

2019
HSBC Bank Canada
Regulatory Capital & Risk Management

Pillar 3 Supplementary Disclosures
As at June 30, 2019



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Notes to users

Regulatory Capital and Risk Management Pillar 3 Disclosures

The Office of the Superintendent of Financial Institutions (“OSFI”) supervises HSBC Bank Canada (the “Bank”) on a consolidated basis. OSFI has approved the Bank’s application to apply the Advanced Internal Ratings Based (“AIRB”) approach to credit risk on our portfolio and the Standardized Approach for measuring Operational Risk. Please refer to the Annual Report and Accounts 2018 for further information on the Bank’s risk and capital management framework. Further information regarding HSBC Group Risk Management Processes can be found in HSBC Holdings plc Capital and Risk Management Pillar 3 Disclosures available on HSBC Group’s investor relations web site.

The Pillar 3 Supplemental Disclosures are additional summary descriptions and quantitative financial information which supplement those already made in the Annual Report and Accounts 2018 for the disclosure requirements under OSFI’s Pillar 3 Disclosure Requirements Advisory issued September 29, 2006 consistent with the “International Convergence of Capital Measurement and Capital Standards” (‘Basel II’) issued by the Basel Committee on Banking Supervision (BCBS) in June 2006 and the “Composition of capital disclosure requirements” (‘Basel III’) issued by the BCBS in June 2012 under OSFI’s advisory letter requirements issued in July 2013 and revised in May 2018

The Basel rules are structured around three “pillars”:

- Pillar 1 - defines the Minimum capital requirements,
- Pillar 2 - requires banks to have robust Internal Capital Adequacy Assessment Processes (ICAAP) which will be part of regulators’ Supervisory review
- Pillar 3 - defines the Market discipline/ disclosures required by Banks which should be consistent and comparable across Banks.

Pillar 3 complements the other two pillars of Basel framework i.e. minimum capital requirements and the supervisory review process. Its aim is to encourage market discipline by developing a set of disclosure requirements which will allow market participants to assess certain specified information on the scope of application of Basel 2/2.5 (‘the Basel rules’), capital, particular risk exposures, risk assessment processes, and hence the capital adequacy of the institution.

The supervisory objectives of BCBS are to promote safety and soundness in the financial system and maintain an appropriate level of capital in the system, enhance competitive equality, constitute a more comprehensive approach to addressing risks, and focus on internationally active banks.

On June 26, 2012, the BCBS issued the Basel III rules on the information banks must publicly disclose when detailing the composition of their capital, which set out a framework to ensure that the components of banks capital bases are publicly disclosed in standardised formats across and within jurisdictions for banks subject to Basel III.

Basel III builds on Basel II. It 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. In addition 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.

On 12 January 2018, OSFI announced its decision to update the existing capital floor for institutions using advanced approaches for credit risk and operational risk. The capital floor of 90%, based on the Basel I capital accord was replaced by a more risk-sensitive capital floor based on the standardized approach under Basel II framework. It was implemented effective Q2 2018 with the floor factor transitioned in over three quarters. The floor factor was set at 70% in Q2 2018, increasing to 72.5% in Q3 2018 and 75% in Q4 2018.

From Q1 2019, disclosure is based on OSFI’s Pillar 3 disclosure requirements (April 2017), including Capital disclosure requirement and Leverage ratio disclosure requirement.

This report is unaudited and all amounts are in rounded millions of Canadian dollars, unless otherwise indicated. Balances reported in this Pillar 3 document reflect the OSFI Capital Adequacy Requirements (CAR) guidelines.

Starting 1 January 2019, counterparty credit risk exposures arising from derivatives are calculated under Standardized Approach for Counterparty Credit Risk (SA-CCR), a new BCBS approach adopted by OSFI. Capital requirements for exposures to Central Counterparties (CCPs) have also been revised. The impact of these changes on credit risk RWA, Credit Valuation Adjustment (CVA) RWA and Leverage Ratio is immaterial.

Road map to Pillar 3 disclosure requirement

Section	Identifier	Table and templates	Frequency	2018 Annual Report
Capital disclosure	CC1	Composition of Regulatory Capital	Quarterly	
Overview of risk management	OVA	Bank risk management approach	Annually	26-28
	OV1	Overview of RWA	Quarterly	
Linkages between financial statements and regulatory exposures	LI1	Differences between accounting and regulatory scopes of consolidation and mapping of financial statements with regulatory risk categories		
	LI2	Main sources of differences between regulatory exposure amounts and carrying values in financial statements		
	LIA	Explanations of differences between accounting and regulatory exposure amounts	na ¹	
Credit risk	CRA	General information about credit risk	Annually	31
	CR1	Credit quality of assets	Semi-annually	32
	CR2	Changes in stock of defaulted loans and debt securities	na ¹	
	CRB	Additional disclosure related to the credit quality of assets	Annually	
	CRC	CRC – Qualitative disclosure requirements related to credit risk mitigation techniques	Annually	41
	CR3	Credit risk mitigation techniques – overview	Semi-annually	
	CRD	Qualitative disclosures on banks' use of external credit ratings under the standardized approach for credit risk	na ¹	
	CR4	Standardized approach – credit risk exposure and Credit Risk Mitigation (CRM) effects	Semi-annually	
	CR5	Standardized approach – exposures by asset classes and risk weights	Semi-annually	
	CRE	Qualitative disclosures related to IRB models	na ¹	
	CR6	IRB Credit risk exposures by portfolio and PD range	Semi-annually	
	CR7	IRB – Effect on RWA of credit derivatives used as CRM techniques	na ²	
	CR8	RWA flow statements of credit risk exposures under IRB	Quarterly	
	CR9	IRB – Backtesting of probability of default (PD) per portfolio	na ¹	
CR10	IRB (specialized lending and equities under the simple risk weight method)	Semi-annually		
Counterparty credit risk	CCRA	Qualitative disclosure related to counterparty credit risk	Annually	40, 67
	CCR1	Analysis of counterparty credit risk (CCR) exposure by approach	Semi-annually	
	CCR2	Credit valuation adjustment (CVA) capital charge	Semi-annually	
	CCR3	Standardized approach of CCR exposures by regulatory portfolio and risk weights	na ²	
	CCR4	IRB – CCR exposures by portfolio and PD scale	Semi-annually	
	CCR5	Composition of collateral for CCR exposure	na ¹	
	CCR6	Credit derivatives exposures	Semi-annually	
	CCR7	RWA flow statements of CCR exposures under the Internal Model Method (IMM)	na ²	
CCR8	Exposures to central counterparties	Semi-annually		
Securitization	SECA	Qualitative disclosure requirements related to securitization exposures		
	SEC1	Securitization exposures in the banking book		
	SEC2	Securitization exposures in the trading book		
	SEC3	Securitization exposures in the banking book and associated regulatory capital requirements – bank		
SEC4	Securitization exposures in the banking book and associated capital requirements – bank acting as	na ²		
Market risk	MRA	Qualitative disclosure requirements related to market risk	Annually	47-48
	MRB	Qualitative disclosures for banks using the Internal Models Approach (IMA)	Annually	
	MR1	Market risk under standardised approach	Semi-annually	
	MR2	RWA flow statements of market risk exposures under an IMA	Quarterly	
	MR3	IMA values for trading portfolios	Semi-annually	
MR4	Comparison of VaR estimates with gains/losses	Semi-annually		
Leverage Ratio	LR2	Leverage Ratio Common Disclosure Template	Quarterly	

1. non D-SIBs are permitted to adopt and disclose any of the above listed tables that are relevant in reflecting the risks and activities of the institution. We assessed accordingly and decided not to adopt this particular table
2. table does not have any reportable values as at 30th June 2019

Table 1 : Composition of Regulatory Capital (CC1)

		All-in Basis ¹	
		At	
		30 Jun 2019	31 Mar 2019
Common Equity Tier 1 capital: instruments and reserves (\$m)			
1	Directly issued qualifying common share capital (and equivalent for non-joint stock companies) plus related stock surplus	1,225	1,225
2	Retained earnings	3,672	3,642
3	Accumulated other comprehensive income (and other reserves)	49	6
4	Directly issued capital subject to phase out from CET1 (only applicable to non-joint stock companies)	na	na
5	Common share capital issued by subsidiaries and held by third parties (amount allowed in group CET1)	na	na
6	Common Equity Tier 1 capital before regulatory adjustments	4,946	4,873
Common Equity Tier 1 capital: regulatory adjustments (\$m)			
28	Total regulatory adjustments to Common Equity Tier 1	(277)	(266)
29	Common Equity Tier 1 capital (CET1)	4,669	4,607
Additional Tier 1 capital: instruments			
30	Directly issued qualifying Additional Tier 1 instruments plus related stock surplus	850	850
31	– of which: classified as equity under applicable accounting standards	850	850
32	– of which: classified as liabilities under applicable accounting standards	na	na
33	Directly issued capital instruments subject to phase out from Additional Tier 1	–	–
34	Additional Tier 1 instruments (and CET1 instruments not included in row 5) issued by subsidiaries and held by third parties (amount	–	–
35	of which: instruments issued by subsidiaries subject to phase out	–	–
36	Additional Tier 1 capital before regulatory adjustments	850	850
Additional Tier 1 capital: regulatory adjustments (\$m)			
43	Total regulatory adjustments to Additional Tier 1 capital	–	–
44	Additional Tier 1 capital (AT1)	850	850
45	Tier 1 capital (T1 = CET1 + AT1)	5,519	5,457
Tier 2 capital: instruments and allowances (\$m)			
46	Directly issued qualifying Tier 2 instruments plus related stock surplus	1,000	1,000
47	Directly issued capital instruments subject to phase out from Tier 2	39	39
48	Tier 2 instruments (and CET1 and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties	–	na
49	– of which: instruments issued by subsidiaries subject to phase out	–	na
50	Impairment allowances	7	4
51	Tier 2 capital before regulatory adjustments	1,046	1,043
Tier 2 capital: regulatory adjustments (\$m)			
57	Total regulatory adjustments to Tier 2 capital	–	–
58	Tier 2 capital (T2)	1,046	1,043
59	Total capital (TC = T1 + T2)	6,565	6,500
60	Total risk-weighted assets	–	–
60a	Common Equity Tier 1 (CET1) Capital RWA ²	42,143	40,916
60b	Tier 1 Capital RWA ²	42,143	40,916
60c	Total Capital RWA ²	42,143	40,916
Capital ratios (%)		All-in Basis ¹	
61	Common Equity Tier 1 (as percentage of risk-weighted assets)	11.1	11.3
62	Tier 1 (as percentage of risk-weighted assets)	13.1	13.3
63	Total capital (as percentage of risk-weighted assets)	15.6	15.9
OSFI all-in target (%)			
69	Common Equity Tier 1 capital all-in target ratio	7	7
70	Tier 1 capital all-in target ratio	8.5	8.5
71	Total capital all-in target ratio	10.5	10.5
Current cap on CET1 instruments subject to phase out arrangements (%)			
80	Current cap on CET1 instruments subject to phase out arrangements	30	30
81	Amounts excluded from CET1 due to cap (excess over cap after redemptions and maturities)	na	na
82	Current cap on AT1 instruments subject to phase out arrangements	30	30
83	Amounts excluded from AT1 due to cap (excess over cap after redemptions and maturities)	–	–
84	Current cap on T2 instruments subject to phase out arrangements	30	30
85	Amounts excluded from T2 due to cap (excess over cap after redemptions and maturities)	–	–

1. "All-in" regulatory capital assumes that all Basel III regulatory adjustments are applied effective January 1, 2013 and that the capital value of instruments which no longer qualify as regulatory capital under Basel III rules will be phased out at a rate of 10% per year from January 1, 2013 and continuing to January 1, 2022.
2. For year 2018, CVA RWAs were calculated using the scalars of 0.80, 0.83 and 0.86 to compute CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively, including regulatory floor adjustment. For year 2019, OSFI has allowed a 0.7 scalar to be applied to the exposure amount determined under SA-CCR for the purpose of calculating CVA.

Table 2 : Overview of Risk Weighted Assets (OV1)

		At		
		30 Jun 2019	31 Mar 2019	30 Jun 2019
		RWA ¹	RWA	Capital requirements ²
		\$m	\$m	\$m
1	Credit risk (excluding counterparty credit risk)	34,744	34,361	2,780
2	– of which Standardized approach (SA) ³	3,244	2,720	260
3	– of which internal rating based (IRB) approach	31,500	31,641	2,520
4	Counterparty credit risk	2,043	1,998	163
4a	– of which credit valuation adjustment (CVA) ⁴	718	726	57
5	– of which Standardized approach for counterparty credit risk (SA-CCR) ⁵	1,325	1,272	106
6	– of which internal model method (IMM)	–	–	–
7	Equity positions in banking book ⁶	5	16	–
8	Equity investments in funds – look-through approach	–	–	–
9	Equity investments in funds – mandate-based approach	–	–	–
10	Equity investments in funds – fall-back approach	–	–	–
11	Settlement risk	–	–	–
12	Securitisation exposures in banking book	–	–	–
13	– of which IRB ratings based approach (RBA)	–	–	–
14	– of which IRB supervisory formula approach (SFA)	–	–	–
15	– of which SA/ simplified supervisory formula approach (SSFA)	–	–	–
16	Market risk	862	664	69
17	– of which Standardized approach (SA)	249	124	20
18	– of which internal model method (IMM)	613	540	49
19	Operational risk	3,827	3,826	306
20	– of which Basic indicator approach	–	–	–
21	– of which Standardized approach	3,827	3,826	306
22	– of which Advanced measurement approach	–	–	–
23	Amounts below the thresholds for deduction (subject to 250% risk weight)	–	–	–
24	Floor adjustment ⁷	662	51	53
25	Total (1+4+7+8+9+10+11+12+16+19+23+24)	42,143	40,916	3,371

1. RWA includes 6% adjustment to IRB risk-weighted assets for scaling factor

2. 'Capital requirement' represents the minimum total capital charge set at 8% of RWAs by the OSFI Capital Adequacy Requirements (CAR) guidelines.

3. Amount includes Other assets not included in standardized or IRB approaches

4. For year 2019, OSFI has allowed a 0.7 scalar to be applied to the exposure amount determined under SA-CCR for the purpose of calculating CVA.

5. Starting Q1,2019 counterparty credit risk exposures arising from derivatives are calculated under SA-CCR which were earlier [Till Dec 2018] calculated under Current Exposure Method (CEM)

6. Amount includes banking book equity exposure which are not material and risk weighted @100% in accordance with OSFI CAR guidelines

7. The Bank is subject to a regulatory capital floor prescribed by OSFI.

Credit Risk

Credit risk is the risk of financial loss if a customer or counterparty fails to meet an obligation under contract. Credit risk arises principally from direct lending, trade finance and the leasing business, but also from other products such as guarantees and credit derivatives.

Table 3 : Credit quality of assets (CR1)

		a		b		c		d	
		Gross carrying values of							
		Defaulted exposures		Non - defaulted exposures		Allowances/ impairments		Net values (a+b-c)	
		\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
1	Debt securities		–	25,151		1			25,150
2	Loans		304	63,549		233			63,620
3	Off-balance sheet exposures		59	49,001		31			49,029
4	Total at 30 Jun 2019		363	137,701		265			137,799
1	Debt securities		–	24,113		1			24,112
2	Loans		251	63,032		231			63,053
3	Off-balance sheet exposures		66	48,847		36			48,875
4	Total at 31 Dec 2018		316	135,992		268			136,040

Table 4 : Credit risk mitigation techniques – overview (CR3)

		Exposures unsecured: carrying amount	Exposures secured; carrying amount ²	Exposures secured by collateral	Exposures secured by guarantees / credit derivatives
		\$m	\$m	\$m	\$m
1	Loans	8,570	55,283	54,306	977
2	Debt securities	14,516	10,635	10,635	–
3	Total at 30 Jun 2019¹	23,086	65,918	64,941	977
4	Of which defaulted	63	241	241	–
1	Loans	9,487	53,795	53,037	758
2	Debt securities	14,320	9,793	9,793	–
3	Total at 31 Dec 2018¹	23,807	63,588	62,830	758
4	Of which defaulted	104	146	144	2

1. Amount equals to the carrying value gross of allowances.

2. Amount represents the gross carrying value of the exposure secured (fully or partially by either collateral or guarantees)

Table 5 : Standardized approach – credit conversion factor ('CCF') and credit risk mitigation ('CRM') effects (CR4)

		Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
		On-balance sheet	Off-balance sheet	On-balance sheet	Off-balance sheet	RWAs	RWA density
		\$m	\$m	\$m	\$m	\$m	%
Asset classes							
1	Sovereigns and their central banks	–	–	–	–	–	–
6	Corporates	1,045	558	1,045	–	1,045	100
7	Regulatory Retail Portfolios	426	2,045	424	–	319	75
10	Equity	–	–	–	–	–	–
13	Other assets ²	3,587	–	3,587	–	1,880	52
14	Total at 30 Jun 2019	5,058	2,603	5,056	–	3,244	64
1	Sovereigns and their central banks	–	–	–	–	–	–
6	Corporates	896	429	896	–	896	100
7	Regulatory Retail Portfolios	439	1,977	436	–	328	75
10	Equity	–	–	–	–	–	–
13	Other assets ²	1,632	–	1,632	–	945	58
14	Total at 31 Dec 2018	2,967	2,406	2,964	–	2,169	73

1. CCF - Credit Conversion Factor, CRM - Credit Risk Mitigation.

2. Comprises exposures subject to credit risk framework but are not included in standardized or IRB approaches including settlement risk and other balance sheet assets that are risk-weighted at 100%.

Table 6: Standardized approach – exposures by asset class and risk weight (CR5)

Risk weight ('RW')	Asset classes	0%	20%	50%	75%	100%	150%	250%	Total credit exposure amount (post-CCF and post-CRM)
		\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
1	Sovereigns and their central banks	–	–	–	–	–	–	–	–
6	Corporates	–	–	–	–	1,045	–	–	1,045
7	Regulatory Retail Portfolios	–	–	–	421	3	–	–	424
10	Equity	–	–	–	–	–	–	–	–
13	Other assets	1,794	29	–	–	1,691	–	73	3,587
14	Total at 30 Jun 2019	1,794	29	–	421	2,739	–	73	5,056
1	Sovereigns and their central banks	–	–	–	–	–	–	–	–
6	Corporates	–	–	–	–	896	–	–	896
7	Regulatory Retail Portfolios	–	–	–	433	3	–	–	436
10	Equity	–	–	–	–	–	–	–	–
13	Other assets	665	168	–	–	725	–	74	1,632
14	Total at 31 Dec 2018	665	168	–	433	1,624	–	74	2,964

Table 7: IRB – Credit risk exposures by portfolio and PD range (CR6)

PD scale	Original on-balance sheet gross exposure	Off-balance sheet exposure pre-CCF	Average CCF	EAD post-CRM and post-CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density	Expected loss	Provisions
	\$m	\$m	%	\$m	%		%	years	\$m	%	\$m	\$m
Sovereign												
0.00 to <0.15	22,258	1,467	41	22,861	0.02	96	9	3.51	658	3	0.5	0.9
0.15 to <0.25	–	4	41	2	0.20	3	47	0.99	1	35	–	–
0.25 to <0.50	–	–	–	–	–	–	–	–	–	–	–	–
0.50 to <0.75	–	–	–	–	–	–	–	–	–	–	–	–
0.75 to <2.50	–	–	–	–	–	–	–	–	–	–	–	–
2.50 to <10.00	–	–	–	–	–	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	22,258	1,471	41	22,863	0.02	99	9	3.51	659	3	0.5	0.9
Banks												
0.00 to <0.15	3,772	1,142	75	4,625	0.1	188	18	1.60	337	7	0.5	0.1
0.15 to <0.25	11	1	20	11	0.2	16	33	0.13	3	24	–	–
0.25 to <0.50	4	1	20	5	0.4	7	34	0.20	2	36	–	–
0.50 to <0.75	6	5	26	8	0.6	10	42	0.17	5	62	–	–
0.75 to <2.50	2	4	20	3	1.0	10	45	0.26	3	83	–	–
2.50 to <10.00	1	–	–	1	5.8	1	56	2.50	2	247	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	3,796	1,153	76	4,653	0.1	232	18	1.59	352	8	0.5	0.1
Corporate – SME												
0.00 to <0.15	147	365	50	330	0.1	107	30	1.38	50	15	0.1	–
0.15 to <0.25	1,166	888	42	1,541	0.2	765	30	2.09	397	26	1.0	0.3
0.25 to <0.50	1,478	1,249	42	2,004	0.4	850	32	1.95	729	36	2.4	0.9
0.50 to <0.75	2,008	1,570	42	2,665	0.6	734	31	1.82	1,172	44	5.1	1.9
0.75 to <2.50	3,952	2,466	42	4,976	1.3	1,702	31	1.84	2,811	57	19.5	7.1
2.50 to <10.00	955	482	41	1,154	4.6	525	28	1.71	875	76	15.4	6.7
10.00 to <100.00	266	123	42	317	22.1	141	31	1.44	374	118	21.2	11.1
100.00 (Default)	138	8	42	141	100.0	64	42	1.22	174	123	58.2	58.2
Sub-total	10,110	7,151	42	13,128	2.7	4,888	31	1.84	6,582	50	122.9	86.2

Table 7: IRB – Credit risk exposures by portfolio and PD range (CR6) (continued)

PD scale	Original on-balance sheet gross exposure \$m	Off-balance sheet exposure pre-CCF \$m	Average CCF %	EAD post-CRM and post-CCF \$m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWA \$m	RWA density %	Expected loss \$m	Provisions \$m
Corporate – Other												
0.00 to <0.15	1,753	8,613	43	5,440	0.1	376	45	2.10	1,353	25	1.9	0.8
0.15 to <0.25	3,733	5,478	43	6,068	0.2	450	38	1.88	2,263	37	5.1	4
0.25 to <0.50	5,938	4,909	43	8,030	0.4	538	35	1.76	3,496	44	10.3	5.4
0.50 to <0.75	4,400	4,125	42	6,150	0.6	458	38	2.09	3,990	65	14.6	10.6
0.75 to <2.50	5,929	6,397	42	8,634	1.2	1,355	36	1.85	6,466	75	36.9	20.3
2.50 to <10.00	1,023	965	46	1,470	5.1	314	35	1.59	1,694	115	25.7	12
10.00 to <100.00	398	417	45	584	17.6	83	32	1.65	858	147	33.5	27.9
100.00 (Default)	110	41	45	128	100.0	19	34	1.27	157	122	41.8	40.8
Sub-total	23,284	30,945	43	36,504	1.4	3,593	37	1.90	20,277	56	169.8	121.8
Wholesale AIRB - Total at 30 Jun 2019	59,448	40,720	44	77,148	2.8	8,812	27	2.30	27,870	36	293.7	209
Retail Residential Mortgages												
0.00 to <0.15	15,532	–	–	15,532	0.1	37,367	18	–	466	3	1	0.7
0.15 to <0.25	4,991	–	–	4,991	0.2	9,518	18	–	376	8	1.7	0.4
0.25 to <0.50	1,707	–	–	1,707	0.3	3,580	16	–	168	10	0.9	–
0.50 to <0.75	1,009	–	–	1,009	0.6	1,859	18	–	163	16	1	0.2
0.75 to <2.50	1,011	–	–	1,011	2.0	2,150	18	–	360	36	3.5	0.7
2.50 to <10.00	276	–	–	276	5.3	731	18	–	173	63	2.5	0.4
10.00 to <100.00	182	–	–	182	25.7	455	16	–	184	101	7.7	4.5
100.00 (Default)	39	–	–	39	100.0	136	19	–	97	248	0.1	10.3
Sub-total	24,747	–	–	24,747	0.6	55,796	18	–	1,987	8	18.4	17.2
HELOC												
0.00 to <0.15	7	–	–	7	0.1	45	20	–	–	3	–	–
0.15 to <0.25	8	–	–	8	0.2	14	15	–	–	6	–	–
0.25 to <0.50	1,060	3,131	28	1,948	0.4	20,002	18	–	235	12	1.3	1
0.50 to <0.75	2	–	–	2	0.6	7	23	–	–	21	–	–
0.75 to <2.50	424	496	38	614	1.1	4,558	19	–	157	26	1.2	1.2
2.50 to <10.00	129	17	43	137	4.8	798	18	–	85	62	1.2	0.7
10.00 to <100.00	57	6	47	60	27.4	237	18	–	67	112	3	1.0
100.00 (Default)	6	7	–	6	100.0	71	22	–	18	287	–	0.3
Sub-total	1,693	3,656	30	2,782	1.6	25,732	18	–	562	20	6.7	4.2
Retail Qualifying revolving exposures												
0.00 to <0.15	–	–	–	–	–	–	–	–	–	–	–	–
0.15 to <0.25	–	–	–	–	–	–	–	–	–	–	–	–
0.25 to <0.50	64	655	21	198	0.3	38,067	57	–	19	9	0.3	0.5
0.50 to <0.75	–	–	–	–	–	–	–	–	–	–	–	–
0.75 to <2.50	68	141	28	107	1.2	14,444	69	–	34	32	0.9	1.8
2.50 to <10.00	57	46	41	76	4.3	6,106	72	–	63	84	2.3	6.9
10.00 to <100.00	8	9	31	11	24.8	939	69	–	21	198	1.8	1.9
100.00 (Default)	2	1	–	2	100.0	234	69	–	14	900	–	0.9
Sub-total	199	852	23	394	2.4	59,790	64	–	151	38	5.3	12
Retail SME												
0.00 to <0.15	–	–	–	–	–	–	–	–	–	–	–	–
0.15 to <0.25	–	–	–	–	–	–	–	–	–	–	–	–
0.25 to <0.50	–	–	–	–	–	–	–	–	–	–	–	–
0.50 to <0.75	31	135	100	166	0.7	1,294	45	–	68	41	0.5	0.1
0.75 to <2.50	163	40	100	203	2.2	1,191	58	–	165	81	2.6	0.6
2.50 to <10.00	16	18	98	33	7.5	764	42	–	23	69	1	0.8
10.00 to <100.00	8	3	91	10	24.5	337	51	–	13	126	1.2	0.2
100.00 (Default)	3	–	24	3	100.0	299	72	–	30	944	0.1	1.7
Sub-total	221	196	100	415	3.3	3,885	52	–	299	72	5.4	3.4

Table 7: IRB – Credit risk exposures by portfolio and PD range (CR6) (continued)

PD scale	Original on-balance sheet gross exposure \$m	Off-balance sheet exposure pre-CCF \$m	Average CCF %	EAD post-CRM and post-CCF \$m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWAs \$m	RWA density %	Expected loss \$m	Provisions \$m
Retail Other												
0.00 to <0.15	207	3	–	207	0.1	772	28.4	–	17	8	0.1	0.1
0.15 to <0.25	–	–	–	–	–	–	–	–	–	–	–	–
0.25 to <0.50	195	457	27	318	0.3	10,876	26.4	–	44	14	0.2	0.2
0.50 to <0.75	474	117	38	518	0.5	7,044	40.8	–	165	32	1.1	1.4
0.75 to <2.50	32	37	33	45	1.5	940	23.5	–	13	29	0.2	0.1
2.50 to <10.00	45	18	40	52	3.3	1,089	21.9	–	17	33	0.4	0.2
10.00 to <100.00	20	4	74	23	17.6	6,499	33.0	–	16	67	1.3	2.8
100.00 (Default)	1	–	–	1	100.0	3,569	24.1	–	4	291	0.7	0.2
Sub-total	974	636	31	1,164	1.0	30,789	33.0	–	276	24	4.0	5
Total Retail at 30 Jun 2019												
	27,834	5,340	31	29,502	0.8	175,992	19.5	–	3,275	11	39.8	41.8
Sovereign												
0.00 to <0.15	21,095	1,490	43.2	21,739	0.02	101	9.0	3.49	618	3	0.4	0.7
0.15 to <0.25	–	4	40.8	2	0.20	3	47.0	0.98	1	35	–	–
0.25 to <0.50	–	–	–	–	–	–	–	–	–	–	–	–
0.50 to <0.75	–	–	–	–	–	–	–	–	–	–	–	–
0.75 to <2.50	–	–	–	–	–	–	–	–	–	–	–	–
2.50 to <10.00	–	–	–	–	–	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	21,096	1,494	43.2	21,741	0.02	254	9.0	3.49	619	3	0.4	0.7
Banks												
0.00 to <0.15	5,145	1,306	76	6,133	0.1	314	19.6	1.59	560	9	0.7	0.1
0.15 to <0.25	7	2	20	7	0.2	30	31.4	0.13	2	22	–	–
0.25 to <0.50	2	–	–	2	0.4	9	35.0	0.08	1	37	–	–
0.50 to <0.75	2	–	20	2	0.6	11	42.5	0.14	1	63	–	–
0.75 to <2.50	1	–	–	1	1.2	14	35.0	0.22	1	58	–	–
2.50 to <10.00	–	1	20	–	3.1	2	54.8	0.12	–	157	–	–
10.00 to <100.00	–	–	–	–	–	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–	–	–	–	–	–
Sub-total	5,158	1,309	76	6,146	0.1	380	19.6	1.59	565	9	0.8	0.1
Corporate – SME												
0.00 to <0.15	146	324	45	291	0.1	114	31.0	1.44	48	17	0.1	–
0.15 to <0.25	1,003	984	43	1,426	0.2	824	31.2	2.01	375	26	1.0	0.5
0.25 to <0.50	1,374	1,283	41	1,905	0.4	826	32.2	2.04	689	36	2.3	0.8
0.50 to <0.75	1,790	1,818	43	2,563	0.6	776	31.1	1.84	1,128	44	5.0	1.6
0.75 to <2.50	3,890	2,240	41	4,814	1.2	1,773	30.6	1.81	2,641	55	18.4	7.0
2.50 to <10.00	985	384	42	1,145	4.5	612	31.6	1.99	957	84	16.2	6.5
10.00 to <100.00	291	120	42	341	20.7	171	30.6	1.48	398	117	21.5	11.8
100.00 (Default)	104	9	41	108	100	65	44.6	1.36	104	97	52.4	52.4
Sub-total	9,582	7,163	42	12,593	2.5	5,161	31.2	1.87	6,341	50	116.8	80.6
Corporate – Other												
0.00 to <0.15	1,793	8,164	44	5,352	0.1	353	45.7	1.96	1,302	24	2	0.6
0.15 to <0.25	3,675	6,834	43	6,583	0.2	433	38.9	1.99	2,622	40	5.6	2.3
0.25 to <0.50	5,106	5,325	43	7,397	0.4	565	35.3	1.80	3,298	45	9.7	4.3
0.50 to <0.75	4,561	3,652	43	6,135	0.6	492	37.4	2.28	4,081	67	14.4	5.8
0.75 to <2.50	5,756	5,252	43	8,004	1.2	1,291	35.2	1.88	5,935	74	33.6	17.6
2.50 to <10.00	1,311	1,414	43	1,915	4.5	414	33.6	1.66	2,053	107	29.3	15.2
10.00 to <100.00	445	274	43	562	15.5	68	34.6	1.71	875	156	30.2	37.3
100.00 (Default)	97	46	49	119	100	27	46.3	1.41	101	85	51.5	50.4
Sub-total	22,742	30,961	43	36,068	1.3	3,643	37.8	1.95	20,268	56	176.4	133.5
Wholesale AIRB - Total at 31 Dec 2018	58,577	40,927	44	76,548	1.0	9,438	27.0	2.10	27,793	36	294.4	213.7

PD scale	Original on-balance sheet gross exposure \$m	Off-balance sheet exposure pre-CCF \$m	Average CCF %	EAD post-CRM and post-CCF \$m	Average PD %	Number of obligors	Average LGD %	Average maturity years	RWAs \$m	RWA density %	Expected loss \$m	Provisions \$m
Retail Residential Mortgages												
0.00 to <0.15	14,910	1	—	14,910	0.1	36,069	17.7	—	448	3	1.6	0.8
0.15 to <0.25	5,272	—	—	5,272	0.2	9,853	18.4	—	398	8	1.8	0.2
0.25 to <0.50	1,491	—	—	1,491	0.3	3,422	16.4	—	147	10	0.8	—
0.50 to <0.75	1,044	1	—	1,044	0.6	1,977	18.3	—	174	17	1.1	—
0.75 to <2.50	975	—	—	975	2.0	2,122	17.7	—	351	36	3.4	0.3
2.50 to <10.00	264	—	—	264	5.3	700	17.0	—	161	61	2.4	0.3
10.00 to <100.00	186	—	—	186	25.7	470	17.0	—	195	105	8.1	2.7
100.00 (Default)	31	—	—	31	100.0	143	19.0	—	79	251	—	8.4
Sub-total	24,174	2	—	24,174	0.6	54,756	17.8	—	1,951	8	19.1	12.7
HELOC												
0.00 to <0.15	—	—	—	—	—	—	—	—	—	—	—	—
0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	—
0.25 to <0.50	1,088	3,069	29	1,976	0.4	19,647	17.8	—	239	12	1.3	0.9
0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	—
0.75 to <2.50	429	513	36	614	1.1	4,703	18.5	—	154	25	1.2	1.6
2.50 to <10.00	135	21	41	144	4.8	806	18.9	—	92	64	1.3	0.7
10.00 to <100.00	57	10	53	63	27.4	249	18.3	—	71	113	3.1	1
100.00 (Default)	4	6	—	4	100.0	54	25.1	—	12	331	—	0.2
Sub-total	1,714	3,619	30	2,800	1.5	25,459	18.0	—	568	20	7	4.4
Retail Qualifying revolving												
0.00 to <0.15	—	—	—	—	—	—	—	—	—	—	—	—
0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	—
0.25 to <0.50	67	644	21	199	0.3	35,370	57.8	—	19	9	0.4	0.6
0.50 to <0.75	—	—	—	—	—	—	—	—	—	—	—	—
0.75 to <2.50	72	139	29	112	1.2	12,864	69.3	—	35	32	0.9	1.9
2.50 to <10.00	57	47	40	76	4.3	5,964	72.3	—	63	84	2.4	5.4
10.00 to <100.00	9	9	34	12	24.6	1,018	69.5	—	25	199	2.1	1.5
100.00 (Default)	1	2	—	1	100	217	69.7	—	12	909	—	0.7
Sub-total	206	842	23	401	2.4	55,433	64.1	—	154	38	5.8	10.2
Retail SME												
0.00 to <0.15	—	—	—	—	—	—	—	—	—	—	—	—
0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	—
0.25 to <0.50	—	—	—	—	—	—	—	—	—	—	—	—
0.50 to <0.75	29	130	100	159	0.7	1,359	46.7	—	67	42	0.5	0.1
0.75 to <2.50	81	36	100	116	2.2	891	54.1	—	88	76	1.4	0.4
2.50 to <10.00	19	34	100	53	7.5	828	36.7	—	32	61	1.5	0.6
10.00 to <100.00	7	4	95	11	24	337	45.1	—	12	112	1.2	0.4
100.00 (Default)	4	—	1	4	100	273	79.9	—	37	1,053	0.1	2.1
Sub-total	140	204	100	343	4	3,688	47.9	—	236	69	4.6	3.6
Retail Other												
0.00 to <0.15	287	5	—	287	0.1	1,080	29	—	24	8	0.1	0.3
0.15 to <0.25	—	—	—	—	—	—	—	—	—	—	—	—
0.25 to <0.50	202	448	28	328	0.3	10,376	24.5	—	42	13	0.2	0.2
0.50 to <0.75	429	108	37	469	0.5	7,656	44.3	—	162	35	1.1	1.7
0.75 to <2.50	34	39	34	47	1.5	1,011	23.9	—	14	30	0.2	0.1
2.50 to <10.00	49	17	40	56	3.3	1,173	22.1	—	19	33	0.4	0.3
10.00 to <100.00	19	6	81	24	17.6	6,255	32.2	—	16	67	1.3	0.7
100.00 (Default)	4	1	—	4	100	6,662	47.8	—	26	614	1.7	2.7
Sub-total	1,024	624	31	1,214	1.2	34,213	33.3	—	302	25	5.0	6.1
Total Retail at 31 Dec 2018	27,258	5,291	32	28,933	0.8	173,549	19.5	—	3,211.0	11	41.5	37

Table 8 : RWA flow statements of credit risk exposures under the IRB approach (CR8)

	RWA ² \$m	Capital requirements ³ \$m
1 RWA at the beginning of the period - 1 Apr 2019	31,641	2,531
2 Asset size ¹	151	12
3 Asset quality	(253)	(20)
4 Model updates	—	—
5 Methodology and policy	(39)	(3)
6 Acquisitions and disposals	—	—
7 Foreign exchange movements	—	—
8 Other	—	—
9 RWA at the end of the period - 30 Jun 2019	31,500	2,520

1. Foreign exchange movements are embedded in the asset size

2. RWA includes 6% adjustment to IRB risk-weighted assets for scaling factor

3. 'Capital requirement' represents the minimum total capital charge set at 8% of RWAs under the OSFI CAR guidelines

Table 9: Specialized lending on slotting approach and Equities under simple risk-weight method (CR10)

		Specialized Lending - Other than HVCRE									
Regulatory categories ¹	Regulatory maturity	On-balance sheet amount \$m	Off-balance sheet amount \$m	Risk weight %	Exposure amount					RWA ³ \$m	Expected loss \$m
					PF ²	OF	CF	IPRE	Total		
					\$m	\$m	\$m	\$m	\$m		
Strong	Less than 2.5 years	—	—	50	—	—	—	—	—	—	—
	Equal to or more than 2.5 years	170	314	70	298	—	—	—	298	209	1
Good	Less than 2.5 years	—	—	70	—	—	—	—	—	—	—
	Equal to or more than 2.5 years	—	—	90	—	—	—	—	—	—	—
Satisfactory		80	75	115	106	—	—	5	111	127	3
Weak		—	—	250	—	—	—	—	—	—	—
Default		—	—	—	—	—	—	—	—	—	—
Total at 30 Jun 2019		250	389		404	—	—	5	409	336	4
Strong	Less than 2.5 years	—	—	50	—	—	—	—	—	—	—
	Equal to or more than 2.5 years	151	280	70	260	—	—	5	266	186	1
Good	Less than 2.5 years	—	—	70	—	—	—	—	—	—	—
	Equal to or more than 2.5 years	—	—	90	—	—	—	—	—	—	—
Satisfactory		75	—	115	75	—	—	—	75	87	2
Weak		—	—	250	—	—	—	—	—	—	—
Default		—	—	—	—	—	—	—	—	—	—
Total at 31 Dec 2018		226	280		336	—	—	5	341	273	3

1. Regulatory categories are defined under paragraph 88 of OSFI CAR guidelines

2. 'PF: Project finance, OF: Object finance, CF: Commodities finance & IPRE: Income producing real estate

3. RWAs are pre 6% adjustment to IRB risk-weighted assets for scaling factor

Counterparty Credit Risk (CCR)

Counterparty credit risk ('CCR') arises for derivatives and SFTs. It is calculated in both trading and non-trading books, and is the risk that a counterparty may default before settlement of the transaction. CCR is generated primarily in our wholesale global businesses.

Table 10: Analysis of counterparty credit risk exposure by approach (excluding CVA Charge & centrally cleared exposures)- CCR1

	Replacement cost	Potential future exposure	Effective expected positive exposure (EEPE)	Alpha used for computing regulatory EAD (Multiplier)	EAD post CRM	post-CRM RWAs
	\$m	\$m	\$m		\$m	\$m
1 SA-CCR (for derivatives)	633	1,267	—	1.4	2,661	1,275
2 Internal Model Method (for derivatives and SFTs)	—	—	—	—	—	—
3 Simple Approach for credit risk mitigation (for SFTs)	—	—	—	—	—	—
4 Comprehensive Approach for credit risk mitigation (for SFTs)	—	—	—	—	143	30
5 VaR for SFTs	—	—	—	—	—	—
6 Total at 30 Jun 2019	633	1,267	—	1.4	2,804	1,305
1 SA-CCR (for derivatives) / Current exposure Method (CEM) ¹	1,669	1,080	—	1.0	2,749	1,016
2 Internal Model Method (for derivatives and SFTs)	—	—	—	—	—	—
3 Simple Approach for credit risk mitigation (for SFTs)	—	—	—	—	—	—
4 Comprehensive Approach for credit risk mitigation (for SFTs)	—	—	—	—	90	24
5 VaR for SFTs	—	—	—	—	—	—
6 Total at 31 Dec 2018	1,669	1,080	—	1.0	2,839	1,040

1. Starting Q1,2019 counterparty credit risk exposures arising from derivatives are calculated under SA-CCR which were earlier (Till Dec 2018) calculated under Current Exposure Method(CEM).

Table 11: Credit valuation adjustment (CVA) capital charge (CCR2)

	At 30 Jun 2019		At 31 Dec 2018	
	EAD post-CRM	RWA	EAD post-CRM	RWA ¹
	\$m	\$m	\$m	\$m
1 Total portfolios subject to the Advanced CVA capital charge	—	—	—	—
2 – VaR component (including the 3 x multiplier)	—	—	—	—
3 – Stressed VaR component (including the 3 x multiplier)	—	—	—	—
4 All portfolios subject to the Standardized CVA capital charge	1,863	718	2,749	791
5 Total subject to the CVA capital charge	1,863	718	2,749	791

1. For year 2018, CVA RWAs were calculated using the scalars of 0.80, 0.83 and 0.86 to compute CET1 capital ratio, Tier 1 capital ratio and Total capital ratio, respectively, including regulatory floor adjustment. For year 2019, OSFI has allowed a 0.7 scalar to be applied to the exposure amount determined under SA-CCR for the purpose of calculating CVA.

Table 12: CCR exposures by portfolio and PD scale (CCR4)

PD scale	EAD post-CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
	\$mn	%		%	years	\$mn	%
Sovereign							
0.00 to <0.15	305	0.03	57	10	2	6	2.0
0.15 to <0.25	—	—	—	—	—	—	—
0.25 to <0.50	—	—	—	—	—	—	—
0.50 to <0.75	—	—	—	—	—	—	—
0.75 to <2.50	—	—	—	—	—	—	—
2.50 to <10.00	—	—	—	—	—	—	—
10.00 to <100.00	—	—	—	—	—	—	—
100.00 (Default)	—	—	—	—	—	—	—
Sub-total	305	0.03	57.0	10	2	6	2.0
Banks							
0.00 to <0.15	654	0.12	36	28	2	144	22.0
0.15 to <0.25	—	—	—	—	—	—	—
0.25 to <0.50	7	0.37	1	27	5.00	4	57.1

0.50 to <0.75	–	–	–	–	–	–	–
0.75 to <2.50	–	–	–	–	–	–	–
2.50 to <10.00	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–
Sub-total	661	0.12	37.0	28	1.7	148	22.4
Corporate – SME							
0.00 to <0.15	2	0.13	7	52	1	–	–
0.15 to <0.25	6	0.22	18	52	4	4	69
0.25 to <0.50	8	0.37	31	52	1	4	59
0.50 to <0.75	17	0.63	39	52	4	19	112
0.75 to <2.50	17	1.38	62	52	3	22	129
2.50 to <10.00	4	5.57	16	52	1	6	167
10.00 to <100.00	1	12.88	3	52	1	3	238
100.00 (Default)	–	–	–	–	–	–	–
Sub-total	55	1.34	176	52	3	58	105.5
Corporate – Other							
0.00 to <0.15	635	0.06	127	52	2	146	23.0
0.15 to <0.25	595	0.22	93	52	3	351	59.0
0.25 to <0.50	197	0.37	65	52	3	157	79.7
0.50 to <0.75	126	0.63	53	52	3	133	105.6
0.75 to <2.50	203	1.38	348	52	2	253	124.6
2.50 to <10.00	27	4.30	12	52	3	48	177.8
10.00 to <100.00	1	44.17	4	52	1	3	300.0
100.00 (Default)	–	–	–	–	–	–	–
Sub-total	1,784	0.43	702	52	2	1,091	61.2
Grand-total at 30 Jun 2019	2,805	0.32	972	42	2	1,303	46.5
Sovereign							
0.00 to <0.15	437.5	0.03	61	10	1.47	9.5	2.0
0.15 to <0.25	–	–	–	–	–	–	–
0.25 to <0.50	–	–	–	–	–	–	–
0.50 to <0.75	–	–	–	–	–	–	–
0.75 to <2.50	–	–	–	–	–	–	–
2.50 to <10.00	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–
Sub-total	437.5	0.03	61	10	1.47	9.5	2.0
Banks							
0.00 to <0.15	649	0.12	32	28	1.34	131.2	20.0
0.15 to <0.25	–	–	–	–	–	–	–
0.25 to <0.50	8	0.37	2	27	4.60	4.2	100.0
0.50 to <0.75	–	–	–	–	–	–	–
0.75 to <2.50	–	–	–	–	–	–	–
2.50 to <10.00	–	–	–	–	–	–	–
10.00 to <100.00	–	–	–	–	–	–	–
100.00 (Default)	–	–	–	–	–	–	–
Sub-total	657	0.12	34	28.23	1.38	135.5	21.0
Corporate – SME							
0.00 to <0.15	1	0.13	6	52	1.05	–	28.0
0.15 to <0.25	3	0.22	30	52	2.86	2	100.0
0.25 to <0.50	9	0.37	27	52	1.42	5	100.0
0.50 to <0.75	2	0.63	29	52	1.08	1	–
0.75 to <2.50	10	0.97	58	52	1.96	10	–
2.50 to <10.00	3	4.14	16	52	1.03	5	–
10.00 to <100.00	–	–	2	52	–	–	–
100.00 (Default)	–	–	–	–	–	–	–
Sub-total	28	0.98	168.0	52	1.68	23	84.0
Corporate – Others							
0.00 to <0.15	800	0.06	168	52	1.68	178	22.0
0.15 to <0.25	569	0.22	58	52	2.45	320	100.0
0.25 to <0.50	78	0.37	56	52	2.63	59	100.0
0.50 to <0.75	90	0.63	58	52	2.81	92	100.0
0.75 to <2.50	168	1.51	231	52	1.28	206	100.0

2.50 to <10.00	5	3.45	6	52	3.33	9	200.0
10.00 to <100.00	4	10.00	4	52	1.00	8	200.0
100.00 (Default)	—	100.00	1	52	1.00	—	700.0
Sub-total	1,713	0.33	582.0	52	2.00	871	51.0
Grand-total at 31 Dec 2018	2,836	0.24	845.0	40	1.77	1,040	37.0

Table 13: Composition of collateral for CCR exposure (CCR5)

	Collateral used in derivative transactions				Collateral used in SFTs		
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral	
	Segregated	Unsegregated	Segregated	Unsegregated			
	\$m	\$m	\$m	\$m	\$m	\$m	
1	Cash – domestic currency	—	14	—	433	—	—
2	Cash – other currencies	—	427	—	445	—	—
3	Domestic sovereign debt	—	24	14	50	—	—
4	Other sovereign debt	—	—	31	—	—	—
5	Government agency debt	—	—	—	—	—	—
6	Corporate bonds	—	—	—	—	—	—
7	Equity securities	—	—	—	—	—	—
8	Other collateral	—	5	—	11	—	—
9	Total at 30 Jun 2019	—	470	45	939	—	—
1	Cash – domestic currency	—	23	—	404	—	—
2	Cash – other currencies	—	182	—	835	—	—
3	Domestic sovereign debt	—	24	17	52	—	—
4	Other sovereign debt	—	—	33	—	—	—
5	Government agency debt	—	—	—	—	—	—
6	Corporate bonds	—	—	—	—	—	—
7	Equity securities	—	—	—	—	—	—
8	Other collateral	—	22	—	1	—	—
9	Total at 31 Dec 2018	—	251	50	1,292	—	—

Table 14: Exposures to central counterparties (CCPs) - CCR8

	At 30 Jun 2019		At 31 Dec 2018		
	EAD post-CRM	RWA	EAD post-CRM	RWA	
	\$m	\$m	\$m	\$m	
1	Exposures to QCCPs (total)	572	20	885	18
2	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	431	9	816	17
3	– OTC derivatives	394	8	813	16
4	– exchange-traded derivatives	11	—	—	—
5	– securities financing transactions	26	1	3	1
6	– netting setts where cross-products netting has been approved	—	—	—	—
7	Segregated initial margin	124	3	54	1
8	Non-segregated initial margin	—	—	—	—
9	Pre-funded default fund contributions	17	8	15	—
10	Unfunded default fund contributions	—	—	—	—
11	Exposures to non-QCCPs (total)	—	—	—	—
12	Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	—	—	—	—
13	– OTC derivatives	—	—	—	—
14	– exchange-traded derivatives	—	—	—	—
15	– securities financing transactions	—	—	—	—
16	– netting setts where cross-products netting has been approved	—	—	—	—
17	Segregated initial margin	—	—	—	—
18	Non-segregated initial margin	—	—	—	—
19	Pre-funded default fund contributions	—	—	—	—
20	Unfunded default fund contributions	—	—	—	—

1. QCCP - Qualifying Central Counterparty

Market Risk

Market Risk is the risk that movements in market factors, such as foreign exchange rates, interest rates, credit spread, equity prices and commodity prices will reduce the value of our portfolios.

Table 15: Market risk under standardised approach (MR1)

		At		
		30 Jun 2019	31 Dec 2018	30 Jun 2019
		RWA	RWA	Capital requirements
		\$m	\$m	\$m
Outright products				
1	Interest rate risk (general and specific)	249	138	20
2	Equity risk (general and specific)	—	—	—
3	Foreign exchange risk	—	—	—
4	Commodity risk	—	—	—
Options				
6	Delta-plus method	—	—	—
7	Scenario approach	—	—	—
8	Securitisation	—	—	—
9	Total	249	138	20

Table 16 : RWA flow statement of market risk exposures under Internal Model Approach (MR2)

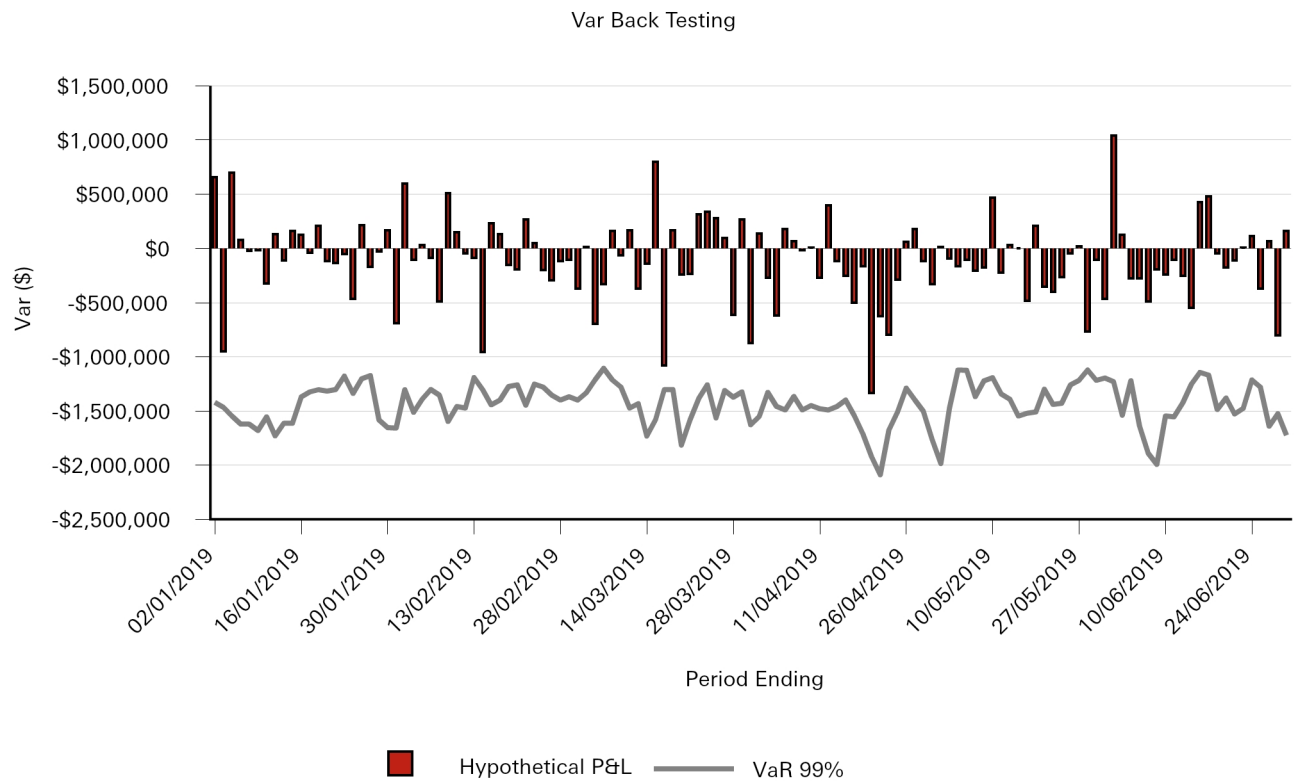
		VaR	Stressed VaR	Total RWA
		\$m	\$m	\$m
1	RWA at the beginning of the period - 1 Apr 2019	224	316	540
2	Movement in risk levels ¹	7	66	73
3	Model updates/changes	—	—	—
4	Methodology and policy	—	—	—
8	RWA at the end of the period - 30 Jun 2019	231	382	613

1. Movement due to position changes; foreign exchange movements are embedded in the movement in risk levels

Table 17: IMA values for trading portfolios (MR3)

		At	
		30 Jun 2019	31 Dec 2018
		\$m	\$m
VaR			
1	Maximum value	6,586	6,049
2	Average value	4,617	4,769
3	Minimum value	3,534	3,274
4	Period end	5,840	4,480
Stressed VaR			
5	Maximum value	12,890	12,073
6	Average value	7,771	9,142
7	Minimum value	4,877	7,194
8	Period end	10,436	11,051
Incremental Risk Charge			
9	Maximum value	—	—
10	Average value	—	—
11	Minimum value	—	—
12	Period end	—	—
Comprehensive Risk capital charge			
13	Maximum value	—	—
14	Average value	—	—
15	Minimum value	—	—
16	Period end	—	—
17	Floor (standardized measurement method)	—	—

Table 18: Comparison of VaR estimates with gains/losses (MR4)



There were no back-testing exceptions noted for the period 1H'19.

Table 18 : Leverage Ratio Common Disclosure Template (LR2)

		At	
		30 Jun 2019	31 Mar 2019
		\$m	\$m
On-balance sheet exposures			
1	On-balance sheet items (excluding derivatives, SFTs and grandfathered securitization exposures but including collateral)	100,908	98,312
2	Gross up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework (IFRS)	–	–
3	(Deductions of receivables assets for cash variation margin provided in derivative transactions)	(828)	(895)
4	(Asset amounts deducted in determining Basel III Tier 1 capital)	(276)	(265)
5	Total on-balance sheet exposures (excluding derivatives and SFTs) (Sum of lines 1 to 4)	99,804	97,152
Derivative exposures			
6	Replacement cost associated with all derivative transactions (i.e. net of eligible cash variation margin)	1,182	1,303
7	Add-on amounts for PFE associated with all derivative transactions	1,884	2,080
8	(Exempted CCP-leg of client cleared trade exposures)	–	–
9	Adjusted effective notional amount of written credit derivatives	–	–
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	–	–
11	Total derivative exposures (sum of lines 6 to 10)	3,066	3,383
Securities financing transaction exposures			
12	Gross SFT assets recognized for accounting purposes (with no recognition of netting), after adjusting for sale accounting transactions	12,481	8,075
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(2,114)	(1,514)
14	Counterparty credit risk (CCR) exposure for SFTs	91	89
15	Agent transaction exposures	–	–
16	Total securities financing transaction exposures (sum of lines 12 to 15)	10,458	6,650
Other off-balance sheet exposures			
17	Off-balance sheet exposure at gross notional amount	49,060	48,529
18	(Adjustments for conversion to credit equivalent amounts)	(34,066)	(33,847)
19	Off-balance sheet items (sum of lines 17 and 18)	14,994	14,682
Capital and Total Exposures			
20	Tier 1 capital	5,519	5,521
21	Total Exposures (sum of lines 5, 11, 16 and 19)	128,322	121,867
Leverage Ratios (%)			
22	Leverage ratio	4.3	4.5

Glossary

- **OSFI** - Office of the Superintendent of Financial Institutions
- **\$** - Canadian dollar
- **Gross carrying values**: The gross value is the accounting value before any any credit conversion factor (CCF), credit risk mitigation (CRM) techniques or allowance/impairments.
- **Probability of Default (PD)** - An estimate of the likelihood of a customer defaulting on any credit related obligation within a 1 year time horizon, expressed as a percentage.
- **Loss Given Default (LGD)** - An estimate of the economic loss, expressed as a percentage (0%-100%) of the exposure at default, that the Bank will incur in the event a borrower defaults
- **Exposure At Default (EAD)** - An estimate of the amount of exposure to a customer at the time of default.
- **Standardized Approach for credit risk** - Under this approach, banks use a standardized set of risk-weights as prescribed by OSFI to calculate credit risk capital requirements. The standardized risk-weights are based on external credit assessments, where available, and other risk-related factors, including exposure asset class, collateral, etc.
- **Advanced Internal Ratings Based (AIRB) approach for credit risk** - Under this approach, banks use their own internal historical experience of PD, LGD, EAD and other key risk assumptions to calculate credit risk capital requirements.
- **Home Equity Lines of Credit (HELOC)** - Revolving personal lines of credit secured by home equity.
- **SA-CCR** - The standardised approach (SA-CCR) for measuring exposure at default for counterparty credit risk.
- **Credit Value adjustment (CVA)** - Credit valuation adjustment ('CVA') risk is the risk of adverse moves in the CVAs taken for expected credit losses on derivative transactions.
- **VaR - Value at Risk**
- **All-in regulatory capital** assumes that all Basel III regulatory adjustments are applied effective January 1, 2013 and that the capital value of instruments which no longer qualify as regulatory capital under Basel III rules will be phased out at a rate of 10% per year from January 1, 2013 and continuing to January 1, 2022.
- **Transitional regulatory capital** assumes that all Basel III regulatory capital adjustments are phased in from January 1, 2014 to January 1, 2018 and that the capital value of instruments which no longer qualify as regulatory capital under Basel III rules will be phased out at a rate of 10% per year from January 1, 2013 and continuing to January 1, 2022.
- **Asset size**: organic changes in book size and composition (including origination of new businesses and maturing loans) but excluding changes in book size due to acquisitions and disposal of entities.
- **Asset quality**: changes in the assessed quality of the bank's assets due to changes in borrower risk, such as rating grade migration or similar effects.
- **Model updates**: changes due to model implementation, changes in model scope, or any changes intended to address model weaknesses.
- **Methodology and policy**: changes due to methodological changes in calculations driven by regulatory policy changes, including both revisions to existing regulations and new regulations.
- **Acquisitions and disposals**: changes in book sizes due to acquisitions and disposal of entities.