

SUPPLEMENTARY REGULATORY CAPITAL DISCLOSURES



July 31, 2019

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(1) Refer to Q4 2018 Supplementary Regulatory Capital Disclosures for this annual requirement.

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This Appendix disclosure is based on OSFI's Pillar 3 disclosure requirements (April 2017), including subsequently issued Total Loss Absorbing Capital (May 2018) and Leverage ratio disclosure requirements (November 2018), and are primarily sourced from the BCBS' Revised Pillar 3 disclosure requirements - Phase 1 (2015). This document is not audited and should be read in conjunction with our 2018 Annual Report.

Effective November 1, 2012, Canadian banks are subject to the revised capital adequacy requirements as published by the Basel Committee on Banking Supervision (BCBS) and commonly referred to as Basel III, as per OSFI's Capital Adequacy Requirements Guideline (CAR). Basel III builds on the "International Convergence of Capital Measurement and Capital Standards: A Revised Framework" (Basel II). Refer to page 2 "Basel III Implementation".

The Basel III Framework is comprised of three Pillars:

- Pillar 1 – methodologies that must be applied to calculate the minimum capital requirements.
- Pillar 2 – the requirement that banks have internal processes to assess their capital adequacy in relation to their strategies, risk appetite and actual risk profile. Regulators are expected to review these internal capital adequacy assessments.
- Pillar 3 – reflects the market disclosures required by banks to assist users of the information to better understand the risk profile.

Basel III classifies risk into three broad categories: credit risk, market risk and operational risk. Under Pillar 1 of the Basel III Framework, minimum capital for these three risks is calculated using one of the following approaches:

- Credit risk capital – Internal Ratings Based Approach (Advanced or Foundation) or Standardized Approach.
- Operational risk capital – Advanced Measurement Approach (AMA), Standardized Approach or Basic Indicator Approach.
- Market risk capital - Internal models or Standardized Approach.

Credit Risk

The credit risk component consists of on- and off- balance sheet claims. The Basel III rules are not applied to traditional balance sheet categories but to categories of on- and off- balance sheet exposures which represent general classes of assets/exposures (Corporate, Sovereign, Bank, Retail and Equity) based on their different underlying risk characteristics.

Generally, while calculating capital requirements, exposure types such as Corporate, Sovereign, Bank, Retail and Equity are analyzed by the following credit risk exposure sub-types: Drawn, Undrawn, Repo-style Transactions, Over-the-counter (OTC) Derivatives, Exchange Traded Derivatives and Other Off-balance Sheet claims.

OSFI approved the Bank's use of the Advanced Internal Ratings Based (AIRB) approach for credit risk in its material Canadian, US and European portfolios and for a significant portion of international corporate and commercial portfolios and Canadian retail portfolios. The Bank uses internal estimates, based on historical experience, for probability of default (PD), loss given default (LGD) and exposure at default (EAD). As described in CR2 of this Supplementary Regulatory Capital Disclosure, the definition of regulatory capital default is consistent with the accounting definitions described in the Bank's annual report, except that all products, including credit cards, may be defaulted when a contractual payment is 90 days in arrears.

- Under the AIRB approach, credit risk risk-weighted assets (RWA) are calculated by multiplying the capital requirement (K) by EAD times 12.5, where K is a function of the PD, LGD, maturity and prescribed correlation factors. This results in the capital calculations being more sensitive to underlying risks.

- Risk weights for exposures falling under the Securitization Framework are mainly computed under 2 approaches: the External Ratings-Based Approach (ERBA), or the OSFI approved Internal Assessments Approach (IAA).
- ERBA risk weights for other banking book exposures depend on the external ratings provided by the external credit assessment institutions (ECAI): S&P, Moody's and DBRS and are risk-weighted based on prescribed percentages incorporating effective maturity and STC (Simple, Transparent, Comparable) criteria, a mapping process consistent with OSFI's CAR.
- IAA risk weights for exposures to our asset-backed commercial paper conduits are based on a rating methodology similar to the criteria that are published by ECAIs and therefore are similar to the methodologies used by these institutions. Our ratings process includes a comparison of the available credit enhancement in a securitization structure to a stressed level of projected losses. The stress level used is determined by the desired risk profile of the transaction. As a result, we stress the cash flows of a given transaction at a higher level in order to achieve a higher rating. Conversely, transactions that only pass lower stress levels achieve lower ratings. We periodically compare our own ratings to ECAIs ratings to ensure that the ratings provided by ECAIs are reasonable. We have developed asset class specific criteria guidelines which provide the rating methodologies for different asset classes. The guidelines are reviewed periodically and are subject to a model validation process, for compliance with Basel rules. The Bank's Global Risk Management (GRM) is responsible for providing risk assessments for capital purposes. GRM is independent of the business originating the securitization exposures and performs its own analysis, sometimes in conjunction with but always independent of the applicable business.
- A multiplier of 1.25 is applied to the correlation parameter of all exposures to all unregulated Financial Institutions, and regulated Financial Institutions with assets of at least US\$100 billion.
- Exchange-traded derivatives and other exposures to CCPs which previously were excluded from the capital calculation under Basel II are risk-weighted under Basel III.
- An overall scaling factor of 6% is added to the credit risk RWA for all AIRB portfolios. For the remaining portfolios, the Standardized Approach is used to compute credit risk.
- The Standardized Approach applies regulator prescribed risk weight factors to credit exposures based on the external credit assessments (public ratings), where available, and also considers other additional factors (e.g. loan-to-value for retail, eligible collateral, allowances, etc.)

Operational Risk

OSFI has approved Scotiabank's application to use the Advanced Measurement Approach (AMA) for Operational Risk, subject to a capital floor based on the Standardized Approach, in the first quarter of 2017. The Bank also utilizes the Standardized Approach for operational risk for units not covered under AMA. AMA utilizes risk drivers for capital movements (such as internal loss experience, business environment and internal control factors, external loss experience, and scenarios); while the Standardized Approach is based on a fixed percentage ranging from 12% to 18% of the average of the previous three years' gross income. As at this reporting date, excluding the capital floor add-on requirement, the Bank's AMA RWA represents more than 80% of total operational risk RWA.

Market Risk

The Bank uses both internal models and standardized approaches to calculate market risk capital. Commencing Q1 2012, the Bank implemented additional market risk measures in accordance with Basel's Revisions of the Basel II market risk framework (July 2009). Additional measures include stressed Value-at-Risk, incremental risk charge and comprehensive risk measure.

This "Supplementary Regulatory Capital Disclosure" including the main features template that sets out a summary of information on the terms and conditions of the main features of all capital instruments is posted on the Bank's website as follows: <http://www.scotiabank.com/ca/en/0,,3066,00.htm>

BASEL III IMPLEMENTATION



Canadian banks are subject to the revised capital adequacy requirements as published by the Basel Committee on Banking Supervision (BCBS) - commonly referred to as Basel III - effective November 1, 2012. Basel III builds on the "International Convergence of Capital Measurement and Capital Standards: A Revised Framework" (Basel II). The Office of the Superintendent of Financial Institutions (OSFI) has issued guidelines, reporting requirements and disclosure guidance which are consistent with the Basel III reforms (except for implementation dates described below).

As compared to previous standards, Basel III places a greater emphasis on common equity by introducing a new category of capital, Common Equity Tier 1 (CET1), which consists primarily of common shareholders equity net of regulatory adjustments. These regulatory adjustments include goodwill, intangible assets, deferred tax assets, pension assets and investments in financial institutions over certain thresholds. Overall, the Basel III rules increase the level of regulatory deductions relative to Basel II. Basel III also increases the level of risk-weighted assets for significant investments and deferred tax amounts due to temporary timing differences under defined thresholds, exposures to large or unregulated financial institutions meeting specific criteria, exposures to centralized counterparties and exposures that give rise to wrong way risk.

To enable banks to meet the new standards, Basel III contains transitional arrangements commencing January 1, 2013, through January 1, 2019. Transitional requirements result in a phase-in of new deductions to common equity over 5 years. Under the transitional rules, all CET1 deductions are multiplied by a factor during the transitional period, beginning with 0% in 2013, 20% in 2014, 40% in 2015, 60% in 2016, 80% in 2017 and 100% in 2018 and going forward. The portion of the CET1 regulatory adjustments not deducted during the transitional period will continue to be subject to Basel II treatment. In addition, non-qualifying capital instruments will be phased-out over 10 years and the capital conservation buffer will be phased in over 4 years. As of January 2019, the banks are required to meet new minimum requirements related to risk-weighted assets of: Common Equity Tier 1 ratio of 4.5% plus a capital conservation buffer of 2.5%, collectively 7%. Including the capital conservation buffer, the minimum Tier 1 ratio is 8.5%, and the Total capital ratio is 10.5%.

OSFI required Canadian deposit-taking institutions to fully implement the 2019 Basel III reforms in 2013, without the transitional phase-in provisions for capital deductions, and achieve a minimum 7% common equity target, by the first quarter of 2013 along with a minimum Tier 1 ratio of 7% and Total capital ratio of 10%. Since the first quarter of 2014, the minimum Tier 1 ratio rose to 8.5% and the Total capital ratio rose to 10.5%.

The BCBS issued the rules on the assessment methodology for global systemically important banks (G-SIBs) and their additional loss absorbency requirements. In their view, additional policy measures for G-SIBs are required due to negative externalities (i.e., adverse side effects) created by systemically important banks which are not fully addressed by current regulatory policies. The assessment methodology for G-SIBs is based on an indicator-based approach and comprises five broad categories: size, interconnectedness, lack of readily available substitutes, global (cross-jurisdictional) activity and complexity. Additional loss absorbency requirements may range from 1% to 3.5% Common Equity Tier 1 depending upon a bank's systemic importance and will be introduced in parallel with the Basel III capital conservation and countercyclical buffers from 2016 through to 2019. Scotiabank is not designated as a G-SIB.

Since similar externalities can apply at a domestic level, the BCBS extended the G-SIBs framework to domestic systemically important banks (D-SIBs) focusing on the impact that a distress or failure would have on a domestic economy. Given that the D-SIB framework complements the G-SIB framework, the Committee considers that it would be appropriate if banks identified as D-SIBs by their national authorities are required by those authorities to comply with the principles in line with phase-in arrangements for the G-SIB framework, i.e., January 2016. In a March 2013 advisory letter, OSFI designated the 6 largest banks in Canada as domestic systemically important banks (D-SIBs), increasing their minimum capital ratio requirements by 1% for the identified D-SIBs. This 1% surcharge is applicable to all minimum capital ratio requirements for CET1, Tier 1 and Total Capital.

As of January 2016, the Scotiabank and other Canadian D-SIB banks are also required to meet new D-SIB minimum requirements; a minimum Common Equity Tier 1 ratio of 8.0%, Tier 1 ratio of 9.5% and a Total capital ratio of 11.5% as a Pillar 1 requirement.

In June 2018, in order to provide increased transparency to the market, OSFI clarified its additional requirement for its Domestic Stability Buffer, already held by D-SIBs as a Pillar 2 buffer requirement. The Domestic Stability Buffer will range between 0 and 2.5% of a bank's total RWA. The buffer is presently set at 2.0%, effective October 2019. OSFI will review the buffer on at least a semi-annual basis.

In December 2013, OSFI announced its decision to implement the phase-in (over 5 years) of the regulatory capital for Credit Valuation Adjustment (CVA) on Bilateral OTC Derivatives effective Q1 2014. In accordance with OSFI's requirements, commencing in Q1, 2019, the CVA risk-weighted assets have been fully phased-in (scalars of 0.80, 0.83 and 0.86, were used to compute the CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively in Fiscal 2018).

OSFI required Canadian deposit-taking institutions to implement the BCBS' countercyclical buffer requirements, starting Q1, 2017. The countercyclical buffer is only applicable to private sector credit exposures in jurisdictions with published buffer requirements. At present only five jurisdictions apply a non-zero countercyclical buffer and the Bank's exposures within these five jurisdictions are not material.

Risk-weighted assets are computed on an all-in Basel III basis unless otherwise indicated. All-in is defined as capital calculated to include all of the regulatory adjustments that is required commencing 2019 but retaining the phase-out rules for non-qualifying capital instruments.

As at January 31, 2013, all of the Bank's preferred shares, capital instruments and subordinated debentures did not meet these additional criteria and are subject to phase-out commencing January 2013. The Bank reserves the right to redeem, call or repurchase any capital instruments within the terms of each offering at any time in the future.

Commencing in 2015, the Bank issued subordinated debentures, additional Tier 1 instruments, and preferred shares which contain non-viability contingent capital (NVCC) provisions necessary for the preferred shares and debentures to qualify as Tier 1 or Tier 2 regulatory capital. Under the NVCC provisions, the preferred shares and debentures are convertible into a variable number of common shares upon: (i) the public announcement by OSFI that the Bank has ceased, or is about to cease, to be viable; or (ii) by a federal or provincial government of Canada that the Bank accepted or agreed to accept a capital injection.

In addition to risk-based capital requirements, the Basel III reforms introduced a simpler, non risk-based Leverage ratio requirement to act as a supplementary measure to its risk-based capital requirements. The Leverage ratio is defined as a ratio of Basel III Tier 1 capital to a leverage exposure measure which includes on-balance sheet assets and off-balance sheet commitments, derivatives and securities financing transactions, as defined within the requirements. As a member of the BCBS, OSFI has adopted the Basel III Leverage requirements as part of its domestic requirements for banks, bank holding companies, federally regulated trust and loan companies in Canada.

In November 2018, OSFI revised its Leverage Requirements Guideline which outlines the application of the Basel III Leverage ratio in Canada. Institutions are expected to maintain a material operating buffer above the 3% minimum. The Bank meets OSFI's authorized leverage ratio. Commencing Q1 2015, disclosure in accordance with OSFI's September 2018 Public Disclosure Requirements related to Basel III Leverage ratio has been made in the Supplementary Regulatory Capital Disclosures.

Since the introduction of Basel II in 2008, OSFI has prescribed a minimum capital floor requirement for institutions that use the AIRB approach for credit risk. Effective Q2 2018, OSFI replaced the Basel I regulatory capital floor with a capital floor based on 70% of the Basel II standardized approach for credit risk RWAs (increasing to 72.5% in Q3 2018 and to 75% thereafter). Revised capital floor requirements also include risk-weighted assets for market risk and CVA.

On September 23, 2018, the regulations under the Canada Deposit Insurance Corporation Act (Canada) (the "CDIC Act") and the Bank Act (Canada) (collectively, the "Bail-In Regulations") providing the details of conversion, issuance and compensation regimes for bail-in instruments issued by D-SIBs, including the Bank, came into force. On April 18, 2018, OSFI issued guidelines on Total Loss Absorbing Capacity (TLAC), which will apply to Canada's D-SIBs as part of the Federal Government's bail-in regime. OSFI provided notification requiring systemically important banks to maintain a minimum of 21.5% plus the domestic stability buffer of TLAC eligible instruments relative to their RWAs and 6.75% relative to their leverage exposures, effective Q1 2022. The Bank is required to disclose its TLAC ratios. Please refer to KM2.

REGULATORY CAPITAL HIGHLIGHTS

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(in \$MM)	Basel III					
	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018
Common Equity Tier 1 capital	46,565	46,193	45,344	44,443	46,777	45,025
Tier 1 capital	51,371	51,709	50,869	50,187	52,540	50,708
Total capital	61,546	60,855	59,796	57,364	59,837	57,716
Risk-weighted Assets⁽¹⁾						
CET1 Capital Risk-weighted Assets	417,058	415,212	408,565	400,507	411,426	375,901
Tier 1 Capital Risk-weighted Assets	417,058	415,212	408,565	400,680	411,604	376,042
Total Capital Risk-weighted Assets	417,058	415,212	408,565	400,853	411,783	376,183
Capital Ratios (%)						
Common Equity Tier 1 (as a percentage of risk-weighted assets)	11.2	11.1	11.1	11.1	11.4	12.0
Tier 1 (as a percentage of risk-weighted assets)	12.3	12.5	12.5	12.5	12.8	13.5
Total capital (as a percentage of risk-weighted assets)	14.8	14.7	14.6	14.3	14.5	15.3
Leverage:						
Leverage Exposures	1,211,612	1,204,111	1,167,691	1,119,099	1,071,975	1,060,648
Leverage Ratio (%)	4.2	4.3	4.4	4.5	4.9	4.8
OSFI Pillar 1 Target: All-in Basis (%)						
Common Equity Tier 1 minimum ratio	8.0	8.0	8.0	8.0	8.0	8.0
Tier 1 capital all-in minimum ratio	9.5	9.5	9.5	9.5	9.5	9.5
Total capital all-in minimum ratio	11.5	11.5	11.5	11.5	11.5	11.5
Leverage all-in minimum ratio	3.0	3.0	3.0	3.0	3.0	3.0
Capital instruments subject to phase-out arrangements						
Current cap on Additional Tier 1 (AT1) instruments subject to phase-out arrangements (%)	30	30	30	40	40	40
Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	-	113	113	-	110	110
Current cap on Tier 2 (T2) instruments subject to phase-out arrangements (%)	30	30	30	40	40	40
Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	-	-	-	-	-

(1) As per OSFI guideline, effective Q1 2014, Credit Valuation Adjustment (CVA) RWA on derivatives were phased-in using Scalars. Commencing in Q1, 2019, the CVA risk-weighted assets have been fully phased-in (scalars of 0.80, 0.83 and 0.86, were used to compute the CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively in Fiscal 2018).

EXPOSURE AT DEFAULT AND RISK-WEIGHTED ASSETS FOR CREDIT RISK PORTFOLIOS

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(in \$MM)	Sub-type	Q3 2019								Q2 2019	
		AIRB		Standardized		Total		% AIRB		Total	
Exposure Type		EAD ⁽¹⁾	RWA ⁽²⁾	EAD ⁽¹⁾	RWA ⁽²⁾	EAD ⁽¹⁾	RWA ⁽²⁾	EAD ⁽¹⁾	RWA ⁽²⁾	EAD ⁽¹⁾	RWA ⁽²⁾
Non-Retail											
Corporate	Drawn	167,798	82,310	53,599	51,056	221,397	133,366	76%	62%	220,434	133,937
	Undrawn	89,870	32,402	3,874	3,841	93,744	36,243	96%	89%	93,664	36,589
	Other ⁽³⁾	42,251	10,381	4,047	3,999	46,298	14,380	91%	72%	50,722	15,583
	Total	299,919	125,093	61,520	58,896	361,439	183,989	83%	68%	364,820	186,109
Bank	Drawn	21,208	4,266	2,198	1,745	23,406	6,011	91%	71%	20,471	6,070
	Undrawn	2,202	319	34	34	2,236	353	98%	90%	2,347	389
	Other ⁽³⁾	9,083	1,078	63	61	9,146	1,139	99%	95%	9,202	1,125
	Total	32,493	5,663	2,295	1,840	34,788	7,503	93%	75%	32,020	7,584
Sovereign	Drawn	96,365	3,438	6,937	1,525	103,302	4,963	93%	69%	112,214	5,255
	Undrawn	811	93	30	29	841	122	96%	76%	792	94
	Other ⁽³⁾	2,042	64	3	-	2,045	64	100%	100%	2,317	99
	Total	99,218	3,595	6,970	1,554	106,188	5,149	93%	70%	115,323	5,448
Total Non-Retail	Drawn	285,371	90,014	62,734	54,326	348,105	144,340			353,119	145,262
	Undrawn	92,883	32,814	3,938	3,904	96,821	36,718			96,803	37,072
	Other ⁽³⁾	53,376	11,523	4,113	4,060	57,489	15,583			62,241	16,807
	Total	431,630	134,351	70,785	62,290	502,415	196,641			512,163	199,141
Retail											
Residential Mortgages	Drawn	213,658	18,850	48,322	20,454	261,980	39,304	82%	48%	257,512	38,212
	Undrawn	-	-	-	-	-	-			-	-
	Total	213,658	18,850	48,322	20,454	261,980	39,304	82%	48%	257,512	38,212
Secured Lines Of Credit	Drawn	21,213	3,861	-	-	21,213	3,861	100%	100%	21,176	3,735
	Undrawn	18,263	1,085	-	-	18,263	1,085	100%	100%	17,952	1,054
	Total	39,476	4,946	-	-	39,476	4,946	100%	100%	39,128	4,789
Qualifying Revolving Retail Exposures (QRRE)	Drawn	15,994	9,134	-	-	15,994	9,134	100%	100%	15,874	8,852
	Undrawn	29,176	3,705	-	-	29,176	3,705	100%	100%	28,409	3,568
	Total	45,170	12,839	-	-	45,170	12,839	100%	100%	44,283	12,420
Other Retail	Drawn	31,971	15,791	45,325	33,697	77,296	49,488	41%	32%	76,140	47,937
	Undrawn	2,296	712	-	-	2,296	712	100%	100%	2,010	610
	Total	34,267	16,503	45,325	33,697	79,592	50,200	43%	33%	78,150	48,547
Total Retail	Drawn	282,836	47,636	93,647	54,151	376,483	101,787			370,702	98,736
	Undrawn	49,735	5,502	-	-	49,735	5,502			48,371	5,232
	Total	332,571	53,138	93,647	54,151	426,218	107,289			419,073	103,968
Securitizations ⁽⁴⁾		18,407	260	4,985	1,803	23,392	2,063	79%	13%	23,713	2,049
Trading Derivatives		21,755	6,434	1,497	1,445	23,252	7,879	94%	82%	21,067	7,102
Derivatives - credit valuation adjustment ⁽⁵⁾		-	5,405	-	-	-	5,405			-	5,840
Total Credit Risk (Excluding Equities & Other Assets)		804,363	199,588	170,914	119,689	975,277	319,277			976,016	318,100
Equities		2,118	2,067	-	-	2,118	2,067	100%	100%	2,014	1,892
Other Assets ⁽⁶⁾		-	-	58,135	29,504	58,135	29,504			61,616	30,337
Total Credit Risk (Before Scaling Factor)		806,481	201,655	229,049	149,193	1,035,530	350,848			1,039,646	350,329
Add-on for 6% Scaling Factor ⁽⁷⁾			11,759				11,759				11,364
Total Credit Risk		806,481	213,414	229,049	149,193	1,035,530	362,607			1,039,646	361,693

(1) Exposure at default, before credit risk mitigation for AIRB exposures, after related IFRS 9 allowances for credit losses for Standardized exposures.

(2) Risk-Weighted Assets used for calculation of CET1, Tier 1, and Total Capital ratios.

(3) Includes lending instruments such as letters of credit and letters of guarantee; banking book derivatives and repo-style exposures, net of related collateral.

(4) Transitional provisions benefit under OSFI's revised securitizations framework, are applied to AIRB securitization portfolio RWA only.

(5) In accordance with OSFI's requirements, commencing Q1 2019, the CVA risk-weighted assets, have been fully phased-in.

(6) Other Assets include exposures related to central counterparties (CCPs).

(7) The Basel Framework requires an additional 6% scaling factor to AIRB credit risk portfolios (excluding CVA, exposures with a risk weight of 1250%, and Securitizations under ERBA/IAA).

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



(in \$MM)		a	a ₂	a ₃
		Q3 2019	Q2 2019	Q1 2019
Resolution group 1				
1	Total Loss Absorbing Capacity (TLAC) available	68,561	65,656	61,274
2	Total RWA at the level of the resolution group	417,058	415,212	408,565
3	TLAC as a percentage of RWA (row 1 / row 2) (%)	16.4%	15.8%	15.0%
4	Leverage exposure measure at the level of the resolution group	1,211,612	1,204,111	1,167,691
5	TLAC as a percentage of leverage exposure measure (row 1 / row 4) (%)	5.7%	5.5%	5.2%
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

Summary of Qualitative Requirements - Pillar III (Cross Referenced)



Item #	Pillar III - Requirements - Qualitative	Frequency	2018 Annual Report: MD&A	2018 Annual Report: Financial Statements	Regulatory Capital Supplementary Package	Financial Reporting Supplementary Package
			Page Reference			
	Part 2 - OVA – Bank risk management approach	Annual				
	Banks must describe their risk management objectives and policies, in particular:	Annual				
(a)	How the business model determines and interacts with the overall risk profile (eg the key risks related to the business model and how each of these risks is reflected and described in the risk disclosures) and how the risk profile of the bank interacts with the risk tolerance approved by the board.	Annual	72-109			
(b)	The risk governance structure: responsibilities attributed throughout the bank (eg oversight and delegation of authority; breakdown of responsibilities by type of risk, business unit etc); relationships between the structures involved in risk management processes (eg board of directors, executive management, separate risk committee, risk management structure, compliance function, internal audit function).	Annual	72-76			
(c)	Channels to communicate, decline and enforce the risk culture within the bank (eg code of conduct; manuals containing operating limits or procedures to treat violations or breaches of risk thresholds; procedures to raise and share risk issues between business lines and risk functions).	Annual	73-77			
(d)	The scope and main features of risk measurement systems.	Annual	75, 78, 83, 92-95, 106			
(e)	Description of the process of risk information reporting provided to the board and senior management, in particular the scope and main content of reporting on risk exposure.	Annual	73-75, 92			
(f)	Qualitative information on stress testing (eg portfolios subject to stress testing, scenarios adopted and methodologies used, and use of stress testing in risk management).	Annual	75-76, 80, 92-93, 95, 97	233-234		
(g)	The strategies and processes to manage, hedge and mitigate risks that arise from the bank's business model and the processes for monitoring the continuing effectiveness of hedges and mitigants.	Annual	76, 80, 84-87, 92, 94-96, 97	160, 181-185		
	Part 3 - LIA – Explanations of differences between accounting and regulatory exposures amounts	Annual				
	Banks must explain the origins of the differences between accounting amounts, as reported in financial statements amounts and regulatory exposure amounts, as displayed in templates LI1 and LI2.	Annual				
(a)	Banks must explain the origins of any significant differences between the amounts in columns (a) and (b) in LI1.	Annual			LI1	
(b)	Banks must explain the origins of differences between carrying values and amounts considered for regulatory purposes shown in LI2.	Annual			LI2	
	In accordance with the implementation of the guidance on prudent valuation, banks must describe systems and controls to ensure that the valuation estimates are prudent and reliable. Disclosure must include:	Annual				

Summary of Qualitative Requirements - Pillar III (Cross Referenced)



Item #	Pillar III - Requirements - Qualitative	Frequency	2018 Annual Report: MD&A	2018 Annual Report: Financial Statements	Regulatory Capital Supplementary Package	Financial Reporting Supplementary Package
			Page Reference			
	• Valuation methodologies, including an explanation of how far mark-to-market and mark-to-model methodologies are used.	Annual	85, 111-112	153, 159, 169-171, 175, 234		
(c)	• Description of the independent price verification process.	Annual	111-112	169-170		
	• Procedures for valuation adjustments or reserves (including a description of the process and the methodology for valuing trading positions by type of instrument).	Annual	111-112	153		
	Part 4 - CRA – General qualitative information about credit risk	Annual				
	Banks must describe their risk management objectives and policies for credit risk, focusing in particular on:	Annual				
(a)	How the business model translates into the components of the bank's credit risk profile	Annual	78, 83			
(b)	Criteria and approach used for defining credit risk management policy and for setting credit risk limits	Annual	83			
(c)	Structure and organization of the credit risk management and control function	Annual	83			
(d)	Relationships between the credit risk management, risk control, compliance and internal audit functions	Annual	73-74, 83			
(e)	Scope and main content of the reporting on credit risk exposure and on the credit risk management function to the executive management and to the board of directors	Annual	83			
	Part 4 - CRB – Additional disclosure related to the credit quality of assets	Annual				
	Banks must provide the following disclosures:					
	Qualitative disclosures	Annual				
(a)	The scope and definitions of "past due" and "impaired" exposures used for accounting purposes and the differences, if any, between the definition of past due and default for accounting and regulatory purposes.	Annual		155, 157	Overview	
(b)	The extent of past-due exposures (more than 90 days) that are not considered to be impaired and the reasons for this.	Annual		155, 157, 197		
(c)	Description of methods used for determining impairments.	Annual		153-155		
(d)	The bank's own definition of a restructured exposure. (i.e. modified loans)	Annual		155		
	Quantitative disclosures	Annual				
(e)	Breakdown of exposures by geographical areas, industry and residual maturity;	Annual				
	(i) Geography	Annual	120, 125	190		
	(ii) Industry	Annual	122			
	(iii) Residual Maturity	Annual	104, 125	191		

Summary of Qualitative Requirements - Pillar III (Cross Referenced)



Item #	Pillar III - Requirements - Qualitative	Frequency	2018 Annual Report: MD&A	2018 Annual Report: Financial Statements	Regulatory Capital Supplementary Package	Financial Reporting Supplementary Package
			Page Reference			
(f)	Amounts of impaired exposures (according to the definition used by the bank for accounting purposes) and related allowances and write-offs, broken down by geographical areas and industry;	Annual				
	(i) Geography - refer to Q4 2018 Supplementary Regulatory Capital Disclosures	Annual				
	(ii) Industry - refer to Q4 2018 Supplementary Regulatory Capital Disclosures	Annual				
(g)	Ageing analysis of accounting past-due exposures;	Annual		197		
(h)	Breakdown of restructured exposures between impaired and not impaired	Annual		195		
	Part 4 - Table CRC: Qualitative disclosure requirements related to credit risk mitigation techniques	Annual				
	Banks must disclose:	Annual				
(a)	Core features of policies and processes for, and an indication of the extent to which the bank makes use of, on- and off-balance sheet netting.	Annual	84, 85	179-180, 181, 185		
(b)	Core features of policies and processes for collateral evaluation and management.	Annual	84			
(c)	Information about market or credit risk concentrations under the credit risk mitigation instruments used (ie by guarantor type, collateral and credit derivative providers).	Annual	78, 83-85, 87	231		
	Part 4 - CRD: Qualitative disclosures on banks' use of external credit ratings under the standardized approach for credit risk	Annual				
	A. For portfolios that are risk-weighted under the standardized approach for credit risk, banks must disclose the following information:	Annual				
(a)	Names of the external credit assessment institutions (ECAIs) and export credit agencies (ECAs) used by the bank, and the reasons for any changes over the reporting period;	Annual	64	231-232		
(b)	The asset classes for which each ECAI or ECA is used;	Annual	64	228, 232	EAD_RWA	
(c)	A description of the process used to transfer the issuer to issue credit ratings onto comparable assets in the banking book (see paragraphs 99–101 of the Basel framework); and	Annual	64	232		
(d)	The alignment of the alphanumerical scale of each agency used with risk buckets (except where the relevant supervisor publishes a standard mapping with which the bank has to comply).	Annual	64	232		
	Part 4 - CRE: Qualitative disclosures related to IRB models	Annual				
	Banks must provide the following information on their use of IRB models:	Annual				
(a)	Internal model development, controls and changes: role of the functions involved in the development, approval and subsequent changes of the credit risk models.	Annual	65-66, 83, 85			

Summary of Qualitative Requirements - Pillar III (Cross Referenced)



Item #	Pillar III - Requirements - Qualitative	Frequency	2018 Annual Report: MD&A	2018 Annual Report: Financial Statements	Regulatory Capital Supplementary Package	Financial Reporting Supplementary Package
			Page Reference			
(b)	Relationships between risk management function and internal audit function and procedure to ensure the independence of the function in charge of the review of the models from the functions responsible for the development of the models.	Annual	72, 74			
(c)	Scope and main content of the reporting related to credit risk models.	Annual	64-66	228-232	Overview	
(d)	Scope of the supervisor's acceptance of approach.	Annual	64			
(e)	For each of the portfolios, the bank must indicate the part of EAD within the group (in percentage of total EAD) covered by standardized, FIRB and AIRB approach and the part of portfolios that are involved in a roll-out plan.	Annual			Overview EAD RWA	
(f)	The number of key models used with respect to each portfolio, with a brief discussion of the main differences among the models within the same portfolios.	Annual	64-66	228-232		
(g)	Description of the main characteristics of the approved models: (i) definitions, methods and data for estimation and validation of PD (eg how PDs are estimated for low default portfolios; if there are regulatory floors; the drivers for differences observed between PD and actual default rates at least for the last three periods); and where applicable: (ii) LGD (eg methods to calculate downturn LGD; how LGDs are estimated for low default portfolio; the time lapse between the default event and the closure of the exposure); (iii) credit conversion factors, including assumptions employed in the derivation of these variables;	Annual	64-66	228-232		
	Part 5 - CCRA: Qualitative disclosure related to counterparty credit risk	Annual				
	Banks must provide:	Annual				
(a)	Risk management objectives and policies related to counterparty credit risk, including:	Annual				
(b)	The method used to assign the operating limits defined in terms of internal capital for counterparty credit exposures and for CCP exposures;	Annual	73-74, 83	179-180, 228		
(c)	Policies relating to guarantees and other risk mitigants and assessments concerning counterparty risk, including exposures towards CCPs;	Annual	75, 83	180, 232		
(d)	Policies with respect to wrong-way risk exposures;	Annual	85	239		
(e)	The impact in terms of the amount of collateral that the bank would be required to provide given a credit rating downgrade.	Annual	99			

Summary of Qualitative Requirements - Pillar III (Cross Referenced)



Item #	Pillar III - Requirements - Qualitative	Frequency	2018 Annual Report: MD&A	2018 Annual Report: Financial Statements	Regulatory Capital Supplementary Package	Financial Reporting Supplementary Package
			Page Reference			
	Part 6 - SECA: Qualitative disclosure requirements related to securitization exposures	Annual				
	Qualitative disclosures	Annual				
	Banks must describe their risk management objectives and policies for securitization activities and main features of these activities according to the framework below. If a bank holds securitization positions reflected both in the regulatory banking book and in the regulatory trading book, the bank must describe each of the following points by distinguishing activities in each of the regulatory books.	Annual				
	(a) The bank's objectives in relation to securitization and re-securitization activity, including the extent to which these activities transfer credit risk of the underlying securitized exposures away from the bank to other entities, the type of risks assumed and the types of risks retained.	Annual	67-69, 101, 113	198-200		
	(b) The bank must provide a list of:	Annual				
	• special purpose entities (SPEs) where the bank acts as sponsor (but not as an originator such as an Asset Backed Commercial Paper (ABCP) conduit), indicating whether the bank consolidates the SPEs into its scope of regulatory consolidation;	Annual	67-69	197-200		
	• affiliated entities (i) that the bank manages or advises and (ii) that invest either in the securitization exposures that the bank has securitized or in SPEs that the bank sponsors; and	Annual	68-69	198-200		
	• a list of entities to which the bank provides implicit support and the associated capital impact for each of them (as required in paragraphs 551 and 564 of the securitization framework).	Annual	n/a			
	(c) Summary of the bank's accounting policies for securitization activities.	Annual	113	197-200		
	(d) If applicable, the names of external credit assessment institution (ECAIs) used for securitizations and the types of securitization exposure for which each agency is used.	Annual			Overview	
	(e) If applicable, describe the process for implementing the Basel internal assessment approach (IAA). The description should include:	Annual			Overview	
	• structure of the internal assessment process and relation between internal assessment and external ratings, including information on ECAIs as referenced in item (d) of this table;	Annual			Overview	
	• control mechanisms for the internal assessment process including discussion of independence, accountability, and internal assessment process review; and	Annual			Overview	
	• the exposure type to which the internal assessment process is applied; and stress factors used for determining credit enhancement levels, by exposure type. ²⁴	Annual			Overview	
	(f) Banks must describe the use of internal assessment other than for IAA capital purposes.	Annual	n/a			

Summary of Qualitative Requirements - Pillar III (Cross Referenced)



Item #	Pillar III - Requirements - Qualitative	Frequency	2018 Annual Report: MD&A	2018 Annual Report: Financial Statements	Regulatory Capital Supplementary Package	Financial Reporting Supplementary Package
			Page Reference			
	Part 7 - Market risk					
	OSFI revised Pillar 3 Market Risk disclosure requirements allow for a continuation of the existing Basel 2.5 Market Risk disclosures until the implementation of the next phase of Pillar 3 disclosures in Canada. As a result, the Bank's Market Risk disclosures continue to be based on Basel 2.5 disclosure requirements. OSFI's requirements for Pillar 3 Requirements may be found in (http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gld/Pages/plr3.aspx).		n/a			
	Part 8 - Operational risk					
	(a) In addition to the general qualitative disclosure requirement (paragraph 824), the approach(es) for operational risk capital assessment for which the bank qualifies.	Annual	67			
	(b) Description of the advanced measurement approaches for operational risk (AMA), if used by the bank, including a discussion of relevant internal and external factors considered in the bank's measurement approach. In the case of partial use, the scope and coverage of the different approaches used/applied in regulatory capital.	Annual	67	106	Overview	
	(c) For banks using the AMA, a description of the use of insurance for the purpose of mitigating operational risk.		n/a			
	Part 9 - Interest rate risk in the banking book (IRRBB)					
	(a) The general qualitative disclosure requirement (paragraph 824), including the nature of IRRBB and key assumptions, including assumptions regarding loan prepayments and behaviour of non-maturity deposits, and frequency of IRRBB measurement.	Annual	93-94	233		

OV1 – Overview of RWA



(in \$MM)		a	b	b ₂	b ₃	c
		CET1 RWA ⁽¹⁾				Minimum capital requirements ⁽²⁾
		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2019
1	Credit risk (excluding counterparty credit risk)	323,138	322,206	315,486	309,711	25,851
2	Of which: standardized approach (SA) ⁽³⁾	128,419	134,356	131,647	131,766	10,274
3	Of which: foundation internal ratings-based (F-IRB) approach	-	-	-	-	-
4	Of which: supervisory slotting approach	-	-	-	-	-
5	Of which: advanced internal ratings-based (A-IRB) approach	194,719	187,850	183,839	177,945	15,577
6	Counterparty credit risk (CCR)	13,951	13,699	12,798	13,196	1,116
7	Of which: standardized approach for counterparty credit risk (SA-CCR) ⁽⁴⁾	1,494	1,265	2,373	2,354	120
8	Of which: Internal Model Method (IMM)	7,449	6,810	5,994	6,547	595
9	Of which: other CCR ⁽⁵⁾	5,008	5,624	4,431	4,295	401
10	Credit valuation adjustment (CVA)	5,405	5,840	5,861	4,616	432
11	Equity positions under the simple risk weight approach	-	-	-	-	-
12	Equity investments in funds – look-through approach	435	412	347	307	35
13	Equity investments in funds – mandate-based approach	157	162	143	175	13
14	Equity investments in funds – fall-back approach	102	2	3	1	8
15	Settlement risk	-	-	-	-	-

OV1 – Overview of RWA



(in \$MM)		a	b	b ₂	b ₃	c
		CET1 RWA ⁽¹⁾				Minimum capital requirements ⁽²⁾
		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2019
16	Securitization exposures in banking book	4,959	4,945	5,202	2,424	397
16a	Less: Offset for 2019 transitional adjustment ⁽⁶⁾	(2,896)	(2,896)	(2,896)	-	(232)
17	Of which: securitization internal ratings-based approach (SEC-IRBA)	-	-	-	-	-
18	Of which: securitization external ratings-based approach (SEC-ERBA), including internal assessment approach (IAA)	4,886	4,871	5,120	2,424	391
19	Of which: securitization standardized approach (SEC-SA)	73	74	82	-	6
20	Market risk	7,755	7,049	9,023	8,357	620
21	Of which: standardized approach (SA)	527	466	406	380	42
22	Of which: internal model approaches (IMA)	7,228	6,583	8,617	7,977	578
23	Capital charge for switch between trading book and banking book	-	-	-	-	-
24	Operational risk	46,696	46,471	45,596	45,054	3,736
25	Amounts below the thresholds for deduction (subject to 250% risk weight)	17,356	17,322	17,002	16,666	1,389
26	Floor adjustment	-	-	-	-	-
27	Total (1 + 6 + 10 + 11 + 12 + 13 + 14 + 15 + 16 + 16a + 20 + 23 + 24 + 25 + 26)	417,058	415,212	408,565	400,507	33,365

(1) RWA: risk-weighted assets according to the Basel framework, including the 1.06 scaling factor.

(2) Minimum capital requirement: Pillar 1 capital requirements are RWA * 8%.

(3) Includes equities under the AIRB Materiality Threshold which are risk weighted at 100% plus the 6% scalar requirement.

(4) SA-CCR was implemented for Capital reporting in Q1, 2019. Figures for Q4, 2018 in line 7 are based on Current Exposure Method (CEM).

(5) Includes SFT and CCP Default Fund.

(6) Adjustment required for transitional provisions (12 months) under OSFI's revised securitizations framework effective Q1 2019.

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



Q3 2019 (in \$MM)	a	b	c	d	e	f	g
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Subject to credit risk framework	Subject to counterparty credit risk framework	Carrying values of items: ⁽²⁾		Not subject to capital requirements or subject to deduction from capital ⁽³⁾
					Subject to the securitization framework	Subject to the market risk framework	
Assets							
Cash and deposits with financial institutions	45,262	45,123	45,123	-	-	-	-
Precious metals	3,572	3,572	3,572	-	-	3,572	-
Trading assets							
Securities	115,988	115,982	23	-	-	115,959	-
Loans	14,158	14,158	7,893	-	-	13,635	-
Other	922	922	-	-	-	922	-
Financial instruments designated at fair value through profit or loss	13	13	13	-	-	-	-
Securities purchased under resale agreements and securities borrowed	119,478	119,470	-	119,470	-	-	-
Derivative financial instruments	36,157	36,157	-	36,157	-	32,283	-
Investment securities	82,592	81,507	81,507	-	-	-	-
Loans							
Residential mortgages ⁽⁴⁾	265,170	265,008	265,008	-	-	-	-
Personal loans	98,679	98,667	97,089	-	1,578	-	-
Credit cards	17,933	17,933	14,185	-	570	-	3,178
Business and government	212,655	212,649	205,769	-	6,722	-	158
Allowance for credit loss	(5,194)	(5,193)	(5,058)	-	-	-	(135)
Customers' liability under acceptances, net of allowance	13,923	13,923	13,923	-	-	-	-
Property and equipment	2,634	2,631	2,631	-	-	-	-
Investments in associates	5,496	5,666	4,843	-	-	-	823
Goodwill and other intangible assets	17,612	18,124	1,846	-	-	-	16,278
Deferred tax assets	1,706	1,706	1,411	-	-	-	295
Other assets	17,984	15,343	10,414	4,662	-	-	267
Total assets	1,066,740	1,063,361	750,192	160,289	8,870	166,371	20,864

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



Q3 2019 (in \$MM)	a	b	c	d	e	f	g
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Carrying values of items: ⁽²⁾				
			Subject to credit risk framework	Subject to counterparty credit risk framework	Subject to the securitization framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital ⁽³⁾
Liabilities							
Deposits							
Personal	222,895	222,895	-	-	-	-	222,895
Business and government	456,806	456,806	-	-	-	-	456,806
Financial institutions	42,645	42,645	-	-	-	-	42,645
Financial instruments designated at fair value through profit or loss	11,536	11,536	-	-	-	-	11,536
Acceptances	13,932	13,932	-	-	-	-	13,932
Obligations related to securities sold short	25,669	25,669	-	-	-	25,669	-
Derivative financial instruments	37,307	37,307	-	37,307	-	31,772	-
Obligations related to securities sold under repurchase agreements and securities lent	120,555	120,555	-	120,555	-	-	-
Subordinated debentures	9,021	9,021	-	-	-	-	9,021
Other liabilities	56,243	52,864	-	-	-	5,100	47,764
Total liabilities	996,609	993,230	-	157,862	-	62,541	804,599

(1) Based on the Consolidated Statement of Financial Position as reported in the Bank's Q3 2019 Quarterly Report. Effective Q1 2018, the Bank fully adopted IFRS 9 (Financial Instruments).

(2) A single item may attract capital charges according to more than one risk category framework.

(3) Includes capital deductions net of associated deferred tax liabilities, and securitized credit card exposures not subject to capital requirements for assets.

(4) Includes \$79.4 billion in mortgages guaranteed by Canada Mortgage Housing Corporation (CMHC) and portions of privately insured mortgages.

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



Q3 2019 (in \$MM)		a	b	c	d	e
		Total	Items subject to: ⁽¹⁾			
			Credit risk framework	Securitization framework	Counterparty credit risk framework	Market risk framework
1	Asset carrying value amount under scope of regulatory consolidation (as per template LI1)	1,042,497	750,192	8,870	160,289	166,371
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template LI1)	220,403	-	-	157,862	62,541
3	Total net amount under regulatory scope of consolidation	822,094	750,192	8,870	2,427	103,830
4	Off-balance sheet amounts ⁽²⁾	190,104	174,620	14,522	962	-
5	Differences in valuations ⁽³⁾	(719)	(719)	-	-	-
6	Differences due to different netting rules, other than those already included in row 2	28,406	917	-	27,489	-
7	Differences due to considerations of provisions ⁽⁴⁾	3,609	3,782	-	(173)	-
8	Collateral offsetting	(18,935)	-	-	(18,935)	-
9	Differences due to Potential Future Exposures and Collateral Haircut	53,907	-	-	53,907	-
10	Differences due to deconsolidated subsidiaries	-	-	-	-	-
11	Other differences not classified above	6	6	-	-	-
12	Exposure amounts considered for regulatory purposes ⁽⁵⁾	1,078,472	928,798	23,392	65,677	103,830

(1) A single item can attract capital charges according to more than one risk category framework.

(2) Includes undrawn commitments and letters of credit/guarantee after application of the credit conversion factors, unfunded securitization exposures, and unfunded default fund contributions.

(3) Includes fair value adjustments for credit risk items (loans, bonds).

(4) Amounts for AIRB exposures are reported gross of partial write-offs and IFRS 9 specific allowances, and amounts for Standardized exposures are reported net of partial write-offs and IFRS 9 specific allowances.

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

CC1 – Composition of regulatory capital


(in \$MM)		a	a ₂	a ₃	a ₄	b
		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation ⁽¹⁾
Common Equity Tier 1 capital: instruments and reserves						
1	Directly issued qualifying common share capital (and equivalent for non-joint stock companies) plus related stock surplus	18,348	18,361	18,385	18,321	u+y
2	Retained earnings	43,682	43,056	42,236	41,414	v
3	Accumulated other comprehensive income (and other reserves)	1,187	1,836	1,587	992	w
4	Directly issued capital subject to phase-out from CET1 (only applicable to non-joint stock companies)	-	-	-	-	
5	Common share capital issued by subsidiaries and held by third parties (amount allowed in group CET1)	1,732	1,689	1,673	1,628	bb
6	Common Equity Tier 1 capital before regulatory adjustments	64,949	64,942	63,881	62,355	
Common Equity Tier 1 capital: regulatory adjustments						
7	Prudential valuation adjustments	-	-	-	-	
8	Goodwill (net of related tax liability)	(10,349)	(10,761)	(10,662)	(10,504)	g
9	Other intangibles other than mortgage servicing rights (net of related tax liability)	(5,929)	(5,999)	(5,948)	(5,924)	h-q+i-r
10	Deferred tax assets excluding those arising from temporary differences (net of related tax liability)	(295)	(310)	(322)	(335)	k
11	Cash flow hedge reserve	(533)	(138)	(136)	121	x
12	Shortfall of provisions to expected losses	-	-	(45)	-	ee
13	Securitization gain on sale	-	-	-	-	
14	Gains and losses due to changes in own credit risk on fair valued liabilities	(182)	(162)	(191)	(151)	p
15	Defined benefit pension fund net assets (net of related tax liability)	(267)	(270)	(240)	(246)	l-s
16	Investments in own shares (if not already netted off paid-in capital on reported balance sheet)	(3)	(5)	(2)	(7)	a
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)	(823)	(881)	(724)	(577)	e
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	-	(219)	(264)	(286)	
23	of which: significant investments in the common stock of financials	-	(145)	(173)	(186)	f
24	of which: mortgage servicing rights	-	-	-	-	
25	of which: deferred tax assets arising from temporary differences	-	(74)	(91)	(100)	j
26	Other deductions or regulatory adjustments to CET1 as determined by OSFI	(3)	(4)	(3)	(3)	o
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	(18,384)	(18,749)	(18,537)	(17,912)	
29	Common Equity Tier 1 capital (CET1)	46,565	46,193	45,344	44,443	

CC1 – Composition of regulatory capital


(in \$MM)		a	a ₂	a ₃	a ₄	b
		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation ⁽¹⁾
Additional Tier 1 capital: instruments						
30	Directly issued qualifying Additional Tier 1 instruments plus related stock surplus	3,211	3,211	3,211	3,210	z
31	of which: classified as equity under applicable accounting standards	3,211	3,211	3,211	3,210	
32	of which: classified as liabilities under applicable accounting standards	-	-	-	-	
33	<i>Directly issued capital instruments subject to phase out from additional Tier 1</i>	1,423	1,960	1,960	2,374	aa +(2)
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)	172	345	354	160	cc
35	<i>of which: instruments issued by subsidiaries subject to phase out</i>	-	-	-	-	
36	Additional Tier 1 capital before regulatory adjustments	4,806	5,516	5,525	5,744	
Additional Tier 1 capital: regulatory adjustments						
37	Investments in own Additional Tier 1 instruments	-	-	-	-	
38	Reciprocal cross holdings in Additional Tier 1 instruments	-	-	-	-	
39	Non-significant investments in the capital of banking, financial and insurance entities, net of eligible short positions (amount above 10% threshold)	-	-	-	-	
40	Significant investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions	-	-	-	-	b
41	Other deductions from Tier 1 capital as determined by OSFI	-	-	-	-	
41a	of which: reverse mortgages	-	-	-	-	
42	Regulatory adjustments applied to Additional Tier 1 due to insufficient Tier 2 to cover deductions	-	-	-	-	
43	Total regulatory adjustments to Additional Tier 1 capital	-	-	-	-	
44	Additional Tier 1 capital (AT1)	4,806	5,516	5,525	5,744	
45	Tier 1 capital (T1 = CET1 + AT1)	51,371	51,709	50,869	50,187	

CC1 – Composition of regulatory capital


(in \$MM)		a	a ₂	a ₃	a ₄	b
		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation ⁽¹⁾
Tier 2 capital: instruments and provisions						
46	Directly issued qualifying Tier 2 instruments plus related stock surplus	6,904	5,431	5,357	3,569	m
47	Directly issued capital instruments subject to phase out from Tier 2	2,117	2,123	2,135	2,129	
48	Tier 2 instruments (and CET1 and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties (amount allowed in group Tier 2)	95	93	109	99	dd
49	of which: instruments issued by subsidiaries subject to phase out	-	-	-	-	
50	General allowances	1,305	1,517	1,326	1,380	c+d
51	Tier 2 capital before regulatory adjustments	10,421	9,164	8,927	7,177	
Tier 2 capital: regulatory adjustments						
52	Investments in own Tier 2 instruments	(246)	(18)	-	-	ff
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.	-	-	-	-	
56	Other deductions from Tier 2 capital	-	-	-	-	
57	Total regulatory adjustments to Tier 2 capital	(246)	(18)	-	-	
58	Tier 2 capital (T2)	10,175	9,146	8,927	7,177	
59	Total capital (TC = T1 + T2)	61,546	60,855	59,796	57,364	
60	Total risk-weighted assets	417,058	415,212	408,565	400,853	
60a	Common Equity Tier 1 (CET1) Capital RWA	417,058	415,212	408,565	400,507	
60b	Tier 1 Capital RWA	417,058	415,212	408,565	400,680	
60c	Total Capital RWA	417,058	415,212	408,565	400,853	

CC1 – Composition of regulatory capital


(in \$MM)		a	a ₂	a ₃	a ₄	b
		Q3 2019	Q2 2019	Q1 2019	Q4 2018	Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation ⁽¹⁾
Capital ratios						
61	Common Equity Tier 1 (as a percentage of risk-weighted assets)	11.2%	11.1%	11.1%	11.1%	
62	Tier 1 (as a percentage of risk-weighted assets)	12.3%	12.5%	12.5%	12.5%	
63	Total capital (as a percentage of risk-weighted assets)	14.8%	14.7%	14.6%	14.3%	
64	Buffer (minimum CET1 requirement plus capital conservation buffer plus G-SIB buffer plus D-SIB buffer 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	0.0%	0.0%	0.0%	0.0%	
67a	of which: D-SIB buffer	1.0%	1.0%	1.0%	1.0%	
68	Common Equity Tier 1 available to meet buffers (as percentage of risk-weighted assets)	11.2%	11.1%	11.1%	11.1%	
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	920	944	832	786	
73	Significant investments in the common stock of financial entities	4,739	4,584	4,460	4,344	
74	Mortgage servicing rights (net of related tax liability)	-	-	-	-	
75	Deferred tax assets arising from temporary differences (net of related tax liability)	2,204	2,345	2,341	2,322	
Applicable caps on the inclusion of allowances in Tier 2						
76	Allowances eligible for inclusion in Tier 2 in respect of exposures subject to standardized approach (prior to application of cap)	1,265	1,358	1,326	1,323	
77	Cap on inclusion of allowances in Tier 2 under standardized approach	1,655	1,729	1,704	1,659	
78	Allowances eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)	40	159	-	58	
79	Cap on inclusion of allowances in Tier 2 under internal ratings-based approach	1,381	1,340	1,306	1,293	
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	30%	30%	30%	40%	
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	30%	30%	30%	40%	
83	Amounts excluded from AT1 due to cap (excess over cap after redemptions and maturities)	-	113	113	-	
84	Current cap on T2 instruments subject to phase out arrangements	30%	30%	30%	40%	
85	Amounts excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	-	-	-	

(1) Cross-referenced to the Consolidated Balance Sheet: Source of Definition of Capital Components on CC2 (refer to column: Under Regulatory Scope of Consolidation).

(2) Line 33 also includes \$750 million (\$1,400 million as at April 30, 2019, January 31, 2019 and October 31, 2018) of capital instruments issued by trusts not consolidated under accounting standard IFRS 10, effective Q1 2014.

CC2 – Reconciliation of regulatory capital to balance sheet


Condensed balance sheet (in \$MM)	a	b	c
	Balance sheet as in published financial statements ⁽¹⁾	Under regulatory scope of consolidation ⁽²⁾	Cross-reference to Definition of Capital Components
	Q3 2019	Q3 2019	
Assets			
Cash and deposits with financial institutions	45,262	45,123	
Precious metals	3,572	3,572	
Trading assets			
Securities	115,988	115,982	
- <i>Investment in own shares</i>		3	<i>a</i>
- <i>Other trading securities</i>		115,979	
Loans	14,158	14,158	
Other	922	922	
	131,068	131,062	
Financial instruments designated at fair value through profit and loss	13	13	
Securities purchased under resale agreements and securities borrowed	119,478	119,470	
Derivative financial instruments	36,157	36,157	
Investment securities	82,592	81,507	
- <i>Significant investments in Additional Tier 1 capital and other financial institutions reflected in regulatory capital</i>		-	<i>b</i>
- <i>Other securities</i>		81,507	
Loans			
Residential mortgages	265,170	265,008	
Personal loans	98,679	98,667	
Credit cards	17,933	17,933	
Business and government	212,655	212,649	
	594,437	594,257	
Allowance for credit losses	5,194	5,193	
- <i>General Allowance reflected in Tier 2 capital</i>		1,265	<i>c</i>
- <i>Shortfall of allowances to expected loss</i>		-	<i>ee</i>
- <i>Excess of allowances to expected loss</i>		40	<i>d</i>
- <i>Allowances not reflected in regulatory capital</i>		3,888	

CC2 – Reconciliation of regulatory capital to balance sheet


Condensed balance sheet (in \$MM)	a	b	c
	Balance sheet as in published financial statements ⁽¹⁾	Under regulatory scope of consolidation ⁽²⁾	Cross-reference to Definition of Capital Components
	Q3 2019	Q3 2019	
Other			
Customers' liability under acceptances, net of allowance	13,923	13,923	
Property and equipment	2,634	2,631	
Investments in associates	5,496	5,666	
- Significant Investments in other financial institutions including deconsolidated subsidiaries exceeding 10% regulatory thresholds		823	e
- Significant Investments in other financial institutions including deconsolidated subsidiaries exceeding 15% regulatory thresholds		-	f
- Significant Investments in other financial institutions including deconsolidated subsidiaries within regulatory thresholds		4,843	
Goodwill and other intangible assets	17,612	18,124	
- Goodwill		9,837	g
- Imputed goodwill for Significant Investments		512	g
- Intangibles (excl computer software)		5,500	h
- Computer software intangibles		2,275	i
Deferred tax assets	1,706	1,706	
- Deferred tax assets arising from temporary differences exceeding the regulatory threshold		-	j
- Deferred tax assets that rely on future profitability		295	k
- Deferred tax assets not deducted from regulatory capital		1,411	
Other Assets	17,984	15,343	
- Defined pension fund assets		395	l
- Other assets		14,948	
Total other	59,355	57,393	
Total assets	1,066,740	1,063,361	

CC2 – Reconciliation of regulatory capital to balance sheet


Condensed balance sheet (in \$MM)	a	b	c
	Balance sheet as in published financial statements ⁽¹⁾	Under regulatory scope of consolidation ⁽²⁾	Cross-reference to Definition of Capital Components
	Q3 2019	Q3 2019	
Liabilities			
Deposits			
Personal	222,895	222,895	
Business and government	456,806	456,806	
- <i>Investment in own Tier 2 instruments</i>		(246)	ff
- <i>Other deposits from Business and government</i>		457,052	
Financial institutions	42,645	42,645	
	722,346	722,346	
Financial instruments designated at fair value through profit and loss	11,536	11,536	
Other			
Acceptances	13,932	13,932	
Obligations related to securities sold short	25,669	25,669	
Derivative financial instruments	37,307	37,307	
Obligations related to securities sold under repurchase agreements and securities lent	120,555	120,555	
Subordinated debentures	9,021	9,021	
- <i>Regulatory capital amortization of maturing debentures</i>		-	
- <i>Subordinated debentures used for regulatory capital</i>		-	
- <i>of which: are included in Tier 2 capital</i>		6,904	m
- <i>of which: are subject to phase out included in Tier 1 capital (30%)</i>		2,117	
- <i>of which: are subject to phase out not included in Tier 1 capital</i>		-	
Other liabilities	56,243	52,864	
- <i>Liquidity reserves</i>		3	o
- <i>Gains/losses due to changes in own credit risk including DVA on derivatives</i>		182	p
- <i>Deferred tax liabilities</i>		1,248	
- <i>Intangible assets (excl. computer software and mortgage servicing rights)</i>		1,493	q
- <i>Intangible assets - computer software</i>		353	r
- <i>Defined benefit pension fund assets</i>		128	s
- <i>Other deferred tax liabilities</i>		(726)	
- <i>Other liabilities</i>		51,431	
Total other	262,727	259,348	
Total liabilities	996,609	993,230	

CC2 – Reconciliation of regulatory capital to balance sheet


Condensed balance sheet (in \$MM)	a	b	c
	Balance sheet as in published financial statements ⁽¹⁾	Under regulatory scope of consolidation ⁽²⁾	Cross-reference to Definition of Capital Components
	Q3 2019	Q3 2019	
Equity			
Common equity			
Common shares	18,295	18,295	u
- of which: amount eligible for CET1		18,295	
- of which: amount eligible for AT1		-	
Retained earnings	43,682	43,682	v
Accumulated other comprehensive income	1,187	1,187	w
- Cash flow hedging reserve		533	x
- Other		654	
Other reserves	370	370	
- portion allowed for inclusion into CET1		53	y
- portion not allowed for regulatory capital		317	
Total common equity	63,534	63,534	
Preferred shares and other equity instruments	3,884	3,884	
- of which: are qualifying Tier 1 capital		3,211	z
- of which: are subject to phase out and included in Tier 1 capital (30%)		673	aa
- of which: are subject to phase out and not included into Tier 1 capital		-	
Total equity attributable to equity holders of the Bank	67,418	67,418	
Non-controlling interests in subsidiaries	2,713	2,713	
- portion allowed for inclusion into CET1		1,732	bb
- portion allowed for inclusion into Tier 1 capital		172	cc
- portion allowed for inclusion into Tier 2 capital		95	dd
- portion not allowed for regulatory capital		714	
Total equity	70,131	70,131	
Total liabilities and equity	1,066,740	1,063,361	

(1) Consolidated Statement of Financial Position as reported in the 2019 Quarterly Report - Third quarter results.

(2) Legal Entities that are within the accounting scope of consolidation but excluded from the regulatory scope of consolidation represent the Bank's insurance subsidiaries whose principle activities include insurance, reinsurance, property and casualty insurance. Key subsidiaries are Scotia Insurance Barbados Ltd (assets: \$252MM, equity: \$249MM), Scotia Life Insurance Company (assets: \$7MM, equity: \$22MM), Scotia Reinsurance Limited (assets: \$25MM, equity: \$79MM), Scotia Jamaica Life Insurance Co. Ltd (assets: \$556MM, equity: \$87MM), Scotia Life Trinidad and Tobago Ltd (assets: \$423MM, equity: \$88MM), Scotia Insurance Caribbean Ltd. (assets: \$1MM, equity: \$14MM), Scotia Seguros de Vida SA (assets: \$208MM, equity: \$67MM), Scotia Seguros SA El Salvador (assets: \$56MM, equity: \$45MM) and MD Life Insurance Company (assets: \$2,493MM, equity: \$18MM).

TLAC1: TLAC composition for G-SIBs (at resolution group level)


(in \$MM)		a	a ₂	a ₃
		Q3 2019 Amounts	Q2 2019 Amounts	Q1 2019 Amounts
Regulatory capital elements of TLAC and adjustments				
1	Common Equity Tier 1 capital (CET1)	46,565	46,193	45,344
2	Additional Tier 1 capital (AT1) before TLAC adjustments	4,806	5,516	5,525
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties	-	-	-
4	Other adjustments	-	-	-
5	AT1 instruments eligible under the TLAC framework	4,806	5,516	5,525
6	Tier 2 capital (T2) before TLAC adjustments	10,421	9,164	8,927
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	(246)	(18)	-
10	T2 instruments eligible under the TLAC framework	10,175	9,146	8,927
11	TLAC arising from regulatory capital	61,546	60,855	59,796
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.	7,015	4,801	1,478
14	Of which: amount eligible as TLAC after application of the caps	N/A	N/A	N/A
15	External TLAC instruments issued by funding vehicles prior to 1 January 2022	-	-	-
16	Eligible ex ante commitments to recapitalise a G-SIB in resolution	N/A	N/A	N/A
17	TLAC arising from non-regulatory capital instruments before adjustments	7,015	4,801	1,478
Non-regulatory capital elements of TLAC: adjustments				
18	TLAC before deductions	68,561	65,656	61,274
19	Deductions of exposures between MPE resolution groups that correspond to items eligible for TLAC (not applicable to SPE G-SIBs)	N/A	N/A	N/A
20	Deduction of investments in own other TLAC liabilities	-	-	-
21	Other adjustments to TLAC	-	-	-
22	TLAC after deductions	68,561	65,656	61,274
Risk-weighted assets and leverage exposure measure for TLAC purposes				
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	417,058	415,212	408,565
24	Leverage exposure measure	1,211,612	1,204,111	1,167,691
TLAC ratios and buffers				
25	TLAC (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	16.4%	15.8%	15.0%
26	TLAC (as a percentage of leverage exposure)	5.7%	5.5%	5.2%
27	CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	N/A	N/A	N/A
28	Institution-specific buffer requirement (capital conservation buffer plus countercyclical buffer requirements plus higher loss absorbency requirement, expressed as a percentage of risk-weighted assets)	3.5%	3.5%	3.5%
29	Of which: capital conservation buffer requirement	2.5%	2.5%	2.5%
30	Of which: bank specific countercyclical buffer requirement	0.0%	0.0%	0.0%
31	Of which: D-SIB / G-SIB buffer	1.0%	1.0%	1.0%

Rows 14, 16, 19 and 27 are not applicable to Canadian D-SIBs.

TLAC3 – Resolution entity – creditor ranking at legal entity level


(in \$MM)		Creditor ranking						Sum of 1 to 6
		1 (most junior)	2	3	4	5	6 (most senior)	
Q3 2019								
1	Description of creditor ranking	Common shares Book value	Preferred shares Stated value	Additional Tier 1 Instruments Stated value	Subordinated Debt Par value	Bail-in Debt ⁽¹⁾ Par value	Other Liabilities ⁽²⁾	Total
2	Total capital and liabilities net of credit risk mitigation	18,295	2,323	1,561	9,009	7,165	-	38,353
3	Subset of row 2 that are excluded liabilities	3	-	-	243	19	-	265
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	18,292	2,323	1,561	8,766	7,146	-	38,088
5	Subset of row 4 that are <i>potentially</i> eligible as TLAC	18,292	2,323	1,561	8,766	7,053	-	37,995
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	-	-	-	-	1,278	-	1,278
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	-	-	-	-	3,815	-	3,815
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	-	-	-	8,656	1,800	-	10,456
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities	-	-	-	110	160	-	270
10	Subset of row 5 that is perpetual securities	18,292	2,323	1,561	-	-	-	22,176

Q2 2019								
1	Description of creditor ranking	Common shares Book value	Preferred shares Stated value	Additional Tier 1 Instruments Stated value	Subordinated Debt Par value	Bail-in Debt ⁽¹⁾ Par value	Other Liabilities ⁽²⁾	Total
2	Total capital and liabilities net of credit risk mitigation	18,284	2,324	1,561	7,540	4,883	-	34,592
3	Subset of row 2 that are excluded liabilities	5	113	-	18	-	-	136
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	18,279	2,211	1,561	7,522	4,883	-	34,456
5	Subset of row 4 that are <i>potentially</i> eligible as TLAC	18,279	2,211	1,561	7,522	4,823	-	34,396
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	-	-	-	-	1,340	-	1,340
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	-	-	-	-	1,715	-	1,715
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	-	-	-	7,407	1,647	-	9,054
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities	-	-	-	115	121	-	236
10	Subset of row 5 that is perpetual securities	18,279	2,211	1,561	-	-	-	22,051

Q1 2019								
1	Description of creditor ranking	Common shares Book value	Preferred shares Stated value	Additional Tier 1 Instruments Stated value	Subordinated Debt Par value	Bail-in Debt ⁽¹⁾ Par value	Other Liabilities ⁽²⁾	Total
2	Total capital and liabilities net of credit risk mitigation	18,296	2,324	1,561	7,522	1,545	-	31,248
3	Subset of row 2 that are excluded liabilities	2	113	-	-	-	-	115
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	18,294	2,211	1,561	7,522	1,545	-	31,133
5	Subset of row 4 that are <i>potentially</i> eligible as TLAC	18,294	2,211	1,561	7,522	1,481	-	31,069
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years	-	-	-	-	1,330	-	1,330
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years	-	-	-	-	33	-	33
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years	-	-	-	7,392	-	-	7,392
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities	-	-	-	130	118	-	248
10	Subset of row 5 that is perpetual securities	18,294	2,211	1,561	-	-	-	22,066

(1) Under the Bank Recapitalization (Bail-In) Regime. Please refer to the Basel III Implementation section for a description of the requirements.

(2) Disclosure not currently required by OSFI.

LR1 – Summary comparison of accounting assets vs leverage ratio exposure measure


(in \$MM)		a	a ₂	a ₃	a ₄
		Q3 2019	Q2 2019	Q1 2019	Q4 2018
1	Total consolidated assets as per published financial statements	1,066,740	1,058,169	1,034,283	998,493
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(3,379)	(3,266)	(3,532)	(3,834)
3	Adjustment for securitized exposures that meet the operational requirements for the recognition of risk transference	(3,336)	-	-	-
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	16,272	15,532	9,416	(37)
6	Adjustment for securities financing transactions (i.e. repos and similar secured lending)	12,892	10,735	8,687	9,993
7	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	140,625	141,528	137,183	132,245
8	Other adjustments ⁽¹⁾	(18,202)	(18,587)	(18,346)	(17,761)
9	Leverage ratio exposure measure	1,211,612	1,204,111	1,167,691	1,119,099

(1) Includes asset amounts deducted in determining Basel III Tier 1 capital

LR2 – Leverage ratio common disclosure


(in \$MM)		a	a ₂	a ₃	a ₄
		Q3 2019	Q2 2019	Q1 2019	Q4 2018
On-balance sheet exposures ⁽¹⁾					
1	On-balance sheet exposures (excluding derivatives and securities financing transactions (SFTs), but including collateral)	904,390	897,456	870,631	853,082
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 derivatives transactions)	(3,830)	(3,612)	(5,613)	(5,525)
4	(Asset amounts deducted in determining Basel III Tier 1 capital)	(18,202)	(18,587)	(18,346)	(17,761)
5	Total on-balance sheet exposures (excluding derivatives and SFTs) (sum of rows 1 to 4)	882,358	875,257	846,672	829,796
Derivative exposures					
6	Replacement cost associated with <i>all</i> derivatives transactions (where applicable net of eligible cash variation margin and/or with bilateral netting)	14,736	11,298	11,035	7,792
7	Add-on amounts for PFE associated with <i>all</i> derivatives transactions	38,116	37,200	33,769	33,277
8	(Exempted CCP leg of client-cleared trade exposures)	-	-	-	-
9	Adjusted effective notional amount of written credit derivatives	5,342	4,753	5,585	5,784
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(1,935)	(2,750)	(3,198)	(3,807)
11	Total derivative exposures (sum of rows 6 to 10)	56,259	50,501	47,191	43,046
Securities financing transaction exposures					
12	Gross SFT assets (with no recognition of netting), after adjusting for sale accounting transactions	129,326	132,082	138,088	116,376
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(9,848)	(5,992)	(10,130)	(12,357)
14	CCR exposure for SFT assets	12,892	10,735	8,687	9,993
15	Agent transaction exposures	-	-	-	-
16	Total securities financing transaction exposures (sum of rows 12 to 15)	132,370	136,825	136,645	114,012
Other off-balance sheet exposures					
17	Off-balance sheet exposure at gross notional amount	454,208	449,556	438,877	424,109
18	(Adjustments for conversion to credit equivalent amounts)	(313,583)	(308,028)	(301,694)	(291,864)
19	Off-balance sheet items (sum of rows 17 and 18)	140,625	141,528	137,183	132,245
Capital and total exposures					
20	Tier 1 capital	51,371	51,709	50,869	50,187
21	Total exposures (sum of rows 5, 11, 16 and 19)	1,211,612	1,204,111	1,167,691	1,119,099
Leverage ratio					
22	Basel III leverage ratio	4.2%	4.3%	4.4%	4.5%

(1) On-balance sheet items exclude securities purchased under resale agreements and securities borrowed (\$119,478), derivative financial instruments (\$36,157), assets outside the regulatory scope of consolidation (\$3,379).

CR1: Credit quality of assets


(in \$MM)		a	b	c	d
		Gross carrying values of ⁽¹⁾		Allowances/ impairments ⁽³⁾	Net values (a+b-c)
		Defaulted exposures ⁽²⁾	Non-defaulted exposures		
Q3 2019					
1	Loans ⁽⁴⁾	5,066	642,012	5,070	642,008
2	Debt Securities	219	78,572	-	78,791
3	Off-balance sheet exposures ⁽⁵⁾	661	225,715	61	226,315
4	Total	5,946	946,299	5,131	947,114

Q2 2019					
1	Loans ⁽⁴⁾	5,211	638,136	5,162	638,185
2	Debt Securities	235	81,499	1	81,733
3	Off-balance sheet exposures ⁽⁵⁾	865	230,498	63	231,300
4	Total	6,311	950,133	5,226	951,218

Q1 2019					
1	Loans ⁽⁴⁾	5,190	630,038	5,053	630,175
2	Debt Securities	218	74,724	1	74,941
3	Off-balance sheet exposures ⁽⁵⁾	913	226,002	69	226,846
4	Total	6,321	930,764	5,123	931,962

Q4 2018					
1	Loans ⁽⁴⁾	5,179	624,091	5,077	624,193
2	Debt Securities	218	75,310	1	75,527
3	Off-balance sheet exposures ⁽⁵⁾	888	218,690	73	219,505
4	Total	6,285	918,091	5,151	919,225

(1) The accounting value of on- and off-balance sheet exposures before any credit conversion factor (CCF) or credit risk mitigation (CRM), but after considering write-offs.

(2) Defaulted exposures include: (i) the Bank's reported Gross Impaired Loans, (ii) credit cards which meet the regulatory definition of default, and (iii) off-balance sheet commitments, LCs and/or LGs which meet the regulatory definition of default.

(3) Includes all three ECL Stages, net of allowances related to securitizations of bank originated credit card receivables and ECL related to entities outside the scope of regulatory consolidation.

(4) Includes bankers acceptances and deposits with banks.

(5) Excludes all revocable loan commitments.

CR2: Changes in stock of defaulted loans and debt securities⁽¹⁾



(in \$MM)		a	a ₂	a ₃	a ₄
		Q3 2019	Q2 2019	Q1 2019	Q4 2018
1	Defaulted loans and debt securities - Beginning of Quarter ⁽²⁾	6,311	6,321	6,285	7,032
2	Loans and debt securities that have defaulted since the last reporting period	1,051	996	1,118	1,165
3	Returned to non-defaulted status ⁽³⁾	(190)	(135)	(177)	(452)
4	Amounts written off	(890)	(863)	(877)	(881)
5	Other changes ⁽⁴⁾	(336)	(8)	(28)	(579)
6	Defaulted loans and debt securities - End of Quarter ⁽²⁾	5,946	6,311	6,321	6,285

(1) Defaulted exposures include: (i) the Bank's reported Gross Impaired Loans, (ii) credit cards which meet the regulatory definition of default, and (iii) off-balance sheet commitments, LCs and/or LGs which meet the regulatory definition of default.

(2) Regulatory Definition of Default: when there is objective evidence that the Bank no longer has reasonable assurance as to the timely collection of interest and principal, or where a contractual payment is 90 days in arrears (including credit cards), or the customer is declared to be bankrupt.

(3) Includes returned to non-defaulted status and payments on defaulted accounts.

(4) Includes the impact from foreign currency translation and changes in credit cards and off-balance sheet exposures which meet the regulatory definition of default.

CR3: Credit risk mitigation techniques – overview


(in \$MM)		a	b1	b	d	f
		Unsecured exposures: carrying amount ⁽¹⁾	Exposures to be secured ⁽¹⁾	Exposures secured by collateral ^{(2) (3)}	Exposures secured by financial guarantees ⁽⁴⁾	Exposures secured by credit derivatives
Q3 2019						
1	Loans ⁽⁵⁾	239,010	402,998	310,556	92,442	-
2	Debt Securities	59,238	19,553	-	19,553	-
3	Total	298,248	422,551	310,556	111,995	-
4	Of which defaulted	1,706	1,910	1,583	327	-

Q2 2019						
1	Loans ⁽⁵⁾	241,870	396,315	300,529	95,786	-
2	Debt Securities	68,853	12,880	-	12,880	-
3	Total	310,723	409,195	300,529	108,666	-
4	Of which defaulted	1,700	2,073	1,654	419	-

Q1 2019						
1	Loans ⁽⁵⁾	240,960	389,215	292,745	96,470	-
2	Debt Securities	65,115	9,826	-	9,826	-
3	Total	306,075	399,041	292,745	106,296	-
4	Of which defaulted	1,667	2,063	1,617	446	-

Q4 2018						
1	Loans ⁽⁵⁾	242,647	381,546	285,122	96,424	-
2	Debt Securities	64,922	10,605	-	10,605	-
3	Total	307,569	392,151	285,122	107,029	-
4	Of which defaulted	1,808	1,912	1,624	288	-

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

(2) Includes non-retail and retail AIRB exposures, where collateral is used within the estimation of LGD.

(3) Includes retail mortgages and real estate secured lines of credit under both AIRB and standardized approaches.

(4) Includes government insured mortgages.

(5) Includes bankers acceptances and deposits with banks.

**CR4: Standardized approach – credit risk exposures and
Credit Risk Mitigation (CRM) effects**



(in \$MM)		a	b	c	d	e	f
		Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
Asset classes		On-balance sheet amount	Off-balance sheet amount	On-balance sheet amount	Off-balance sheet amount	RWA	RWA density
Q3 2019							
1	Bank	2,198	487	2,198	65	1,811	80%
2	Corporate	53,599	25,421	53,599	6,887	57,862	96%
3	Sovereign	6,937	302	6,937	33	1,554	22%
4	Real Estate Secured	48,322	51	48,322	-	20,454	42%
5	Other Retail	45,325	26,430	45,325	-	33,697	74%
6	Equity ⁽¹⁾	1,412	-	1,412	-	1,497	106%
7	Other Assets ⁽²⁾	55,589	-	55,589	-	11,544	21%
8	Total	213,382	52,691	213,382	6,985	128,419	58%

Q2 2019							
1	Bank	2,860	197	2,860	107	2,590	87%
2	Corporate	57,562	28,201	57,562	8,464	63,006	95%
3	Sovereign	5,890	15	5,890	6	1,392	24%
4	Real Estate Secured	48,510	52	48,510	-	20,525	42%
5	Other Retail	45,233	24,719	45,233	-	33,049	73%
6	Equity ⁽¹⁾	1,348	-	1,348	-	1,429	106%
7	Other Assets ⁽²⁾	60,422	-	60,422	-	12,365	20%
8	Total	221,825	53,184	221,825	8,577	134,356	58%

Q1 2019							
1	Bank	3,659	311	3,659	182	3,220	84%
2	Corporate	55,773	27,551	55,773	8,567	61,586	96%
3	Sovereign	6,147	9	6,147	7	1,229	20%
4	Real Estate Secured	47,562	51	47,562	-	19,974	42%
5	Other Retail	44,088	23,869	44,088	-	32,154	73%
6	Equity ⁽¹⁾	1,120	-	1,120	-	1,187	106%
7	Other Assets ⁽²⁾	58,316	-	58,316	-	12,297	21%
8	Total	216,665	51,791	216,665	8,756	131,647	58%

Q4 2018							
1	Bank	3,208	508	3,208	303	2,954	84%
2	Corporate	59,018	29,023	59,018	8,814	65,600	97%
3	Sovereign	5,299	161	5,299	37	1,442	27%
4	Real Estate Secured	44,517	51	44,517	-	18,592	42%
5	Other Retail	42,100	21,727	42,100	-	30,826	73%
6	Equity ⁽¹⁾	1,163	-	1,163	-	1,232	106%
7	Other Assets ⁽²⁾	53,457	-	53,457	-	11,120	21%
8	Total	208,762	51,470	208,762	9,154	131,766	60%

(1) Includes equities under the AIRB Materiality Threshold which are risk weighted at 100% plus the 6% scalar requirement.

(2) Exposures to CCP and risk-weighted threshold deductions are excluded.

CR5: Standardized approach – exposures by asset classes and risk weights


(in \$MM)	Risk weight	a	b	c	d	e	f	g	h	i	j
		0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount (post-CCF and post-CRM) ⁽¹⁾
	Asset classes										
	Q3 2019										
1	Bank	-	-	560	-	11	-	1,692	-	-	2,263
2	Corporate	2,557	-	212	-	69	-	57,374	274	-	60,486
3	Sovereign	3,993	-	-	-	2,847	-	130	-	-	6,970
4	Real Estate Secured	5,375	-	-	30,419	-	11,406	859	263	-	48,322
5	Other Retail	243	-	430	-	-	44,293	292	67	-	45,325
6	Equity ⁽²⁾	-	-	-	-	-	-	1,412	-	-	1,412
7	Other Assets ⁽³⁾	45,509	-	-	-	-	-	9,953	-	127	55,589
8	Total	57,677	-	1,202	30,419	2,927	55,699	71,712	604	127	220,367

Q2 2019											
1	Bank	-	-	465	-	9	-	2,493	-	-	2,967
2	Corporate	2,833	-	312	-	170	-	62,416	295	-	66,026
3	Sovereign	3,217	-	-	-	2,574	-	105	-	-	5,896
4	Real Estate Secured	4,975	-	1,335	29,693	-	11,460	600	447	-	48,510
5	Other Retail	1,340	-	-	-	-	43,522	298	73	-	45,233
6	Equity ⁽²⁾	-	-	-	-	-	-	1,348	-	-	1,348
7	Other Assets ⁽³⁾	49,506	-	-	-	-	-	10,790	-	126	60,422
8	Total	61,871	-	2,112	29,693	2,753	54,982	78,050	815	126	230,402

Q1 2019											
1	Bank	-	-	772	-	9	-	3,059	1	-	3,841
2	Corporate	2,576	-	247	-	309	-	60,861	347	-	64,340
3	Sovereign	3,826	-	-	-	2,199	-	129	-	-	6,154
4	Real Estate Secured	5,010	-	1,439	29,021	-	11,083	593	416	-	47,562
5	Other Retail	1,364	-	-	-	-	42,410	249	65	-	44,088
6	Equity ⁽²⁾	-	-	-	-	-	-	1,120	-	-	1,120
7	Other Assets ⁽³⁾	46,790	-	830	-	-	-	10,571	-	125	58,316
8	Total	59,566	-	3,288	29,021	2,517	53,493	76,582	829	125	225,421

Q4 2018											
1	Bank	-	-	658	-	62	-	2,791	-	-	3,511
2	Corporate	2,185	-	358	-	292	-	64,226	771	-	67,832
3	Sovereign	2,903	-	-	-	1,984	-	449	-	-	5,336
4	Real Estate Secured	4,248	-	1,382	27,784	-	10,048	1,055	-	-	44,517
5	Other Retail	1,316	-	-	-	-	40,466	-	318	-	42,100
6	Equity ⁽²⁾	-	-	-	-	-	-	1,163	-	-	1,163
7	Other Assets ⁽³⁾	43,422	-	-	-	-	-	9,941	-	94	53,457
8	Total	54,074	-	2,398	27,784	2,338	50,514	79,625	1,089	94	217,916

(1) Exposure amount used for the calculation of capital requirements, including both on- and off-balance sheet amounts, net of allowances (ECL Stage 3) and write-offs. The amounts are after application of credit risk mitigation (CRM) techniques and credit conversion factors (CCF).

(2) Includes equities under the AIRB Materiality Threshold which are risk weighted at 100% plus the 6% scalar requirement.

(3) Exposures to CCP and risk-weighted threshold deductions are excluded.

CR6: IRB – Credit risk exposures by portfolio and PD range - Retail


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF ⁽¹⁾	e Average PD ⁽²⁾	f Number of obligors ⁽³⁾	g Average LGD ⁽⁴⁾	h Average maturity ⁽⁵⁾	i RWA ⁽¹⁾⁽⁶⁾	j RWA Density ⁽⁷⁾	k EL ⁽¹⁾	l Provisions ⁽⁸⁾
Q3 2019													
Retail - insured exposures secured by residential real estate	0.00 to <0.15	30,998	-		81,133	0.00%	206,533	23.66%		365	0.4%	1	
	0.15 to <0.25	28,506	-		1,923	0.24%	134,851	22.76%		210	10.9%	1	
	0.25 to <0.50	725	-		-		3,735			-		-	
	0.50 to <0.75	-	-		-		-			-		-	
	0.75 to <2.50	17,301	-		270	0.93%	77,267	14.91%		51	18.9%	-	
	2.50 to <10.00	4,483	-		-		19,613			-		-	
	10.00 to <100.00	1,000	-		-		4,808			-		-	
	100.00 (Default)	333	-		20	100.00%	1,824	86.72%		-	0.0%	17	
	Sub-total	83,346	-	0%	83,346	0.03%	448,631	23.63%		626	0.8%	19	15
Retail - uninsured exposures secured by residential real estate	0.00 to <0.15	45,734	34,696	42%	60,308	0.06%	573,381	19.89%		1,970	3.3%	7	
	0.15 to <0.25	57,866	7,735	38%	60,804	0.22%	361,633	21.36%		5,850	9.6%	28	
	0.25 to <0.50	325	-		325	0.46%	1,978	37.31%		93	28.6%	1	
	0.50 to <0.75	4,785	1,173	49%	5,365	0.66%	68,113	32.73%		1,756	32.7%	12	
	0.75 to <2.50	32,451	242	54%	32,581	0.96%	116,919	21.05%		8,952	27.5%	67	
	2.50 to <10.00	9,036	49	57%	9,063	3.01%	33,377	21.28%		5,003	55.2%	59	
	10.00 to <100.00	1,053	17	79%	1,067	23.87%	7,257	21.60%		1,281	120.1%	54	
	100.00 (Default)	275	1,015	0%	275	100.00%	20,567	71.14%		-	0.0%	196	
	Sub-total	151,525	44,927	41%	169,788	0.78%	1,183,225	21.25%		24,905	14.7%	424	95

CR6: IRB – Credit risk exposures by portfolio and PD range - Retail


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF ⁽¹⁾	e Average PD ⁽²⁾	f Number of obligors ⁽³⁾	g Average LGD ⁽⁴⁾	h Average maturity ⁽⁵⁾	i RWA ⁽¹⁾⁽⁶⁾	j RWA Density ⁽⁷⁾	k EL ⁽¹⁾	l Provisions ⁽⁸⁾
Retail - qualifying revolving (QRRE)	0.00 to <0.15	955	19,254	57%	12,002	0.04%	918,694	73.70%		288	2.4%	4	
	0.15 to <0.25	558	13,338	63%	9,019	0.18%	1,670,147	70.70%		648	7.2%	11	
	0.25 to <0.50	3,483	5,248	69%	7,117	0.27%	346,673	81.40%		836	11.7%	16	
	0.50 to <0.75	343	332	108%	703	0.63%	21,562	42.77%		85	12.1%	2	
	0.75 to <2.50	5,708	6,101	74%	10,212	1.25%	1,063,325	81.90%		3,984	39.0%	106	
	2.50 to <10.00	3,900	1,138	93%	4,963	5.33%	689,898	85.66%		5,557	112.0%	227	
	10.00 to <100.00	921	45	240%	1,028	27.92%	206,130	82.78%		2,211	215.1%	235	
	100.00 (Default)	126	6,331	0%	126	100.00%	607,171	90.62%		-	0.0%	114	
	Sub-total	15,994	51,787	56%	45,170	1.88%	5,523,600	77.25%		13,609	30.1%	715	587
Other Retail Exposures	0.00 to <0.15	6,683	772	58%	7,129	0.09%	363,368	52.60%		919	12.9%	3	
	0.15 to <0.25	-	3	61%	2	0.18%	22	74.89%		1	50.0%	-	
	0.25 to <0.50	7,549	117	78%	7,639	0.29%	332,765	56.65%		2,379	31.1%	13	
	0.50 to <0.75	944	1,608	107%	2,658	0.63%	9,773	42.77%		983	37.0%	7	
	0.75 to <2.50	12,693	44	91%	12,733	1.19%	472,208	61.05%		8,792	69.0%	93	
	2.50 to <10.00	3,019	1	102%	3,021	5.09%	125,068	65.20%		3,085	102.1%	98	
	10.00 to <100.00	906	1	163%	908	29.52%	38,912	58.19%		1,334	146.9%	156	
	100.00 (Default)	177	136	0%	177	100.00%	18,811	89.88%		-	0.0%	159	
	Sub-total	31,971	2,682	86%	34,267	2.32%	1,360,927	57.33%		17,493	51.0%	529	299
Total		282,836	99,396	50%	332,571	0.90%	8,516,383	33.17%		56,633	17.0%	1,687	996

CR6: IRB – Credit risk exposures by portfolio and PD range - Retail


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF ⁽¹⁾	e Average PD ⁽²⁾	f Number of obligors ⁽³⁾	g Average LGD ⁽⁴⁾	h Average maturity ⁽⁵⁾	i RWA ⁽¹⁾⁽⁶⁾	j RWA Density ⁽⁷⁾	k EL ⁽¹⁾	l Provisions ⁽⁸⁾
Q2 2019													
Retail - insured exposures secured by residential real estate	0.00 to <0.15	32,262	-		83,228	0.00%	213,097	23.55%		366	0.4%	1	
	0.15 to <0.25	29,245	-		1,973	0.24%	138,139	22.66%		215	10.9%	1	
	0.25 to <0.50	769	-		-		3,946			-		-	
	0.50 to <0.75	-	-		-		-			-		-	
	0.75 to <2.50	17,435	-		274	0.93%	78,078	14.92%		52	19.0%	-	
	2.50 to <10.00	4,370	-		-		19,481			-		-	
	10.00 to <100.00	1,093	-		-		5,204			-		-	
	100.00 (Default)	319	-		18	100.00%	1,802	86.19%		-	0.0%	16	
	Sub-total	85,493	-	0%	85,493	0.03%	459,747	23.52%		633	0.7%	18	14
Retail - uninsured exposures secured by residential real estate	0.00 to <0.15	45,406	34,336	42%	59,797	0.06%	572,737	19.98%		1,962	3.3%	7	
	0.15 to <0.25	55,331	7,529	38%	58,175	0.22%	352,701	21.58%		5,647	9.7%	27	
	0.25 to <0.50	317	-		317	0.46%	1,886	37.32%		91	28.7%	1	
	0.50 to <0.75	4,726	1,114	51%	5,291	0.66%	67,736	32.54%		1,721	32.5%	11	
	0.75 to <2.50	29,466	210	55%	29,582	0.97%	108,593	21.35%		8,253	27.9%	62	
	2.50 to <10.00	8,166	41	55%	8,188	3.02%	30,592	21.63%		4,580	55.9%	54	
	10.00 to <100.00	1,029	18	77%	1,043	23.58%	7,142	21.46%		1,245	119.4%	52	
	100.00 (Default)	244	970	0%	244	100.00%	19,894	72.56%		-	0.0%	177	
	Sub-total	144,685	44,218	41%	162,637	0.75%	1,161,281	21.42%		23,499	14.4%	391	91

CR6: IRB – Credit risk exposures by portfolio and PD range - Retail


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF ⁽¹⁾	e Average PD ⁽²⁾	f Number of obligors ⁽³⁾	g Average LGD ⁽⁴⁾	h Average maturity ⁽⁵⁾	i RWA ⁽¹⁾⁽⁶⁾	j RWA Density ⁽⁷⁾	k EL ⁽¹⁾	l Provisions ⁽⁸⁾
Retail - qualifying revolving (QRRE)	0.00 to <0.15	983	19,054	57%	11,852	0.04%	915,564	73.37%		283	2.4%	4	
	0.15 to <0.25	518	12,964	63%	8,729	0.18%	1,649,080	70.46%		625	7.2%	11	
	0.25 to <0.50	3,483	5,002	69%	6,937	0.27%	340,928	81.01%		811	11.7%	15	
	0.50 to <0.75	425	331	109%	788	0.63%	23,879	42.77%		96	12.2%	2	
	0.75 to <2.50	5,672	5,923	74%	10,060	1.25%	1,060,539	81.66%		3,923	39.0%	104	
	2.50 to <10.00	3,792	1,091	94%	4,814	5.32%	675,967	85.46%		5,370	111.5%	220	
	10.00 to <100.00	859	42	242%	961	27.36%	197,634	82.50%		2,057	214.0%	215	
	100.00 (Default)	142	6,112	0%	142	100.00%	587,582	88.69%		-	0.0%	126	
	Sub-total	15,874	50,519	56%	44,283	1.88%	5,451,173	76.89%		13,165	29.7%	697	610
Other Retail Exposures	0.00 to <0.15	6,778	738	57%	7,199	0.09%	372,956	52.52%		929	12.9%	3	
	0.15 to <0.25	-	3	63%	2	0.18%	21	74.57%		1	50.0%	-	
	0.25 to <0.50	7,490	96	74%	7,562	0.29%	335,314	56.53%		2,350	31.1%	12	
	0.50 to <0.75	913	1,395	107%	2,404	0.63%	9,043	42.77%		889	37.0%	6	
	0.75 to <2.50	11,994	26	90%	12,017	1.18%	460,258	61.07%		8,279	68.9%	88	
	2.50 to <10.00	2,762	1	98%	2,763	5.05%	118,730	65.14%		2,818	102.0%	89	
	10.00 to <100.00	794	-	309%	794	29.09%	35,953	58.09%		1,162	146.3%	134	
	100.00 (Default)	176	132	0%	176	100.00%	18,087	89.03%		-	0.0%	157	
	Sub-total	30,907	2,391	84%	32,917	2.22%	1,350,362	57.24%		16,428	49.9%	489	297
Total		276,959	97,128	50%	325,330	0.86%	8,422,563	33.14%		53,725	16.5%	1,595	1,012

CR6: IRB – Credit risk exposures by portfolio and PD range - Retail


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF ⁽¹⁾	e Average PD ⁽²⁾	f Number of obligors ⁽³⁾	g Average LGD ⁽⁴⁾	h Average maturity ⁽⁵⁾	i RWA ⁽¹⁾⁽⁶⁾	j RWA Density ⁽⁷⁾	k EL ⁽¹⁾	l Provisions ⁽⁸⁾
Q1 2019													
Retail - insured exposures secured by residential real estate	0.00 to <0.15	31,862	-		83,743	0.00%	210,412	25.73%		375	0.4%	1	
	0.15 to <0.25	29,152	-		1,934	0.24%	137,629	22.75%		211	10.9%	1	
	0.25 to <0.50	806	-		-		4,110			-		-	
	0.50 to <0.75	-	-		-		-			-		-	
	0.75 to <2.50	18,107	-		288	0.93%	80,620	14.95%		54	18.8%	-	
	2.50 to <10.00	4,542	-		-		20,403			-		-	
	10.00 to <100.00	1,175	-		-		5,618			-		-	
	100.00 (Default)	341	-		20	100.00%	1,916	79.71%		-	0.0%	16	
	Sub-total	85,985	-	0%	85,985	0.03%	460,708	25.64%		640	0.7%	18	14
Retail - uninsured exposures secured by residential real estate	0.00 to <0.15	44,669	34,044	42%	58,943	0.06%	569,938	20.15%		1,955	3.3%	7	
	0.15 to <0.25	54,528	7,396	38%	57,352	0.22%	349,863	21.76%		5,616	9.8%	27	
	0.25 to <0.50	292	-		292	0.46%	1,660	37.29%		84	28.8%	-	
	0.50 to <0.75	4,621	1,098	49%	5,160	0.66%	67,111	32.28%		1,665	32.3%	11	
	0.75 to <2.50	29,886	232	53%	30,010	0.97%	110,515	21.66%		8,484	28.3%	64	
	2.50 to <10.00	7,539	46	56%	7,564	3.09%	29,219	21.73%		4,300	56.8%	51	
	10.00 to <100.00	1,131	18	76%	1,145	25.26%	7,449	21.21%		1,352	118.1%	60	
	100.00 (Default)	264	921	0%	264	100.00%	19,190	69.83%		-	0.0%	184	
	Sub-total	142,930	43,755	41%	160,730	0.79%	1,154,945	21.59%		23,456	14.6%	404	92

CR6: IRB – Credit risk exposures by portfolio and PD range - Retail


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF ⁽¹⁾	e Average PD ⁽²⁾	f Number of obligors ⁽³⁾	g Average LGD ⁽⁴⁾	h Average maturity ⁽⁵⁾	i RWA ⁽¹⁾⁽⁶⁾	j RWA Density ⁽⁷⁾	k EL ⁽¹⁾	l Provisions ⁽⁸⁾
Retail - qualifying revolving (QRRE)	0.00 to <0.15	918	18,438	57%	11,495	0.04%	888,604	73.38%		276	2.4%	4	
	0.15 to <0.25	815	12,796	64%	9,044	0.18%	1,638,337	70.76%		650	7.2%	11	
	0.25 to <0.50	3,390	5,044	69%	6,881	0.27%	340,015	81.10%		805	11.7%	15	
	0.50 to <0.75	423	338	109%	792	0.63%	23,971	42.77%		96	12.1%	2	
	0.75 to <2.50	6,025	5,764	75%	10,341	1.24%	1,038,037	81.82%		4,019	38.9%	106	
	2.50 to <10.00	4,540	1,080	93%	5,539	5.24%	666,826	85.66%		6,136	110.8%	249	
	10.00 to <100.00	1,119	43	206%	1,208	27.45%	198,327	82.68%		2,580	213.6%	271	
	100.00 (Default)	155	5,873	0%	155	100.00%	564,216	89.48%		-	0.0%	138	
	Sub-total	17,385	49,376	57%	45,455	2.09%	5,358,333	77.21%		14,562	32.0%	796	677
Other Retail Exposures	0.00 to <0.15	6,788	734	57%	7,207	0.09%	371,552	52.46%		929	12.9%	3	
	0.15 to <0.25	-	3	66%	2	0.18%	20	77.36%		1	50.0%	-	
	0.25 to <0.50	7,351	85	77%	7,416	0.29%	332,823	56.33%		2,297	31.0%	12	
	0.50 to <0.75	830	1,261	107%	2,177	0.63%	8,291	42.77%		806	37.0%	6	
	0.75 to <2.50	11,844	26	87%	11,867	1.18%	460,828	60.67%		8,132	68.5%	86	
	2.50 to <10.00	2,908	3	95%	2,911	5.06%	124,266	64.99%		2,964	101.8%	94	
	10.00 to <100.00	827	-	201%	827	29.69%	38,067	58.43%		1,222	147.8%	144	
	100.00 (Default)	181	130	0%	181	100.00%	17,015	89.54%		-	0.0%	162	
	Sub-total	30,729	2,242	83%	32,588	2.32%	1,352,862	57.16%		16,351	50.2%	507	262
Total		277,029	95,373	50%	324,758	0.93%	8,326,848	34.02%		55,009	16.9%	1,725	1,045

(1) Includes the retail residential mortgage exposures insured by CMHC, Genworth Canada and Canada Guaranty Insurance.

(2) Post-CRM PD weighted by post-CRM EAD.

(3) Number of obligors represents the number of retail accounts.

(4) Post-CRM LGD weighted by post-CRM EAD.

(5) Average maturity is not used in RWA calculation for retail exposures except for the retail residential mortgages where a substitution approach was done to recognize the government guarantee and guarantee of insurance companies.

(6) After application of AIRB scalar of 1.06.

(7) RWA density is calculated as Risk-weighted assets (column i) divided by EAD post-CRM and post-CCF (column d).

(8) Includes all three ECL stages under IFRS 9.

CR6: IRB – Credit risk exposures by portfolio and PD range - Non-Retail ⁽¹⁾


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF	e Average PD (2)	f Number of obligors (3)	g Average LGD (4)	h Average maturity (5)	i RWA (6)	j RWA Density (7)	k EL	l Provisions (8)
Q3 2019													
Sovereign													
	0.00 to <0.15	87,662	1,855	37%	88,492	0.02%	100	13.58%	2.03	1,488	1.7%	3	
	0.15 to <0.25	3,009	242	10%	3,033	0.20%	3	25.40%	1.83	702	23.1%	2	
	0.25 to <0.50	1,251	516	55%	1,535	0.42%	12	22.26%	1.47	423	27.6%	1	
	0.50 to <0.75	1,948	1	44%	1,949	0.69%	12	17.85%	1.24	545	28.0%	2	
	0.75 to <2.50	972	-	100%	972	1.39%	2	16.96%	1.53	384	39.5%	2	
	2.50 to <10.00	812	-	0%	812	3.10%	9	7.28%	0.73	170	21.0%	2	
	10.00 to <100.00	394	-	0%	394	18.48%	1	3.06%	0.33	60	15.3%	2	
	100.00 (Default)	219	1	100%	220	100.00%	2	25.00%	4.29	2	1.0%	55	
	Sub-total	96,267	2,615	38%	97,407	0.38%	141	14.14%	1.98	3,774	3.9%	69	5
Bank													
	0.00 to <0.15	15,369	6,890	60%	19,756	0.07%	272	31.69%	0.79	2,317	11.7%	5	
	0.15 to <0.25	1,763	385	48%	1,967	0.19%	29	39.09%	0.64	594	30.2%	1	
	0.25 to <0.50	2,226	807	52%	2,419	0.37%	75	42.33%	0.40	1,011	41.8%	4	
	0.50 to <0.75	1,640	197	40%	1,718	0.56%	25	43.35%	0.46	1,047	60.9%	4	
	0.75 to <2.50	54	10	29%	57	1.39%	4	45.00%	1.80	57	99.6%	-	
	2.50 to <10.00	21	1	31%	21	2.68%	7	44.65%	1.55	25	118.6%	-	
	10.00 to <100.00	74	1	38%	75	19.57%	8	35.54%	0.94	137	183.4%	5	
	100.00 (Default)	35	3	20%	36	100.00%	6	44.51%	1.25	68	191.4%	12	
	Sub-total	21,182	8,294	58%	26,049	0.33%	426	34.07%	0.72	5,256	20.2%	31	14

CR6: IRB – Credit risk exposures by portfolio and PD range - Non-Retail ⁽¹⁾


(in \$MM)	PD scale	a	b	c	d	e	f	g	h	i	j	k	l
		Original on-balance sheet gross exposures	Off-balance sheet exposures pre-CCF	Average CCF	EAD post-CRM and post-CCF	Average PD ⁽²⁾	Number of obligors ⁽³⁾	Average LGD ⁽⁴⁾	Average maturity ⁽⁵⁾	RWA ⁽⁶⁾	RWA Density ⁽⁷⁾	EL	Provisions ⁽⁸⁾
Corporate - Other ⁽⁹⁾													
	0.00 to <0.15	52,799	109,043	54%	120,520	0.08%	1,930	38.49%	2.18	27,110	22.5%	36	
	0.15 to <0.25	15,923	31,266	48%	27,787	0.17%	1,412	43.65%	2.42	11,333	40.8%	21	
	0.25 to <0.50	52,179	48,648	43%	69,490	0.37%	4,260	49.70%	2.22	46,674	67.2%	130	
	0.50 to <0.75	18,478	14,598	40%	22,928	0.66%	2,359	46.47%	2.13	17,882	78.0%	69	
	0.75 to <2.50	5,465	5,034	40%	7,009	1.39%	681	38.88%	2.22	6,062	86.5%	38	
	2.50 to <10.00	2,394	2,357	47%	3,227	4.77%	406	40.21%	1.79	4,014	124.4%	63	
	10.00 to <100.00	1,101	601	59%	1,311	28.69%	110	41.54%	1.65	2,736	208.7%	160	
	100.00 (Default)	558	544	65%	669	100.00%	78	46.61%	1.53	2,697	403.4%	163	
	Sub-total	148,897	212,091	49%	252,941	0.73%	11,236	42.93%	2.20	118,508	46.9%	680	323
Corporate – Specialized Lending													
	0.00 to <0.15	3,728	4,887	54%	6,910	0.09%	123	41.32%	2.25	1,746	25.2%	3	
	0.15 to <0.25	3,321	2,624	51%	5,512	0.16%	179	40.15%	1.93	1,802	32.7%	4	
	0.25 to <0.50	10,332	7,022	52%	12,835	0.32%	630	37.91%	1.72	5,488	42.8%	15	
	0.50 to <0.75	1,042	566	22%	1,063	0.70%	83	43.16%	1.30	708	66.6%	3	
	0.75 to <2.50	73	78	16%	79	1.39%	10	58.14%	1.10	85	107.4%	1	
	2.50 to <10.00	371	51	68%	335	3.83%	10	39.28%	3.00	436	130.4%	5	
	10.00 to <100.00	151	18	44%	133	21.19%	12	38.69%	1.02	270	203.3%	11	
	100.00 (Default)	7	-	0%	7	100.00%	-	56.00%	1.00	13	184.6%	3	
	Sub-total	19,025	15,246	51%	26,874	0.42%	1,047	39.54%	1.89	10,548	39.2%	45	18
Total		285,371	238,246	49%	403,271	0.60%	12,850	39.21%	2.04	138,086	34.2%	825	360

CR6: IRB – Credit risk exposures by portfolio and PD range - Non-Retail ⁽¹⁾


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF	e Average PD (2)	f Number of obligors (3)	g Average LGD (4)	h Average maturity (5)	i RWA (6)	j RWA Density (7)	k EL	l Provisions (8)
Q2 2019													
Sovereign													
	0.00 to <0.15	97,003	1,676	40%	97,809	0.02%	94	12.92%	1.90	1,752	1.8%	3	
	0.15 to <0.25	1,989	264	10%	2,016	0.20%	3	22.98%	3.01	556	27.6%	1	
	0.25 to <0.50	2,513	447	53%	2,749	0.40%	13	19.27%	1.34	658	23.9%	2	
	0.50 to <0.75	2,088	1	44%	2,088	0.69%	11	17.64%	1.08	552	26.4%	3	
	0.75 to <2.50	1,941	-	100%	1,941	1.44%	10	11.85%	1.35	560	28.8%	4	
	2.50 to <10.00	70	-	0%	70	9.00%	1	25.00%	1.05	72	103.0%	2	
	10.00 to <100.00	413	-	0%	413	18.00%	1	3.00%	0.58	62	15.1%	2	
	100.00 (Default)	222	1	100%	223	100.00%	2	25.00%	4.31	2	1.0%	55	
	Sub-total	106,239	2,389	39%	107,309	0.35%	135	13.34%	1.88	4,214	3.9%	72	3
Bank													
	0.00 to <0.15	12,159	7,192	62%	16,788	0.07%	276	31.16%	0.81	1,969	11.7%	3	
	0.15 to <0.25	1,491	373	47%	1,684	0.19%	24	36.27%	0.74	500	29.7%	1	
	0.25 to <0.50	2,273	876	53%	2,562	0.37%	77	38.27%	0.40	987	38.5%	4	
	0.50 to <0.75	1,507	305	34%	1,611	0.56%	23	38.74%	0.59	910	56.5%	4	
	0.75 to <2.50	61	41	46%	79	1.00%	11	39.92%	1.54	71	89.2%	-	
	2.50 to <10.00	-	-	0%	-	0.00%	-	0.00%	-	-	0.0%	-	
	10.00 to <100.00	69	8	14%	70	19.43%	8	33.49%	0.34	117	168.0%	5	
	100.00 (Default)	25	3	20%	15	100.00%	5	39.18%	1.92	-	0.0%	7	
	Sub-total	17,585	8,798	59%	22,809	0.27%	424	32.92%	0.75	4,554	20.0%	24	6

CR6: IRB – Credit risk exposures by portfolio and PD range - Non-Retail ⁽¹⁾


(in \$MM)	PD scale	a	b	c	d	e	f	g	h	i	j	k	l
		Original on-balance sheet gross exposures	Off-balance sheet exposures pre-CCF	Average CCF	EAD post-CRM and post-CCF	Average PD ⁽²⁾	Number of obligors ⁽³⁾	Average LGD ⁽⁴⁾	Average maturity ⁽⁵⁾	RWA ⁽⁶⁾	RWA Density ⁽⁷⁾	EL	Provisions ⁽⁸⁾
Corporate - Other ⁽⁹⁾													
	0.00 to <0.15	51,670	108,882	54%	119,407	0.08%	1,917	38.29%	2.17	26,605	22.3%	35	
	0.15 to <0.25	15,772	30,131	48%	27,018	0.17%	1,357	42.41%	2.39	10,554	39.1%	19	
	0.25 to <0.50	50,744	44,108	44%	67,088	0.37%	4,160	47.92%	2.23	43,585	65.0%	122	
	0.50 to <0.75	17,936	14,686	41%	23,060	0.66%	2,245	45.96%	2.18	17,884	77.6%	69	
	0.75 to <2.50	6,597	6,075	42%	8,363	1.23%	932	38.22%	2.11	7,367	88.1%	54	
	2.50 to <10.00	793	597	45%	998	9.00%	109	41.75%	2.09	1,773	177.7%	41	
	10.00 to <100.00	1,119	317	53%	1,263	26.59%	108	39.50%	1.68	2,538	201.0%	137	
	100.00 (Default)	726	607	95%	901	100.00%	82	44.95%	1.43	3,547	393.6%	189	
	Sub-total	145,357	205,403	50%	248,098	0.79%	10,910	42.10%	2.20	113,853	45.9%	666	356
Corporate – Specialized Lending													
	0.00 to <0.15	3,215	4,927	54%	6,388	0.09%	125	43.35%	2.12	1,645	25.7%	3	
	0.15 to <0.25	3,070	2,325	54%	5,113	0.16%	174	44.04%	1.84	1,781	34.8%	4	
	0.25 to <0.50	9,693	7,394	52%	12,440	0.32%	607	45.22%	1.78	6,409	51.5%	17	
	0.50 to <0.75	1,079	549	25%	1,149	0.70%	79	44.28%	1.46	807	70.3%	4	
	0.75 to <2.50	288	176	38%	276	1.74%	13	42.82%	2.76	330	119.5%	3	
	2.50 to <10.00	129	-	0%	129	9.00%	4	36.94%	2.45	214	165.5%	5	
	10.00 to <100.00	145	30	44%	133	20.96%	13	44.87%	1.00	312	235.4%	12	
	100.00 (Default)	7	-	75%	7	100.00%	2	48.72%	1.00	6	90.6%	3	
	Sub-total	17,626	15,401	52%	25,635	0.44%	1,017	44.41%	1.87	11,504	44.9%	51	19
Total		286,807	231,991	50%	403,851	0.63%	12,486	37.68%	2.01	134,125	33.2%	813	384

CR6: IRB – Credit risk exposures by portfolio and PD range - Non-Retail ⁽¹⁾


(in \$MM)	PD scale	a Original on- balance sheet gross exposures	b Off- balance sheet exposures pre-CCF	c Average CCF	d EAD post- CRM and post- CCF	e Average PD (2)	f Number of obligors (3)	g Average LGD (4)	h Average maturity (5)	i RWA (6)	j RWA Density (7)	k EL	l Provisions (8)
Q1 2019													
Sovereign													
	0.00 to <0.15	92,023	1,660	39%	92,817	0.02%	91	12.41%	1.59	1,559	1.7%	3	
	0.15 to <0.25	1,852	269	10%	1,879	0.20%	3	23.75%	3.07	547	29.1%	1	
	0.25 to <0.50	2,540	423	61%	2,798	0.40%	11	19.29%	1.40	671	24.0%	2	
	0.50 to <0.75	1,799	1	44%	1,800	0.68%	11	18.07%	0.98	478	26.6%	2	
	0.75 to <2.50	1,805	3	48%	1,801	1.39%	12	12.26%	1.36	547	30.4%	4	
	2.50 to <10.00	-	-	0%	-	0.00%	-	0.00%	-	-	-	-	
	10.00 to <100.00	356	-	0%	356	18.00%	1	3.07%	-	54	15.1%	2	
	100.00 (Default)	218	2	100%	220	100.00%	2	25.00%	4.30	5	2.5%	55	
	Sub-total	100,593	2,358	40%	101,671	0.35%	131	12.90%	1.59	3,861	3.8%	69	3
Bank													
	0.00 to <0.15	12,722	6,698	62%	17,023	0.07%	266	31.68%	0.80	1,963	11.5%	4	
	0.15 to <0.25	1,752	486	74%	2,132	0.18%	25	34.39%	0.67	576	27.0%	1	
	0.25 to <0.50	2,182	764	57%	2,476	0.37%	71	38.35%	0.48	951	38.4%	3	
	0.50 to <0.75	1,382	288	35%	1,482	0.57%	24	36.44%	0.63	789	53.2%	3	
	0.75 to <2.50	81	40	46%	99	1.19%	13	39.93%	1.57	92	92.7%	1	
	2.50 to <10.00	-	-	0%	-	0.00%	-	0.00%	-	-	-	-	
	10.00 to <100.00	75	10	16%	77	20.84%	10	34.07%	0.65	136	176.8%	6	
	100.00 (Default)	12	-	100%	2	100.00%	3	33.00%	0.24	-	0.0%	2	
	Sub-total	18,206	8,286	61%	23,291	0.22%	412	32.98%	0.74	4,507	19.3%	20	5

CR6: IRB – Credit risk exposures by portfolio and PD range - Non-Retail ⁽¹⁾


		a	b	c	d	e	f	g	h	i	j	k	l
(in \$MM)	PD scale	Original on-balance sheet gross exposures	Off-balance sheet exposures pre-CCF	Average CCF	EAD post-CRM and post-CCF	Average PD ⁽²⁾	Number of obligors ⁽³⁾	Average LGD ⁽⁴⁾	Average maturity ⁽⁵⁾	RWA ⁽⁶⁾	RWA Density ⁽⁷⁾	EL	Provisions ⁽⁸⁾
Corporate - Other ⁽⁹⁾													
	0.00 to <0.15	50,643	105,016	54%	115,835	0.08%	1,941	38.10%	2.14	25,570	22.1%	34	
	0.15 to <0.25	15,649	29,582	51%	27,445	0.17%	1,327	42.59%	2.45	10,913	39.8%	20	
	0.25 to <0.50	45,721	42,842	45%	61,738	0.38%	4,024	47.77%	2.21	39,918	64.7%	113	
	0.50 to <0.75	17,528	14,374	39%	22,049	0.66%	2,085	45.90%	2.21	17,184	77.9%	66	
	0.75 to <2.50	6,570	6,820	43%	9,063	1.20%	944	39.12%	2.18	8,266	91.2%	58	
	2.50 to <10.00	685	785	49%	918	9.00%	111	41.98%	1.91	1,610	175.4%	38	
	10.00 to <100.00	1,056	448	51%	1,273	27.21%	97	39.67%	1.82	2,621	205.9%	142	
	100.00 (Default)	678	560	93%	787	100.00%	85	46.44%	1.61	2,892	367.4%	204	
	Sub-total	138,530	200,427	50%	239,108	0.77%	10,614	41.92%	2.20	108,974	45.6%	675	368
Corporate – Specialized Lending													
	0.00 to <0.15	3,215	4,486	54%	6,210	0.09%	125	43.32%	2.15	1,616	26.0%	2	
	0.15 to <0.25	3,132	2,715	54%	5,310	0.16%	178	44.12%	1.88	1,877	35.3%	4	
	0.25 to <0.50	9,363	7,606	53%	12,257	0.32%	610	45.31%	1.78	6,301	51.4%	18	
	0.50 to <0.75	1,023	453	28%	1,063	0.69%	75	44.27%	1.52	748	70.3%	3	
	0.75 to <2.50	261	208	39%	282	1.58%	16	41.32%	2.83	321	113.9%	2	
	2.50 to <10.00	181	-	44%	181	9.00%	9	39.10%	2.35	314	173.8%	7	
	10.00 to <100.00	133	41	44%	125	21.16%	13	45.19%	1.00	296	237.3%	12	
	100.00 (Default)	9	-	75%	9	100.00%	3	48.05%	1.00	15	176.6%	3	
	Sub-total	17,317	15,509	52%	25,437	0.46%	1,029	44.44%	1.89	11,488	45.2%	51	18
Total		274,646	226,580	51%	389,507	0.61%	12,186	37.55%	1.93	128,830	33.1%	815	394

(1) Excludes the retail residential mortgages insured by CMHC, Genworth Canada and Canada Guaranty Insurance.

(2) Post-CRM PD weighted by post-CRM EAD.

(3) Represents the number of individual borrowers.

(4) Post-CRM LGD weighted by post-CRM EAD.

(5) Effective remaining maturity in years.

(6) After application of AIRB scalar of 1.06.

(7) RWA density is calculated as Risk-weighted assets (column i) divided by EAD post-CRM and post-CCF (column d).

(8) Includes all three ECL stages under IFRS 9, and partial write-offs.

(9) Includes purchased receivables portfolio totaling \$1.1 billion EAD, \$0.2 billion RWA (\$1.1 billion EAD, \$0.2 billion RWA in Q2 2019; and \$1.2 billion EAD, \$0.2 billion RWA in Q1 2019).

CR7: IRB – Effect on RWA of credit derivatives used as CRM techniques


(in \$MM)		Q3 2019		Q2 2019		Q1 2019		Q4 2018	
		a	b	a ₂	b ₂	a ₃	b ₃	a ₄	b ₄
		Pre-credit derivatives RWA	Actual RWA ⁽¹⁾	Pre-credit derivatives RWA	Actual RWA ⁽¹⁾	Pre-credit derivatives RWA	Actual RWA ⁽¹⁾	Pre-credit derivatives RWA	Actual RWA ⁽¹⁾
1	Sovereign – FIRB	-	-	-	-	-	-	-	-
2	Sovereign – AIRB	3,774	3,774	4,214	4,214	3,861	3,861	3,861	3,861
3	Bank – FIRB	-	-	-	-	-	-	-	-
4	Bank – AIRB	5,256	5,256	4,554	4,554	4,507	4,507	4,568	4,568
5	Corporate – FIRB	-	-	-	-	-	-	-	-
6	Corporate – AIRB	118,327	118,327	113,692	113,692	108,808	108,808	103,969	103,969
7	Specialized lending – FIRB	-	-	-	-	-	-	-	-
8	Specialized lending – AIRB	10,548	10,548	11,504	11,504	11,488	11,488	11,186	11,186
9	Retail – qualifying revolving (QRRE)	13,609	13,609	13,165	13,165	14,562	14,562	14,271	14,271
10	Retail – residential mortgage exposures	25,531	25,531	24,132	24,132	24,096	24,096	23,611	23,611
11	Retail – SME	-	-	-	-	-	-	-	-
12	Other retail exposures	17,493	17,493	16,428	16,428	16,351	16,351	16,273	16,273
13	Equity – FIRB	-	-	-	-	-	-	-	-
14	Equity – AIRB	-	-	-	-	-	-	-	-
15	Purchased receivables – FIRB	-	-	-	-	-	-	-	-
16	Purchased receivables – AIRB	181	181	161	161	166	166	206	206
17	Total	194,719	194,719	187,850	187,850	183,839	183,839	177,945	177,945

(1) As at the reporting date, there was no impact on RWA from credit derivatives, used as a CRM technique, within the banking book.

CR8: RWA flow statements of credit risk exposures under IRB


(in \$MM)		a	a ₂	a ₃	a ₄
		Q3 2019	Q2 2019	Q1 2019	Q4 2018
1	RWA as at end of previous reporting period	187,850	183,839	177,945	178,655
2	Asset size ⁽¹⁾	6,769	3,265	9,416	289
3	Asset quality ⁽²⁾	852	264	(3,757)	(1,541)
4	Model updates ⁽³⁾	959	-	-	-
5	Methodology and policy ⁽⁴⁾	-	-	-	-
6	Acquisitions and disposals ⁽⁵⁾	-	184	-	67
7	Foreign exchange movements ⁽⁶⁾	(1,711)	1,629	235	475
8	Other ⁽⁷⁾	-	(1,331)	-	-
9	RWA as at end of reporting period	194,719	187,850	183,839	177,945

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

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

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

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

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

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

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

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


Specialized Lending ⁽¹⁾ - Q3 2019											
Other than HVCRE											
Regulatory Categories	Remaining Maturity	On-balance sheet amount	Off-balance sheet amount	RW	Exposure Amount					RWA	Expected Losses
					PF	OF	CF	IPRE	Total		
Strong	Less than 2.5 Years	-	-	50%	-	-	-	-	-	-	-
	Equal to or more than 2.5 years	-	-	70%	-	-	-	-	-	-	-
Good	Less than 2.5 Years	-	-	70%	-	-	-	-	-	-	-
	Equal to or more than 2.5 years	-	-	90%	-	-	-	-	-	-	-
Satisfactory		-	-	115%	-	-	-	-	-	-	-
Weak		-	-	250%	-	-	-	-	-	-	-
Default		-	-	-	-	-	-	-	-	-	-
Total		-	-		-	-	-	-	-	-	-
HVCRE											
Regulatory Categories	Remaining Maturity	On-balance sheet amount	Off-balance sheet amount	RW	Exposure Amount				RWA	Expected Losses	
Strong	Less than 2.5 Years	-	-	70%	-				-	-	
	Equal to or more than 2.5 years	-	-	95%	-				-	-	
Good	Less than 2.5 Years	-	-	95%	-				-	-	
	Equal to or more than 2.5 years	-	-	120%	-				-	-	
Satisfactory		-	-	140%	-				-	-	
Weak		-	-	250%	-				-	-	
Default		-	-	-	-				-	-	
Total		-	-		-				-	-	
Equities under the simple risk-weight approach											
Categories			Off-balance sheet amount	RW	Exposure Amount				RWA		
Exchange-traded equity exposures			-	190%	-				-		
Private equity exposures			-	290%	-				-		
Other equity exposures			-	370%	-				-		
Total			-		-				-		

(1) As at the reporting date, specialized lending and equities under the simple risk-weight method are not applicable.

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


Specialized Lending ⁽¹⁾ - Q2 2019											
Other than HVCRE											
Regulatory Categories	Remaining Maturity	On-balance sheet amount	Off-balance sheet amount	RW	Exposure Amount					RWA	Expected Losses
					PF	OF	CF	IPRE	Total		
Strong	Less than 2.5 Years	-	-	50%	-	-	-	-	-	-	-
	Equal to or more than 2.5 years	-	-	70%	-	-	-	-	-	-	-
Good	Less than 2.5 Years	-	-	70%	-	-	-	-	-	-	-
	Equal to or more than 2.5 years	-	-	90%	-	-	-	-	-	-	-
Satisfactory		-	-	115%	-	-	-	-	-	-	-
Weak		-	-	250%	-	-	-	-	-	-	-
Default		-	-	-	-	-	-	-	-	-	-
Total		-	-		-	-	-	-	-	-	-
HVCRE											
Regulatory Categories	Remaining Maturity	On-balance sheet amount	Off-balance sheet amount	RW	Exposure Amount					RWA	Expected Losses
Strong	Less than 2.5 Years	-	-	70%	-					-	-
	Equal to or more than 2.5 years	-	-	95%	-					-	-
Good	Less than 2.5 Years	-	-	95%	-					-	-
	Equal to or more than 2.5 years	-	-	120%	-					-	-
Satisfactory		-	-	140%	-					-	-
Weak		-	-	250%	-					-	-
Default		-	-	-	-					-	-
Total		-	-		-					-	-
Equities under the simple risk-weight approach											
Categories			Off-balance sheet amount	RW	Exposure Amount					RWA	
Exchange-traded equity exposures			-	190%	-					-	
Private equity exposures			-	290%	-					-	
Other equity exposures			-	370%	-					-	
Total			-		-					-	

(1) As at the reporting date, specialized lending and equities under the simple risk-weight method are not applicable.

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


(in \$MM)		a	b	c	d	e	f
		Replacement cost	Potential future exposure	EEPE	Alpha used for computing regulatory EAD	EAD post- CRM	RWA
Q3 2019							
1	SA-CCR (for derivatives) ⁽²⁾	640	1,339		1.40	2,770	1,376
2	Internal Model Method (for derivatives and SFTs) ⁽³⁾			15,441	1.40	21,445	7,438
3	Simple Approach for credit risk mitigation (for SFTs)					-	-
4	Comprehensive Approach for credit risk mitigation (for SFTs)					28,462	4,534
5	VaR for SFTs					-	-
6	Total						13,348
Q2 2019							
1	SA-CCR (for derivatives) ⁽²⁾	356	1,324		1.40	2,349	1,141
2	Internal Model Method (for derivatives and SFTs) ⁽³⁾			14,213	1.40	19,692	6,803
3	Simple Approach for credit risk mitigation (for SFTs)					-	-
4	Comprehensive Approach for credit risk mitigation (for SFTs)					32,448	5,105
5	VaR for SFTs					-	-
6	Total						13,049
Q1 2019							
1	SA-CCR (for derivatives) ⁽²⁾	985	1,963		1.40	4,120	2,268
2	Internal Model Method (for derivatives and SFTs) ⁽³⁾			13,145	1.40	18,202	5,987
3	Simple Approach for credit risk mitigation (for SFTs)					-	-
4	Comprehensive Approach for credit risk mitigation (for SFTs)					29,289	4,094
5	VaR for SFTs					-	-
6	Total						12,349
Q4 2018							
1	CEM / SA-CCR (for derivatives) ⁽²⁾	1,876	1,822		1.00	3,695	2,197
2	Internal Model Method (for derivatives and SFTs) ⁽³⁾			14,644	1.40	20,501	6,535
3	Simple Approach for credit risk mitigation (for SFTs)					-	-
4	Comprehensive Approach for credit risk mitigation (for SFTs)					29,355	3,991
5	VaR for SFTs					-	-
6	Total						12,723

(1) Excludes exposures cleared through a CCP and CVA charges.

(2) SA-CCR was implemented for Capital reporting in Q1 2019. Figures in line 1 for Q4 2018 are based on Current Exposure Method (CEM).

(3) Includes OTC derivatives related transactions only.

CCR2: Credit valuation adjustment (CVA) capital charge


(in \$MM)		Q3 2019		Q2 2019		Q1 2019		Q4 2018	
		a	b	a ₂	b ₂	a ₃	b ₃	a ₄	b ₄
		EAD post-CRM	RWA ⁽¹⁾	EAD post-CRM	RWA ⁽¹⁾	EAD post-CRM	RWA ⁽¹⁾	EAD post-CRM	RWA ⁽¹⁾
	Total portfolios subject to the Advanced CVA capital charge	24,055	5,405	22,250	5,840	21,002	5,135	21,711	3,537
1	(i) VaR component (including the 3×multiplier)		697		1,091		1,068		847
2	(ii) Stressed VaR component (including the 3×multiplier)		4,708		4,749		4,067		2,690
3	All portfolios subject to the Standardized CVA capital charge	-	-	-	-	1,530	726	2,657	1,079
4	Total subject to the CVA capital charge	24,055	5,405	22,250	5,840	22,532	5,861	24,368	4,616

(1) In accordance with OSFI's requirements, fully transitioned as at Q1 2019. As at Q4 2018 reported based on CVA scalars of 0.80, 0.83 and 0.86, for the CET1 ratio, Tier 1 capital ratio and Total capital ratio, respectively.

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


(in \$MM)	a	b	c	d	e	f	g	h	i
Risk weight	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure ⁽¹⁾
Regulatory portfolio ⁽²⁾									
Q3 2019									
Sovereigns	-	-	-	103	-	-	-	-	103
Non-central government public sector entities (PSEs)	-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-
Banks	-	-	3	-	-	31	-	-	34
Securities firms	-	-	-	-	-	-	-	-	-
Corporates	-	-	-	-	-	2,425	-	-	2,425
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-
Other assets ⁽³⁾	-	-	-	-	-	-	-	-	-
Total	-	-	3	103	-	2,456	-	-	2,562
Q2 2019									
Sovereigns	-	-	-	26	-	-	-	-	26
Non-central government public sector entities (PSEs)	-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-
Banks	-	-	1	-	-	44	-	-	45
Securities firms	-	-	-	-	-	-	-	-	-
Corporates	-	-	-	-	-	2,069	-	-	2,069
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-
Other assets ⁽³⁾	-	-	-	-	-	-	-	-	-
Total	-	-	1	26	-	2,113	-	-	2,140
Q1 2019									
Sovereigns	-	-	-	207	-	-	-	-	207
Non-central government public sector entities (PSEs)	-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-
Banks	-	-	2	-	-	31	-	-	33
Securities firms	-	-	-	-	-	-	-	-	-
Corporates	-	-	-	-	-	2,321	-	-	2,321
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-
Other assets ⁽³⁾	-	-	-	-	-	-	-	-	-
Total	-	-	2	207	-	2,352	-	-	2,561
Q4 2018									
Sovereigns	-	-	-	-	-	-	-	-	-
Non-central government public sector entities (PSEs)	-	-	-	-	-	-	-	-	-
Multilateral development banks (MDBs)	-	-	-	-	-	-	-	-	-
Banks	-	-	-	-	-	-	-	-	-
Securities firms	-	-	-	-	-	-	-	-	-
Corporates	-	-	-	-	-	301	-	-	301
Regulatory retail portfolios	-	-	-	-	-	-	-	-	-
Other assets ⁽³⁾	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	301	-	-	301

(1) Total credit exposure: the amount relevant for the capital requirements calculation, having applied CRM techniques.

(2) Commencing Q1 2019, the application of the Standardized Approach to counterparty credit risk was expanded to more portfolios.

(3) Other assets: the amount excludes exposures to CCPs, which are reported in CCR8.

CCR4: IRB – CCR exposures by portfolio and PD scale ⁽¹⁾


(in \$MM)	PD scale	a	b	c	d	e	f	g
		EAD post-CRM	Average PD ⁽²⁾	Number of obligors	Average LGD ⁽³⁾	Average maturity ⁽⁴⁾	RWA ⁽⁵⁾	RWA Density ⁽⁶⁾
Q3 2019								
Sovereign								
	0.00 to <0.15	5,780	0.02%	50	15.65%	1.96	180	3.1%
	0.15 to <0.25	37	0.17%	3	25.00%	1.03	6	16.0%
	0.25 to <0.50	14	0.44%	2	25.00%	1.00	4	28.6%
	0.50 to <0.75	4	0.72%	1	25.00%	1.00	2	37.0%
	0.75 to <2.50	-	0.00%	-	0.00%	-	-	0.0%
	2.50 to <10.00	-	2.68%	1	25.00%	5.00	-	91.7%
	10.00 to <100.00	-	0.00%	-	0.00%	-	-	0.0%
	100.00 (Default)	-	0.00%	-	0.00%	-	-	0.0%
	Sub-total	5,835	0.03%	57	15.74%	1.95	192	3.3%
Bank								
	0.00 to <0.15	11,187	0.07%	176	31.22%	1.22	1,665	14.9%
	0.15 to <0.25	1,620	0.16%	37	30.77%	0.59	360	22.2%
	0.25 to <0.50	428	0.36%	67	42.00%	1.79	245	57.2%
	0.50 to <0.75	44	0.64%	7	36.50%	1.19	24	55.3%
	0.75 to <2.50	1	1.39%	1	30.00%	1.31	1	62.0%
	2.50 to <10.00	2	2.76%	3	45.00%	1.09	2	114.2%
	10.00 to <100.00	-	0.00%	-	0.00%	-	-	0.0%
	100.00 (Default)	-	0.00%	-	0.00%	-	-	0.0%
	Sub-total	13,282	0.09%	291	31.53%	1.16	2,297	17.3%
Corporate								
	0.00 to <0.15	24,009	0.07%	3,070	46.07%	0.64	4,087	17.0%
	0.15 to <0.25	2,549	0.17%	466	46.62%	1.56	990	38.8%
	0.25 to <0.50	2,995	0.34%	704	49.88%	1.55	1,838	61.4%
	0.50 to <0.75	826	0.70%	316	49.60%	1.13	681	82.5%
	0.75 to <2.50	453	1.39%	95	48.00%	3.17	565	124.8%
	2.50 to <10.00	137	3.17%	47	42.11%	2.08	169	123.7%
	10.00 to <100.00	9	18.58%	10	44.00%	1.11	21	227.6%
	100.00 (Default)	20	100.00%	1	44.00%	1.00	-	0.0%
	Sub-total	30,998	0.23%	4,709	46.59%	0.86	8,351	26.9%
Total		50,115	0.17%	5,057	39.00%	1.06	10,840	21.6%

CCR4: IRB – CCR exposures by portfolio and PD scale ⁽¹⁾


(in \$MM)	PD scale	a	b	c	d	e	f	g
		EAD post-CRM	Average PD ⁽²⁾	Number of obligors	Average LGD ⁽³⁾	Average maturity ⁽⁴⁾	RWA ⁽⁵⁾	RWA Density ⁽⁶⁾
Q2 2019								
Sovereign								
	0.00 to <0.15	5,629	0.03%	56	16.00%	2.21	217	3.9%
	0.15 to <0.25	13	0.18%	3	25.00%	1.09	2	16.9%
	0.25 to <0.50	27	0.44%	2	25.00%	1.00	8	28.5%
	0.50 to <0.75	-	0.00%	-	0.00%	-	-	0.0%
	0.75 to <2.50	-	2.00%	1	25.00%	5.00	-	91.7%
	2.50 to <10.00	-	0.00%	-	0.00%	-	-	0.0%
	10.00 to <100.00	-	0.00%	-	0.00%	-	-	0.0%
	100.00 (Default)	-	0.00%	-	0.00%	-	-	0.0%
	Sub-total	5,669	0.04%	62	16.43%	2.23	227	4.0%
Bank								
	0.00 to <0.15	10,715	0.07%	187	31.00%	1.25	1,582	14.8%
	0.15 to <0.25	1,176	0.17%	37	31.00%	0.89	294	25.0%
	0.25 to <0.50	332	0.36%	61	38.00%	2.04	182	54.7%
	0.50 to <0.75	39	0.61%	8	36.00%	1.58	22	56.0%
	0.75 to <2.50	2	1.41%	3	34.00%	1.48	2	80.9%
	2.50 to <10.00	-	9.00%	1	40.00%	2.09	-	176.1%
	10.00 to <100.00	-	0.00%	-	0.00%	-	-	0.0%
	100.00 (Default)	-	0.00%	-	0.00%	-	-	0.0%
	Sub-total	12,264	0.09%	297	31.13%	1.24	2,082	17.0%
Corporate								
	0.00 to <0.15	26,372	0.07%	4,416	42.00%	0.45	4,060	15.4%
	0.15 to <0.25	2,855	0.17%	424	46.00%	1.25	1,025	35.9%
	0.25 to <0.50	2,951	0.33%	706	48.00%	1.30	1,676	56.8%
	0.50 to <0.75	1,660	0.71%	325	47.00%	0.73	1,275	76.8%
	0.75 to <2.50	505	1.18%	119	41.00%	2.65	530	105.0%
	2.50 to <10.00	10	9.00%	10	39.00%	3.88	19	194.5%
	10.00 to <100.00	8	18.41%	9	39.00%	1.10	15	202.1%
	100.00 (Default)	25	100.00%	2	44.00%	1.00	-	0.0%
	Sub-total	34,386	0.23%	6,011	45.74%	0.66	8,600	25.0%
Total		52,319	0.17%	6,370	39.14%	0.97	10,909	20.9%

CCR4: IRB – CCR exposures by portfolio and PD scale ⁽¹⁾


(in \$MM)	PD scale	a	b	c	d	e	f	g
		EAD post-CRM	Average PD ⁽²⁾	Number of obligors	Average LGD ⁽³⁾	Average maturity ⁽⁴⁾	RWA ⁽⁵⁾	RWA Density ⁽⁶⁾
Q1 2019								
Sovereign								
	0.00 to <0.15	4,207	0.02%	53	14.00%	2.27	160	3.8%
	0.15 to <0.25	18	0.18%	4	25.00%	1.00	3	16.5%
	0.25 to <0.50	29	0.44%	2	25.00%	1.00	8	28.5%
	0.50 to <0.75	2	0.72%	1	25.00%	1.00	1	37.0%
	0.75 to <2.50	-	0.00%	-	0.00%	-	-	0.0%
	2.50 to <10.00	-	9.00%	1	25.00%	5.00	-	129.9%
	10.00 to <100.00	-	0.00%	-	0.00%	-	-	0.0%
	100.00 (Default)	-	0.00%	-	0.00%	-	-	0.0%
	Sub-total	4,256	0.03%	61	15.67%	2.48	172	4.1%
Bank								
	0.00 to <0.15	13,251	0.07%	183	33.00%	1.38	2,152	16.2%
	0.15 to <0.25	1,506	0.17%	38	31.00%	1.14	401	26.6%
	0.25 to <0.50	313	0.36%	56	38.00%	1.92	165	52.8%
	0.50 to <0.75	24	0.57%	10	38.00%	1.31	13	54.9%
	0.75 to <2.50	8	1.04%	2	30.00%	1.11	5	62.3%
	2.50 to <10.00	-	9.00%	1	40.00%	1.76	-	172.5%
	10.00 to <100.00	-	0.00%	-	0.00%	-	-	0.0%
	100.00 (Default)	-	0.00%	-	0.00%	-	-	0.0%
	Sub-total	15,102	0.08%	290	32.58%	1.37	2,736	18.1%
Corporate								
	0.00 to <0.15	23,810	0.07%	4,428	41.00%	0.45	3,732	15.7%
	0.15 to <0.25	2,358	0.17%	412	46.00%	1.25	895	37.9%
	0.25 to <0.50	2,275	0.34%	666	50.00%	1.26	1,344	59.1%
	0.50 to <0.75	597	0.70%	278	42.00%	1.98	444	74.4%
	0.75 to <2.50	369	1.21%	118	40.00%	3.07	398	107.9%
	2.50 to <10.00	23	9.00%	9	58.00%	1.68	58	256.9%
	10.00 to <100.00	4	19.29%	11	44.00%	1.04	10	225.5%
	100.00 (Default)	44	100.00%	1	44.00%	1.00	-	0.0%
	Sub-total	29,480	0.29%	5,923	45.61%	0.68	6,881	23.3%
Total		48,838	0.20%	6,274	38.97%	1.05	9,789	20.0%

(1) Represents AIRB exposures for Derivatives and SFT.

(2) Post-CRM PD weighted by post-CRM EAD.

(3) Post-CRM LGD weighted by post-CRM EAD.

(4) Effective remaining maturity in years.

(5) After application of AIRB scalar of 1.06.

(6) RWA density is calculated as Risk-weighted assets (column f) divided by EAD post-CRM (column a).

CCR5: Composition of collateral for CCR exposure ⁽¹⁾


(in \$MM)	a	b	c	d	e	f
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated ⁽²⁾	Unsegregated ⁽²⁾	Segregated ⁽²⁾	Unsegregated ⁽²⁾		
Q3 2019						
Cash – domestic currency	-	1,552	-	151	6,539	4,322
Cash – other currencies	-	5,621	-	7,124	28,485	18,366
Domestic sovereign debt	-	82	-	1,933	701	3,426
Other sovereign debt	-	636	440	1,976	3,722	2,003
Government agency debt	-	657	-	1,933	2,152	4,544
Corporate bonds	-	156	-	836	15,102	16,392
Equity securities	-	-	6	-	26,141	17,456
Other collateral	-	-	-	-	18	-
Total	-	8,704	446	13,953	82,860	66,509
Q2 2019						
Cash – domestic currency	-	1,953	-	87	8,203	4,091
Cash – other currencies	-	4,956	3	6,613	31,164	18,630
Domestic sovereign debt	-	144	-	2,468	328	4,623
Other sovereign debt	-	577	415	1,610	3,611	3,430
Government agency debt	-	965	-	1,908	1,315	6,270
Corporate bonds	-	133	-	439	16,922	20,632
Equity securities	-	-	5	-	27,520	18,999
Other collateral	-	-	-	-	39	-
Total	-	8,728	423	13,125	89,102	76,675
Q1 2019						
Cash – domestic currency	-	1,923	-	213	10,202	4,189
Cash – other currencies	-	4,248	-	6,862	35,944	23,064
Domestic sovereign debt	-	105	-	2,488	345	7,766
Other sovereign debt	-	602	417	1,477	3,609	2,987
Government agency debt	-	876	-	1,990	502	9,595
Corporate bonds	-	112	-	203	15,957	20,145
Equity securities	-	-	5	-	27,764	19,039
Other collateral	-	-	-	-	22	-
Total	-	7,866	422	13,233	94,345	86,785
Q4 2018						
Cash – domestic currency	-	1,607	-	266	8,341	4,405
Cash – other currencies	-	5,091	85	6,467	32,301	21,045
Domestic sovereign debt	-	109	-	2,103	297	5,076
Other sovereign debt	-	668	373	1,801	3,410	3,477
Government agency debt	-	818	-	1,714	812	9,765
Corporate bonds	-	85	-	58	15,981	19,500
Equity securities	-	-	5	-	28,304	15,610
Other collateral	-	-	-	-	25	-
Total	-	8,378	463	12,409	89,471	78,878

(1) Provides breakdown of collateral posted or received for SFTs or derivative transactions, including transactions cleared through CCPs.

(2) Segregated refers to collateral which is held in a bankruptcy-remote manner. Unsegregated refers to collateral that is not held in a bankruptcy-remote manner.

CCR6: Credit derivatives exposures


(in \$MM)	a	b
	Protection bought	Protection sold
Q3 2019		
Notionals		
Single-name credit default swaps	9,420	4,999
Index credit default swaps	-	-
Credit default swaps	9,420	4,999
Total return swaps	14,998	343
Credit options	-	-
Other credit derivatives	-	-
Total notionals	24,418	5,342
Fair values		
Positive fair value (asset)	243	14
Negative fair value (liability)	-	(49)
Q2 2019		
Notionals		
Single-name credit default swaps	11,997	4,750
Index credit default swaps	-	-
Credit default swaps	11,997	4,750
Total return swaps	12,969	2
Credit options	-	-
Other credit derivatives	-	-
Total notionals	24,966	4,752
Fair values		
Positive fair value (asset)	234	18
Negative fair value (liability)	-	(56)
Q1 2019		
Notionals		
Single-name credit default swaps	10,136	5,426
Index credit default swaps	-	-
Credit default swaps	10,136	5,426
Total return swaps	12,385	158
Credit options	-	-
Other credit derivatives	-	-
Total notionals	22,521	5,584
Fair values		
Positive fair value (asset)	350	21
Negative fair value (liability)	-	(58)
Q4 2018		
Notionals		
Single-name credit default swaps	12,296	5,622
Index credit default swaps	-	-
Credit default swaps	12,296	5,622
Total return swaps	11,785	164
Credit options	-	-
Other credit derivatives	-	-
Total notionals	24,081	5,786
Fair values		
Positive fair value (asset)	323	26
Negative fair value (liability)	(104)	(1)

CCR7: RWA flow statements of CCR exposures under Internal Model Method (IMM)



(in \$MM)		a	a ₂	a ₃	a ₄
		Q3 2019	Q2 2019	Q1 2019	Q4 2018
1	RWA as at end of previous reporting period ⁽¹⁾	6,810	5,994	6,547	6,348
2	Asset size ⁽²⁾	579	(373)	(207)	135
3	Asset quality ⁽³⁾	6	1	(217)	(3)
4	Model updates ⁽⁴⁾	161	1,067	-	-
5	Methodology and policy ⁽⁵⁾	-	-	(123)	-
6	Acquisitions and disposals ⁽⁶⁾	-	-	-	-
7	Foreign exchange movements ⁽⁷⁾	(107)	121	(6)	67
8	Other ⁽⁸⁾	-	-	-	-
9	RWA as at end of current reporting period	7,449	6,810	5,994	6,547

(1) Includes exposures under IMM cleared through a CCP.

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

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

(4) Changes due to model implementation, changes in model scope, or any changes intended to address model weaknesses. Includes additional conversion of certain portfolios to IMM from SA-CCR in Q2 2019.

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

(6) Changes in book sizes from acquisitions and/or divestitures.

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

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

CCR8: Exposures to central counterparties


(in \$MM)		a	b	a ₂	b ₂	a ₃	b ₃	a ₄	b ₄
		EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA	EAD (post-CRM)	RWA
		Q3 2019		Q2 2019		Q1 2019		Q4 2018	
1	Exposures to QCCPs (total)		472		550		398		426
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	7,463	159	8,222	174	7,671	158	9,858	205
3	(i) OTC derivatives	570	11	383	8	736	15	781	16
4	(ii) Exchange-traded derivatives	5,416	118	5,725	124	4,638	97	7,300	153
5	(iii) Securities financing transactions	1,477	30	2,114	42	2,297	46	1,777	36
6	(iv) Netting sets where cross-product netting has been approved	-	-	-	-	-	-	-	-
7	Segregated initial margin	3,917		4,733		4,956		3,247	
8	Non-segregated initial margin	-	-	-	-	-	-	-	-
9	Pre-funded default fund contributions	649	313	595	376	420	240	448	221
10	Unfunded default fund contributions	962	-	878	-	886	-	848	-
11	Exposures to non-QCCPs (total)		131		100		51		47
12	Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	-	-	-	-	-	-	-	-
13	(i) OTC derivatives	-	-	-	-	-	-	-	-
14	(ii) Exchange-traded derivatives	-	-	-	-	-	-	-	-
15	(iii) Securities financing transactions	-	-	-	-	-	-	-	-
16	(iv) Netting sets where cross-product netting has been approved	-	-	-	-	-	-	-	-
17	Segregated initial margin	-		-		-		-	
18	Non-segregated initial margin	-	-	-	-	-	-	-	-
19	Pre-funded default fund contributions	10	131	8	100	4	51	4	47
20	Unfunded default fund contributions	-	-	-	-	-	-	-	-

SEC1: Securitization exposures in the banking book


(in \$MM)		a ⁽¹⁾	a ⁽²⁾	b	c	e	f	g	i	j	k
		Bank acts as Originator				Bank acts as Sponsor ⁽³⁾			Bank acts as Investor ⁽⁴⁾		
		Traditional	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
Q3 2019											
1	Retail (total)	134	382	-	516	10,551	-	10,551	4,027	-	4,027
	– of which										
2	Residential Mortgage ⁽⁵⁾	-	-	-	-	510	-	510	80	-	80
3	Credit Card	134	-	-	134	1,306	-	1,306	2,000	-	2,000
4	Consumer Receivables	-	102	-	102	1,303	-	1,303	759	-	759
5	Auto Loans/Leases	-	280	-	280	7,432	-	7,432	1,188	-	1,188
6	Wholesale (total)	-	-	-	-	7,856	-	7,856	824	-	824
	– of which										
7	Trade Receivables	-	-	-	-	4,639	-	4,639	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	25	-	25
9	Auto Wholesale/Rentals	-	-	-	-	2,146	-	2,146	385	-	385
10	Other Wholesale	-	-	-	-	1,071	-	1,071	341	-	341
11	Re-Securitization	-	-	-	-	-	-	-	73	-	73

Q2 2019											
1	Retail (total)	134	485	-	619	11,340	-	11,340	4,053	-	4,053
	– of which										
2	Residential Mortgage ⁽⁵⁾	-	-	-	-	510	-	510	142	-	142
3	Credit Card	134	-	-	134	608	-	608	2,000	-	2,000
4	Consumer Receivables	-	205	-	205	1,897	-	1,897	670	-	670
5	Auto Loans/Leases	-	280	-	280	8,325	-	8,325	1,241	-	1,241
6	Wholesale (total)	-	-	-	-	7,374	-	7,374	812	-	812
	– of which										
7	Trade Receivables	-	-	-	-	3,507	-	3,507	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	25	-	25
9	Auto Wholesale/Rentals	-	-	-	-	2,072	-	2,072	395	-	395
10	Other Wholesale	-	-	-	-	1,795	-	1,795	318	-	318
11	Re-Securitization	-	-	-	-	-	-	-	74	-	74

SEC1: Securitization exposures in the banking book


(in \$MM)		a ⁽¹⁾	a ⁽²⁾	b	c	e	f	g	i	j	k
		Bank acts as Originator			Sub-total	Bank acts as Sponsor ⁽³⁾			Bank acts as Investor ⁽⁴⁾		
		Traditional	Traditional	Synthetic		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
Q1 2019											
1	Retail (total)	134	524	-	658	11,314	-	11,314	4,012	-	4,012
	– of which										
2	Residential Mortgage ⁽⁵⁾	-	-	-	-	510	-	510	142	-	142
3	Credit Card	134	-	-	134	596	-	596	2,001	-	2,001
4	Consumer Receivables	-	205	-	205	1,872	-	1,872	657	-	657
5	Auto Loans/Leases	-	319	-	319	8,336	-	8,336	1,212	-	1,212
6	Wholesale (total)	-	-	-	-	7,242	-	7,242	761	-	761
	– of which										
7	Trade Receivables	-	-	-	-	3,671	-	3,671	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	36	-	36
9	Auto Wholesale/Rentals	-	-	-	-	2,045	-	2,045	387	-	387
10	Other Wholesale	-	-	-	-	1,526	-	1,526	265	-	265
11	Re-Securitization	-	-	-	-	-	-	-	73	-	73

Q4 2018											
1	Retail (total)	134	652	-	786	11,898	-	11,898	3,957	-	3,957
	– of which										
2	Residential Mortgage ⁽⁵⁾	-	-	-	-	526	-	526	143	-	143
3	Credit Card	134	-	-	134	1,269	-	1,269	2,000	-	2,000
4	Consumer Receivables	-	205	-	205	2,334	-	2,334	658	-	658
5	Auto Loans/Leases	-	447	-	447	7,769	-	7,769	1,156	-	1,156
6	Wholesale (total)	-	-	-	-	6,633	-	6,633	724	-	724
	– of which										
7	Trade Receivables	-	-	-	-	3,693	-	3,693	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	36	-	36
9	Auto Wholesale/Rentals	-	-	-	-	1,843	-	1,843	371	-	371
10	Other Wholesale	-	-	-	-	1,097	-	1,097	244	-	244
11	Re-Securitization	-	-	-	-	-	-	-	73	-	73

(1) Retained positions where the Bank acts as an originator and has achieved significant and effective risk transfer.

(2) Retained positions where the Bank acts as an originator and has not achieved significant and effective risk transfer.

(3) Retained positions where the Bank acts as sponsor include exposures to commercial paper conduits to which the bank provides liquidity facilities.

(4) Retained positions where the Bank acts as an investor are the investment positions purchased in third-party deals.

(5) 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 Capital Adequacy Requirements Guideline, Chapter 7, paragraph 3.

SEC2: Securitization exposures in the Trading book


(in \$MM)		a ⁽¹⁾	a ⁽²⁾	b	c	e	f	g	i	j	k
		Bank acts as Originator			Sub-total	Bank acts as Sponsor ⁽³⁾			Bank acts as Investor ⁽⁴⁾		
		Traditional	Traditional	Synthetic		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
Q3 2019											
1	Retail (total) ⁽⁵⁾	-	52	-	52	-	-	-	30	-	30
	– of which										
2	Residential Mortgage ⁽⁶⁾	-	-	-	-	-	-	-	1	-	1
3	Credit Card	-	-	-	-	-	-	-	-	-	-
4	Consumer Receivables	-	52	-	52	-	-	-	16	-	16
5	Auto Loans/Leases	-	-	-	-	-	-	-	13	-	13
6	Wholesale (total) ⁽⁵⁾	-	-	-	-	-	-	-	55	-	55
	– of which										
7	Trade Receivables	-	-	-	-	-	-	-	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	-	-	-
9	Auto Wholesale/Rentals	-	-	-	-	-	-	-	42	-	42
10	Other Wholesale	-	-	-	-	-	-	-	13	-	13
11	Re-Securitization	-	-	-	-	-	-	-	-	-	-

Q2 2019											
1	Retail (total) ⁽⁵⁾	-	66	-	66	-	-	-	9	-	9
	– of which										
2	Residential Mortgage ⁽⁶⁾	-	-	-	-	-	-	-	-	-	-
3	Credit Card	-	-	-	-	-	-	-	-	-	-
4	Consumer Receivables	-	66	-	66	-	-	-	-	-	-
5	Auto Loans/Leases	-	-	-	-	-	-	-	9	-	9
6	Wholesale (total) ⁽⁵⁾	-	-	-	-	-	-	-	33	-	33
	– of which										
7	Trade Receivables	-	-	-	-	-	-	-	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	-	-	-
9	Auto Wholesale/Rentals	-	-	-	-	-	-	-	19	-	19
10	Other Wholesale	-	-	-	-	-	-	-	14	-	14
11	Re-Securitization	-	-	-	-	-	-	-	-	-	-

SEC2: Securitization exposures in the Trading book


(in \$MM)		a ⁽¹⁾	a ⁽²⁾	b	c	e	f	g	i	j	k
		Bank acts as Originator			Sub-total	Bank acts as Sponsor ⁽³⁾			Bank acts as Investor ⁽⁴⁾		
		Traditional	Traditional	Synthetic		Traditional	Synthetic	Sub-total	Traditional	Synthetic	Sub-total
Q1 2019											
1	Retail (total) ⁽⁵⁾	-	57	-	57	-	-	-	113	-	113
	– of which										
2	Residential Mortgage ⁽⁶⁾	-	-	-	-	-	-	-	-	-	-
3	Credit Card	-	-	-	-	-	-	-	19	-	19
4	Consumer Receivables	-	57	-	57	-	-	-	58	-	58
5	Auto Loans/Leases	-	-	-	-	-	-	-	36	-	36
6	Wholesale (total) ⁽⁵⁾	-	-	-	-	-	-	-	56	-	56
	– of which										
7	Trade Receivables	-	-	-	-	-	-	-	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	-	-	-
9	Auto Wholesale/Rentals	-	-	-	-	-	-	-	41	-	41
10	Other Wholesale	-	-	-	-	-	-	-	15	-	15
11	Re-Securitization	-	-	-	-	-	-	-	-	-	-

Q4 2018											
1	Retail (total) ⁽⁵⁾	-	60	-	60	-	-	-	102	-	102
	– of which										
2	Residential Mortgage ⁽⁶⁾	-	-	-	-	-	-	-	-	-	-
3	Credit Card	-	-	-	-	-	-	-	56	-	56
4	Consumer Receivables	-	60	-	60	-	-	-	30	-	30
5	Auto Loans/Leases	-	-	-	-	-	-	-	16	-	16
6	Wholesale (total) ⁽⁵⁾	-	-	-	-	-	-	-	47	-	47
	– of which										
7	Trade Receivables	-	-	-	-	-	-	-	-	-	-
8	Diversified Asset-Backed Securities	-	-	-	-	-	-	-	-	-	-
9	Auto Wholesale/Rentals	-	-	-	-	-	-	-	35	-	35
10	Other Wholesale	-	-	-	-	-	-	-	12	-	12
11	Re-Securitization	-	-	-	-	-	-	-	-	-	-

(1) Retained positions where the Bank acts as an originator and has achieved significant and effective risk transfer.

(2) Retained positions where the Bank acts as an originator and has not achieved significant and effective risk transfer.

(3) Retained positions where the Bank acts as sponsor include exposures to commercial paper conduits to which the bank provides liquidity facilities.

(4) Retained positions where the Bank acts as an investor are the investment positions purchased in third-party deals.

(5) Capital charges related to trading book securitization exposures are based upon the Bank's internal market risk models including its comprehensive risk measure.

(6) 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 Capital Adequacy Requirements Guideline, Chapter 7, paragraph 3.

SEC3: Securitization exposures in the banking book and associated regulatory capital requirements
– bank acting as originator or as sponsor



(in \$MM)	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
	Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)				Capital charge after cap			
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%
Q3 2019																	
1 Total exposures ⁽¹⁾⁽²⁾	15,159	2,521	861	-	-	18,541	-	-	-	3,278	-	-	-	262	-	-	-
2 Traditional securitization	15,159	2,521	861	-	-	18,541	-	-	-	3,278	-	-	-	262	-	-	-
3 Of which securitization	15,159	2,521	861	-	-	18,541	-	-	-	3,278	-	-	-	262	-	-	-
4 Of which retail underlying	9,920	631	134	-	-	10,685	-	-	-	1,553	-	-	-	124	-	-	-
5 Of which wholesale	5,239	1,890	727	-	-	7,856	-	-	-	1,725	-	-	-	138	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q2 2019																	
1 Total exposures ⁽¹⁾⁽²⁾	15,691	2,842	315	-	-	18,848	-	-	-	3,263	-	-	-	261	-	-	-
2 Traditional securitization	15,691	2,842	315	-	-	18,848	-	-	-	3,263	-	-	-	261	-	-	-
3 Of which securitization	15,691	2,842	315	-	-	18,848	-	-	-	3,263	-	-	-	261	-	-	-
4 Of which retail underlying	10,626	635	213	-	-	11,474	-	-	-	1,824	-	-	-	146	-	-	-
5 Of which wholesale	5,065	2,207	102	-	-	7,374	-	-	-	1,439	-	-	-	115	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SEC3: Securitization exposures in the banking book and associated regulatory capital requirements
– bank acting as originator or as sponsor



(in \$MM)	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
	Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)				Capital charge after cap			
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%
Q1 2019																	
1 Total exposures ⁽¹⁾⁽²⁾	15,425	2,120	1,011	134	-	18,690	-	-	-	3,575	-	-	-	286	-	-	-
2 Traditional securitization	15,425	2,120	1,011	134	-	18,690	-	-	-	3,575	-	-	-	286	-	-	-
3 Of which securitization	15,425	2,120	1,011	134	-	18,690	-	-	-	3,575	-	-	-	286	-	-	-
4 Of which retail underlying	10,586	728	-	134	-	11,448	-	-	-	1,841	-	-	-	147	-	-	-
5 Of which wholesale	4,839	1,392	1,011	-	-	7,242	-	-	-	1,734	-	-	-	139	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q4 2018																	
1 Total exposures ⁽¹⁾⁽²⁾	18,531	-	134	-	-	18,665	-	-	-	1,710	-	-	-	137	-	-	-
2 Traditional securitization	18,531	-	134	-	-	18,665	-	-	-	1,710	-	-	-	137	-	-	-
3 Of which securitization	18,531	-	134	-	-	18,665	-	-	-	1,710	-	-	-	137	-	-	-
4 Of which retail underlying	11,898	-	134	-	-	12,032	-	-	-	1,082	-	-	-	87	-	-	-
5 Of which wholesale	6,633	-	-	-	-	6,633	-	-	-	628	-	-	-	50	-	-	-
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) Includes banking book on-balance sheet investments in asset backed securities (ABS), collateralized loan obligations (CLOs), collateralized debt obligations (CDOs), and off-balance sheet liquidity lines and credit enhancements to bank sponsored conduits.

(2) Included in on-balance sheet exposures are investment grade subordinated notes retained by the Bank, issued by Trillium Credit Card Trust II, and backed by bank originated credit card receivables. OSFI's Securitization Framework is applied.

SEC4: Securitization exposures in the banking book and associated capital requirements – bank acting as investor


(in \$MM)	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
	Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)				Capital charge after cap			
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%
Q3 2019																	
1 Total exposures ⁽¹⁾	2,331	869	1,568	83	-	4,778	-	73	-	1,608	-	73	-	129	-	6	-
2 Traditional securitization	2,331	869	1,568	83	-	4,778	-	73	-	1,608	-	73	-	129	-	6	-
3 Of which securitization	2,331	869	1,495	83	-	4,778	-	-	-	1,608	-	-	-	129	-	-	-
4 Of which retail underlying	2,331	759	854	83	-	4,027	-	-	-	1,127	-	-	-	91	-	-	-
5 Of which wholesale	-	110	641	-	-	751	-	-	-	481	-	-	-	38	-	-	-
6 Of which re-securitization	-	-	73	-	-	-	-	73	-	-	-	73	-	-	-	6	-
7 Of which senior	-	-	73	-	-	-	-	73	-	-	-	73	-	-	-	6	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q2 2019																	
1 Total exposures ⁽¹⁾	2,425	783	1,574	83	-	4,791	-	74	-	1,608	-	74	-	129	-	6	-
2 Traditional securitization	2,425	783	1,574	83	-	4,791	-	74	-	1,608	-	74	-	129	-	6	-
3 Of which securitization	2,425	783	1,500	83	-	4,791	-	-	-	1,608	-	-	-	129	-	-	-
4 Of which retail underlying	2,425	670	875	83	-	4,053	-	-	-	1,140	-	-	-	92	-	-	-
5 Of which wholesale	-	113	625	-	-	738	-	-	-	468	-	-	-	37	-	-	-
6 Of which re-securitization	-	-	74	-	-	-	-	74	-	-	-	74	-	-	-	6	-
7 Of which senior	-	-	74	-	-	-	-	74	-	-	-	74	-	-	-	6	-
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


(in \$MM)	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
	Exposure values (by RW bands)					Exposure values (by regulatory approach)				RWA (by regulatory approach)				Capital charge after cap			
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%	ERBA / IAA	IRB SFA	SA/SSF A	1250%
Q1 2019																	
1 Total exposures⁽¹⁾	2,419	770	1,583	1	-	4,699	-	74	-	1,545	-	82	-	124	-	7	-
2 Traditional securitization	2,419	770	1,583	1	-	4,699	-	74	-	1,545	-	82	-	124	-	7	-
3 Of which securitization	2,419	770	1,510	1	-	4,699	-	1	-	1,545	-	9	-	124	-	1	-
4 Of which retail underlying	2,419	657	935	1	-	4,011	-	1	-	1,102	-	9	-	88	-	1	-
5 Of which wholesale	-	113	575	-	-	688	-	-	-	443	-	-	-	36	-	-	-
6 Of which re-securitization	-	-	73	-	-	-	-	73	-	-	-	73	-	-	-	6	-
7 Of which senior	-	-	73	-	-	-	-	73	-	-	-	73	-	-	-	6	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Q4 2018																	
1 Total exposures⁽¹⁾	4,330	298	26	27	-	4,681	-	-	-	714	-	-	-	57	-	-	-
2 Traditional securitization	4,330	298	26	27	-	4,681	-	-	-	714	-	-	-	57	-	-	-
3 Of which securitization	4,330	241	26	11	-	4,608	-	-	-	607	-	-	-	48	-	-	-
4 Of which retail underlying	3,814	142	1	-	-	3,957	-	-	-	428	-	-	-	34	-	-	-
5 Of which wholesale	516	99	25	11	-	651	-	-	-	179	-	-	-	14	-	-	-
6 Of which re-securitization	-	57	-	16	-	73	-	-	-	107	-	-	-	9	-	-	-
7 Of which senior	-	57	-	16	-	73	-	-	-	107	-	-	-	9	-	-	-
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) Includes banking book investments in asset backed securities (ABS), collateralized loan obligations (CLOs), collateralized debt obligations (CDOs).

FLOW STATEMENT FOR REGULATORY CAPITAL



(in \$MM)	Basel III All-in						
	IFRS 9 ⁽¹⁾						
	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018
Common Equity Tier 1 (CET1) capital							
Opening amount	46,193	45,344	44,443	46,777	45,025	42,990	43,352
Net income attributable to equity holders of the Bank	1,864	2,189	2,136	2,179	1,983	2,107	2,279
Dividends paid to equity holders of the Bank	(1,087)	(1,127)	(1,070)	(1,108)	(1,038)	(1,047)	(979)
Shares issued	46	48	110	16	2,596	34	62
Shared repurchased/redeemed	(196)	(289)	(234)	(380)	(74)	-	(178)
Removal of own credit spread (net of tax)	(20)	29	(40)	(6)	(33)	(21)	35
Movements in other comprehensive income (OCI), excluding cash flow hedges	(1,044)	247	338	(556)	87	1,158	(918)
Currency translation differences	(778)	380	562	(566)	(70)	1,222	(1,006)
Debt and equity investments fair valued through OCI ⁽²⁾	51	50	77	(63)	(19)	(92)	27
Employee Benefits	(347)	(190)	(339)	81	158	5	58
Other	30	7	38	(8)	18	23	3
Goodwill and other intangible assets (deduction, net of related tax liability)	482	(150)	(182)	(2,384)	(2,367)	(222)	50
Other, including regulatory adjustments and transitional arrangements	327	(98)	(157)	(95)	598	26	(713)
Deferred tax assets that rely on future probability	15	12	13	8	(2)	41	35
IFRS 15 (2019) / IFRS 9 (2018) impact ⁽³⁾	-	-	(58)	-	-	-	(564)
Threshold deductions	277	(112)	(125)	(270)	(133)	(41)	(148)
Other	35	2	13	167	733	26	(36)
Closing Amount	46,565	46,193	45,344	44,443	46,777	45,025	42,990
Other Additional Tier 1 capital							
Opening amount	5,516	5,525	5,744	5,763	5,683	5,658	6,121
Capital issuances	-	-	-	300	-	-	-
Redeemed capital	(650)	-	(300)	(350)	-	(345)	-
Other, capital including regulatory adjustments and transitional arrangements (NVCC)	(60)	(9)	81	31	80	370	(463)
Closing Amount	4,806	5,516	5,525	5,744	5,763	5,683	5,658
Total Tier 1 capital	51,371	51,709	50,869	50,187	52,540	50,708	48,648
Tier 2 capital							
Opening amount	9,146	8,927	7,177	7,297	7,008	6,989	6,640
Capital issuances	1,500	-	1,750	-	-	-	-
Redeemed capital	(4)	(17)	-	-	-	(119)	(113)
Amortization adjustments	-	-	-	-	-	-	-
Other, including regulatory adjustments and transitional adjustments (NVCC)	(467)	236	-	(120)	289	138	462
Closing Amount	10,175	9,146	8,927	7,177	7,297	7,008	6,989
Total regulatory capital	61,546	60,855	59,796	57,364	59,837	57,716	55,637

(1) Effective Q1 2019, the Bank adopted IFRS 15 (Revenue Contracts). Effective Q1 2018, the Bank adopted IFRS 9 (Financial Instruments). The full transitional impacts on regulatory capital from IFRS 15 and IFRS 9 were recognized upon adoption.

(2) Referred to as Available-for-Sale under IAS 39 (prior to Fiscal 2018).

(3) Represents the full transitional impact on retained earnings from the Bank's adoption of IFRS 15 (Revenue Contracts) on November 1, 2018 and IFRS 9 (Financial Instruments) on November 1, 2017.

RISK-WEIGHTED ASSETS AND CAPITAL RATIOS



(in \$billions)	Basel III - All-in						
	IFRS 9 ⁽¹⁾						
	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018
RISK-WEIGHTED ASSETS: ⁽²⁾							
On-Balance Sheet Assets							
Cash Resources	3.5	3.4	3.6	3.9	3.3	3.5	3.1
Securities	7.7	7.8	7.7	7.9	8.9	8.5	8.6
Residential Mortgages	39.3	38.2	37.7	35.9	37.2	32.0	31.6
Loans							
- Personal Loans	62.5	60.5	60.9	59.3	59.6	54.3	53.7
- Non-Personal Loans	136.5	137.3	131.7	130.0	131.1	118.6	114.3
All Other	33.7	35.0	33.5	31.9	32.1	32.2	31.6
	283.2	282.2	275.1	268.9	272.2	249.1	242.9
Off-Balance Sheet Assets							
Indirect Credit Instruments	53.7	54.5	53.9	54.2	55.1	53.5	51.2
Derivative Instruments	13.9	13.6	13.9	13.0	12.9	12.1	10.1
	67.6	68.1	67.8	67.2	68.0	65.6	61.3
Total Credit Risk before AIRB scaling factor	350.8	350.3	342.9	336.1	340.2	314.7	304.2
AIRB Scaling factor ⁽³⁾	11.8	11.4	11.0	11.0	11.0	10.7	10.5
Total Credit Risk after AIRB scaling factor	362.6	361.7	353.9	347.1	351.2	325.4	314.7
Market Risk - Risk Assets Equivalent	7.8	7.0	9.0	8.4	16.4	8.8	9.9
Operational Risk - Risk Assets Equivalent	46.7	46.5	45.7	45.0	43.8	41.7	41.2
Regulatory Capital Floor Adjustment to CET1 RWA ⁽⁴⁾	-	-	-	-	-	-	16.4
CET1 Risk-Weighted Assets ⁽⁴⁾⁽⁵⁾	417.1	415.2	408.6	400.5	411.4	375.9	382.2
Tier 1 Risk-Weighted Assets ⁽⁴⁾⁽⁵⁾	417.1	415.2	408.6	400.7	411.6	376.0	382.2
Total Risk-Weighted Assets ⁽⁴⁾⁽⁵⁾	417.1	415.2	408.6	400.9	411.8	376.2	382.2
REGULATORY CAPITAL RATIOS (%):							
Common Equity Tier 1	11.2	11.1	11.1	11.1	11.4	12.0	11.2
Tier 1	12.3	12.5	12.5	12.5	12.8	13.5	12.7
Total	14.8	14.7	14.6	14.3	14.5	15.3	14.6

(1) Effective Q1 2018, the Bank adopted IFRS 9 (Financial Instruments). The full transitional impact on regulatory capital from IFRS 9 was recognized upon adoption.

(2) For purposes of this presentation only, Risk-Weighted Assets (RWA) are shown by balance sheet categories. Details by Basel III exposure type are shown on tab EAD_RWA (page 6), "Exposure at Default and Risk-Weighted Assets for Credit Risk Portfolios".

(3) The Basel Framework requires an additional 6% scaling factor to AIRB credit risk portfolios (excluding CVA, exposures with a risk weight of 1250%, and Securitizations under ERBA/IAA).

(4) The Bank did not have a regulatory capital floor add-on for CET1, Tier 1 and Total capital risk-weighted assets from April 30, 2018 onwards. As at January 31, 2018, the Bank had a regulatory capital floor add-on for CET1, Tier 1 and Total capital risk-weighted assets of \$16.4 billion, \$16.3 billion and \$16.2 billion respectively.

(5) As per OSFI guideline, effective Q1 2014, Credit Valuation Adjustment (CVA) RWA on derivatives were phased-in using Scalars. Commencing in Q1, 2019, the CVA risk-weighted assets have been fully phased-in, (scalars of 0.80, 0.83 and 0.86, were used to compute the CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively in Fiscal 2018).

MOVEMENT OF RISK-WEIGHTED ASSETS BY RISK TYPE (ALL-IN BASIS)


Credit Risk Risk-weighted Assets (RWA) ⁽¹⁾ (in \$MM)	Q3 2019		Q2 2019	
	Credit Risk	Of which Counterparty Credit Risk ⁽⁶⁾	Credit Risk	Of which Counterparty Credit Risk ⁽⁶⁾
Credit risk-weighted assets as at beginning of Quarter	361,693	19,063	353,947	18,368
Book size ⁽²⁾	3,855	56	4,448	258
Book quality ⁽³⁾	858	6	273	9
Model updates ⁽⁴⁾	1,028	70	99	99
Methodology and policy ⁽⁵⁾	-	-	-	-
Acquisitions and disposals	-	-	1,441	-
Foreign exchange movements	(4,827)	(284)	2,896	329
Other	-	-	(1,411)	-
Credit risk-weighted assets as at end of Quarter	362,607	18,911	361,693	19,063

(1) In accordance with OSFI's requirements, in Q1 2019, the CVA risk-weighted assets have been fully phased-in.

(2) Book size is defined as organic changes in book size and composition (including new business and maturing loans).

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

(4) Model updates are defined as model implementation, change in model scope or any change to address model enhancement.

(5) Methodology and policy is defined as methodology changes to the calculations driven by regulatory policy changes, such as new regulation (e.g. Basel III).

(6) Excludes risk-weighted assets for default fund contributions to a CCP.

Market Risk RWA (in \$MM)	Q3 2019	Q2 2019
Market risk-weighted assets as at beginning of Quarter	7,049	9,023
Movement in risk levels ⁽¹⁾	584	(1,981)
Model updates ⁽²⁾	122	7
Methodology and policy ⁽³⁾	-	-
Acquisitions and disposals	-	-
Other	-	-
Market risk-weighted assets as at end of Quarter	7,755	7,049

(1) Movement in risk levels are defined as changes in risk due to position changes and market movements. Foreign exchange movements are embedded within Movement in risk levels.

(2) Model updates are defined as updates to the model to reflect recent experience and change in model scope.

(3) Methodology and policy is defined as methodology changes to the calculations driven by regulatory policy changes (e.g. Basel III).

Operational Risk RWA (in \$MM)	Q3 2019	Q2 2019
Operational risk-weighted assets as at beginning of Quarter	46,471	45,596
Acquisitions and disposals	-	447
Higher Revenue	225	428
Operational risk-weighted assets as at end of Quarter	46,696	46,471

RISK-WEIGHTED ASSETS ARISING FROM THE ACTIVITIES OF THE BANK'S BUSINESSES



(in \$billions)	Q3 2019				
Risk-weighted Assets (RWA)	Canadian Banking	International Banking	Global Banking & Markets	Other	All Bank
RWA	\$133.9	\$176.7	\$99.4	\$7.1	\$417.1
Proportion of Bank	32%	42%	24%	2%	100%
Comprised of:					
Credit risk	85%	89%	85%	108%	87%
Market risk	- %	1%	6%	6%	2%
Operational risk	15%	10%	9%	-14%	11%

(in \$billions)	Q2 2019				
Risk-weighted Assets (RWA)	Canadian Banking	International Banking	Global Banking & Markets	Other	All Bank
RWA	\$129.6	\$178.0	\$100.1	\$7.5	\$415.2
Proportion of Bank	31%	43%	24%	2%	100%
Comprised of:					
Credit risk	84%	89%	86%	107%	87%
Market risk	- %	1%	5%	2%	2%
Operational risk	16%	10%	9%	-9%	11%

CREDIT RISK EXPOSURES BY GEOGRAPHY ⁽¹⁾⁽²⁾



Exposure at Default

(in \$MM)	Q3 2019					Q2 2019				
	Non-Retail			Retail	Total	Non-Retail			Retail	Total
	Drawn	Undrawn	Other ⁽³⁾			Drawn	Undrawn	Other ⁽³⁾		
Canada	111,273	43,424	31,011	351,804	537,512	104,079	42,866	32,402	343,868	523,215
USA	93,985	36,476	41,971	-	172,432	103,782	35,578	43,543	-	182,903
Chile	23,662	1,141	4,107	25,831	54,741	25,022	1,136	4,124	26,438	56,720
Mexico	21,137	1,043	2,778	12,170	37,128	22,099	1,078	2,661	12,167	38,005
Peru	18,578	807	3,296	9,636	32,317	18,792	1,665	3,760	9,520	33,737
Colombia	5,699	476	644	7,437	14,256	5,769	426	488	7,559	14,242
Other International										
Europe	21,542	6,395	14,265	-	42,202	21,027	7,032	13,815	-	41,874
Caribbean	17,417	1,885	1,278	18,571	39,151	19,100	1,773	1,202	18,750	40,825
Latin America (other)	10,751	1,110	163	723	12,747	10,427	1,286	165	723	12,601
All Other	24,061	4,064	4,620	46	32,791	23,022	3,963	4,861	48	31,894
Total	348,105	96,821	104,133	426,218	975,277	353,119	96,803	107,021	419,073	976,016

(in \$MM)	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018
Canada	517,036	521,803	514,606	507,981	504,021
USA	172,791	178,139	162,339	173,649	157,375
Chile	55,919	53,152	57,505	30,015	28,537
Mexico	36,332	33,294	34,730	33,051	31,653
Peru	30,088	28,495	28,989	27,960	26,834
Colombia	14,268	13,649	14,790	12,717	12,294
Other International					
Europe	44,626	42,613	42,181	41,039	43,940
Caribbean	38,772	38,302	38,527	38,665	37,355
Latin America (other)	12,207	11,368	9,814	10,535	9,331
All Other	33,286	28,419	27,267	29,473	29,338
Total	955,325	949,234	930,748	905,085	880,678

(1) Before credit risk mitigation, excluding equity investment securities and other assets.

(2) Geographic segmentation is based upon the location of the ultimate risk of the credit exposure.

(3) Includes off-balance sheet lending instruments such as letters of credit and letters of guarantee, OTC derivatives, securitization and repo-style transactions net of related collateral.

AIRB CREDIT RISK EXPOSURES BY MATURITY ⁽¹⁾⁽²⁾



NON-RETAIL AND RETAIL PORTFOLIO EXPOSURE AT DEFAULT

(in \$MM)	Q3 2019				Q2 2019			
	Drawn	Undrawn	Other ⁽³⁾	Total	Drawn	Undrawn	Other ⁽³⁾	Total
Non-Retail								
Less than 1 year	143,961	27,654	59,364	230,979	143,097	26,146	63,868	233,111
1 to 5 years	121,646	63,260	27,425	212,331	123,175	62,936	26,795	212,906
Over 5 Years	19,764	1,969	6,749	28,482	20,535	2,433	5,900	28,868
Total Non-Retail	285,371	92,883	93,538	471,792	286,807	91,515	96,563	474,885
Retail								
Less than 1 year	39,479	20,559		60,038	38,269	19,962		58,231
1 to 5 years	188,817	-		188,817	185,000	-		185,000
Over 5 Years	15,493	-		15,493	14,975	-		14,975
Revolving Credits ⁽⁴⁾	39,047	29,176		68,223	38,715	28,409		67,124
Total Retail	282,836	49,735		332,571	276,959	48,371		325,330
Total	568,207	142,618	93,538	804,363	563,766	139,886	96,563	800,215

(in \$MM)	Q1 2019	Q4 2018	Q3 2018	Q2 2018
Non-Retail				
Less than 1 year	229,133	235,630	221,700	225,404
1 to 5 years	207,500	208,800	202,411	199,373
Over 5 Years	20,268	17,618	15,715	20,555
Total Non-Retail	456,901	462,048	439,826	445,332
Retail				
Less than 1 year	54,149	50,941	49,302	50,158
1 to 5 years	187,947	188,922	188,710	185,391
Over 5 Years	14,761	15,259	15,487	15,670
Revolving Credits ⁽⁴⁾	67,901	68,467	68,177	66,556
Total Retail	324,758	323,589	321,676	317,775
Total	781,659	785,637	761,502	763,107

(1) Before credit risk mitigation, excluding equity investment securities and other assets.

(2) Remaining term to maturity of the credit exposure.

(3) Off-balance sheet lending instruments such as letters of credit and letters of guarantee, securitization, derivatives and repo-style transactions net of related collateral.

(4) Credit cards and lines of credit with unspecified maturity.

AIRB CREDIT LOSSES



Exposure Type	Q3 2019		Q2 2019		Q1 2019		Q4 2018		Q3 2018	
	Actual Loss Rate	Expected Loss Rate	Actual Loss Rate	Expected Loss Rate	Actual Loss Rate	Expected Loss Rate	Actual Loss Rate	Expected Loss Rate	Actual Loss Rate	Expected Loss Rate
	%	%	%	%	%	%	%	%	%	%
Non-Retail⁽¹⁾										
Corporate	0.04	0.49	0.04	0.52	0.07	0.49	0.08	0.57	0.06	0.59
Sovereign	-	0.06	-	0.02	-	0.03	-	0.02	-	0.02
Bank	-	0.09	-	0.10	-	0.10	-	0.10	-	0.13
Retail⁽²⁾										
Real Estate Secured	0.01	0.15	0.01	0.14	0.01	0.13	0.01	0.12	0.01	0.12
QRRE	2.93	3.88	2.64	3.69	2.55	4.02	2.50	3.92	2.65	3.87
Other Retail	0.59	1.61	0.58	1.60	0.58	1.74	0.57	1.66	0.61	1.74

(1) Non-retail actual loss rates represent the credit losses net of recoveries for the current and prior three quarters divided by the 5-point average of outstanding loan balances for the same four-quarter period beginning 12 months ago. Expected loss rates represent the expected losses that were predicted at the beginning of the four-quarter period divided by outstanding loan balances at the beginning of the four-quarter period.

(2) Retail actual loss rates represent write-offs net of recoveries for the current and prior three quarters divided by the 5-point average of outstanding loan balances for the same four-quarter period beginning 12 months ago. Expected loss rates represent the expected losses that were predicted at the beginning of the four-quarter period divided by outstanding loan balances at the beginning of the four-quarter period.

ESTIMATED AND ACTUAL LOSS PARAMETERS - NON-RETAIL AND RETAIL AIRB PORTFOLIOS



(in \$MM) ⁽¹⁾	Q3 2019						Q2 2019					
	Average estimated PD %	Actual default rate %	Average estimated LGD %	Actual LGD %	Average estimated CCF ⁽²⁾ %	Actual CCF ⁽²⁾ %	Average estimated PD %	Actual default rate %	Average estimated LGD %	Actual LGD %	Average estimated CCF ⁽²⁾ %	Actual CCF ⁽²⁾ %
Non-Retail	0.76	0.31	40.69	23.55	48.99	17.64	0.84	0.33	40.35	23.81	49.05	12.72

(1) Reporting is on a one quarter lag basis. For reporting as of Q3/19, estimated parameters are based on portfolio averages at Q2/18 whereas actual parameters are based on averages of realized parameters during the subsequent four quarters (Q3/18 – Q2/19).

(2) EAD back-testing is performed through Credit Conversion Factor (CCF) back-testing, as EAD is computed using the sum of the drawn exposure and undrawn exposure multiplied by the estimated CCF.

(in \$MM) ⁽¹⁾	Four-quarter period ending Q3 2019						Four-quarter period ending Q2 2019					
	Average estimated PD ⁽²⁾⁽⁷⁾ %	Actual default rate ⁽²⁾⁽⁵⁾ %	Average estimated LGD ⁽³⁾⁽⁷⁾ %	Actual LGD ⁽³⁾⁽⁶⁾ %	Estimated EAD ⁽⁴⁾⁽⁷⁾ \$	Actual EAD ⁽⁴⁾⁽⁵⁾ \$	Average estimated PD ⁽²⁾⁽⁷⁾ %	Actual default rate ⁽²⁾⁽⁵⁾ %	Average estimated LGD ⁽³⁾⁽⁷⁾ %	Actual LGD ⁽³⁾⁽⁶⁾ %	Estimated EAD ⁽⁴⁾⁽⁷⁾ \$	Actual EAD ⁽⁴⁾⁽⁵⁾ \$
Residential real estate secured												
Residential mortgages												
Insured mortgages ⁽⁸⁾	0.76	0.41	-	-	-	-	0.64	0.49	-	-	-	-
Uninsured mortgages	0.57	0.27	19.91	11.15	-	-	0.50	0.31	18.82	11.08	-	-
Secured lines of credit	0.35	0.23	30.15	18.93	87	79	0.39	0.24	29.52	17.80	92	84
Qualifying revolving retail exposures	1.89	1.51	77.35	71.96	716	619	2.01	1.57	79.53	69.73	682	592
Other retail	1.71	1.09	62.37	53.64	5	5	1.79	1.10	60.67	50.17	7	7

(1) Estimates and Actual Values are recalculated to align with new models implemented during the period.

(2) Account weighted aggregation.

(3) Default weighted aggregation.

(4) EAD is estimated for revolving products only.

(5) Actual based on accounts not at default as at four quarters prior to reporting date.

(6) Actual LGD calculated based on 24 month recovery period after default and therefore excludes any recoveries received after the 24 month period.

(7) Estimates are based on the four quarters prior to the reporting date.

(8) Actual and Estimated LGD for insured mortgages are not shown. Actual LGD includes the insurance benefit, whereas estimated LGD may not.

DERIVATIVES - COUNTERPARTY CREDIT RISK ⁽¹⁾


Contract Types	Q3 2019				Q2 2019				Q1 2019				Q4 2018			
	Notional Amount	Credit Risk Amount	Credit Risk Equivalent Amount	Risk-weighted Amount ⁽²⁾	Notional Amount	Credit Risk Amount	Credit Risk Equivalent Amount	Risk-weighted Amount ⁽²⁾	Notional Amount	Credit Risk Amount	Credit Risk Equivalent Amount	Risk-weighted Amount ⁽²⁾	Notional Amount	Credit Risk Amount	Credit Risk Equivalent Amount	Risk-weighted Amount ⁽²⁾
Interest Rate Contracts:																
Futures and Forward Rate Agreements	520,394	85	251	120	387,188	37	196	70	442,990	14	286	130	458,028	36	250	82
Swaps	3,542,415	3,514	6,207	2,006	3,747,573	2,116	4,772	1,449	3,666,697	1,902	4,770	1,397	3,598,398	96	4,436	1,125
Options Purchased	30,502	38	36	18	30,666	36	50	23	49,662	40	71	29	33,019	36	138	63
Options Written	30,892	13	5	5	33,989	5	2	2	37,855	4	2	2	34,655	-	2	1
Total	4,123,403	3,637	6,507	2,149	4,199,416	2,189	5,023	1,544	4,197,204	1,956	5,131	1,558	4,124,100	168	4,826	1,271
Foreign Exchange Contracts:																
Futures and Forwards	510,208	2,574	4,374	1,764	484,041	1,715	4,028	1,720	489,551	2,020	5,091	2,136	474,024	2,571	5,525	2,006
Swaps	434,391	3,076	7,003	2,751	430,719	2,428	6,378	2,547	419,244	2,400	6,833	2,538	399,538	4,297	8,267	2,611
Options Purchased	48,957	854	280	115	47,520	829	287	117	51,388	912	273	100	42,545	712	240	76
Options Written	49,090	-	38	8	47,627	-	37	8	51,056	-	48	13	41,804	-	20	5
Total	1,042,646	6,504	11,695	4,638	1,009,907	4,972	10,730	4,392	1,011,239	5,332	12,245	4,787	957,911	7,580	14,052	4,698
Other Derivatives Contracts:																
Equity	130,081	609	7,386	1,208	124,430	398	7,260	1,131	112,861	359	6,105	1,128	123,305	455	4,927	1,505
Credit	29,760	113	418	112	29,720	108	268	88	28,105	162	416	114	29,866	239	420	119
Other	115,637	812	4,194	433	105,423	1,273	4,868	576	98,544	1,324	3,799	436	100,576	1,182	8,052	830
Total	275,478	1,534	11,998	1,753	259,573	1,779	12,396	1,795	239,510	1,845	10,320	1,678	253,747	1,876	13,399	2,454
Credit Valuation Adjustment⁽²⁾				5,405				5,840				5,861				4,616
Total Derivatives after Netting and Collateral	5,441,527	11,675	30,200	13,945	5,468,896	8,940	28,149	13,571	5,447,953	9,133	27,696	13,884	5,335,758	9,624	32,277	13,039

Contract Types	Q3 2018			Q2 2018			Q1 2018			Q4 2017		
	Notional Amount		Risk-weighted Amount ⁽³⁾	Notional Amount		Risk-weighted Amount ⁽³⁾	Notional Amount		Risk-weighted Amount ⁽³⁾	Notional Amount		Risk-weighted Amount ⁽³⁾
Interest Rate Contracts:												
Futures and Forward Rate Agreements	437,173		89	522,515		80	475,328		40	491,651		20
Swaps	3,503,927		1,919	3,605,918		1,142	3,106,659		854	2,803,343		1,341
Options Purchased	41,843		46	44,468		351	44,681		41	39,664		57
Options Written	37,075		-	35,392		1	39,851		-	40,993		3
Total	4,020,018		2,054	4,208,293		1,574	3,666,519		935	3,375,651		1,421
Foreign Exchange Contracts:												
Futures and Forwards	516,792		1,625	497,076		1,665	540,034		1,569	481,187		1,765
Swaps	392,657		1,915	379,532		1,982	379,457		1,980	386,010		1,899
Options Purchased	50,450		73	40,694		190	34,873		121	39,116		113
Options Written	48,963		5	39,683		29	35,032		7	40,028		12
Total	1,008,862		3,618	956,985		3,866	989,396		3,677	946,341		3,789
Other Derivatives Contracts:												
Equity	118,693		1,468	112,499		1,670	108,887		1,425	101,390		1,575
Credit	31,283		104	33,586		164	34,372		182	37,591		174
Other	97,325		899	110,229		1,033	113,275		1,082	87,415		807
Total	247,301		2,471	256,314		2,867	256,534		2,689	226,396		2,556
Credit Valuation Adjustment⁽²⁾			4,755			3,757			2,760			2,988
Risk-weighted Amount			12,898			12,064			10,061			10,754

(1) The impact of Master Netting Agreements and Collateral has been incorporated within the various contracts. As a result, risk-weighted amounts are reported net of impact of collateral and master netting arrangements.

(2) As per OSFI guideline, Credit Valuation Adjustment RWA on derivatives was phased-in in 2014. Commencing in Q1, 2019, the CVA risk-weighted assets have been fully phased-in, (scalars of 0.80, 0.83 and 0.86, were used to compute the CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively in Fiscal 2018).

(3) Includes derivative exposures cleared through CCPs. Excludes (i) risk weighted assets for default fund contributions to a CCP and (ii) the 6% AIRB scalar.

TOTAL MARKET RISK-WEIGHTED ASSETS



(in \$MM)	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018
All Bank VaR	1,425	1,339	1,489	1,553	1,667
All Bank stressed VaR	4,396	3,993	5,356	5,240	5,620
Incremental risk charge	1,407	1,251	1,772	1,184	5,648
Comprehensive risk measure ⁽¹⁾	-	-	-	-	-
Standardized approach	527	466	406	380	3,467
Market risk-weighted assets as at end of Quarter	7,755	7,049	9,023	8,357	16,402

(1) Comprehensive risk measure charges are no longer applicable as of Q4 2017.

GLOSSARY



Credit Risk Parameters	
Exposure at Default (EAD)	Generally represents the expected gross exposures at default and includes outstanding amounts for on-balance sheet exposures and loan equivalent amounts for off-balance sheet exposures.
Probability of Default (PD)	Measures the likelihood that a borrower will default within a 1-year time horizon, expressed as a percentage.
Loss Given Default (LGD)	Measures the severity of loss on a facility in the event of a borrower's default, expressed as a percentage of exposure at default.
Exposure Types	
Non-retail	
Corporate	Debt obligation of a corporation, partnership, or proprietorship.
Bank	Debt obligation of a bank or bank equivalent (including certain public sector entities (PSEs) treated as Bank equivalent exposures).
Sovereign	Debt obligation of a sovereign, central bank, certain multilateral development banks (MDBs) and certain PSEs treated as Sovereign.
Securitization	On-balance sheet investments in asset backed securities (ABS), mortgage backed securities (MBS), collateralized loan obligations (CLOs) and collateralized debt obligations (CDOs). Off-balance sheet liquidity lines including credit enhancements to Bank's sponsored ABCP conduits and liquidity lines to non-bank sponsored ABCP conduits.
Retail	
Real Estate Secured	
Residential Mortgages	Loans to individuals against residential property (four units or less).
Secured Lines Of Credit	Revolving personal lines of credit secured by first charge on residential real estate.
Qualifying Revolving Retail Exposures (QRRE)	Credit cards and unsecured line of credit for individuals.
Other Retail	All other personal loans.
Exposure Sub-types	
Drawn	Outstanding amounts for loans, leases, acceptances, deposits with banks and available-for-sale debt securities.
Undrawn	Unutilized portion of an authorized credit line.
Repo-Style Transactions	Reverse repurchase agreements (reverse repos) and repurchase agreements (repos), securities lending and borrowing.
Over-the-counter (OTC) Derivatives	Over-the-counter derivatives contracts.
Exchange-traded derivatives (ETD)	Derivative contracts (e.g. futures contracts and options) that are transacted on an organized futures exchange. These include Futures contracts (both Long and Short positions), Purchased Options and Written Options.
Other Off-Balance Sheet	Direct credit substitutes such as standby letters of credits and guarantees, trade letters of credits, and performance letters of credits and guarantees.
Qualifying central counterparty (QCCP)	A qualifying central counterparty (QCCP) is licensed as a central counterparty and is also considered as "qualifying" when it is compliant with CPSS-IOSCO standards and is able to assist clearing member banks in properly capitalizing for CCP exposures by either undertaking the calculations and/or making available sufficient information to its clearing members, or others, to enable the completion of capital calculations.
Non-qualifying central counterparties (NQCCP)	Defined as those central counterparties which are not compliant with CPSS-IOSCO standards as outlined under qualifying CCP's. The exposures to NQCCP will follow standardized treatment under the Basel accord.
Other	
Asset Value Correlation Multiplier (AVC)	Basel III has increased the risk-weights on exposures to certain Financial Institutions (FIs) relative to the non-financial corporate sector by introducing an Asset Value Correlation multiplier (AVC). The correlation factor in the risk-weight formula is multiplied by this AVC factor of 1.25 for all exposures to regulated FIs whose total assets are greater than or equal to US \$100 billion and all exposures to unregulated FIs.
Regulatory Capital Floor	A minimum capital floor requirement is prescribed for institutions that use the AIRB approach for credit risk. Up to and including Q1 2018, the capital floor add-on was determined by comparing a capital requirement calculated by reference to Basel I against the Basel III calculation, as prescribed by OSFI. A shortfall in the Basel III capital requirement compared with the Basel I capital floor was added to RWAs. Effective Q2 2018, OSFI has replaced the Basel I regulatory capital floor with a capital floor based on the Basel II standardized approach for credit risk. Revised capital floor requirements also include risk-weighted assets for market risk and CVA.
Specific Wrong-Way Risk (WWR)	Specific Wrong-Way Risk arises when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty due to the nature of the transactions with the counterparty.
Credit Valuation Adjustment (CVA)	Credit Valuation Adjustment (CVA) is the difference between the risk free value of a portfolio and the true value of that portfolio, accounting for the possible default of a counterparty. CVA adjustment aims to identify the impact of Counterparty Risk.
Advanced Measurement Approaches (AMA)	Under the AMA, the regulatory capital requirement for Operational Risk will equal the risk measure generated by the bank's internal operational risk measurement system using the quantitative and qualitative criteria. AMA utilizes risk drivers for capital movements (such as internal loss experience, business environment and internal control factors, external loss experience, and scenarios).