

Pillar 3 Disclosure Report

31 December 2018

United Overseas Bank Limited
Incorporated in the Republic of Singapore

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Notes:

- 1 The pillar 3 disclosure report is presented in Singapore dollars.
- 2 Certain figures in this report may not add up to the respective totals due to rounding.
- 3 Amounts less than \$500,000 in absolute term are shown as "0".

1 INTRODUCTION

UOB Group's Pillar 3 Disclosure Report ("The Report") is prepared in accordance with the Monetary Authority of Singapore ("MAS") Notice to Banks No. 637 "Risk Based Capital Adequacy Requirements for Banks Incorporated in Singapore".

The Report is governed by the Group Pillar 3 Disclosure Policy which specifies the Group's Pillar 3 disclosure requirements, frequency of disclosure, medium of disclosure, and the roles and responsibilities of various parties involved in the disclosure reporting. The Policy is reviewed at least annually and approved by the Board.

The Report facilitates an assessment of the Group's capital adequacy and provides an overview of the Group's risk profile. For capital adequacy ratios of the Group's major bank subsidiaries, please refer to the Group Financial Report, available on UOB website www.UOBgroup.com/investor-relations/financial/index.html.

2 ATTESTATION BY CHIEF EXECUTIVE OFFICER PURSUANT TO MAS NOTICE 637 AS AT 31 DECEMBER 2018

In accordance with the Monetary Authority of Singapore Notice 637 – Notice on Risk Based Capital Adequacy requirements for Banks incorporated in Singapore and on behalf of the Board of Directors and Senior Management of UOB Group, I hereby attest that UOB Group's Pillar 3 Disclosures Report for the financial year ended 31 December 2018 has been prepared in accordance with the internal control processes approved by the Board.

A handwritten signature in black ink, appearing to read "Wee Ee Cheong", written over a horizontal line.

Wee Ee Cheong

Deputy Chairman and Chief Executive Officer

Date: 22 February 2019

3 KEY METRICS

The table below provides an overview of the Group's key prudential metrics related to regulatory capital, leverage ratio and liquidity standards.

\$m		31 Dec 2018	30 Sep 2018	30 Jun 2018	31 Mar 2018	31 Dec 2017
Available capital (amounts)¹						
1	CET1 capital	30,750	29,902	29,921	30,206	30,134
2	Tier 1 capital	32,879	32,030	32,897	33,182	32,220
3	Total capital	37,542	36,895	37,803	37,986	37,348
Risk weighted assets (amounts)¹						
4	Total RWA	220,568	212,502	205,704	202,286	199,481
Risk-based capital ratios as a percentage of RWA						
5	CET1 ratio (%)	13.9	14.1	14.5	14.9	15.1
6	Tier 1 ratio (%)	14.9	15.1	16.0	16.4	16.2
7	Total capital ratio (%)	17.0	17.4	18.4	18.8	18.7
Additional CET1 buffer requirements as a percentage of RWA						
8	Capital conservation buffer requirement (2.5% from 2019) (%)	1.875	1.875	1.875	1.875	1.25
9	Countercyclical buffer requirement (%)	0.2	0.2	0.2	0.2	0.1
10	Bank G-SIB and/or D-SIB additional requirement (%)	-	-	-	-	-
11	Total of bank CET1 specific buffer requirements (%) (row 8 + row 9 + row 10)	2.1	2.1	2.1	2.0	1.4
12	CET1 available after meeting the Reporting Bank's minimum capital requirements (%)	6.9	7.1	8.0	8.4	8.2
Leverage Ratio¹						
13	Total Leverage Ratio exposure measure	434,732	430,329	428,845	406,608	400,803
14	Leverage Ratio (%) (row 2/row 13)	7.6	7.4	7.7	8.2	8.0
Liquidity Coverage Ratio						
15	Total High Quality Liquid Assets	49,847	45,706	44,722	42,773	39,255
16	Total net cash outflow	39,109	32,385	31,627	33,524	29,253
17	Liquidity Coverage Ratio ¹ (%)	127	142	142	128	135
Net Stable Funding Ratio²						
18	Total available stable funding	230,739	230,052	224,709	218,198	-
19	Total required stable funding	215,097	209,023	205,090	197,079	-
20	Net Stable Funding Ratio ¹ (%)	107	110	110	111	-

¹ For Capital Adequacy, Leverage, Liquidity Coverage and Net Stable Funding Ratios' commentaries, please refer to the Group Financial Report and Liquidity Coverage Ratio Disclosure available on UOB's website at www.UOBgroup.com/investor-relations/financial/index.html

² Net Stable Funding Ratio requirement is effective January 2018.

4 COMPOSITION OF CAPITAL

Table 1 and Table 2 are mandatory disclosures prescribed in MAS Notice 637 requirements.

Table 1 shows the reconciliation between the Group's published consolidated balance sheet and the regulatory capital components. Details of the regulatory capital components are set out in Table 2, as referenced.

The scope of consolidation for accounting and regulatory purposes is similar, except that subsidiaries which carry out insurance business are not consolidated for regulatory purpose. The list of the Group's major insurance subsidiaries can be found in the Group's Annual Report. As at 31 Dec 2018, both the total assets and the total equities of each of these subsidiaries were less than \$1 billion.

Compared with 30 June 2018, key movements in the items under the column "Under regulatory scope of consolidation" were mainly from earnings in the second half of 2018, payment of dividends and redemption of AT1 capital instruments.

Table 1 - Reconciliation of Balance Sheet to Regulatory Capital as at 31 Dec 2018

\$m	Balance Sheet per Published Financial Statements	Under regulatory scope of consolidation	Reference in Table 2
Equity			
Share capital and other capital	7,014		
<i>of which paid-up ordinary shares</i>		4,888	A
<i>of which AT1 capital instruments</i>		2,127	B
Retained earnings	21,716	21,586	C
<i>of which unrealised fair value gains/losses on financial liabilities and derivative liabilities arising from changes in own credit risk</i>		29	D1
Other reserves	8,893	8,846	E
<i>of which unrealised fair value gains/losses on financial liabilities and derivative liabilities arising from changes in own credit risk</i>		65	D2
Equity attributable to equity holders of the Bank	37,623		
Non-controlling interests	190		
<i>of which NCI that meets criteria for inclusion in</i>			
- CET1 capital		13	F1
- AT1 capital		2	F2
- T2 capital		1	F3
Total equity	37,813		
Liabilities			
Deposits and balances of banks	13,801		
Deposits and balances of customers	293,186		
Bills and drafts payable	638		
Other liabilities	12,050		
Debts issued	30,606		
<i>of which T2 capital instruments</i>		4,186	G
Total liabilities	350,280		

4 COMPOSITION OF CAPITAL (cont'd)

Table 1 - Reconciliation of Balance Sheet to Regulatory Capital as at 31 Dec 2018

\$m	Balance Sheet per Published Financial Statements	Under regulatory scope of consolidation	Reference in Table 2
Assets			
Cash, balances and placements with central banks	25,252		
Singapore Government treasury bills and securities	5,615		
Other government treasury bills and securities	13,201		
Trading securities	1,929		
Placements and balances with banks	50,800		
Loans to customers	258,627		
<i>of which provisions eligible for inclusion in T2 capital</i>		476	H
Investment securities ³	13,553		
<i>of which investments in PE/VC held beyond the relevant holding period</i>		70	I
Other assets	10,530		
<i>of which amount related to deferred tax assets (net of deferred tax liabilities, where permissible)</i>		269	J
Investment in associates and joint ventures ³	1,170		
<i>of which amount related to goodwill</i>		12	K1
Investment properties	1,012		
Fixed assets	2,266		
Intangible assets	4,138		
<i>of which amount related to goodwill</i>		4,138	K2
Total Assets	388,092		

³ Note: This includes the Bank's major stake investments in financial institutions.

4 COMPOSITION OF CAPITAL (cont'd)

Table 2 lists the regulatory capital components and the corresponding regulatory adjustments.

(a) 'Amount' refers to components of capital calculated in accordance with MAS Notice 637.

(b) 'Reference in Table 1' links the respective line item to Table 1.

Regulatory adjustments that are deducted against capital are reflected as positive numbers.

Table 2 - Capital Components as at 31 Dec 2018

\$m		Amount	Reference in Table 1
Common Equity Tier 1 capital: instruments and reserves			
1	Paid-up ordinary shares and share premium (if applicable)	4,888	A
2	Retained earnings	21,586	C
3 [#]	Accumulated other comprehensive income and other disclosed reserves	8,846	E
4	Directly issued capital subject to phase out from CET1 (only applicable to non-joint stock companies)	-	
5	Minority interest that meets criteria for inclusion	13	F1
6	Common Equity Tier 1 capital before regulatory adjustments	35,333	
Common Equity Tier 1 capital: regulatory adjustments			
7	Valuation adjustment pursuant to Part VIII of MAS Notice 637	-	
8	Goodwill, net of associated deferred tax liability	4,150	K1+K2
9 [#]	Intangible assets, net of associated deferred tax liability	-	
10 [#]	Deferred tax assets that rely on future profitability	269	J
11	Cash flow hedge reserve	-	
12	Shortfall of TEP relative to EL under IRBA	-	
13	Increase in equity capital resulting from securitisation transactions	-	
14	Unrealised fair value gains/losses on financial liabilities and derivative liabilities arising from changes in own credit risk	94	D1+ D2
15	Defined benefit pension fund assets, net of associated deferred tax liability	-	
16	Investments in own shares	-	
17	Reciprocal cross-holdings in ordinary shares of financial institutions	-	
18	Investments in ordinary shares of unconsolidated financial institutions in which the Reporting Bank does not hold a major stake	-	
19	Investments in ordinary shares of unconsolidated financial institutions in which the Reporting Bank holds a major stake (including insurance subsidiaries) (amount above 10% threshold)	-	
20 [#]	Mortgage servicing rights (amount above 10% threshold)	-	
21 [#]	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of associated deferred tax liability)	-	
22	Amount exceeding the 15% threshold	-	
23	<i>of which investments in ordinary shares of unconsolidated financial institutions in which the Reporting Bank holds a major stake (including insurance subsidiaries)</i>	-	
24 [#]	<i>of which mortgage servicing rights</i>	-	
25 [#]	<i>of which deferred tax assets arising from temporary differences</i>	-	
26	National specific regulatory adjustments	70	
26A	PE/VC investments held beyond the relevant holding periods set out in MAS Notice 630	70	I
26B	Capital deficits in subsidiaries and associates that are regulated financial institutions	-	
26C	Any other items which the Authority may specify	-	
27	Regulatory adjustments applied in calculation of CET1 Capital due to insufficient AT1 Capital to satisfy required deductions	-	
28	Total regulatory adjustments to CET1 Capital	4,583	
29	Common Equity Tier 1 capital (CET1)	30,750	
	Additional Tier 1 capital: instruments		

4 COMPOSITION OF CAPITAL (cont'd)

Table 2 - Capital Components as at 31 Dec 2018

\$m		Amount	Reference in Table 1
30	AT1 capital instruments and share premium (if applicable)	2,127	B
31	<i>of which classified as equity under the Accounting Standards</i>	2,127	
32	<i>of which classified as liabilities under the Accounting Standards</i>	-	
33	Transitional: Ineligible capital instruments (pursuant to paragraphs 6.5.3 and 6.5.4)	-	
34	AT1 capital instruments issued by fully-consolidated subsidiaries that meet criteria for inclusion	2	F2
35	<i>of which instruments issued by subsidiaries subject to phase out</i>	-	
36	Additional Tier 1 capital before regulatory adjustments	2,129	
	Additional Tier 1 capital: regulatory adjustments		
37	Investments in own AT1 capital instruments	-	
38	Reciprocal cross-holdings in AT1 capital instruments of financial institutions	-	
39	Investments in AT1 capital instruments of unconsolidated financial institutions in which Reporting Bank does not hold a major stake	-	
40	Investments in AT1 capital instruments of unconsolidated financial institutions in which the Reporting Bank holds a major stake (including insurance subsidiaries)	-	
41	National specific regulatory adjustments which the Authority may specify	-	
42	Regulatory adjustments applied in calculation of AT1 Capital due to insufficient Tier 2 Capital to satisfy required deductions	-	
43	Total regulatory adjustments to Additional Tier 1 capital	-	
44	Additional Tier 1 capital (AT1)	2,129	
45	Tier 1 capital (T1 = CET1 + AT1)	32,879	
	Tier 2 capital: instruments and provisions		
46	Tier 2 capital instruments and share premium (if applicable)	4,186	G
47	Transitional: Ineligible capital instruments (pursuant to paragraphs 6.5.3 and 6.5.4)	-	
48	Tier 2 capital instruments issued by fully-consolidated subsidiaries that meet criteria for inclusion	1	F3
49	<i>of which instruments issued by subsidiaries subject to phase out</i>	-	
50	Provisions	476	H
51	Tier 2 capital before regulatory adjustments	4,664	
	Tier 2 capital: regulatory adjustments		
52	Investments in own Tier 2 instruments	-	
53	Reciprocal cross-holdings in Tier 2 capital instruments of financial institutions	-	
54	Investments in Tier 2 capital instruments of unconsolidated financial institutions in which the Reporting Bank does not hold a major stake	-	
55	Investments in Tier 2 capital instruments of unconsolidated financial institutions in which the Reporting Bank holds a major stake (including insurance subsidiaries)	-	
56	National specific regulatory adjustments which the Authority may specify	-	
57	Total regulatory adjustments to Tier 2 capital	-	
58	Tier 2 capital (T2)	4,664	
59	Total capital (TC = T1 + T2)	37,542	
60	Floor-adjusted total risk weighted assets	220,568	
	Capital ratios (as a percentage of floor-adjusted risk weighted assets)		
61	Common Equity Tier 1 CAR	13.9%	
62	Tier 1 CAR	14.9%	
63	Total CAR	17.0%	

4 COMPOSITION OF CAPITAL (cont'd)

Table 2 - Capital Components as at 31 Dec 2018

\$m		Amount	Reference in Table 1
64	Bank-specific buffer requirement	8.6%	
65	<i>of which: capital conservation buffer requirement</i>	1.875%	
66	<i>of which: bank specific countercyclical buffer requirement</i>	0.2%	
67	<i>of which: G-SIB and/or D-SIB buffer requirement (if applicable)</i>	-	
68	Common Equity Tier 1 available after meeting the Reporting Bank's minimum capital requirements	6.9%	
	National minima		
69	Minimum CET1 CAR	6.5%	
70	Minimum Tier 1 CAR	8.0%	
71	Minimum Total CAR	10.0%	
	Amounts below the thresholds for deduction (before risk weighting)		
72	Investments in ordinary shares, AT1 capital and Tier 2 capital of unconsolidated financial institutions in which the Reporting Bank does not hold a major stake	358	
73	Investments in ordinary shares of unconsolidated financial institutions in which the Reporting Bank holds a major stake (including insurance subsidiaries)	2,267	
74	Mortgage servicing rights (net of related tax liability)	-	
75	Deferred tax assets arising from temporary differences (net of related tax liability)	-	
	Applicable caps on the inclusion of provisions in Tier 2		
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to standardised approach (prior to application of cap)	264	row 50
77	Cap on inclusion of provisions in Tier 2 under standardised approach	326	
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)	212	row 50
79	Cap for inclusion of provisions in Tier 2 under internal ratings-based approach	917	
	Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)		
80	Current cap on CET1 instruments subject to phase out arrangements	-	
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	-	
82	Current cap on AT1 instruments subject to phase out arrangements	-	
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	-	
84	Current cap on T2 instruments subject to phase out arrangements	-	
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	

These elements are subject to a more conservative definition relative to those set out under the Basel III capital standards.

4 COMPOSITION OF CAPITAL (cont'd)

Key Features of Regulatory Capital Instruments as at 31 Dec 2018

	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited
1 Issuer	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited
2 Unique Identifier (ISIN code)	SG1M31001969	XS1699845068	SG72C9000002	SG58I7998534
3 Governing law(s) of the instrument	Singapore	Singapore	Singapore	Singapore
Regulatory treatment				
4 Transitional Basel III rules	Core Equity	Additional Tier 1	Additional Tier 1	Additional Tier 1
5 Post-transitional Basel III rules	Core Equity	Additional Tier 1	Additional Tier 1	Additional Tier 1
6 Eligible at solo/group/group&solo	Group & Solo	Group & Solo	Group & Solo	Group & Solo
7 Instrument type	Ordinary Share	Perpetual Capital Security	Perpetual Capital Security	Perpetual Capital Security
8 Amount recognised in regulatory capital (in millions)	S\$4,888 million	S\$879 million	S\$748 million	S\$499 million
9 Principal amount (in millions)	n.a.	US\$650 million	S\$750 million	S\$500 million
10 Accounting classification	Equity	Equity	Equity	Equity
11 Original date of issuance	20 July 1970	19 October 2017	18 May 2016	19 November 2013
12 Perpetual or dated	Perpetual	Perpetual	Perpetual	Perpetual
13 Original maturity date	No maturity	No maturity	No maturity	No maturity
14 Issuer call subject to prior supervisory approval	n.a.	Yes	Yes	Yes
15 Optional call date	n.a.	19 October 2023	18 May 2021	19 November 2019
16 Tax/ regulatory event call	n.a.	Yes	Yes	Yes
Redemption price	n.a.	Par	Par	Par
Subsequent call dates, if applicable	n.a.	Each distribution payment date thereafter	Each distribution payment date thereafter	Each distribution payment date thereafter
Coupons / dividends				
17 Fixed or floating ⁽¹⁾	Discretionary dividend amount	Fixed	Fixed	Fixed
18 Coupon rate and any related index	n.a.	3.875% paid semi-annually on 19 April and 19 October	4.00% paid semi-annually on 18 May and 18 November	4.75% paid semi-annually on 19 May and 19 November
19 Existence of a dividend stopper	n.a.	Yes	Yes	Yes
20 Fully discretionary, discretionally or mandatory	Fully discretionary	Fully discretionary	Fully discretionary	Fully discretionary
21 Existence of step up or incentive to redeem	n.a.	No	No	No
22 Non-cumulative or cumulative	Non-cumulative	Non-cumulative	Non-cumulative	Non-cumulative
23 Convertible or non-convertible	n.a.	Non-convertible	Non-convertible	Non-convertible
24 If convertible, conversion trigger	n.a.	n.a.	n.a.	n.a.
25 If convertible, fully or partially	n.a.	n.a.	n.a.	n.a.
26 If convertible, conversion rate	n.a.	n.a.	n.a.	n.a.
27 If convertible, mandatory or optional conversion	n.a.	n.a.	n.a.	n.a.
28 If convertible, specify instrument type convertible into	n.a.	n.a.	n.a.	n.a.
29 If convertible, specify issuer of instrument it converts into	n.a.	n.a.	n.a.	n.a.
30 Write-down feature	n.a.	Yes	Yes	Yes
31 If write-down, write-down triggers(s)	n.a.	Point of non-viability at the discretion of the Regulator	Point of non-viability at the discretion of the Regulator	Point of non-viability at the discretion of the Regulator
32 If write-down, full or partial	n.a.	Partial	Partial	Partial
33 If write-down, permanent or temporary	n.a.	Permanent	Permanent	Permanent
34 If temporary write-down, description of write-up mechanism	n.a.	n.a.	n.a.	n.a.
35 Position in subordination hierarchy in liquidation (instrument type immediately senior to instrument)	Additional Tier 1 instruments	Tier 2 instruments	Tier 2 instruments	Tier 2 instruments
36 Non compliant transitioned features	No	No	No	No
37 If yes, specify non compliant features	n.a.	n.a.	n.a.	n.a.

(1) Details on re-fixing of the dividend/interest rate on the first call date are available in the UOB website.

4 COMPOSITION OF CAPITAL (cont'd)

Key Features of Regulatory Capital Instruments as at 31 Dec 2018

	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited
1 Issuer	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited	United Overseas Bank Limited
2 Unique Identifier (ISIN code)	SG79A8000002	XS1485603408	XS1480822516	XS1379133058
3 Governing law(s) of the instrument	Singapore	Singapore	Singapore	Singapore
Regulatory treatment				
4 Transitional Basel III rules	Tier 2	Tier 2	Tier 2	Tier 2
5 Post-transitional Basel III rules	Tier 2	Tier 2	Tier 2	Tier 2
6 Eligible at solo/group/group&solo	Group & Solo	Group & Solo	Group & Solo	Group & Solo
7 Instrument type	Subordinated Debt	Subordinated Debt	Subordinated Debt	Subordinated Debt
8 Amount recognised in regulatory capital (in millions)	S\$763 million	S\$799 million	S\$116 million	S\$926 million
9 Principal amount (in millions)	S\$750 million	US\$600 million	HK\$700 million	US\$700 million ⁽²⁾
10 Accounting classification	Liability	Liability	Liability	Liability
11 Original date of issuance	27 February 2017	8 September 2016	26 August 2016	16 & 24 March 2016
12 Perpetual or dated	Dated	Dated	Dated	Dated
13 Original maturity date	27 February 2029	8 March 2027	26 August 2028	16 September 2026
14 Issuer call subject to prior supervisory approval	Yes	Yes	Yes	Yes
15 Optional call date	27 February 2024	8 March 2022	26 August 2023	16 September 2021
Tax/ regulatory event call	Yes	Yes	Yes	Yes
Redemption price	Par	Par	Par	Par
16 Subsequent call dates, if applicable	Not applicable. One time call only.	Not applicable. One time call only.	Not applicable. One time call only.	Not applicable. One time call only.
Coupons / dividends				
17 Fixed or floating ⁽¹⁾	Fixed	Fixed	Fixed	Fixed
18 Coupon rate and any related index	3.50% paid semi-annually on 27 February and 27 August	2.88% paid semi-annually on 8 March and 8 September	3.19% paid quarterly on 26 August, 26 November, 26 February and 26 May	3.5% paid semi-annually on 16 March and 16 September
19 Existence of a dividend stopper	No	No	No	No
20 Fully discretionary, discretionally or mandatory	Mandatory	Mandatory	Mandatory	Mandatory
21 Existence of step up or incentive to redeem	No	No	No	No
22 Non-cumulative or cumulative	Cumulative	Cumulative	Cumulative	Cumulative
23 Convertible or non-convertible	Non-convertible	Non-convertible	Non-convertible	Non-convertible
24 If convertible, conversion trigger	n.a.	n.a.	n.a.	n.a.
25 If convertible, fully or partially	n.a.	n.a.	n.a.	n.a.
26 If convertible, conversion rate	n.a.	n.a.	n.a.	n.a.
27 If convertible, mandatory or optional conversion	n.a.	n.a.	n.a.	n.a.
28 If convertible, specify instrument type convertible into	n.a.	n.a.	n.a.	n.a.
29 If convertible, specify issuer of instrument it converts into	n.a.	n.a.	n.a.	n.a.
30 Write-down feature	Yes	Yes	Yes	Yes
31 If write-down, write-down triggers(s)	Point of non-viability at the discretion of the Regulator	Point of non-viability at the discretion of the Regulator	Point of non-viability at the discretion of the Regulator	Point of non-viability at the discretion of the Regulator
32 If write-down, full or partial	Partial	Partial	Partial	Partial
33 If write-down, permanent or temporary	Permanent	Permanent	Permanent	Permanent
34 If temporary write-down, description of write-up mechanism	n.a.	n.a.	n.a.	n.a.
35 Position in subordination hierarchy in liquidation (instrument type immediately senior to instrument)	Unsubordinated and unsecured obligations	Unsubordinated and unsecured obligations	Unsubordinated and unsecured obligations	Unsubordinated and unsecured obligations
36 Non compliant transitioned features	No	No	No	No
37 If yes, specify non compliant features	n.a.	n.a.	n.a.	n.a.

(2) US\$500m 3.5% subordinated notes were first issued on 16 March 2016. This was followed by a re-tap for US\$200m on 24 March 2016, which was consolidated and formed a single series with the US\$500m tranche issued on 16 March 2016.

4 COMPOSITION OF CAPITAL (cont'd)

Key Features of Regulatory Capital Instruments as at 31 Dec 2018

1	Issuer	United Overseas Bank Limited	United Overseas Bank Limited
2	Unique Identifier (ISIN code)	SG6QD3000002	XS1045409965
3	Governing law(s) of the instrument	Singapore	Singapore
Regulatory treatment			
4	Transitional Basel III rules	Tier 2	Tier 2
5	Post-transitional Basel III rules	Tier 2	Tier 2
6	Eligible at solo/group/group&solo	Group & Solo	Group & Solo
7	Instrument type	Subordinated Debt	Subordinated Debt
8	Amount recognised in regulatory capital (<i>in millions</i>)	S\$500 million	S\$1,082 million
9	Principal amount (<i>in millions</i>)	S\$500 million	US\$800 million
10	Accounting classification	Liability	Liability
11	Original date of issuance	22 May 2014	19 March 2014
12	Perpetual or dated	Dated	Dated
13	Original maturity date	22 May 2026	19 September 2024
14	Issuer call subject to prior supervisory approval	Yes	Yes
15	Optional call date	22 May 2020	19 September 2019
	Tax/ regulatory event call	Yes	Yes
	Redemption price	Par	Par
16	Subsequent call dates, if applicable	Not applicable. One time call only.	Not applicable. One time call only.
Coupons / dividends			
17	Fixed or floating ⁽¹⁾	Fixed	Fixed
18	Coupon rate and any related index	3.5% paid semi-annually on 22 May and 22 November	3.75% paid semi-annually on 19 March and 19 September
19	Existence of a dividend stopper	No	No
20	Fully discretionary, discretionally or mandatory	Mandatory	Mandatory
21	Existence of step up or incentive to redeem	No	No
22	Non-cumulative or cumulative	Cumulative	Cumulative
23	Convertible or non-convertible	Non-convertible	Non-convertible
24	If convertible, conversion trigger	n.a.	n.a.
25	If convertible, fully or partially	n.a.	n.a.
26	If convertible, conversion rate	n.a.	n.a.
27	If convertible, mandatory or optional conversion	n.a.	n.a.
28	If convertible, specify instrument type convertible into	n.a.	n.a.
29	If convertible, specify issuer of instrument it converts into	n.a.	n.a.
30	Write-down feature	Yes	Yes
31	If write-down, write-down triggers(s)	Point of non-viability at the discretion of the Regulator	Point of non-viability at the discretion of the Regulator
32	If write-down, full or partial	Partial	Partial
33	If write-down, permanent or temporary	Permanent	Permanent
34	If temporary write-down, description of write-up mechanism	n.a.	n.a.
35	Position in subordination hierarchy in liquidation (<i>instrument type immediately senior to instrument</i>)	Unsubordinated and unsecured obligations	Unsubordinated and unsecured obligations
36	Non compliant transitioned features	No	No
37	If yes, specify non compliant features	n.a.	n.a.

5 LEVERAGE RATIO

The Basel III framework introduced Leverage Ratio as a non-risk-based backstop limit to supplement the risk-based capital requirements. It aims to constrain the build-up of excess leverage in the banking sector, with additional safeguards against model risk and measurement errors. Leverage ratio is expressed as Tier 1 Capital against Exposure Measure, which comprises on- and off-balance sheet items. Other than the difference in scope for consolidation and aggregation under SFRS and MAS Notice 637, there are no material differences between total balance sheet assets (net of on-balance sheet derivative and SFT assets) as reported in the financial statements and Exposure Measure of on-balance sheet items.

As at 31 December 2018, the Group's leverage ratio was 7.6%, up 0.1% quarter-on-quarter, primarily from higher Tier 1 capital.

\$m	31 Dec 2018	30 Sep 2018	30 Jun 2018	31 Mar 2018
Tier 1 capital	32,879	32,030	32,897	33,182
Exposure measure	434,732	430,329	428,845	406,608
Leverage ratio	7.6%	7.4%	7.7%	8.2%

The following disclosure is presented in prescribed templates under MAS Notice 637 Annex 11F and 11G.

Reconciliation of Balance Sheet Assets to Exposure Measure

\$m		31 Dec 2018
1	Total consolidated assets as per published financial statements	388,092
2	Adjustment for investments in entities that are consolidated for accounting purposes but are outside the regulatory scope of consolidation	(568)
3	Adjustment for fiduciary assets recognised on the balance sheet in accordance with the Accounting Standards but excluded from the calculation of the exposure measure	-
4	Adjustment for derivative transactions	4,454
5	Adjustment for SFTs	373
6	Adjustment for off-balance sheet items	46,870
7	Other adjustments	(4,489)
8	Exposure measure	434,732

5 LEVERAGE RATIO (cont'd)

Exposure Measure Components

\$m		31 Dec 2018	30 Sep 2018
Exposure measures of on-balance sheet items			
1	On-balance sheet items (excluding derivative transactions and SFTs, but including on-balance sheet collateral for derivative transactions or SFTs)	364,662	357,704
2	Asset amounts deducted in determining Tier 1 capital	(4,489)	(4,467)
3	Total exposure measures of on-balance sheet items (excluding derivative transactions and SFTs)	360,173	353,237
Derivative exposure measures			
4	Replacement cost associated with all derivative transactions (net of the eligible cash portion of variation margins)	4,499	5,188
5	Potential future exposure associated with all derivative transactions	5,408	5,976
6	Gross-up for derivative collaterals provided where deducted from the balance sheet assets in accordance with the Accounting Standards	-	-
7	Deductions of receivables for the cash portion of variation margins provided in derivative transactions	-	-
8	CCP leg of trade exposures excluded	-	-
9	Adjusted effective notional amount of written credit derivatives	234	235
10	Further adjustments in effective notional amounts and deductions from potential future exposures of written credit derivatives	-	-
11	Total derivative exposure measures	10,141	11,399
SFT exposure measures			
12	Gross SFT assets (with no recognition of accounting netting), after adjusting for sales accounting	17,175	17,691
13	Eligible netting of cash payables and cash receivables	-	-
14	SFT counterparty exposures	373	445
15	SFT exposure measures where a Reporting Bank acts as an agent in the SFTs	-	-
16	Total SFT exposure measures	17,549	18,135
Exposure measures of off-balance sheet items			
17	Off-balance sheet items at notional amount	212,479	204,399
18	Adjustments for calculation of exposure measures of off-balance sheet items	(165,610)	(156,841)
19	Total exposure measures of off-balance sheet items	46,870	47,557
Capital and Total exposures			
20	Tier 1 capital	32,879	32,030
21	Total exposures	434,732	430,329
Leverage ratio			
22	Leverage ratio	7.6%	7.4%

6 GEOGRAPHICAL DISTRIBUTION OF CREDIT EXPOSURES USED IN THE COUNTERCYCLICAL CAPITAL BUFFER

To achieve the broader macroprudential goal of protecting the banking sector from periods of excess aggregate credit growth, the Basel III standards introduced the Countercyclical Capital Buffer (CCyB) framework. The CCyB is applied on a discretionary basis by banking supervisors in the respective jurisdictions. Parallel with the Capital Conservation Buffer, a CCyB of up to 2.5%, is to be maintained in the form of CET1 capital and phased in from 1 January 2016, capped at 0.625% per year, till 1 January 2019.

The Group's countercyclical buffer is computed as the weighted average of effective CCyB in jurisdictions where the Group has private sector credit exposures and the geographical distribution of the private sector credit exposures is based on where the ultimate risk of the exposure resides. Following mandatory disclosure under MAS Notice 637 provides an overview of the Group's private sector credit exposures by geographical breakdown.

\$m	(a)	(b)	(c)	(d)
Geographical breakdown	Country-specific countercyclical buffer requirement	RWA for private sector credit exposures used in the computation of the countercyclical buffer	Bank-specific countercyclical buffer requirement	Countercyclical buffer amount
Hong Kong	1.875%	18,736		
Sweden	1.875%	1		
United Kingdom	1.000%	2,037		
Sum		20,775		
Total		178,047	0.2%	460

7 OVERVIEW OF RWA

The table below lists the Group's RWA by risk type and approach, as prescribed under MAS Notice 637. The minimum capital requirement is stated at 10.0% of RWA.

The Group's RWA comprises credit RWA (88.6%), operational RWA (6.7%) and market RWA (4.7%). Total RWA at 31 December 2018 was \$220.6 billion, or \$8.1 billion higher quarter-on-quarter mainly due to corporate loan growth.

\$m		(a)	(b)	(c)
		RWA		Minimum capital requirements
		As at 31 Dec 2018	As at 30 Sep 2018	As at 31 Dec 2018
1	Credit risk (excluding CCR)	182,300	175,132	18,230
2	<i>of which Standardised Approach</i>	22,846	22,486	2,285
3	<i>of which F-IRBA</i>	137,532	130,629	13,753
4	<i>of which supervisory slotting approach</i>	4,234	4,311	423
5	<i>of which A-IRBA</i>	17,688	17,706	1,769
6	CCR	3,172	3,145	317
7	<i>of which Current Exposure Method</i>	1,919	2,000	192
8	<i>of which CCR internal models method</i>	-	-	-
9	<i>of which other CCR</i>	980	889	98
9a	<i>of which CCP</i>	272	256	27
10	CVA	1,288	1,158	129
11	Equity exposures under the simple risk weight method	-	-	-
11a	Equity exposures under the IMM	-	-	-
12	Equity investments in funds – look through approach	122	140	12
13	Equity investments in funds – mandate-based approach	2,558	2,547	256
14	Equity investments in funds – fall back approach	0	0	0
14a	Equity investment in funds – partial use of an approach	-	-	-
15	Unsettled transactions	-	-	-
16	Securitisation exposures in the banking book	235	226	24
17	<i>of which SEC-IRBA</i>	-	-	-
18	<i>of which SEC-ERBA, including IAA</i>	116	106	12
19	<i>of which SEC-SA</i>	26	26	3
20	Market risk	10,344	9,817	1,034
21	<i>of which SA(MR)</i>	10,344	9,817	1,034
22	<i>of which IMA</i>	-	-	-
23	Operational risk	14,882	14,652	1,488
24	Amounts below the thresholds for deduction (subject to 250% risk weight)	5,667	5,685	567
25	Floor adjustment	-	-	-
26	Total	220,568	212,502	22,057

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

The following table shows the differences between the accounting and regulatory scopes of consolidation, and provides a breakdown of the Group's assets and liabilities by regulatory risk categories.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation ⁴	Carrying values of items:				
Subject to credit risk requirements			Subject to CCR requirements	Subject to securitisation framework	Subject to market risk requirements		
\$m							
Assets							
Cash, balances and placements with central banks	25,252	25,252	20,522	1,524	-	3,344	-
Singapore Government treasury bills and securities	5,615	5,609	5,337	-	-	272	-
Other government treasury bills and securities	13,201	13,196	12,491	-	-	705	-
Trading securities	1,929	1,929	-	-	-	1,929	-
Placements and balances with banks	50,800	50,745	36,573	11,234	-	3,234	-
Loans to customers	258,627	258,628	253,848	4,417	344	7	-
Derivative financial assets	5,730	5,729	-	5,729	-	5,729	-
Investment securities	13,553	13,155	12,901	-	254	-	-
Other assets	4,516	4,370	4,355	14	1	14	-
Deferred tax assets	284	284	-	-	-	-	284
Investment in associates and joint ventures	1,170	1,170	1,100	-	-	-	70
Investment in subsidiaries	-	45	45	-	-	-	-
Investment properties	1,012	1,012	1,012	-	-	-	-
Fixed assets	2,266	2,265	2,265	-	-	-	-
Intangible assets	4,138	4,138	-	-	-	-	4,138
Total assets	388,092	387,529	350,450	22,919	599	15,235	4,492

8 DIFFERENCES BETWEEN ACCOUNTING AND REGULATORY SCOPES OF CONSOLIDATION AND MAPPING OF FINANCIAL STATEMENTS CATEGORIES WITH REGULATORY RISK CATEGORIES (cont'd)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation ⁴	Carrying values of items:				Not subject to capital requirements or subject to deduction from regulatory capital
\$m			Subject to credit risk requirements	Subject to CCR requirements	Subject to securitisation framework	Subject to market risk requirements	
Liabilities							
Deposits and balances of:							
Banks	13,801	13,801	-	2,459	-	1,207	11,086
Customers	293,186	293,200	-	541	-	365	292,295
Bills and drafts payable	638	638	-	-	-	-	638
Derivative financial liabilities	5,840	5,840	-	5,840	-	5,840	-
Other liabilities	5,417	5,201	-	7	-	0	5,194
Tax payable	514	507	-	-	-	-	507
Deferred tax liabilities	279	272	-	-	-	-	272
Debts issued	30,606	30,606	-	-	-	95	30,511
Total liabilities	350,280	350,064	-	8,847	-	7,506	340,503

⁴ The amounts shown in column (b) do not equal the sum of the amounts shown in columns (c) to (g) as some of the items are subject to capital requirements from more than one risk category.

9 MAIN SOURCES OF DIFFERENCES BETWEEN REGULATORY EXPOSURE AMOUNTS AND CARRYING AMOUNTS IN FINANCIAL STATEMENTS

The following table illustrates the main differences between the regulatory exposure amounts and the carrying values in the financial statements in respect of the assets and liabilities subject to credit risk, CCR and securitisation framework requirements.

It is not meaningful to include items subject to market risk requirements as they are based on a different exposure measurement approach.

\$m		(a)	(b)	(c)	(d)
		Total	Items subject to:		
			Credit risk requirements	CCR requirements	Securitisation framework
1	Asset carrying amount under regulatory scope of consolidation (as per Section 8) ⁵	383,037	350,450	22,919	599
2	Liabilities carrying amount under regulatory scope of consolidation (as per Section 8) ⁵	9,561	-	8,847	-
3	Total net amount under regulatory scope of consolidation	373,476	350,450	14,073	599
4	Off-balance sheet amount	210,951	48,324	358	152
5	Differences in derivatives and securities financing transactions		-	16,312	-
6	Differences due to consideration of provisions		3,250	-	-
7	Differences due to specific regulatory adjustments and others		(3,893)	(406)	(0)
8	Exposures amounts considered for regulatory purposes	429,219	398,131	30,337	751

⁵ The total column excludes amounts subject to deduction from capital or not subject to regulatory capital requirements.

The main differences between accounting amounts as reported in financial statements and regulatory exposure amounts are:

- (i) off-balance sheet exposures including contingent liabilities and commitments after application of Credit Conversion Factor
- (ii) securities financing transactions counterparty exposures and potential future exposures for derivatives, offset by netting under enforceable netting agreements
- (iii) differences due to consideration of provisions
- (iv) differences due to specific regulatory adjustments and others, including recognition of credit risk mitigation.

10 PRUDENT VALUATION ADJUSTMENTS

The table below provides the breakdown of the constituent elements of the Group's prudent valuation adjustment.

This prudent valuation adjustment is applicable for all assets measured at fair value (Marked to market or Marked to model) and for which valuation adjustments are required.

The main contributions to the prudent valuation adjustment are Day 1 Funding cost for Total Return Swap and Day 1 break fund cost for Structured Notes.

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
		Equity	Interest rates	FX	Credit	Commodities	Total	of which: in the trading book	of which: in the banking book
\$m									
1	Closeout uncertainty	5	6	6	0	0	17	11	6
2	of which: Mid-market value	1	6	6	-	0	12	11	1
3	of which: Closeout cost	4	-	-	0	-	5	0	5
4	of which: Concentration	-	-	-	-	-	-	-	-
5	Early termination	-	8	-	1	-	9	9	-
6	Model risk	0	0	0	-	-	1	1	-
7	Operational risk	-	-	-	-	-	-	-	-
8	Investing and funding costs	-	2	-	11	-	13	13	-
9	Unearned credit spreads	-	-	-	3	-	3	3	-
10	Future administrative	-	-	-	-	-	-	-	-
11	Other	-	-	-	-	-	-	-	-
12	Total Adjustments	5	15	6	15	0	42	36	6
13	of which: exceeds the valuation adjustment under financial reporting standards	-	-	-	-	-	-	-	-

11 CREDIT QUALITY OF ASSETS

The table below provides an overview of the credit quality of the Group's on- and off-balance sheet assets.

A default on the obligor is considered to have occurred when either or both of the followings have taken place:

- The obligor is unlikely to pay its credit obligations to the Group in full, without recourse by the bank to actions such as realising security (if held).
- The obligor is past due more than 90 days on any credit obligation to the Group. Overdrafts will be considered as being past due once the outstanding has breached an advised limit.

		(a)	(b)	(c)	(d)
		Gross carrying amount of		Total impairment allowances	Net values (a+b-c)
\$m		Defaulted exposures	Non-defaulted exposures		
1	Loans	3,994	257,712	3,079	258,627
2	Debt securities	93	27,837	170	27,760
3	Off-balance sheet exposures	57	66,534	36	66,555
4	Total	4,144	352,083	3,285	352,942

12 CHANGES IN STOCK OF DEFAULTED LOANS AND DEBT SECURITIES

The table below provides the change in defaulted exposures, the flows between non-defaulted and defaulted exposure categories and reductions in the defaulted exposures due to write-offs.

\$m		(a)
1	Defaulted loans and debt securities at end of the previous semi-annual reporting period	4,252
2	Loans and debt securities that have defaulted since the previous semi-annual reporting period	960
3	Returned to non-defaulted status	(234)
4	Amounts written-off	(396)
5	Other changes	(495)
6	Defaulted loans and debt securities at end of the semi-annual reporting period (1+2+3+4+5)	4,087

The decrease in defaulted loans and debt securities in the second half of 2018 was mainly due to write-off and recoveries that was partially offset by new defaulted loans. Other changes mainly comprise of recoveries and foreign exchange.

13 ADDITIONAL DISCLOSURES RELATED TO THE CREDIT QUALITY OF ASSETS

The following tables show the Group's exposures analysed by geographical areas, industry and residual maturity:

Major On-balance sheet credit exposures

\$m	Loans to customers (gross)	Government treasury bills and securities	Placements and balances with banks	Debt securities	Total
Analysed by geography^a					
Singapore	137,176	5,614	998	1,519	145,307
Malaysia	29,315	2,683	6,124	1,337	39,459
Thailand	16,813	2,945	2,608	47	22,413
Indonesia	11,289	1,225	2,269	4	14,787
Greater China	40,081	3,113	24,237	2,224	69,655
Others	27,033	3,235	14,564	6,686	51,518
Total	261,707	18,815	50,800	11,817	343,139

^a By borrower's country of incorporation / operation (for non-individuals) and residence (for individuals).

\$m	Loans to customers (gross)	Government treasury bills and securities	Placements and balances with banks	Debt securities	Total
Analysed by industry					
Transport, storage and communication	10,185	–	–	1,411	11,596
Building and construction	63,139	–	–	197	63,336
Manufacturing	21,112	–	–	2,091	23,203
Financial institutions, investment and holding companies	23,199	–	50,800	3,917	77,916
General commerce	32,928	–	–	1,173	34,101
Professionals and private individuals	29,288	–	–	–	29,288
Housing loans	68,387	–	–	–	68,387
Government	–	18,815	–	–	18,815
Others	13,469	–	–	3,028	16,497
Total	261,707	18,815	50,800	11,817	343,139

13 ADDITIONAL DISCLOSURES RELATED TO THE CREDIT QUALITY OF ASSETS (cont'd)

Contingent liabilities

	\$m
Analysed by geography^a	
Singapore	16,164
Malaysia	2,851
Thailand	1,627
Indonesia	1,095
Greater China	4,008
Others	5,257
Total	31,002

^a By borrower's country of incorporation / operation (for non-individuals) and residence (for individuals).

	\$m
Analysed by industry	
Transport, storage and communication	1,386
Building and construction	7,673
Manufacturing	2,717
Financial institutions, investment and holding companies	8,623
General commerce	8,636
Professionals and private individuals	166
Others	1,801
Total	31,002

Commitments (excluding operating lease and capital commitments)

	\$m
Analysed by geography^a	
Singapore	78,416
Malaysia	13,588
Thailand	11,753
Indonesia	5,818
Greater China	25,212
Others	16,040
Total	150,827

^a By borrower's country of incorporation / operation (for non-individuals) and residence (for individuals).

13 ADDITIONAL DISCLOSURES RELATED TO THE CREDIT QUALITY OF ASSETS (cont'd)

	\$m
Analysed by industry	
Transport, storage and communication	5,719
Building and construction	26,989
Manufacturing	20,486
Financial institutions, investment and holding companies	18,371
General commerce	43,308
Professionals and private individuals	22,360
Housing Loans	3,500
Others	10,094
Total	150,827

Credit exposures by residual contractual maturity

The following table shows the Group's credit exposures by remaining contractual maturities.

\$m	Up to 7 days	Over 7 days to 1 month	Over 1 to 3 months	Over 3 to 12 months	Over 1 to 3 years	Over 3 years	No specific maturity	Total
Balances and placements with central banks	5,317	3,854	6,003	2,439	-	-	6,773	24,386
Singapore Government treasury bills and securities	-	5	17	86	2,726	2,781	-	5,615
Other government treasury bills and securities	581	277	2,095	1,827	3,667	4,754	-	13,201
Trading debt securities	-	245	41	53	142	1,194	-	1,675
Placements and balances with banks	11,225	12,371	13,814	10,422	1,949	241	778	50,800
Loans to customers	18,699	26,757	19,978	22,885	39,842	127,111	3,355	258,627
Derivative financial assets	-	-	-	-	-	-	5,730	5,730
Investment debt securities	-	403	421	1,431	3,083	4,804	-	10,142
Others	-	-	-	-	-	-	2,710	2,710
Total	35,822	43,912	42,369	39,143	51,409	140,885	19,346	372,886

The majority of the Group's off-balance sheet credit exposures are short term commitments with maturity of less than 1 year.

13 ADDITIONAL DISCLOSURES RELATED TO THE CREDIT QUALITY OF ASSETS (cont'd)

The following tables show the Group's impaired exposures, related allowances and write-offs analysed by geographical areas and industry.

\$m	Impaired Exposure	Specific allowance	Write-off
Analysed by geography⁶			
Singapore	2,085	818	113
Malaysia	558	161	14
Thailand	456	153	31
Indonesia	545	221	184
Greater China	120	53	42
Others	230	102	12
Non-performing loans	3,994	1,508	396
Debt securities, contingent items and others	172	143	15
Total	4,166	1,651	411

⁶ By borrower's country of incorporation/operation (for non-individuals) and residence (for individuals).

\$m	Impaired Exposure	Specific allowance	Write-off
Analysed by industry			
Transport, storage and communication	813	512	227
Building and construction	497	80	9
Manufacturing	709	291	7
Financial institutions, investment and holding companies	41	23	0
General commerce	511	191	89
Professionals and private individuals	320	77	49
Housing loans	739	123	13
Others	364	211	2
Non-performing loans	3,994	1,508	396
Debt securities, contingent items and others	172	143	15
Total	4,166	1,651	411

13 ADDITIONAL DISCLOSURES RELATED TO THE CREDIT QUALITY OF ASSETS (cont'd)

The following tables show the Group's past due but not impaired exposures analysed by ageing.

\$m	Past due but not impaired exposure			
	< 30 days	30 - 59 days	60 – 90 days	Total
Total	4,755	571	485	5,811

The following tables show the Group's restructured impaired exposure.

\$m	Restructured impaired exposure
Total	823

14 OVERVIEW OF CRM TECHNIQUES

The following table provides information on the extent of usage of CRM techniques.

Compared with 30 June 2018, the total exposures increased primarily due to loan growth.

\$m		(a)	(b)	(c)	(d)	(e)
		Exposures Unsecured	Exposures Secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
1	Loans	128,346	130,281	113,010	13,095	-
2	Debt Securities	27,692	68	-	68	-
3	Total	156,038	130,349	113,010	13,163	-
4	Of which defaulted	1,144	1,455	1,396	-	-

15 SA(CR) AND SA(EQ) – CREDIT RISK EXPOSURE AND CRM EFFECTS

The following table illustrates the effects of CRM on the calculation of Group's capital requirements for credit exposures under SA(CR) and SA(EQ).

Compared with 30 June 2018, the increase in exposures to Cash and PSE asset classes was mainly due to increase in gold holdings and debt securities respectively.

	Asset classes and others	(a)	(b)	(c)	(d)	(e)	(f)
		Exposures before CCF and CRM		Exposures post-CCF and post-CRM		RWA and RWA density	
		On-balance sheet amount \$m	Off-balance sheet amount \$m	On-balance sheet amount \$m	Off-balance sheet amount \$m	RWA \$m	RWA density %
1	Cash items	2,079	-	2,079	-	19	1
2	Central government and central bank	1,602	1	1,602	0	171	11
3	PSE	1,631	1,079	1,631	98	290	17
4	MDB	155	1	328	-	77	23
5	Bank	908	524	990	101	551	50
6	Corporate	8,392	12,831	6,837	1,858	8,259	95
7	Regulatory retail	1,931	1,733	1,593	24	1,213	75
8	Residential mortgage	2,011	6	2,011	-	840	42
9	CRE	1,994	1,066	1,921	45	1,967	100
10	Equity - SA(EQ)	1,275	25	1,275	25	2,198	169
11	Past due exposures	235	12	235	0	308	131
12	Higher-risk categories	-	-	-	-	-	-
13	Other exposures	8,772	1,618	6,490	465	6,954	100
14	Total	30,985	18,896	26,991	2,617	22,846	77

16 SA(CR) AND SA(EQ) – EXPOSURES BY ASSET CLASSES AND RISK WEIGHTS

The following table provides a breakdown of Group's credit risk exposures under SA(CR) and SA(EQ) by asset class and risk weight.

Compared with 30 June 2018, the increase in exposures to Cash and PSE asset classes was mainly due to increase in gold holdings and debt securities respectively.

\$m		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
	Risk weight Asset classes and others	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposure amount (post-CCF and post-CRM)
		1	Cash items	1,982	-	96	-	-	-	-	-
2	Central government and central bank	1,298	-	-	-	267	-	37	-	-	1,603
3	PSE	1,039	-	229	-	434	-	27	-	-	1,729
4	MDB	175	-	-	-	153	-	-	-	-	328
5	Bank	-	-	168	-	812	-	111	-	-	1,091
6	Corporate	-	-	502	-	69	-	8,124	-	-	8,695
7	Regulatory retail	-	-	-	-	-	1,617	-	-	-	1,617
8	Residential mortgage	-	-	-	1,786	-	43	183	-	-	2,011
9	CRE	-	-	-	-	-	-	1,967	-	-	1,967
10	Equity - SA(EQ)	-	-	-	-	-	-	-	-	1,299	1,299
11	Past due exposures	-	-	-	-	-	-	89	146	-	235
12	Higher-risk categories	-	-	-	-	-	-	-	-	-	-
13	Other exposures	-	-	-	-	-	-	6,954	-	-	6,954
14	Total	4,495	-	995	1,786	1,736	1,660	17,492	146	1,299	29,608

17 IRBA – CREDIT RISK EXPOSURES BY PORTFOLIO AND PD RANGE

The following table provides the main parameters used for the calculation of capital requirements for credit exposures under IRBA.

Compared with 30 June 2018, there was an increase in EAD and RWA for Corporate and Specialised Lending IPRE asset classes. This was in line with loan growth.

PD range %	(a) Original on-balance sheet gross exposures \$m	(b) Off-balance sheet exposures pre-CCF \$m	(c) Average CCF %	(d) EAD post-CRM and post-CCF \$m	(e) Average PD %	(f) Number of Obligors	(g) Average LGD %	(h) Average Maturity Years	(i) RWA \$m	(j) RWA density %	(k) EL \$m	(l) TEP \$m
Sovereign asset sub-class												
0.00 to < 0.15	34,335	1,655	6	34,767	0.0	22	45	1.3	1,965	6	3	
0.15 to <0.25	386	-	-	386	0.2	2	45	2.2	177	46	0	
0.25 to <0.50	61	-	-	61	0.4	2	45	0.9	27	44	0	
0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	
0.75 to < 2.50	39	-	-	39	1.5	2	45	1.3	37	96	0	
2.50 to < 10.00	-	-	-	-	-	-	-	-	-	-	-	
10.00 to <100.00	62	-	-	62	18.5	2	45	0.0	136	221	5	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	34,882	1,655	6	35,315	0.1	30	45	1.3	2,342	7	9	24
Bank asset sub-class												
0.00 to < 0.15	30,263	5,288	57	33,500	0.0	162	45	0.5	3,640	11	8	
0.15 to <0.25	3,474	287	60	3,666	0.2	25	45	0.7	1,328	36	4	
0.25 to <0.50	2,626	771	18	2,772	0.4	16	45	0.8	1,459	53	4	
0.50 to <0.75	132	50	4	135	0.6	8	45	0.1	65	49	0	
0.75 to < 2.50	1,001	177	15	1,029	1.4	20	45	0.4	837	81	6	
2.50 to < 10.00	415	7	20	243	4.3	12	45	0.3	299	123	5	
10.00 to <100.00	37	11	43	42	18.5	15	44	0.3	91	220	3	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	37,948	6,590	51	41,387	0.2	258	45	0.5	7,720	19	30	78

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
PD range %	Original on-balance sheet gross exposures \$m	Off-balance sheet exposures 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 %	EL \$m	TEP \$m
Corporate asset sub-class												
0.00 to < 0.15	4,384	3,465	27	5,314	0.1	58	47	1.8	1,072	20	2	
0.15 to <0.25	7,936	17,486	14	10,745	0.2	115	41	1.9	4,201	39	8	
0.25 to <0.50	12,211	23,482	20	20,698	0.4	498	43	2.1	12,019	58	33	
0.50 to <0.75	7,097	15,339	15	9,988	0.5	488	47	1.8	6,713	67	24	
0.75 to < 2.50	25,310	36,834	13	32,442	1.2	1,929	42	1.4	26,361	81	158	
2.50 to < 10.00	9,514	9,373	29	7,312	5.4	651	37	1.5	8,838	121	141	
10.00 to <100.00	2,751	2,487	29	1,394	19.6	363	37	1.7	2,706	194	101	
100.00 (Default)	1,225	116	20	1,248	100.0	116	43	2.2	-	-	536	
Sub-total	70,427	108,582	17	89,141	2.7	4,217	42	1.7	61,910	69	1,004	1,385
Corporate small business asset sub-class												
0.00 to < 0.15	-	9	0	0	0.1	1	45	1.0	0	14	0	
0.15 to <0.25	89	846	15	258	0.2	179	38	1.9	79	31	0	
0.25 to <0.50	776	3,319	6	1,137	0.4	518	37	1.8	483	42	2	
0.50 to <0.75	818	1,967	9	1,199	0.5	559	39	2.1	663	55	2	
0.75 to < 2.50	6,343	7,261	11	7,523	1.4	2,833	38	2.0	5,790	77	40	
2.50 to < 10.00	5,494	3,966	13	5,439	5.0	2,271	38	1.7	5,934	109	103	
10.00 to <100.00	1,140	622	8	977	16.4	527	38	1.6	1,641	168	61	
100.00 (Default)	673	112	6	680	100.0	186	41	1.8	-	-	278	
Sub-total	15,334	18,102	11	17,212	7.2	7,074	38	1.9	14,590	85	487	342

17 IRBA – CREDIT RISK EXPOSURES BY PORTFOLIO AND PD RANGE (cont'd)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
PD range %	Original on-balance sheet gross exposures \$m	Off-balance sheet exposures 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 %	EL \$m	TEP \$m
Specialised lending asset sub-class - IPRE												
0.00 to < 0.15	-	45	-	-	-	-	-	-	-	-	-	-
0.15 to <0.25	8,284	3,104	64	10,261	0.2	151	45	1.9	4,057	40	9	
0.25 to <0.50	16,677	3,159	55	18,403	0.4	319	45	2.2	11,319	62	32	
0.50 to <0.75	6,468	1,642	69	7,594	0.5	148	45	2.3	5,539	73	18	
0.75 to < 2.50	22,251	4,170	44	24,072	1.2	976	45	2.4	24,128	100	127	
2.50 to < 10.00	3,426	706	38	3,693	4.0	531	45	2.7	5,521	149	67	
10.00 to <100.00	165	12	62	172	20.5	13	45	1.5	408	236	16	
100.00 (Default)	351	11	62	358	100.0	41	45	2.2	-	-	161	
Sub-total	57,623	12,848	54	64,554	1.5	2,179	45	2.3	50,971	79	429	532
Total (FIRB portfolios)	216,214	147,778	21	247,608	1.9	13,758	44	1.6	137,532	56	1,960	2,361
Residential mortgage asset sub-class												
0.00 to < 0.15	652	263	104	926	0.1	16,294	20	-	36	4	0	
0.15 to <0.25	17,638	581	100	18,219	0.2	45,666	14	-	997	5	5	
0.25 to <0.50	27,666	2,608	66	29,398	0.3	86,699	11	-	1,750	6	9	
0.50 to <0.75	16,323	677	98	16,988	0.7	39,348	13	-	2,178	13	14	
0.75 to < 2.50	7,811	498	37	7,993	1.3	44,640	12	-	1,551	19	13	
2.50 to < 10.00	1,551	105	42	1,595	3.8	16,377	23	-	1,094	69	14	
10.00 to <100.00	1,502	22	44	1,512	27.5	7,868	17	-	1,337	88	67	
100.00 (Default)	790	2	0	790	100.0	3,213	21	-	791	100	120	
Sub-total	73,932	4,755	73	77,421	2.1	239,713	13	-	9,733	13	241	220

17 IRBA – CREDIT RISK EXPOSURES BY PORTFOLIO AND PD RANGE (cont'd)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
PD range %	Original on-balance sheet gross exposures \$m	Off-balance sheet exposures 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 %	EL \$m	TEP \$m
QRRE asset sub-class												
0.00 to < 0.15	813	4,697	28	2,131	0.1	480,888	51	-	73	3	1	
0.15 to <0.25	306	1,601	34	850	0.2	157,509	46	-	47	6	1	
0.25 to <0.50	298	4,512	58	2,934	0.3	724,082	50	-	223	8	4	
0.50 to <0.75	771	1,440	54	1,542	0.6	314,082	55	-	245	16	5	
0.75 to < 2.50	887	2,118	75	2,472	1.4	348,549	40	-	550	22	15	
2.50 to < 10.00	601	476	56	870	5.6	215,722	59	-	698	80	28	
10.00 to <100.00	452	121	66	531	23.8	127,959	68	-	882	166	82	
100.00 (Default)	50	-	-	50	100.0	11,799	70	-	81	164	29	
Sub-total	4,178	14,964	48	11,380	2.5	2,039,708	50	-	2,799	25	167	
Other retail exposures asset sub-class (excluding exposures to small business)												
0.00 to < 0.15	68	244	39	164	0.1	2,936	35	-	14	9	0	
0.15 to <0.25	1,289	88	40	1,324	0.2	29,547	13	-	64	5	0	
0.25 to <0.50	18	124	58	91	0.3	975	17	-	8	9	0	
0.50 to <0.75	5,194	631	49	5,501	0.6	24,765	10	-	462	8	3	
0.75 to < 2.50	3,198	706	74	3,720	1.7	20,095	6	-	292	8	4	
2.50 to < 10.00	636	153	83	762	5.2	72,771	47	-	563	74	20	
10.00 to <100.00	433	56	27	448	22.7	39,342	41	-	391	87	37	
100.00 (Default)	97	0	-	97	100.0	5,137	42	-	309	317	20	
Sub-total	10,933	2,003	59	12,106	2.8	192,140	13	-	2,103	17	84	

17 IRBA – CREDIT RISK EXPOSURES BY PORTFOLIO AND PD RANGE (cont'd)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
PD range %	Original on-balance sheet gross exposures \$m	Off-balance sheet exposures 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 %	EL \$m	TEP \$m
Other retail small business exposures asset sub-class												
0.00 to < 0.15	13	51	69	47	0.1	304	8	-	1	1	0	
0.15 to <0.25	459	624	68	886	0.2	3,382	21	-	77	9	0	
0.25 to <0.50	2,197	972	63	2,808	0.4	10,288	24	-	434	15	3	
0.50 to <0.75	976	354	59	1,185	0.5	4,976	26	-	238	20	2	
0.75 to < 2.50	3,217	1,014	52	3,744	1.3	14,634	28	-	1,202	32	13	
2.50 to < 10.00	1,150	208	52	1,258	4.8	5,438	28	-	545	43	16	
10.00 to <100.00	265	23	42	274	21.3	1,330	26	-	172	63	15	
100.00 (Default)	197	15	5	198	100.0	769	39	-	385	194	56	
Sub-total	8,474	3,260	59	10,400	3.7	41,119	26	-	3,053	29	106	87
Total (Retail Asset Class)	97,517	24,982	55	111,306	2.3	2,278,632	18	-	17,688	16	598	404

18 IRBA – EFFECT ON RWA OF CREDIT DERIVATIVES USED AS CRM

As at 31 December 2018, the Group does not use credit derivatives as credit risk mitigant for exposures under IRBA.

\$m		(a)	(b)
		Pre-credit derivatives RWA	Actual RWA
1	Sovereign – F-IRBA	2,342	2,342
2	Sovereign – A-IRBA	-	-
3	Banks – F-IRBA	7,720	7,720
4	Banks – A-IRBA	-	-
5	Corporate – F-IRBA	61,910	61,910
6	Corporate – A-IRBA	-	-
7	Corporate small business – F-IRBA	14,590	14,590
8	Corporate small business – A-IRBA	-	-
9	Specialised lending – F-IRBA	50,971	50,971
10	Specialised lending – A-IRBA	-	-
11	High Volatility Commercial Real Estate – F-IRBA	-	-
12	High Volatility Commercial Real Estate – A-IRBA	-	-
13	Retail – QRRE	2,799	2,799
14	Retail – residential mortgage	9,733	9,733
15	Retail – small business	3,053	3,053
16	Other retail exposures	2,103	2,103
17	Equity – F-IRBA	-	-
18	Equity – A-IRBA	-	-
19	Purchased receivables – F-IRBA	-	-
20	Purchased receivables – A-IRBA	-	-
21	Total	155,220	155,220

19 IRBA – RWA FLOW STATEMENT FOR CREDIT RISK EXPOSURES

The following table presents changes in RWA corresponding to credit risk only (excluding CCR) over the quarterly reporting period for each of the key drivers.

The Group's RWA increased by \$6.8 billion quarter-on-quarter mainly driven by corporate loan growth.

\$m		(a)
		RWA amounts
1	RWA as at end of previous quarter	152,646
2	Asset size	4,113
3	Asset quality	3,350
4	Model updates	(108)
5	Methodology and policy	-
6	Acquisitions and disposals	-
7	Foreign exchange movements	(546)
8	Other	-
9	RWA as at end of quarter	159,454

20 IRBA – BACKTESTING OF PD PER PORTFOLIO

The tables below provide the backtesting data used to validate the reliability of PD calculations and compares the PD used in IRBA capital calculations with the effective default rates of the bank's obligors.

PD range %	(c)			(d)	(e)	(f)		(g)	(h)	(i)
	S&P	Fitch's Rating	Moody's Rating	Weighted Average PD %	Arithmetic Average PD by Obligor %	Number of Obligor		Defaulted Obligor in the Annual Reporting Period	Of which new defaulted obligors in the Annual Reporting Period	Average Historical Annual Default Rate %
						End of Previous Annual Reporting Period	End of Annual Reporting Period			
Sovereign asset sub-class										
0.00 to < 0.15	A	A	A2	0.0	0.0	23	22	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	1	2	-	-	0.0
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	2	2	-	-	0.0
0.50 to <0.75	BB	BB	Ba2	-	-	-	-	-	-	0.0
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.5	1.5	2	2	-	-	0.0
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	-	-	-	-	-	-	0.0
10.00 to <100.00	B-	B-	B3	18.5	23.2	1	2	-	-	0.0
100.00 (Default)				-	-	-	-			
Bank asset sub-class										
0.00 to < 0.15	A	A	A2	0.0	0.1	161	162	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	22	25	-	-	0.0
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	16	16	-	-	0.0
0.50 to <0.75	BB	BB	Ba2	0.6	0.6	14	8	-	-	0.0
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.4	1.2	12	20	-	-	0.0
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	4.3	4.3	15	12	-	-	0.0
10.00 to <100.00	B-	B-	B3	18.5	21.3	17	15	-	-	0.0
100.00 (Default)				-	-	-	-			

PD range %	(c)			(d)	(e)	(f)		(g)	(h)	(i)
	S&P	Fitch's Rating	Moody's Rating	Weighted Average PD %	Arithmetic Average PD by Obligors %	Number of Obligors		Defaulted Obligors in the Annual Reporting Period	Of which new defaulted obligors in the Annual Reporting Period	Average Historical Annual Default Rate %
						End of Previous Annual Reporting Period	End of Annual Reporting Period			
Corporate asset sub-class										
0.00 to < 0.15	A	A	A2	0.1	0.1	45	58	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	124	115	-	-	0.0
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	505	498	-	-	0.1
0.50 to <0.75	BB	BB	Ba2	0.5	0.5	439	488	1	-	0.3
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.2	1.2	1,701	1,929	6	-	0.6
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	5.4	5.3	666	651	27	-	2.8
10.00 to <100.00	B-	B-	B3	19.6	22.8	385	363	11	-	2.8
100.00 (Default)				100.0	100.0	140	116			
Corporate small business asset sub-class										
0.00 to < 0.15	A	A	A2	0.1	0.1	2	1	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	201	179	1	-	0.1
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	545	518	-	-	0.2
0.50 to <0.75	BB	BB	Ba2	0.5	0.5	553	559	-	-	0.2
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.4	1.4	2,897	2,833	21	-	0.5
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	5.0	5.3	2,138	2,271	31	-	1.6
10.00 to <100.00	B-	B-	B3	16.4	17.9	485	527	23	1	4.9
100.00 (Default)				100.0	100.0	167	186			

PD range %	(c)			(d)	(e)	(f)		(g)	(h)	(i)
	S&P	Fitch's Rating	Moody's Rating	Weighted Average PD %	Arithmetic Average PD by Obligors %	Number of Obligors		Defaulted Obligors in the Annual Reporting Period	Of which new defaulted obligors in the Annual Reporting Period	Average Historical Annual Default Rate %
						End of Previous Annual Reporting Period	End of Annual Reporting Period			
Specialised lending asset sub-class - IPRE										
0.00 to < 0.15	A	A	A2	-	-	1	-	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	155	151	-	-	0.2
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	359	319	1	-	0.1
0.50 to <0.75	BB	BB	Ba2	0.5	0.5	120	148	-	-	0.0
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.2	1.4	924	976	4	-	0.3
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	4.0	3.9	520	531	13	-	1.1
10.00 to <100.00	B-	B-	B3	20.5	20.5	18	13	6	-	26.2
100.00 (Default)				100.0	100.0	24	41			
Residential mortgage asset sub-class										
0.00 to < 0.15				0.1	0.1	14,298	16,294	7	-	0.1
0.15 to <0.25				0.2	0.2	41,114	45,666	56	-	0.1
0.25 to <0.50				0.3	0.3	83,270	86,699	89	-	0.1
0.50 to <0.75				0.7	0.6	44,685	39,348	160	3	0.3
0.75 to < 2.50				1.3	1.3	42,285	44,640	319	6	0.7
2.50 to < 10.00				3.8	3.7	16,854	16,377	608	81	2.4
10.00 to <100.00				27.5	20.4	8,088	7,868	1,495	4	17.2
100.00 (Default)				100.0	100.0	3,240	3,213			

PD range %	(c)			(d)	(e)	(f)		(g)	(h)	(i)
	S&P	Fitch's Rating	Moody's Rating	Weighted Average PD %	Arithmetic Average PD by Obligors %	Number of Obligors		Defaulted Obligors in the Annual Reporting Period	Of which new defaulted obligors in the Annual Reporting Period	Average Historical Annual Default Rate %
						End of Previous Annual Reporting Period	End of Annual Reporting Period			
QRRE asset sub-class										
0.00 to < 0.15				0.1	0.1	479,491	480,888	329	-	0.1
0.15 to <0.25				0.2	0.2	151,845	157,509	196	-	0.1
0.25 to <0.50				0.3	0.3	710,940	724,082	841	7	0.1
0.50 to <0.75				0.6	0.7	309,607	314,082	1,783	-	0.5
0.75 to < 2.50				1.4	1.5	338,016	348,549	3,167	93	0.9
2.50 to < 10.00				5.6	5.3	217,704	215,722	9,639	870	3.3
10.00 to <100.00				23.8	24.2	123,804	127,959	27,266	36	17.0
100.00 (Default)				100.0	100.0	11,019	11,799			
Other retail exposures asset sub-class (excluding exposures to small business)										
0.00 to < 0.15				0.1	0.1	2,965	2,936	8	-	0.1
0.15 to <0.25				0.2	0.2	27,857	29,547	91	-	0.1
0.25 to <0.50				0.3	0.4	879	975	7	-	0.3
0.50 to <0.75				0.6	0.6	24,639	24,765	173	-	0.3
0.75 to < 2.50				1.7	1.2	23,125	20,095	137	4	0.4
2.50 to < 10.00				5.2	5.6	54,062	72,771	2,243	203	3.3
10.00 to <100.00				22.7	33.6	62,915	39,342	6,161	254	11.5
100.00 (Default)				100.0	100.0	5,592	5,137			

PD range %	(c)			(d)	(e)	(f)		(g)	(h)	(i)
	S&P	Fitch's Rating	Moody's Rating	Weighted Average PD %	Arithmetic Average PD by Obligors %	Number of Obligors		Defaulted Obligors in the Annual Reporting Period	Of which new defaulted obligors in the Annual Reporting Period	Average Historical Annual Default Rate %
						End of Previous Annual Reporting Period	End of Annual Reporting Period			
Other retail small business exposures asset sub-class										
0.00 to < 0.15				0.1	0.1	363	304	1	-	0.1
0.15 to <0.25				0.2	0.2	3,509	3,382	5	-	0.1
0.25 to <0.50				0.4	0.4	9,776	10,288	8	-	0.1
0.50 to <0.75				0.5	0.5	4,901	4,976	8	-	0.2
0.75 to < 2.50				1.3	1.3	14,778	14,634	113	5	0.7
2.50 to < 10.00				4.8	4.5	5,742	5,438	161	4	2.2
10.00 to <100.00				21.3	22.0	1,259	1,330	241	-	16.4
100.00 (Default)				100.0	100.0	767	769			

21 IRBA – SPECIALISED LENDING

The following table provides the exposure amount and RWA of the Group's specialised lending portfolio under Supervisory Slotting Criteria.

Compared with 30 June 2018, exposures and RWA increased mainly due to loan growth in Project Finance asset class.

\$m

Specialised lending											
Other than HVCRE											
Regulatory categories	Remaining maturity	On-balance sheet	Off-balance sheet amount	Risk weight	Exposure amount					RWA	EL
					PF	OF	CF	IPRE	Total		
Strong	< 2.5 years	1,459	14,951	50%	967	-	1,077	94	2,139	1,133	-
	≥ 2.5 years	1,071	447	70%	1,161	-	48	197	1,406	1,043	6
Good	< 2.5 years	366	2,891	70%	80	71	147	279	577	428	2
	≥ 2.5 years	789	311	90%	407	212	0	399	1,018	971	8
Satisfactory		311	75	115%	72	25	4	232	333	406	9
Weak		95	1	250%	92	-	0	3	95	252	8
Default		330	13	-	-	296	30	11	337	-	169
Total		4,421	18,688		2,779	604	1,305	1,217	5,905	4,234	202

22 ANALYSIS OF COUNTERPARTY CREDIT RISK EXPOSURE BY APPROACH

The following table provides the EAD, RWA and parameters used to calculate the Group's CCR regulatory requirements.

Compared with 30 June 2018, the decrease in EAD under Current Exposure Method was mainly from foreign exchange derivatives.

		(a)	(b)	(c)	(d)	(e)	(f)
		Replacement cost	Potential future exposure	Effective EPE	α used for computing regulatory EAD	EAD (post-CRM)	RWA
		\$m					
1	Current Exposure Method (for derivatives)	1,837	3,187			4,766	1,919
2	CCR internal models method (for derivatives and SFTs)			-	-	-	-
3	FC(SA) (for SFTs)					-	-
4	FC(CA) (for SFTs)					20,712	980
5	VaR for SFTs					-	-
6	Total						2,899

23 CVA RISK CAPITAL REQUIREMENTS

The following table provides the Group's CVA risk capital requirements calculated under Standardised Approach.

Compared with 30 June 2018, the decrease in EAD was mainly from foreign exchange derivatives.

		(a)	(b)
		EAD (post-CRM)	RWA
		\$m	
	Total portfolios subject to the Advanced CVA capital requirement	-	-
1	(i) VaR component (including the three-times multiplier)		-
2	(ii) Stressed VaR component (including the three-times multiplier)		-
3	All portfolios subject to the Standardised CVA capital requirement	4,216	1,288
4	Total portfolios subject to the CVA risk capital requirement	4,216	1,288

24 STANDARDISED APPROACH – CCR EXPOSURES BY PORTFOLIO AND RISK WEIGHTS

The following table provides a breakdown of the Group's CCR exposures under SA(CR) by asset class and risk weight.

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
		0%	10%	20%	50%	75%	100%	150%	Others	Total Credit Exposure
		\$m								
Risk weight	Asset classes									
	Central government and central bank	-	-	-	1	-	-	-	-	1
	PSE	-	-	8	18	-	1	-	-	28
	MDB	9	-	-	-	-	-	-	-	9
	Bank	-	-	8	67	-	15	-	-	90
	Corporate	-	-	2	2	-	265	-	-	269
	Regulatory retail	-	-	-	-	6	-	-	-	6
	Other exposures	-	-	-	-	-	8	-	-	8
	Total	9	-	18	89	6	289	-	-	411

25 IRBA – CCR EXPOSURES BY PORTFOLIO AND PD RANGE

The following table sets out the relevant parameters used for the calculations of CCR capital requirements for IRBA models.

Compared with 30 June 2018, the reduction in EAD was mainly from foreign exchange derivatives.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
PD range %	EAD post-CRM \$m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWA \$m	RWA density %
Sovereign asset sub-class							
0.00 to < 0.15	3,578	0.0	5	8	0.1	7	0
0.15 to <0.25	4	0.2	1	45	0.0	1	24
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	3	27.9	1	13	2.3	2	75
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	3,584	0.0	7	8	0.1	10	0
Bank asset sub-class							
0.00 to < 0.15	12,074	0.1	129	15	0.3	631	5
0.15 to <0.25	1,385	0.2	19	15	0.1	134	10
0.25 to <0.50	828	0.4	14	8	0.1	65	8
0.50 to <0.75	169	0.6	3	3	0.1	5	3
0.75 to < 2.50	44	1.5	6	1	0.0	1	3
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to <100.00	0	18.5	1	45	1.0	0	264
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	14,500	0.1	172	15	0.3	837	6
Corporate asset sub-class							
0.00 to < 0.15	188	0.1	26	44	1.4	41	22
0.15 to <0.25	604	0.2	34	24	1.1	146	24
0.25 to <0.50	3,540	0.4	121	10	0.3	454	13
0.50 to <0.75	157	0.5	88	46	3.3	137	87
0.75 to < 2.50	2,038	1.4	340	12	0.4	484	24
2.50 to < 10.00	117	4.8	63	49	2.3	193	166
10.00 to <100.00	30	27.9	20	5	1.1	8	26
100.00 (Default)	4	100.0	3	40	1.1	-	-
Sub-total	6,675	0.9	695	14	0.5	1,462	22

25 IRBA – CCR EXPOSURES BY PORTFOLIO AND PD RANGE (cont'd)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
PD range %	EAD post-CRM \$m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWA \$m	RWA density %
Corporate small business asset sub-class							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to <0.25	3	0.2	47	45	0.2	1	19
0.25 to <0.50	2	0.4	59	44	0.5	1	38
0.50 to <0.75	2	0.5	58	42	1.0	1	46
0.75 to < 2.50	36	1.0	244	44	0.4	24	65
2.50 to < 10.00	37	2.9	184	44	0.3	38	102
10.00 to <100.00	1	13.6	27	44	1.2	2	202
100.00 (Default)	0	100.0	1	45	0.4	-	-
Sub-total	81	2.0	620	44	0.4	66	81
Specialised lending asset sub-class - IPRE							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to <0.25	18	0.2	16	45	2.8	9	48
0.25 to <0.50	47	0.4	44	45	2.7	32	67
0.50 to <0.75	38	0.5	11	45	2.2	27	72
0.75 to < 2.50	24	0.9	20	45	2.8	23	99
2.50 to < 10.00	24	3.3	4	45	3.0	35	147
10.00 to <100.00	0	20.5	2	45	1.1	0	239
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	151	1.0	97	45	2.7	127	84
Total (sum of portfolios)	24,992	0.3	1,591	14	0.3	2,502	10

26 COMPOSITION OF COLLATERAL FOR CCR EXPOSURES

The following table provides the breakdown of all types of collateral posted or received by the Group to support or reduce the CCR exposures related to derivative transactions or to SFTs.

Compared with 30 June 2018, the decrease in collaterals posted and received for SFT transactions was due to the reduction in repurchase agreement transactions.

	(a)	(b)	(c)	(d)	(e)	(f)
\$m	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		
Cash domestic currencies	-	1,105	-	437	290	1,725
Cash other currencies	-	528	-	1,218	2,725	15,784
Domestic sovereign debt	-	-	-	11	1,781	288
Other sovereign debt	-	-	-	68	7,244	1,155
Government agency debt	-	-	-	-	38	17
Corporate bonds	-	-	-	104	7,913	1,929
Equity securities	-	-	-	-	-	-
Other collateral	-	-	-	-	-	-
Total	-	1,633	-	1,838	19,991	20,896

27 CREDIT DERIVATIVE EXPOSURES

The following table shows the breakdown of Group's exposures to credit derivative transactions by protection bought or sold.

Compared with 30 June 2018, the decrease in credit derivative exposures was mainly from total return swaps.

		(a)	(b)
		Protection bought	Protection sold
\$m	Notionals		
1	Single-name credit default swaps	245	234
2	Index credit default swaps	55	-
3	Total return swaps	956	-
4	Total notionals	1,255	234
	Fair values		
5	Positive fair value (asset)	42	1
6	Negative fair value (liability)	6	-

28 SECURITISATION EXPOSURES IN THE BANKING BOOK

The following table shows the Group's securitisation exposures in the Banking Book.

Compared with 30 June 2018, the increase in securitisation exposures mainly arose from residential mortgage-backed securities.

		(a)	(b)	(c)
		UOB acts as investor		
		Traditional	Synthetic	Sub-total
\$m	1 Total retail	721	-	721
2	of which: residential mortgage	629	-	629
3	of which: credit card	92	-	92
4	Total wholesale	29	-	29
5	of which: commercial mortgage	29	-	29

Note: The group does not have any securitisation exposures where it acts as sponsor or originator.

29 SECURITISATION EXPOSURES IN THE BANKING BOOK AND ASSOCIATED REGULATORY CAPITAL REQUIREMENTS – UOB ACTING AS INVESTOR

The following table shows the exposure amounts, RWA and capital requirements of the Group's securitisation exposures in the Banking Book where the Group acts as an investor.

Compared with 30 June 2018, the increase in securitisation exposures mainly arose from residential mortgage-backed securities with lower risk weights.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)
	Exposure values (by risk weight 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	SEC-IRBA	SEC-ERBA	SA(SA)	1250%	SEC-IRBA	SEC-ERBA	SA(SA)	1250%	SEC-IRBA	SEC-ERBA	SA(SA)	1250%
\$m																	
1 Total exposures	629	-	114	-	8	-	569	174	8	-	116	26	94	-	12	3	9
2 Traditional securitisation	629	-	114	-	8	-	569	174	8	-	116	26	94	-	12	3	9
3 of which: securitisation	629	-	114	-	8	-	569	174	8	-	116	26	94	-	12	3	9
4 of which: retail underlying	629	-	85	-	8	-	539	174	8	-	96	26	94	-	10	3	9
5 of which: wholesale	-	-	29	-	-	-	29	-	-	-	19	-	-	-	2	-	-
6 of which: resecuritisation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 of which: senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 of which: non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Synthetic securitisation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 of which: securitisation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 of which: retail underlying	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 of which: wholesale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13 of which resecuritisation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14 of which: senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 of which: non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

30 MARKET RISK UNDER STANDARDISED APPROACH

The table below shows the components of the capital requirement under the standardised approach for market risk.

Compared with 30 June 2018, the increase in RWA was mainly due to higher interest rate risk.

\$m		(a)
		RWA
	Products excluding options	
1	Interest rate risk (general and specific)	3,373
2	Equity risk (general and specific)	104
3	Foreign exchange risk	5,197
4	Commodity risk	442
	Options	
5	Simplified approach	
6	Delta-plus method	
7	Scenario approach	1,229
8	Securitisation	
9	Total	10,344

31 COMPARISON OF VAR ESTIMATES WITH GAINS OR LOSSES

Standardised Approach

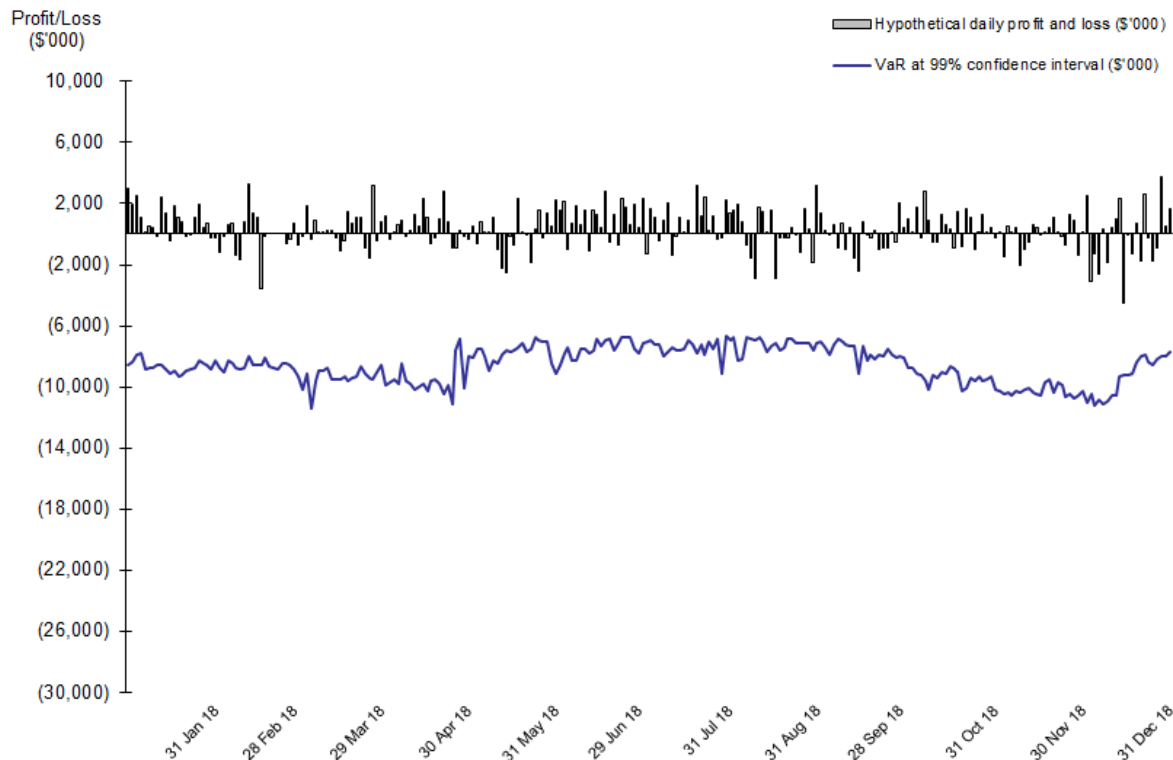
The Group currently adopts the SA for the calculation of regulatory market risk capital but uses the Internal Models Approach to measure and to control trading market risks. The financial products which are warehoused, measured and controlled with internal models include FX and FX options, plain vanilla interest rate contracts and interest rate options, government and corporate bonds, equities and equity options, commodities contracts and commodity options.

Internal Model Approach

The Group estimates a daily Value-at-Risk (VaR) within a 99 per cent confidence interval, using the historical simulation method, as a control for market risk. The method assumes that possible future changes in market rates may be implied by observed historical market movements.

Group Trading Backtesting Chart

(Hypothetical daily profit and loss versus VaR at 99% confidence interval)

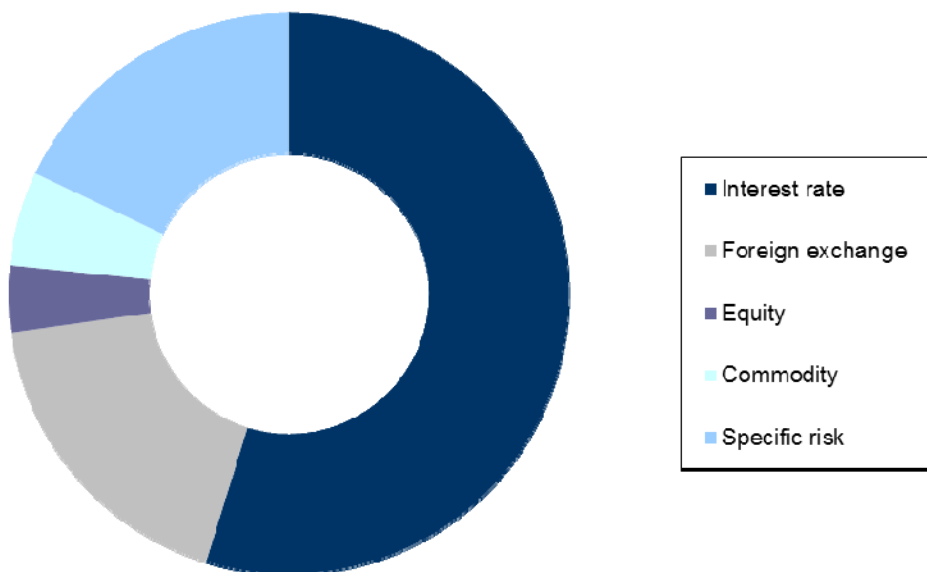


As VaR is the statistical measure for potential losses, the VaR measures are backtested against profit and loss of the trading book to validate the robustness of the methodology. The backtesting process analyses whether the exceptions are due to model deficiencies or market volatility. All backtesting exceptions are tabled at the ALCO with recommended actions and resolutions. No backtesting exception was noted for Group Trading in year 2018.

To complement the VaR measure, we perform stress and scenario tests to identify the Group's vulnerability to event risk. These tests serve to provide early warnings of plausible extreme losses for which proactive management of market risk is taken.

The Group's daily VaR on 31 December 2018 was \$7.72 million.

Group Trading VaR for Market Risk by Risk Class



32 INTEREST RATE RISK IN THE BANKING BOOK

Interest rate risk is the impact to earnings and economic value of the Group due to fluctuations in interest rates. Interest rate exposure arises from differences in the maturity and repricing dates of assets, liabilities and off-balance sheet items. These mismatches are actively monitored and managed as part of the overall interest rate risk management process which is conducted in accordance with the Group’s policies as approved by the ALCO. Details on the Group’s management of interest rate risk are available in the Group’s Annual Reports.

The Group’s interest rate risk sensitivity is measured as changes in economic value of equity (“EVE”) or net interest income (NII) based on new Basel IRRBB requirements. At 100 and 200 basis points parallel interest rate shocks, worst case results were negative \$779 million and \$1,589 million respectively.

EVE is the present value of assets less present value of liabilities of the Group. NII is the simulated change in the Group’s net interest income. The repricing profile of loans is generally based on the earliest possible repricing dates, taking into account the notice period to be served to the customers. Interest rate flooring effects are taken into consideration. Loan prepayment and time deposit early withdrawal rates are estimated based on past statistics and trends where possible and material. Behavioural assumptions based on historical trends are applied where appropriate. The average repricing maturity of core non-maturity deposits is determined through empirical models taking into account asset duration. Risk-free zero coupon curves are used for EVE discounting. Currencies are aggregated by scenarios. There may be some differences in the assumptions across geographical locations due to variation in local conditions.

33 SUMMARY OF DISCLOSURE EXCLUDED

<u>Disclosures Description</u>	<u>Rationale</u>
RWA flow statements under CCR internal models method	UOB not using CCR Internal Models Method
Securitisation exposures in the Trading book	Currently, UOB has no such exposures in the Trading book.
Securitisation exposures in the Banking book and associated regulatory capital requirements - A reporting bank acting as originator or as sponsor	Currently, UOB has no such exposures.
RWA flow statements of market risk exposures under IMA	UOB not using IMA for market risk
IMA values for trading portfolios	UOB not using IMA for market risk

34 ABBREVIATIONS

The following abbreviated terms are used throughout this document.

A		F	
A-IRBA	Advanced Internal Ratings-Based Approach	FC(SA)	Financial Collateral Simple Approach
ALCO	Asset and Liability Committee	FC(CA)	Financial Collateral Comprehensive Approach
AMA	Advanced Measurement Approach	F-IRBA	Foundation Internal Ratings-Based Approach
AT1 capital	Additional Tier 1 capital	G	
B		G-SIB	Global Systemically Important Bank
BIA	Basic Indicator Approach	H	
C		HVCRE	High-Volatility Commercial Real Estate
CAR	Capital Adequacy Ratio	I	
CCF	Credit Conversion Factor	IAA	Internal Assessment Approach
CCP	Central Counterparty	IAM	Internal Assessment Method
CCR	Counterparty Credit Risk	IMA	Internal Models Approach
CCyB	Countercyclical Buffer	IMM	Internal Models Method
CET1	Common Equity Tier 1	IPRE	Income-Producing Real Estate
CF	Commodities Finance	IRBA	Internal Ratings-Based Approach
CR	Credit Risk	IRBA (EQ)	Internal Ratings-Based Approach for Equity Exposures
CRE	Commercial Real Estate	L	
CRM	Credit Risk Mitigation	LGD	Loss Given Default
CVA	Credit Valuation Adjustment	M	
E		MDB	Multilateral Development Bank
EAD	Exposure at Default	MR	Market Risk
EL	Expected Loss	N	
EPE	Expected Positive Exposure	NBFI	Non Bank Financial Institutions
EQ	Equity Exposures	NCI	Non-Controlling Interests
EVE	Economic Value of Equity		

34 ABBREVIATIONS (cont'd)

O		SFRS	Singapore Financial Reporting Standards
OF	Object Finance	SFTs	Securities Financing Transactions
OR	Operational Risk	SME	Small-and Medium-sized Enterprises
P		T	
PD	Probability of Default	T1 capital	Tier 1 capital
PE/VC	Private Equity/Venture Capital	T2 capital	Tier 2 capital
PF	Project Finance	TEP	Total Eligible Provisions
PSE	Public Sector Entity	V	
Q		VaR	Value at Risk
QRRE	Qualifying Revolving Retail Exposures		
R			
RBM	Ratings-Based Method		
RW	Risk Weight		
RWA	Risk-Weighted Assets		
S			
SA	Standardised Approach		
SA(CR)	Standardised Approach to Credit Risk		
SA(EQ)	Standardised Approach for Equity Exposures		
SA(SE)	Standardised Approach for Securitisation Exposures		
SA(MR)	Standardised Approach to Market Risk		
SA(OR)	Standardised Approach to Operational Risk		
SE	Securitisation Exposures		
SEC-IRBA	Securitisation Internal Ratings-Based Approach		
SEC-ERBA	Securitisation External Ratings-Based Approach		
SEC-SA	Securitisation Standardised Approach		
SF	Supervisory Formula		