-	-	411	-	-	-	33	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) Effective Q1 2019, securitization capital requirements are calculated in accordance with new securitization framework in OSF's CAR Guideline issued October 30, 2018.
 (2) Only includes securitization exposures where the risk transferance recognition criteria are met in accordance with OSF's CAR Guidelines, Chapter 7, Structured Credit Products.
 (3) Exposure amounts are net of collateral.
 (4) RWA before application of the KIRB cap.

SEC4 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS INVESTOR) (1) (2)

(\$ millions)	Q3 2019																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	1250% RW	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	40	-	8	-	-	8	40	-	-	1	11	-	-	-	-	-	-
2 Traditional securitization	40	-	8	-	-	8	40	-	-	1	11	-	-	-	-	-	-
3 Of which securitization	40	-	8	-	-	8	40	-	-	1	11	-	-	-	-	-	-
4 Of which retail underlying	8	-	-	-	-	8	-	-	-	1	-	-	-	-	-	-	-
5 Of which wholesale	32	-	8	-	-	-	40	-	-	-	11	-	-	-	-	-	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SEC4 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS INVESTOR) (1) (2)

(\$ millions)	Q2 2019																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	1250% RW	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
2 Traditional securitization	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
3 Of which securitization	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
4 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Of which wholesale	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SEC4 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS INVESTOR) (1) (2)

(\$ millions)	Q1 2019																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	1250% RW	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA including IAA	SEC-SA	1250%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
2 Traditional securitization	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
3 Of which securitization	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
4 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Of which wholesale	-	-	8	-	-	-	8	-	-	-	5	-	-	-	-	-	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SEC4 - SECURITIZATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED CAPITAL REQUIREMENTS (BANK ACTING AS INVESTOR) (2)

(\$ millions)	Q4 2018																
	Exposure values by RW bands (3)				Exposure values by regulatory approach (3)					RWA by regulatory approach (4)				Capital charge after cap			
	≤20%	>20% to 50%	>50% to 100%	>100% to <1250%	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%
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
1 Total exposures	8	-	-	-	-	8	-	-	-	1	-	-	-	1	-	-	-
2 Traditional securitization	8	-	-	-	-	8	-	-	-	1	-	-	-	1	-	-	-
3 Of which securitization	8	-	-	-	-	8	-	-	-	1	-	-	-	1	-	-	-
4 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Of which wholesale	8	-	-	-	-	8	-	-	-	1	-	-	-	1	-	-	-
6 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Of which securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Of which retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Of which wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13 Of which re-securitization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) Effective Q1 2019, securitization capital requirements are calculated in accordance with new securitization framework in OSFI's CAR Guideline issued October 30, 2018.
 (2) Only includes securitization exposures where the risk transferance recognition criteria are met in accordance with OSFI's CAR Guidelines, Chapter 7, Structured Credit Products.
 (3) Exposure amounts are net of collateral.
 (4) RWA before application of the KIRB cap.

MARKET RISK RISK-WEIGHTED ASSETS (RWA) MOVEMENT BY KEY DRIVERS

(\$ millions)	LINE #	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3
Market Risk RWA, beginning of quarter	1	12,332	14,820	13,532	11,097	10,415
Movement in risk levels (1)	2	(242)	(1,993)	1,615	(980)	1,643
Model updates (2)	3	-	-	-	399	44
Methodology and policy (3)	4	(1,377)	(495)	(327)	(178)	(1,005)
Acquisition and disposals	5	-	-	-	3,194	-
Foreign exchange movement and others	6	-	-	-	-	-
Market Risk RWA, end of quarter	7	10,713	12,332	14,820	13,532	11,097

(1) Movement in risk levels includes changes in exposures and market movements.

(2) Model updates includes updates to risk models to reflect recent experience and changes in model scope.

(3) Methodology and policy includes methodology changes to the calculations driven by regulatory policy changes, such as new or revised regulation.

ESTIMATED AND ACTUAL LOSS PARAMETERS UNDER AIRB APPROACH

(\$ millions except as noted)

Risk Profile	LINE #	Q3 2019					
		PD (1) (2)		LGD (3) (4)		EAD (5) (6)	
		Average estimated	Actual	Average estimated	Actual	Estimated	Actual
Wholesale							
Corporate including specialized lending	1	0.84%	0.40%	34.18%	27.98%	291	161
Corporate small and medium enterprises (SMEs)	2	1.17%	0.48%	38.77%	23.59%	108	59
Sovereign	3	0.10%	0.00%	16.19%	0.00%	-	-
Bank	4	0.41%	0.00%	14.81%	0.00%	-	-
Retail							
Residential mortgages excluding home equity line of credits (HELOCs) - Uninsured only (7) (8)	5	0.96%	0.64%	25.65%	12.97%	273	273
HELOCs (8)	6	0.47%	0.47%	34.12%	19.22%	191	182
Qualifying revolving retail (QRR)	7	1.27%	1.15%	84.36%	74.72%	503	486
Other retail (excl. SMEs)	8	5.43%	4.75%	83.70%	75.76%	325	324
Retail SMEs	9	1.24%	0.88%	96.34%	79.59%	42	36

ESTIMATED AND ACTUAL LOSS PARAMETERS UNDER AIRB APPROACH

(\$ millions except as noted)

Risk Profile	LINE #	Q2 2019					
		PD (1) (2)		LGD (3) (4)		EAD (5) (6)	
		Average estimated	Actual	Average estimated	Actual	Estimated	Actual
Wholesale							
Corporate including specialized lending	1	0.85%	0.43%	34.25%	19.60%	213	180
Corporate small and medium enterprises (SMEs)	2	1.25%	0.48%	38.51%	24.95%	123	91
Sovereign	3	0.11%	0.00%	15.78%	0.00%	-	-
Bank	4	0.33%	0.00%	14.46%	0.00%	-	-
Retail							
Residential mortgages excluding home equity line of credits (HELOCs) - Uninsured only (7) (8)	5	0.96%	0.59%	25.26%	13.87%	260	260
HELOCs (8)	6	0.52%	0.40%	34.73%	19.84%	170	161
Qualifying revolving retail (QRR)	7	1.35%	1.10%	84.20%	74.69%	479	463
Other retail (excl. SMEs)	8	5.33%	4.65%	83.96%	74.95%	317	316
Retail SMEs	9	1.28%	0.74%	95.33%	77.81%	51	44

ESTIMATED AND ACTUAL LOSS PARAMETERS UNDER AIRB APPROACH

(\$ millions except as noted)

Risk Profile	LINE #	Q1 2019					
		PD (1) (2)		LGD (3) (4)		EAD (5) (6)	
		Average estimated	Actual	Average estimated	Actual	Estimated	Actual
Wholesale							
Corporate including specialized lending	1	0.83%	0.42%	35.03%	21.43%	264	225
Corporate small and medium enterprises (SMEs)	2	1.26%	0.49%	38.27%	21.91%	118	87
Sovereign	3	0.11%	0.00%	15.05%	0.00%	-	-
Bank	4	0.31%	0.00%	14.72%	0.00%	-	-
Retail							
Residential mortgages excluding home equity line of credits (HELOCs) - Uninsured only (7) (8)	5	0.98%	0.59%	24.59%	13.85%	244	244
HELOCs (8)	6	0.57%	0.42%	34.58%	20.18%	178	171
Qualifying revolving retail (QRR)	7	1.37%	1.12%	84.31%	75.24%	476	461
Other retail (excl. SMEs)	8	5.42%	4.97%	85.16%	79.28%	321	320
Retail SMEs	9	1.25%	0.81%	95.80%	77.96%	48	42

ESTIMATED AND ACTUAL LOSS PARAMETERS UNDER AIRB APPROACH

(\$ millions except as noted)

Risk Profile	LINE #	Q4 2018					
		PD (1) (2)		LGD (3) (4)		EAD (5) (6)	
		Average estimated	Actual	Average estimated	Actual	Estimated	Actual
Wholesale							
Corporate including specialized lending	1	0.83%	0.44%	35.31%	19.59%	268	228
Corporate small and medium enterprises (SMEs)	2	1.26%	0.53%	38.43%	22.58%	68	65
Sovereign	3	0.11%	0.00%	14.93%	0.00%	-	-
Bank	4	0.31%	0.00%	17.30%	0.00%	-	-
Retail							
Residential mortgages excluding home equity line of credits (HELOCs) - Uninsured only (7) (8)	5	0.97%	0.64%	25.67%	14.34%	250	250
HELOCs (8)	6	0.57%	0.47%	34.60%	20.04%	190	184
Qualifying revolving retail (QRR)	7	1.30%	1.15%	84.12%	79.00%	484	468
Other retail (excl. SMEs)	8	4.97%	4.53%	84.04%	77.44%	328	328
Retail SMEs	9	1.17%	0.83%	95.86%	78.51%	47	42

(1) Wholesale PDs are based on a borrower weighted average. There have been no Bank or Sovereign defaults in the past 12 months.

(2) Retail PD is based on account weighted average.

(3) Wholesale LGDs are expressed as an exposure weighted average. The LGD figures include back-dated resolved facilities.

(4) Retail LGD is based on weighted average of LGD eligible accounts.

(5) Wholesale EAD represented predicted vs. realized comparison for defaults in the previous 12 months. Term products are not included. There have been no defaults in the Bank and Sovereign asset classes within the past 12 months.

(6) Retail EAD represents predicted vs. realized comparison for defaults in the previous 12 months.

(7) Mortgages insured by Canada Mortgage and Housing Corporation and private mortgage insurers are primarily included in Sovereign.

(8) Investor-owned mortgages are included in the Other Retail asset class.

AIRB (Advanced Internal Ratings Based approach): The AIRB approach is the most advanced of the range of options for determining the capital requirements for credit risk. This option allows banks to use their own internal model to measure credit risk capital requirements, subject to regulatory approval. OSFI has indicated that it expects the largest Canadian Banks to adopt the AIRB approach.

Basel Capital Floor: A capital floor is measured based on the Basel standardized approach for credit risk and internal model for market risk, as prescribed by OSFI in CAR.

Capital Adequacy Requirements (CAR): OSFI's Capital Adequacy Requirements guideline.

Credit Conversion Factor (CCF) converts an off balance sheet exposure to its credit exposure equivalent.

Credit Risk Mitigation (CRM) are techniques under the CAR that banks use to mitigate credit risk and applicable capital, including exposures collateralized by first priority claims, in whole or in part with cash or securities, a loan exposure guaranteed by a third party, or a credit derivative to offset various forms of credit risk.

Credit valuation adjustment (CVA) is the adjustment that a bank must add as capital charge to cover the risk of mark-to-market losses on the expected counterparty risk to OTC derivatives.

The **Current exposure method (CEM)** is a method to calculate the exposure at default for OTC derivatives when the Internal Models Method (IMM) is not used.

Drawn: The amount of funds invested or advanced to a customer.

Exposure at Default (EAD): EAD for on-balance sheet amounts represents outstandings, grossed up by provisions for credit losses on impaired loans and write-offs. EAD for undrawn and other off-balance sheet are estimated using CCFs.

Exposure at Default OTC Derivatives: Represent the net gross positive replacement costs plus the potential credit exposure amount.

HELOCs: Home Equity Lines of Credit comprise lines of credit secured by equity in a residential property.

OSFI: Office of the Superintendent of Financial Institutions.

Pillar 3: OSFI prescribed regulatory disclosures to promote market discipline.

Qualifying central counterparty (QCCP) is an entity that is licensed to operate as a central counterparty (CCP) and is permitted by the appropriate regulator/overseer to operate as such with respect to the products offered.

RWA Density is the ratio of Σ risk weighted assets / (total exposures post CCF and post CRM). It provides a synthetic metric on riskiness of each portfolio.

SA-CCR is the Standardized Approach for Counterparty Credit Risk. Effective Q1 2019, SA-CCR replaces CEM as the methodology to calculate exposure at default for OTC derivatives when the Internal Models Method (IMM) is not used.

Scaling Factor: Regulatory requirement of an incremental multiplier of 1.06 applied to AIRB credit risk RWA.

Securities Financing Transactions (SFT): transactions such as repurchase agreements, reverse repurchase agreements, security lending and borrowing, and wholesale margin lending transactions.

Standardized Approach: This approach allows banks to measure capital requirements by multiplying exposures by defined percentages based on the exposures product type and external credit rating (if applicable).

Value at risk (VaR) is a measure of how much a set of investments might lose (with a given probability), given normal market conditions, in a set time period.