

Pillar 3 Disclosure Report

31 December 2019

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".

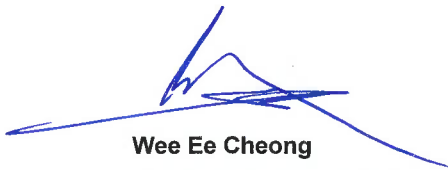
1 Introduction

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.

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 2019 has been prepared in accordance with the internal control processes approved by the Board.

A handwritten signature in blue ink, appearing to read "Wee Ee Cheong", with a long horizontal stroke extending to the left.

Wee Ee Cheong

Deputy Chairman and Chief Executive Officer

Date: 21 February 2020

3 Risk Management Approach

Please refer to UOB Annual Report 2019, Risk Management section – Maintaining a Sound Risk Culture.

4 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 2019	30 Sep 2019	30 Jun 2019	31 Mar 2019	31 Dec 2018
Available capital (amounts)¹						
1	CET1 capital	32,366	31,759	32,067	32,013	30,750
2	Tier 1 capital	34,745	34,637	34,196	34,142	32,879
3	Total capital	39,352	39,171	39,630	38,914	37,542
Risk weighted assets (amounts)¹						
4	Total RWA	226,318	231,610	230,032	229,515	220,568
Risk-based capital ratios as a percentage of RWA						
5	CET1 ratio (%)	14.3	13.7	13.9	13.9	13.9
6	Tier 1 ratio (%)	15.4	15.0	14.9	14.9	14.9
7	Total capital ratio (%)	17.4	16.9	17.2	17.0	17.0
Additional CET1 buffer requirements as a percentage of RWA						
8	Capital conservation buffer requirement (2.5% from 2019) (%)	2.5	2.5	2.5	2.5	1.875
9	Countercyclical buffer requirement (%)	0.2	0.3	0.3	0.3	0.2
10	Bank G-SIB and/or D-SIB additional requirement (%)	-	-	-	-	-
11	Total of bank CET1 specific buffer requirements (%) (row 8 + row 9 + row 10)	2.7	2.8	2.8	2.8	2.1
12	CET1 available after meeting the Reporting Bank's minimum capital requirements (%)	7.4	6.9	6.9	6.9	6.9
Leverage Ratio¹						
13	Total Leverage Ratio exposure measure	452,859	458,057	454,152	448,511	434,732
14	Leverage Ratio (%) (row 2/ row 13)	7.7	7.6	7.5	7.6	7.6
Liquidity Coverage Ratio						
15	Total High Quality Liquid Assets	57,419	61,140	58,528	60,256	49,847
16	Total net cash outflow	38,859	42,869	39,873	41,439	39,109
17	Liquidity Coverage Ratio (%)	149	144	147	146	127
Net Stable Funding Ratio						
18	Total available stable funding	249,651	244,071	242,619	240,458	230,739
19	Total required stable funding	223,998	227,613	224,621	220,953	215,097
20	Net Stable Funding Ratio (%)	111	107	108	109	107

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

5 Composition of Capital

5.1 Reconciliation of Regulatory Capital to Balance Sheet

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 December 2019, both the total assets and the total equities of each of these subsidiaries were less than \$1 billion.

Compared with 30 June 2019, key movements in the items under the column "Under regulatory scope of consolidation" were mainly from earnings in the second half of 2019, payment of dividends, and issuance and redemption of capital instruments.

Table 1 - Reconciliation of Balance Sheet to Regulatory Capital as at 31 December 2019

\$m	Balance Sheet per Published Financial Statements	Under regulatory scope of consolidation	Reference in Table 2
Equity			
Share capital and other capital	7,325		
<i>of which paid-up ordinary shares</i>		4,949	A
<i>of which AT1 capital instruments</i>		2,377	B
Retained earnings	23,405	23,258	C
<i>of which unrealised fair value gains/losses on financial liabilities and derivative liabilities arising from changes in own credit risk</i>		28	D1
Other reserves	8,907	8,740	E
<i>of which unrealised fair value gains/losses on financial liabilities and derivative liabilities arising from changes in own credit risk</i>		3	D2
Equity attributable to equity holders of the Bank	39,637		
Non-controlling interests	227		
<i>of which NCI that meets criteria for inclusion in</i>			
- CET1 capital		14	F1
- AT1 capital		2	F2
- T2 capital		2	F3
Total equity	39,864		
Liabilities			
Deposits and balances of banks	15,301		
Deposits and balances of customers	310,726		
Bills and drafts payable	646		
Derivative financial liabilities	6,695		
Other liabilities	5,179		
Tax payable	489		
Deferred tax liabilities	299		
Debts issued	25,209		
<i>of which T2 capital instruments</i>		3,969	G
Total liabilities	364,545		

5.1 Reconciliation of Regulatory Capital to Balance Sheet (cont'd)

Table 1 - Reconciliation of Balance Sheet to Regulatory Capital as at 31 December 2019

\$m	Balance Sheet per Published Financial Statements	Under regulatory scope of consolidation	Reference in Table 2
Assets			
Cash, balances and placements with central banks	25,864		
Singapore Government treasury bills and securities	6,199		
Other government treasury bills and securities	15,166		
Trading securities	2,789		
Placements and balances with banks	52,840		
Loans to customers	265,458		
<i>of which provisions eligible for inclusion in T2 capital</i>		636	H
Derivative financial assets	6,408		
Investment securities ²	15,454		
<i>of which investments in PE/VC held beyond the relevant holding period</i>		6	I1
Other assets	4,906		
Deferred tax assets	300		
<i>of which amount related to deferred tax assets (net of deferred tax liabilities, where permissible)</i>		354	J
Investment in associates and joint ventures ²	1,182		
<i>of which amount related to goodwill</i>		12	K1
<i>of which investments in PE/VC held beyond the relevant holding period</i>		35	I2
Investment properties	936		
Fixed assets	2,760		
Intangible assets	4,148		
<i>of which amount related to goodwill</i>		4,148	K2
Total Assets	404,409		

² Note: This includes the Bank's major stake investments in financial institutions.

5.1 Reconciliation of Regulatory Capital to Balance Sheet (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, and include both on- and off-balance sheet items.
- (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 December 2019

\$m	Amount	Reference in Table 1	
Common Equity Tier 1 capital: instruments and reserves			
1	Paid-up ordinary shares and share premium (if applicable)	4,949	A
2	Retained earnings	23,258	C
3 [#]	Accumulated other comprehensive income and other disclosed reserves	8,740	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	14	F1
6	Common Equity Tier 1 capital before regulatory adjustments	36,961	
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	4,160	K1+K2
9 [#]	Intangible assets, net of associated deferred tax liability	-	
10 [#]	Deferred tax assets that rely on future profitability	354	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	31	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	of which: investments in ordinary shares of unconsolidated financial institutions in which the Reporting Bank holds a major stake (including insurance subsidiaries)	-	
24 [#]	of which: mortgage servicing rights	-	
25 [#]	of which: deferred tax assets arising from temporary differences	-	
26	National specific regulatory adjustments	50	
26A	PE/VC investments held beyond the relevant holding periods set out in MAS Notice 630	50	I1 + I2
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	4,595	
29	Common Equity Tier 1 capital (CET1)	32,366	
Additional Tier 1 capital: instruments			

5.1 Reconciliation of Regulatory Capital to Balance Sheet (cont'd)

Table 2 - Capital Components as at 31 December 2019

\$m		Amount	Reference in Table 1
30	AT1 capital instruments and share premium (if applicable)	2,377	B
31	of which: classified as equity under the Accounting Standards	2,377	
32	of which: classified as liabilities under the Accounting Standards	-	
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	of which: instruments issued by subsidiaries subject to phase out	-	
36	Additional Tier 1 capital before regulatory adjustments	2,379	
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)	2,379	
45	Tier 1 capital (T1 = CET1 + AT1)	34,745	
Tier 2 capital: instruments and provisions			
46	Tier 2 capital instruments and share premium (if applicable)	3,969	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	2	F3
49	of which: instruments issued by subsidiaries subject to phase out	-	
50	Provisions	636	H
51	Tier 2 capital before regulatory adjustments	4,607	
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 and other TLAC liabilities of unconsolidated financial institutions in which the Reporting Bank does not hold a major stake	-	
54a [#]	Investments in other TLAC liabilities of unconsolidated financial institutions in which the Reporting Bank does not hold a major stake: amount previously designated for the 5% threshold but that no longer meets the conditions	-	
55	Investments in Tier 2 capital instruments and other TLAC liabilities 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)	4,607	
59	Total capital (TC = T1 + T2)	39,352	
60	Floor-adjusted total risk weighted assets	226,318	
Capital ratios (as a percentage of floor-adjusted risk weighted assets)			
61	Common Equity Tier 1 CAR	14.3%	
62	Tier 1 CAR	15.4%	
63	Total CAR	17.4%	

5.1 Reconciliation of Regulatory Capital to Balance Sheet (cont'd)

Table 2 - Capital Components as at 31 December 2019

\$m		Amount	Reference in Table 1
64	Bank-specific buffer requirement	9.2%	
65	of which: capital conservation buffer requirement	2.5%	
66	of which: bank specific countercyclical buffer requirement	0.2%	
67	of which: G-SIB and/or D-SIB buffer requirement (if applicable)	-	
68	Common Equity Tier 1 available after meeting the Reporting Bank's minimum capital requirements	7.4%	
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, Tier 2 capital and other TLAC liabilities of unconsolidated financial institutions in which the bank does not hold a major stake	650	
73	Investments in ordinary shares of unconsolidated financial institutions in which the Reporting Bank holds a major stake (including insurance subsidiaries)	1,584	
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)	304	row 50
77	Cap on inclusion of provisions in Tier 2 under standardised approach	356	
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)	332	row 50
79	Cap for inclusion of provisions in Tier 2 under internal ratings-based approach	938	
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)			
80	<i>Current cap on CET1 instruments subject to phase out arrangements</i>	-	
81	<i>Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)</i>	-	
82	<i>Current cap on AT1 instruments subject to phase out arrangements</i>	-	
83	<i>Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)</i>	-	
84	<i>Current cap on T2 instruments subject to phase out arrangements</i>	-	
85	<i>Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)</i>	-	

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

5.2 Main Features of Regulatory Instruments

Key Features of Regulatory Capital Instruments as at 31 December 2019

	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	SGXF48097749	XS1699845068	SG72C9000002
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 (<i>in millions</i>)	S\$4,949 million	S\$749 million	S\$879 million	S\$748 million
9 Principal amount (<i>in millions</i>)	n.a.	S\$750 million	US\$650 million	S\$750 million
10 Accounting classification	Equity	Equity	Equity	Equity
11 Original date of issuance	20 July 1970	17 July 2019	19 October 2017	18 May 2016
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.	17 July 2026	19 October 2023	18 May 2021
Tax/ regulatory event call	n.a.	Yes	Yes	Yes
Redemption price	n.a.	Par	Par	Par
16 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.	3.58% paid semi-annually on 17 January and 17 July	3.875% paid semi-annually on 19 April and 19 October	4.00% paid semi-annually on 18 May and 18 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 (<i>instrument type immediately senior to instrument</i>)	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.

5.2 Main Features of Regulatory Instruments (cont'd)

Key Features of Regulatory Capital Instruments as at 31 December 2019

	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)	US91127LAC46 / US91127KAC62	SG79A8000002	XS1485603408	XS1480822516
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\$826 million	S\$774 million	S\$811 million	S\$118 million
9 Principal amount (in millions)	US\$600 million	S\$750 million	US\$600 million	HK\$700 million
10 Accounting classification	Liability	Liability	Liability	Liability
11 Original date of issuance	15 April 2019	27 February 2017	8 September 2016	26 August 2016
12 Perpetual or dated	Dated	Dated	Dated	Dated
13 Original maturity date	15 April 2029	27 February 2029	8 March 2027	26 August 2028
14 Issuer call subject to prior supervisory approval	Yes	Yes	Yes	Yes
15 Optional call date	15 April 2024	27 February 2024	8 March 2022	26 August 2023
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	3.75% paid semi-annually on 15 April and 15 October	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
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.

5.2 Main Features of Regulatory Instruments (cont'd)

Key Features of Regulatory Capital Instruments as at 31 December 2019

1 Issuer	United Overseas Bank Limited	United Overseas Bank Limited
2 Unique Identifier (ISIN code)	XS1379133058	SG6QD3000002
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\$939 million	S\$501 million
9 Principal amount (<i>in millions</i>)	US\$700 million ⁽²⁾	S\$500 million
10 Accounting classification	Liability	Liability
11 Original date of issuance	16 & 24 March 2016	22 May 2014
12 Perpetual or dated	Dated	Dated
13 Original maturity date	16 September 2026	22 May 2026
14 Issuer call subject to prior supervisory approval	Yes	Yes
15 Optional call date	16 September 2021	22 May 2020
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 16 March and 16 September	3.5% paid semi-annually on 22 May and 22 November
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.

(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.

6 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.

6.1 Leverage Ratio Summary Comparison Table

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

Reconciliation of Balance Sheet Assets to Exposure Measure³

\$m		31 Dec 2019
1	Total consolidated assets as per published financial statements	404,409
2	Adjustment for investments in entities that are consolidated for accounting purposes but are outside the regulatory scope of consolidation	(593)
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	4,952
5	Adjustment for SFTs	292
6	Adjustment for off-balance sheet items	48,363
7	Other adjustments	(4,564)
8	Exposure measure	452,859

³ Computed using quarter-end balances

6.2 Leverage Ratio Common Disclosure Template

Exposure Measure Components³

\$m		31 Dec 2019	30 Sep 2019
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)	379,829	382,167
2	Asset amounts deducted in determining Tier 1 capital	(4,564)	(4,528)
3	Total exposure measures of on-balance sheet items (excluding derivative transactions and SFTs)	375,265	377,639
Derivative exposure measures			
4	Replacement cost associated with all derivative transactions (net of the eligible cash portion of variation margins)	5,499	6,013
5	Potential future exposure associated with all derivative	5,813	6,542
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	13	41
10	Further adjustments in effective notional amounts and deductions from potential future exposures of written credit derivatives	-	-
11	Total derivative exposure measures	11,325	12,596
SFT exposure measures			
12	Gross SFT assets (with no recognition of accounting netting), after adjusting for sales accounting	17,614	18,357
13	Eligible netting of cash payables and cash receivables	-	-
14	SFT counterparty exposures	292	643
15	SFT exposure measures where a Reporting Bank acts as an agent in the SFTs	-	-
16	Total SFT exposure measures	17,906	19,000
Exposure measures of off-balance sheet items			
17	Off-balance sheet items at notional amount	219,192	215,080
18	Adjustments for calculation of exposure measures of off-balance sheet items	(170,829)	(166,258)
19	Total exposure measures of off-balance sheet items	48,363	48,822
Capital and Total exposures			
20	Tier 1 capital	34,745	34,637
21	Total exposures	452,859	458,057
Leverage ratio			
22	Leverage ratio	7.7%	7.6%

³ Computed using quarter-end balances

As at 31 December 2019, the Group's leverage ratio was 7.7%, a 0.1% increase quarter-on-quarter, primarily due to reduced exposures from lower asset base.

7 Macprudential Supervisory Measures

7.1 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.

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.

Countercyclical Capital Buffer as at 31 December 2019

\$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
France	0.25%	6		
Hong Kong	2.0%	20,646		
Sweden	2.5%	1		
United Kingdom	1.0%	2,241		
Sum		22,894		
Total		183,401	0.2%	537

Countercyclical Capital Buffer as at 30 June 2019

\$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	2.5%	20,239		
Sweden	2.0%	1		
United Kingdom	1.0%	2,188		
Sum		22,428		
Total		185,631	0.3%	654

7.2 Disclosure of G-SIB Indicators

The Basel Committee on Banking Supervision (BCBS) assesses the systemic importance of banks in a global context and has developed an indicator-based methodology for identifying Global Systemically Important Banks (G-SIBs). The 12 indicators are based on cross-jurisdictional activity, size, interconnectedness, substitutability/financial institution infrastructure and complexity.

Although UOB is not a G-SIB, it is required under MAS Notice 637 to disclose these 12 indicators on an annual basis. The indicators have been prepared in accordance with the instructions issued by the BCBS. Further details on the 12 indicators and assessment methodology are available at BCBS website: <http://www.bis.org/bcbs/gsib/>

G-SIB Indicators of UOB Group as at 31 December 2019 ⁴

Category	Indicators used for assessing G-SIBs	\$m
Cross-jurisdictional activity	Cross-jurisdictional claims	224,875
	Cross-jurisdictional liabilities	137,744
Size	Total exposures as defined for use in the Basel III leverage ratio ⁵	457,422
Interconnectedness	Intra-financial system assets	113,524
	Intra-financial system liabilities	50,476
	Securities outstanding	83,437
Substitutability/ financial institution infrastructure	Assets under custody	21,118
	Payments activity	3,699,227
	Underwritten transactions in debt and equity markets	10,100
Complexity	Notional amount of over-the-counter derivatives	908,190
	Level 3 assets	5,785
	Trading and available-for-sale securities	9,949

⁴ Previous disclosures are available at UOB website: www.UOBgroup.com/investor-relations/financial/index.html.

⁵ Total exposures differ from the total exposures disclosed under Leverage Ratio as the computation required by the BCBS for purpose of the G-SIB assessment exercise excludes regulatory adjustments.

8 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.

Total RWA was \$5.3 billion lower quarter-on-quarter mainly due to lower asset base.

\$m		(a)	(b)	(c)
		RWA		Minimum capital requirements
		As at 31 Dec 2019	As at 30 Sep 2019	As at 31 Dec 2019
1	Credit risk (excluding CCR)	188,203	191,748	18,820
2	<i>of which: Standardised Approach</i>	24,977	24,230	2,498
3	<i>of which: F-IRBA</i>	140,482	144,900	14,048
4	<i>of which: supervisory slotting approach</i>	4,523	4,490	452
5	<i>of which: A-IRBA</i>	18,221	18,128	1,822
6	CCR	3,292	3,682	329
7	<i>of which: Current Exposure Method</i>	2,334	2,542	233
8	<i>of which: CCR internal models method</i>	-	-	-
9	<i>of which: other CCR</i>	503	645	50
9a	<i>of which: CCP</i>	455	495	46
10	CVA	1,769	1,883	177
11	Equity exposures under the simple risk weight method	-	-	-
11a	Equity exposures under the IMM	-	-	-
12	Equity investments in funds – look through approach	95	95	9
13	Equity investments in funds – mandate-based approach	2,831	2,760	283
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	270	239	27
17	<i>of which: SEC-IRBA</i>	-	-	-
18	<i>of which: SEC-ERBA, including IAA</i>	239	202	24
19	<i>of which: SEC-SA</i>	31	37	3
20	Market risk	9,959	10,170	996
21	<i>of which: SA(MR)</i>	9,959	10,170	996
22	<i>of which: IMA</i>	-	-	-
23	Operational risk	15,940	15,606	1,594
24	Amounts below the thresholds for deduction (subject to 250% risk weight)	3,959	5,427	396
25	Floor adjustment	-	-	-
26	Total	226,318	231,610	22,632

9 Linkages between Financial Statements and Regulatory Exposures

9.1 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.

As at 31 December 2019

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Carrying values of items:						
\$m	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation ⁶	Subject to credit risk requirements	Subject to CCR requirements	Subject to securitisation framework	Subject to market risk requirements	Not subject to capital requirements or subject to deduction from regulatory capital
Assets							
Cash, balances and placements with central banks	25,864	25,864	22,612	417	-	3,132	-
Singapore Government treasury bills and securities	6,199	6,199	5,723	-	-	476	-
Other government treasury bills and securities	15,166	15,159	14,271	-	-	888	-
Trading securities	2,789	2,789	-	-	-	2,789	-
Placements and balances with banks	52,840	52,752	36,661	12,965	-	12,540	-
Loans to customers	265,458	265,458	260,563	4,232	579	3,446	-
Derivative financial assets	6,408	6,406	-	6,406	-	5,495	-
Investment securities	15,454	15,057	13,716	-	1,334	-	6
Other assets	4,906	4,765	4,763	0	2	-	-
Deferred tax assets	300	300	-	-	-	-	300
Investment in associates and joint ventures	1,182	1,182	1,135	-	-	-	47
Investment in subsidiaries	-	45	45	-	-	-	-
Investment properties	936	936	936	-	-	-	-
Fixed assets	2,760	2,756	2,756	-	-	-	-
Intangible assets	4,148	4,148	-	-	-	-	4,148
Total assets	404,409	403,816	363,181	24,020	1,915	28,766	4,501

⁶ 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.

9.1 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 of items:						
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation ⁶	Subject to credit risk requirements	Subject to CCR requirements	Subject to securitisation framework	Subject to market risk requirements	Not subject to capital requirements or subject to deduction from regulatory capital
\$m							
Liabilities							
Deposits and balances of:							
Banks	15,301	15,301	-	2,094	-	1,111	12,953
Customers	310,726	310,726	-	284	-	402	310,324
Bills and drafts payable	646	646	-	-	-	-	646
Derivative financial liabilities	6,695	6,695	-	6,695	-	5,759	-
Other liabilities	5,179	4,979	-	1	-	-	4,978
Tax payable	489	482	-	-	-	-	482
Deferred tax liabilities	299	289	-	-	-	-	289
Debts issued	25,209	25,209	-	-	-	401	24,808
Total liabilities	364,545	364,327	-	9,074	-	7,673	354,480

⁶ 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.

9.2 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.

As at 31 December 2019

\$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 Table 11-4) ⁷	399,315	363,181	24,020	1,915
2	Liabilities carrying amount under regulatory scope of consolidation (as per Table 11-4) ⁷	9,847	-	9,074	-
3	Total net amount under regulatory scope of consolidation	389,468	363,181	14,946	1,915
4	Off-balance sheet amount	217,222	49,722	642	46
5	Differences in derivatives and securities financing transactions		-	16,436	-
6	Differences due to consideration of provisions		3,411	-	-
7	Differences due to specific regulatory adjustments and others		(4,213)	(245)	(0)
8	Exposures amounts considered for regulatory purposes	445,840	412,100	31,779	1,961

⁷ The total column excludes amounts subject to deduction from capital or not subject to regulatory capital requirements.

9.3 Qualitative Disclosure of Differences between Carrying Amounts in Financial Statements and Regulatory Exposure Amounts

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.

9.4 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.

As at 31 December 2019

		(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	7	4	-	-	16	8	8
2	of which: Mid-market value	-	6	4	-	-	10	8	2
3	of which: Closeout cost	5	1	-	-	-	6	-	6
4	of which: Concentration	-	-	-	-	-	-	-	-
5	Early termination	-	7	-	1	-	7	7	-
6	Model risk	-	-	-	-	-	1	1	-
7	Operational risk	-	-	-	-	-	-	-	-
8	Investing and funding costs	-	8	-	-	-	8	8	-
9	Unearned credit spreads	-	-	-	1	-	1	1	-
10	Future administrative	-	-	-	-	-	-	-	-
11	Other	-	-	-	-	-	-	-	-
12	Total Adjustments	5	21	4	2	-	33	25	8
13	of which: exceeds the valuation adjustment under financial reporting standards	-	-	-	-	-	-	-	-

9.4 Prudent Valuation Adjustments (cont'd)

As at 31 December 2018

\$m		(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
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 costs	-	-	-	-	-	-	-	-
11	Other	-	-	-	-	-	-	-	-
12	Total Adjustments	5	15	6	15	0	42	36	6
13	of which: exceeds the valuation adjustment under financial reporting standards	-	-	-	-	-	-	-	-

10.1 General Qualitative Disclosures on Credit Risk

Please refer to UOB Annual Report 2019, Risk Management section – Credit Risk.

10.2 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.

As at 31 December 2019

		(a)	(b)	(c)	(d)		(e)	(f)	(g)
		Gross carrying amount of		Allowances and impairments	of which: allowances for standardised approach exposures		of which: allowances for IRBA exposures	Net values (a+b-c)	
		Defaulted exposures	Non-defaulted exposures		of which: specific allowances	of which: general allowances			
\$m									
1	Loans	4,136	264,539	3,217	119	300	2,798	265,458	
2	Debt securities	93	32,403	118	-	18	100	32,378	
3	Off-balance sheet exposures	43	54,681	215	0	29	186	54,509	
4	Total	4,272	351,623	3,550	119	347	3,084	352,345	

As at 30 June 2019

		(a)	(b)	(c)	(d)		(e)	(f)	(g)
		Gross carrying amount of		Allowances and impairments	of which: allowances for standardised approach exposures		of which: allowances for IRBA exposures	Net values (a+b-c)	
		Defaulted exposures	Non-defaulted exposures		of which: specific allowances	of which: general allowances			
\$m									
1	Loans	4,030	268,851	3,061	129	222	2,709	269,820	
2	Debt securities	93	29,374	123	-	16	108	29,344	
3	Off-balance sheet exposures	38	69,370	236	-	34	202	69,172	
4	Total	4,161	367,595	3,420	129	272	3,019	368,336	

10.3 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.

As at 31 December 2019

\$m	(a)	
1	Defaulted loans and debt securities at end of the previous semi-annual reporting period	4,123
2	Loans and debt securities that have defaulted since the previous semi-annual reporting period	922
3	Returned to non-defaulted status	(99)
4	Amounts written-off	(129)
5	Other changes	(588)
6	Defaulted loans and debt securities at end of the semi-annual reporting period (1+2+3+4+5)	4,229

The increase in defaulted loans and debt securities in the second half of 2019 was mainly due to higher inflow of new defaulted loans relative to the outflow of defaulted loans from recoveries, write-off and returned to non-defaulted status. Other changes mainly comprise of recoveries and foreign exchange.

10.4 Additional Disclosures Related to the Credit Quality of Assets

Please refer to UOB Annual Report 2019, Risk Management section – Credit Risk.

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

Major On-balance sheet credit exposures as at 31 December 2019

\$m	Loans to customers (gross)	Government treasury bills and securities	Placements and balances with banks	Debt securities	Total
Analysed by geography^a					
Singapore	138,666	6,199	2,222	2,134	149,221
Malaysia	29,554	3,846	7,117	2,619	43,136
Thailand	19,585	4,087	1,897	53	25,622
Indonesia	11,466	1,145	2,025	14	14,650
Greater China	41,423	3,480	25,792	2,882	73,577
Others	27,982	2,607	13,787	7,361	51,737
Total	268,676	21,364	52,840	15,063	357,943

^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	11,036	–	–	789	11,825
Building and construction	66,992	–	–	526	67,518
Manufacturing	19,380	–	–	921	20,301
Financial institutions, investment and holding companies	26,098	–	52,840	6,747	85,685
General commerce	32,713	–	–	717	33,430
Professionals and private individuals	29,458	–	–	–	29,458
Housing loans	68,586	–	–	–	68,586
Government	–	21,364	–	–	21,364
Others	14,413	–	–	5,363	19,776
Total	268,676	21,364	52,840	15,063	357,943

10.4 Additional Disclosures Related to the Credit Quality of Asset (cont'd)

Major On-balance sheet credit exposures as at 31 December 2018

\$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

Contingent liabilities

\$m	31 December 2019	31 December 2018
Analysed by geography^a		
Singapore	16,565	16,164
Malaysia	2,759	2,851
Thailand	1,892	1,627
Indonesia	1,238	1,095
Greater China	4,489	4,008
Others	5,419	5,257
Total	32,362	31,002

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

\$m	31 December 2019	31 December 2018
Analysed by industry		
Transport, storage and communication	1,559	1,386
Building and construction	8,270	7,673
Manufacturing	3,376	2,717
Financial institutions, investment and holding companies	9,006	8,623
General commerce	7,703	8,636
Professionals and private individuals	172	166
Others	2,276	1,801
Total	32,362	31,002

Commitments (excluding operating lease and capital commitments)

\$m	31 December 2019	31 December 2018
Analysed by geography^a		
Singapore	81,671	78,416
Malaysia	13,293	13,588
Thailand	13,449	11,753
Indonesia	5,628	5,818
Greater China	28,349	25,212
Others	18,390	16,040
Total	160,780	150,827

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

\$m	31 December 2019	31 December 2018
Analysed by industry		
Transport, storage and communication	6,364	5,719
Building and construction	26,587	26,989
Manufacturing	23,714	20,486
Financial institutions, investment and holding companies	17,970	18,371
General commerce	44,016	43,308
Professionals and private individuals	23,907	22,360
Housing Loans	3,430	3,500
Others	14,792	10,094
Total	160,780	150,827

10.4 Additional Disclosures Related to the Credit Quality of Assets (cont'd)

Credit exposures by residual contractual maturity

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

As at 31 December 2019

\$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	8,579	3,445	4,457	2,026	-	-	6,405	24,912
Singapore Government treasury bills and securities	-	35	104	828	1,992	3,240	-	6,199
Other government treasury bills and securities	678	340	1,450	3,306	5,838	3,463	90	15,165
Trading debt securities	-	23	258	860	128	1,136	-	2,405
Placements and balances with banks	11,017	11,644	14,142	13,749	1,438	320	530	52,840
Loans to customers	19,104	26,327	19,019	22,298	43,836	127,301	7,573	265,458
Derivative financial assets	-	-	-	-	-	-	6,408	6,408
Investment debt securities	-	153	637	3,346	4,084	4,457	(19)	12,658
Others	-	-	-	-	-	-	2,690	2,690
Total	39,378	41,967	40,067	46,413	57,316	139,917	23,677	388,735

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

10.4 Additional Disclosures Related to the Credit Quality of Assets (cont'd)

As at 31 December 2018

\$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.

10.4 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.

As at 31 December 2019

\$m	Impaired Exposure	Specific allowance	Write-off
Analysed by geography^a			
Singapore	2,183	822	34
Malaysia	612	174	8
Thailand	550	200	37
Indonesia	463	178	37
Greater China	101	24	2
Others	227	100	11
Non-performing loans	4,136	1,498	129
Debt securities, contingent items and others	161	128	8
Total	4,297	1,626	137

^a 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	650	354	6
Building and construction	618	149	20
Manufacturing	712	276	22
Financial institutions, investment and holding companies	39	23	-
General commerce	658	262	15
Professionals and private individuals	309	82	24
Housing loans	776	144	40
Others	374	208	2
Non-performing loans	4,136	1,498	129
Debt securities, contingent items and others	161	128	8
Total	4,297	1,626	137

As at 31 December 2018

\$m	Impaired Exposure	Specific allowance	Write-off
Analysed by geography^a			
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

^a 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

10.4 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.

As at 31 December 2019

\$m	Past due but not impaired exposure			
	< 30 days	30 - 59 days	60 – 90 days	Total
Total	3,850	535	618	5,003

As at 31 December 2018

\$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.

As at 31 December 2019

\$m	Restructured impaired exposure
Total	809

As at 31 December 2018

\$m	Restructured impaired exposure
Total	823

10.5 Qualitative disclosure related to Credit Risk Mitigation techniques

Please refer to UOB Annual Report 2019, Risk Management section – Credit Risk.

10.6 Overview of CRM Techniques

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

Compared with 30 June 2019, the decrease in loans were partially offset by an increase in debt securities.

As at 31 December 2019

		(a)	(b)	(c)	(d)	(e)
		Exposures Unsecured	Exposures Secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
\$m						
1	Loans	133,008	132,450	114,576	12,030	-
2	Debt Securities	31,960	418	-	418	-
3	Total	164,968	132,868	114,576	12,448	-
4	Of which: defaulted	1,259	1,521	1,412	-	-

As at 30 June 2019

		(a)	(b)	(c)	(d)	(e)
		Exposures Unsecured	Exposures Secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
\$m						
1	Loans	136,958	132,862	115,793	12,120	-
2	Debt Securities	28,979	365	-	365	-
3	Total	165,937	133,227	115,793	12,485	-
4	Of which: defaulted	1,344	1,435	1,337	-	-

10.7 Qualitative disclosure on the use of external credit ratings under the Standardised Approach Credit Risk

Please refer to UOB Annual Report 2019, Risk Management section – Credit Risk.

10.8 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 2019, the increase in RWA were mainly driven by higher exposures to Corporate and PSE asset classes.

As at 31 December 2019

	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	2,383	-	2,383	-	23	1
2	Central government and central bank	1,606	-	1,606	-	147	9
3	PSE	2,221	1,619	2,212	274	448	18
4	MDB	134	1	268	-	67	25
5	Bank	922	76	1,042	32	438	41
6	Corporate	9,733	12,290	7,841	1,519	9,192	98
7	Regulatory retail	2,102	1,705	1,746	23	1,327	75
8	Residential mortgage	2,128	5	2,127	0	901	42
9	CRE	1,940	883	1,857	45	1,902	100
10	Equity - SA(EQ)	1,446	137	1,446	137	2,717	172
11	Past due exposures	230	15	229	0	288	125
12	Higher-risk categories	-	-	-	-	-	-
13	Other exposures	9,257	1,854	7,037	492	7,528	100
14	Total	34,100	18,587	29,793	2,523	24,977	77

As at 30 June 2019

	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	2,051	-	2,051	-	21	1
2	Central government and central bank	1,771	9	1,771	4	187	11
3	PSE	1,588	1,535	1,588	133	281	16
4	MDB	156	1	258	-	78	30
5	Bank	663	66	790	27	358	44
6	Corporate	9,450	12,003	7,627	1,347	8,500	95
7	Regulatory retail	2,052	1,727	1,711	26	1,303	75
8	Residential mortgage	2,094	6	2,093	-	881	42
9	CRE	1,924	806	1,845	93	1,939	100
10	Equity - SA(EQ)	1,411	138	1,411	138	2,702	174
11	Past due exposures	218	16	218	0	288	132
12	Higher-risk categories	-	-	-	-	-	-
13	Other exposures	9,278	1,768	6,815	495	7,311	100
14	Total	32,655	18,074	28,180	2,263	23,848	78

10.9 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 2019, the increase in exposures were mainly from Corporate and PSE asset classes.

As at 31 December 2019

\$m		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Asset classes and others	Risk weight	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposure amount (post-CCF and post-CRM)
		1	Cash items	2,270	-	113	-	-	-	-	-
2	Central government and central bank	1,312	-	-	-	294	-	-	-	-	1,606
3	PSE	1,193	-	751	-	490	-	52	-	-	2,487
4	MDB	134	-	-	-	134	-	-	-	-	268
5	Bank	-	-	366	-	686	-	22	-	-	1,074
6	Corporate	-	-	164	-	74	-	9,122	-	-	9,360
7	Regulatory retail	-	-	-	-	-	1,769	-	-	-	1,769
8	Residential mortgage	-	-	-	1,859	-	73	196	-	-	2,128
9	CRE	-	-	-	-	-	-	1,902	-	-	1,902
10	Equity - SA(EQ)	-	-	-	-	-	-	-	-	1,583	1,583
11	Past due exposures	-	-	-	-	-	-	113	117	-	229
12	Higher-risk categories	-	-	-	-	-	-	-	-	-	-
13	Other exposures	-	-	-	-	-	-	7,528	-	-	7,528
14	Total	4,909	-	1,393	1,859	1,678	1,842	18,935	117	1,583	32,317

As at 30 June 2019

\$m		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Asset classes and others	Risk weight	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposure amount (post-CCF and post-CRM)
		1	Cash items	1,946	-	104	-	-	-	-	-
2	Central government and central bank	1,402	-	-	-	373	-	-	-	-	1,775
3	PSE	1,106	-	88	-	527	-	-	-	-	1,721
4	MDB	103	-	-	-	156	-	-	-	-	258
5	Bank	-	-	178	-	636	-	4	-	-	818
6	Corporate	0	-	496	-	152	-	8,325	-	-	8,973
7	Regulatory retail	-	-	-	-	-	1,737	-	-	-	1,737
8	Residential mortgage	-	-	-	1,842	-	58	193	-	-	2,093
9	CRE	-	-	-	-	-	-	1,939	-	-	1,939
10	Equity - SA(EQ)	-	-	-	-	-	-	-	-	1,549	1,549
11	Past due exposures	-	-	-	-	-	-	78	140	-	218
12	Higher-risk categories	-	-	-	-	-	-	-	-	-	-
13	Other exposures	-	-	-	-	-	-	7,311	-	-	7,311
14	Total	4,558	-	866	1,842	1,844	1,795	17,849	140	1,549	30,443

10.10 Qualitative disclosure for Internal Ratings-Based Approach models

Please refer to UOB Annual Report 2019, Risk Management section – Credit Risk.

10.11 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.

(A) Main parameters used for calculations of capital requirements for credit exposures under FIRB

As at 31 December 2019

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	38,563	862	100	39,920	0.0	23	45	1.4	2,079	5	4	
0.15 to <0.25	151	-	-	151	0.2	2	45	1.2	54	35	0	
0.25 to <0.50	103	-	-	103	0.4	2	45	0.9	46	44	0	
0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	
0.75 to < 2.50	109	-	-	109	0.9	2	45	2.8	109	100	0	
2.50 to < 10.00	-	-	-	-	-	-	-	-	-	-	-	
10.00 to <100.00	10	0	-	10	18.5	1	45	0.0	21	221	1	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	38,936	862	100	40,293	0.0	30	45	1.4	2,308	6	5	25
Bank asset sub-class												
0.00 to < 0.15	34,477	4,516	45	36,662	0.1	167	45	0.6	4,406	12	9	
0.15 to <0.25	3,210	332	57	3,403	0.2	22	45	0.8	1,229	36	3	
0.25 to <0.50	1,117	965	18	1,237	0.4	18	45	0.8	659	53	2	
0.50 to <0.75	11	20	0	12	0.6	7	45	0.3	6	53	0	
0.75 to < 2.50	683	81	12	692	1.3	15	45	0.3	531	77	4	
2.50 to < 10.00	582	-	-	448	4.3	11	45	0.5	562	125	9	
10.00 to <100.00	31	10	89	40	18.5	18	43	0.2	86	214	3	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	40,111	5,925	40	42,495	0.2	258	45	0.6	7,480	18	30	80
Corporate asset sub-class												
0.00 to < 0.15	4,414	7,365	9	5,004	0.1	54	45	1.5	859	17	1	
0.15 to <0.25	4,321	7,189	24	7,232	0.2	96	43	2.0	3,039	42	6	
0.25 to <0.50	14,254	24,516	25	22,399	0.4	472	40	2.0	11,869	53	34	
0.50 to <0.75	6,912	13,583	10	9,936	0.5	422	37	1.8	5,453	55	19	
0.75 to < 2.50	25,181	52,510	12	33,078	1.2	2,031	43	1.4	27,677	84	168	
2.50 to < 10.00	8,880	10,406	24	7,368	5.2	721	40	1.3	9,446	128	151	
10.00 to <100.00	2,593	2,714	28	1,272	18.3	294	31	1.5	1,996	157	68	
100.00 (Default)	1,359	240	16	1,397	100.0	121	43	1.8	-	-	605	
Sub-total	67,914	118,523	17	87,688	2.9	4,211	41	1.7	60,337	69	1,053	1,470
Corporate small business asset sub-class												
0.00 to < 0.15	3	15	29	8	0.1	4	44	0.7	1	11	0	
0.15 to <0.25	84	835	10	220	0.2	200	33	1.8	63	28	0	
0.25 to <0.50	594	2,065	10	1,005	0.4	477	38	1.8	436	43	1	
0.50 to <0.75	710	1,757	8	986	0.5	519	39	2.0	535	54	2	
0.75 to < 2.50	7,182	8,166	10	8,724	1.4	3,090	38	1.8	6,660	76	48	
2.50 to < 10.00	5,974	4,264	11	5,940	5.2	2,362	38	1.8	6,553	110	116	
10.00 to <100.00	978	529	12	778	18.3	435	37	1.5	1,363	175	53	
100.00 (Default)	778	121	7	786	100.0	217	41	1.7	-	-	326	
Sub-total	16,303	17,752	10	18,447	7.4	7,304	38	1.8	15,610	85	547	408
Specialised lending asset sub-class - IPRE												
0.00 to < 0.15	-	10	-	-	-	-	-	-	-	-	-	
0.15 to <0.25	7,177	3,320	64	9,289	0.2	128	45	2.3	4,048	44	8	
0.25 to <0.50	19,916	3,078	60	21,750	0.4	290	45	2.2	13,298	61	37	
0.50 to <0.75	6,964	1,761	56	7,947	0.5	118	45	2.5	6,004	76	19	
0.75 to < 2.50	24,367	3,511	46	25,993	1.2	902	45	2.2	25,752	99	141	
2.50 to < 10.00	3,355	520	38	3,552	3.6	474	45	2.7	5,171	146	58	
10.00 to <100.00	191	2	36	191	19.7	13	45	2.7	472	247	17	
100.00 (Default)	355	5	20	356	100.0	49	45	1.8	-	-	160	
Sub-total	62,324	12,207	55	69,080	1.4	1,974	45	2.3	54,746	79	440	622
Total (sum of portfolios)	225,588	155,270	20	258,003	1.9	13,777	43	1.6	140,482	54	2,075	2,604

As at 30 June 2019

	(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
Sovereign asset sub-class												
0.00 to < 0.15	36,543	73	96	37,053	0.0	23	45	1.5	1,860	5	3	
0.15 to <0.25	363	-	-	363	0.2	2	45	2.1	163	45	0	
0.25 to <0.50	30	-	-	30	0.4	2	45	1.0	14	45	0	
0.50 to <0.75	-	-	-	-	-	-	-	-	-	-	-	
0.75 to < 2.50	47	-	-	47	0.9	2	45	3.4	50	107	0	
2.50 to < 10.00	-	-	-	-	-	-	-	-	-	-	-	
10.00 to <100.00	10	-	-	10	18.5	1	45	0.0	21	221	1	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	36,992	73	96	37,503	0.0	30	45	1.5	2,108	6	4	21
Bank asset sub-class												
0.00 to < 0.15	34,960	5,358	46	37,590	0.1	158	45	0.4	4,129	11	9	
0.15 to <0.25	2,663	143	39	2,723	0.2	24	45	0.7	988	36	3	
0.25 to <0.50	2,058	473	5	2,086	0.4	14	45	0.7	1,056	51	3	
0.50 to <0.75	272	40	0	273	0.6	7	45	0.3	139	51	1	
0.75 to < 2.50	488	83	13	499	1.4	19	45	0.7	424	85	3	
2.50 to < 10.00	331	15	100	243	4.3	12	45	0.2	303	125	5	
10.00 to <100.00	23	2	65	24	19.7	17	43	0.3	52	218	2	
100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	
Sub-total	40,795	6,114	42	43,437	0.1	251	45	0.5	7,091	16	25	72
Corporate asset sub-class												
0.00 to < 0.15	4,045	4,624	19	4,852	0.1	54	45	1.6	893	18	1	
0.15 to <0.25	8,058	8,506	21	10,548	0.2	112	44	1.8	4,270	40	9	
0.25 to <0.50	15,646	26,116	27	25,434	0.4	507	39	2.1	13,238	52	37	
0.50 to <0.75	6,764	11,642	11	8,905	0.5	431	47	1.7	5,982	67	22	
0.75 to < 2.50	24,857	45,623	15	33,942	1.2	2,045	42	1.4	27,676	82	166	
2.50 to < 10.00	9,894	9,185	21	7,652	5.4	684	38	1.4	9,593	125	156	
10.00 to <100.00	2,661	3,208	24	1,261	17.6	345	32	1.8	2,125	169	72	
100.00 (Default)	1,093	143	16	1,116	100.0	108	43	2.2	-	-	480	
Sub-total	73,019	109,047	19	93,709	2.5	4,285	42	1.7	63,778	68	943	1,315
Corporate small business asset sub-class												
0.00 to < 0.15	8	17	29	13	0.1	8	44	0.8	1	11	0	
0.15 to <0.25	114	902	11	281	0.2	205	37	1.7	72	26	0	
0.25 to <0.50	721	2,839	8	1,162	0.4	503	37	2.0	498	43	2	
0.50 to <0.75	674	1,634	9	1,034	0.5	507	38	2.1	556	54	2	
0.75 to < 2.50	6,925	7,829	11	8,338	1.4	2,986	38	1.9	6,309	76	46	
2.50 to < 10.00	5,691	4,124	12	5,841	5.3	2,311	38	1.8	6,238	107	116	
10.00 to <100.00	1,017	555	11	829	17.4	454	37	1.4	1,353	163	54	
100.00 (Default)	727	85	8	734	100.0	203	41	1.8	-	-	300	
Sub-total	15,877	17,986	11	18,231	7.2	7,177	38	1.8	15,027	82	518	350
Specialised lending asset sub-class - IPRE												
0.00 to < 0.15	-	-	-	-	-	-	-	-	-	-	-	
0.15 to <0.25	7,683	2,411	56	9,023	0.2	145	45	1.9	3,546	39	8	
0.25 to <0.50	17,712	3,130	55	19,422	0.4	299	45	2.2	11,821	61	33	
0.50 to <0.75	6,492	1,572	66	7,524	0.5	139	45	2.4	5,546	74	18	
0.75 to < 2.50	26,065	4,072	49	28,054	1.2	963	45	2.4	27,984	100	146	
2.50 to < 10.00	3,987	637	31	4,187	3.7	532	45	2.7	6,104	146	70	
10.00 to <100.00	471	7	59	475	24.2	17	45	1.5	1,165	245	52	
100.00 (Default)	579	6	57	583	100.0	48	45	1.6	-	-	262	
Sub-total	62,988	11,834	53	69,266	1.9	2,143	45	2.3	56,167	81	588	597
Total (sum of portfolios)	229,671	145,054	22	262,147	1.9	13,885	43	1.6	144,171	55	2,079	2,355

10.11 IRBA – Credit Risk Exposures by Portfolio and PD Range (cont'd)

(B) Main parameters used for calculations of capital requirements for credit exposures under AIRB

As at 31 December 2019

	(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
Residential mortgage asset sub-class												
0.00 to < 0.15	811	257	104	1,078	0.1	16,780	23	-	46	4	0	
0.15 to <0.25	18,408	469	100	18,877	0.2	48,508	15	-	1,079	6	5	
0.25 to <0.50	26,994	2,449	66	28,616	0.3	87,614	11	-	1,719	6	9	
0.50 to <0.75	16,161	713	99	16,863	0.7	39,621	13	-	2,144	13	14	
0.75 to < 2.50	7,883	480	35	8,052	1.3	45,406	12	-	1,565	19	13	
2.50 to < 10.00	1,495	81	42	1,529	3.9	15,751	22	-	1,037	68	14	
10.00 to <100.00	1,462	23	27	1,469	27.8	7,816	18	-	1,372	93	71	
100.00 (Default)	807	3	0	807	100.0	3,621	22	-	710	88	141	
Sub-total	74,020	4,475	73	77,291	2.1	245,825	13	-	9,670	13	267	245
QRRE asset sub-class												
0.00 to < 0.15	856	5,207	30	2,432	0.1	499,538	52	-	87	4	1	
0.15 to <0.25	334	1,772	33	926	0.2	165,425	46	-	51	6	1	
0.25 to <0.50	307	4,775	61	3,230	0.3	726,367	52	-	254	8	5	
0.50 to <0.75	843	1,745	56	1,814	0.6	331,034	55	-	290	16	7	
0.75 to < 2.50	971	2,050	66	2,332	1.5	344,624	45	-	607	26	17	
2.50 to < 10.00	620	569	64	983	5.7	219,899	58	-	777	79	32	
10.00 to <100.00	469	128	66	554	24.6	127,990	67	-	913	165	89	
100.00 (Default)	56	-	-	56	100.0	13,240	70	-	95	169	33	
Sub-total	4,456	16,245	48	12,326	2.5	2,115,057	52	-	3,074	25	184	66
Other retail exposures asset sub-class (excluding exposures to small business)												
0.00 to < 0.15	69	267	39	174	0.1	3,001	34	-	15	9	0	
0.15 to <0.25	1,139	102	44	1,184	0.2	27,598	13	-	61	5	0	
0.25 to <0.50	16	127	57	88	0.3	1,013	18	-	8	10	0	
0.50 to <0.75	5,088	581	49	5,374	0.6	25,498	10	-	456	8	3	
0.75 to < 2.50	3,374	652	73	3,848	1.7	20,871	6	-	314	8	4	
2.50 to < 10.00	654	155	75	770	5.2	76,008	51	-	617	80	22	
10.00 to <100.00	378	27	73	398	26.0	62,766	50	-	427	107	47	
100.00 (Default)	109	0	0	109	100.0	6,157	45	-	368	337	24	
Sub-total	10,828	1,911	58	11,945	3.0	219,463	14	-	2,266	19	101	48
Other retail small business exposures asset sub-class												
0.00 to < 0.15	12	63	68	54	0.1	278	8	-	1	1	0	
0.15 to <0.25	473	620	66	883	0.2	3,366	21	-	76	9	0	
0.25 to <0.50	2,215	1,008	60	2,823	0.4	10,470	25	-	448	16	3	
0.50 to <0.75	993	345	58	1,192	0.5	4,961	26	-	238	20	2	
0.75 to < 2.50	3,423	1,112	51	3,992	1.3	14,934	28	-	1,304	33	15	
2.50 to < 10.00	1,288	268	44	1,406	4.7	5,745	29	-	629	45	19	
10.00 to <100.00	260	19	40	268	21.0	1,330	26	-	165	62	15	
100.00 (Default)	194	13	5	194	100.0	768	35	-	350	180	51	
Sub-total	8,856	3,449	57	10,812	3.6	41,851	26	-	3,211	30	104	85
Total (sum of portfolios)	98,161	26,080	54	112,374	2.4	2,381,158	19	-	18,221	16	655	444

10.11 IRBA – Credit Risk Exposures by Portfolio and PD Range (cont'd)
As at 30 June 2019

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
Residential mortgage asset sub-class												
0.00 to < 0.15	733	260	104	1,003	0.1	16,200	21	-	39	4	0	
0.15 to <0.25	18,675	539	100	19,214	0.2	47,087	14	-	1,069	6	5	
0.25 to <0.50	27,697	2,493	68	29,385	0.3	87,729	11	-	1,755	6	9	
0.50 to <0.75	15,160	605	98	15,754	0.7	38,105	13	-	2,055	13	13	
0.75 to < 2.50	7,838	432	37	7,997	1.3	45,429	13	-	1,605	20	13	
2.50 to < 10.00	1,570	91	41	1,608	3.8	16,730	24	-	1,157	72	15	
10.00 to <100.00	1,580	25	38	1,590	24.0	7,334	17	-	1,469	92	68	
100.00 (Default)	787	3	0	787	100.0	3,567	23	-	735	93	138	
Sub-total	74,039	4,449	74	77,337	2.0	242,471	13	-	9,885	13	262	240
QRRE asset sub-class												
0.00 to < 0.15	734	5,010	28	2,133	0.1	482,518	51	-	73	3	1	
0.15 to <0.25	307	1,668	34	878	0.2	156,758	46	-	48	5	1	
0.25 to <0.50	271	4,724	57	2,957	0.3	727,237	51	-	227	8	4	
0.50 to <0.75	755	1,632	53	1,615	0.6	316,494	54	-	255	16	6	
0.75 to < 2.50	927	2,131	69	2,403	1.4	355,845	43	-	579	24	16	
2.50 to < 10.00	601	491	61	901	5.6	210,532	58	-	707	79	29	
10.00 to <100.00	464	136	65	552	23.4	129,259	67	-	899	163	83	
100.00 (Default)	51	-	-	51	100.0	12,153	69	-	85	166	29	
Sub-total	4,111	15,792	47	11,489	2.5	2,066,260	51	-	2,874	25	169	59
Other retail exposures asset sub-class (excluding exposures to small business)												
0.00 to < 0.15	71	258	39	172	0.1	3,068	35	-	15	9	0	
0.15 to <0.25	1,183	91	45	1,224	0.2	27,828	13	-	62	5	0	
0.25 to <0.50	16	124	58	87	0.3	991	17	-	8	9	0	
0.50 to <0.75	5,142	591	50	5,435	0.6	25,604	10	-	457	8	3	
0.75 to < 2.50	3,171	690	74	3,679	1.7	19,969	6	-	285	8	4	
2.50 to < 10.00	682	169	73	806	5.1	74,932	46	-	581	72	20	
10.00 to <100.00	405	27	30	413	21.7	49,517	45	-	396	96	39	
100.00 (Default)	96	0	100	96	100.0	11,572	42	-	280	293	21	
Sub-total	10,765	1,950	59	11,911	2.7	210,251	13	-	2,085	18	88	41
Other retail small business exposures asset sub-class												
0.00 to < 0.15	8	60	68	50	0.1	298	7	-	1	1	0	
0.15 to <0.25	452	612	67	865	0.2	3,393	21	-	74	9	0	
0.25 to <0.50	2,206	998	62	2,829	0.4	10,397	24	-	440	16	3	
0.50 to <0.75	994	345	58	1,194	0.5	5,016	25	-	237	20	2	
0.75 to < 2.50	3,303	1,025	50	3,816	1.3	14,740	28	-	1,260	33	14	
2.50 to < 10.00	1,197	232	49	1,310	4.7	5,555	29	-	580	44	17	
10.00 to <100.00	270	25	40	280	21.1	1,225	26	-	173	62	15	
100.00 (Default)	173	13	5	174	100.0	721	38	-	320	184	49	
Sub-total	8,604	3,311	58	10,518	3.4	41,343	26	-	3,085	29	100	80
Total (sum of portfolios)	97,520	25,502	54	111,255	2.3	2,322,036	18	-	17,928	16	619	420

10.12 IRBA – Effect on RWA of Credit Derivatives used as CRM

As at 31 December 2019, the Group did not use credit derivatives as credit risk mitigant for exposures under IRBA.

10.13 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 decreased mainly due to lower asset base.

As at 31 December 2019

		(a)
		RWA amounts
\$m		
1	RWA as at end of previous quarter	167,517
2	Asset size	(5,058)
3	Asset quality	2,230
4	Model updates	(25)
5	Methodology and policy	-
6	Acquisitions and disposals	-
7	Foreign exchange movements	(1,439)
8	Other	-
9	RWA as at end of quarter	163,226

10.14 IRBA – Backtesting of PD per portfolio

The following table shows the backtesting of PD of non-retail portfolios whose exposures are under F-IRBA for capital computation. The non-retail portfolio comprises of Sovereign, Bank, Corporate, Corporate Small Business, and Specialised Lending IPRE exposures. Refer to UOB Annual Report Credit Risk Management for the percentage of RWA covered by non-retail exposures.

As at 31 December 2019

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 ⁸ %
						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	22	23	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	2	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	0.9	0.9	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	18.5	2	1	-	-	0.0
Bank asset sub-class										
0.00 to < 0.15	A	A	A2	0.1	0.1	162	167	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	25	22	-	-	0.0
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	16	18	-	-	0.0
0.50 to <0.75	BB	BB	Ba2	0.6	0.6	8	7	-	-	0.0
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.3	1.2	20	15	-	-	0.0
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	4.3	4.3	12	11	-	-	0.0
10.00 to <100.00	B-	B-	B3	18.5	21.7	15	18	-	-	0.0
Corporate asset sub-class										
0.00 to < 0.15	A	A	A2	0.1	0.1	58	54	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	115	96	-	-	0.0
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	498	472	-	-	0.1
0.50 to <0.75	BB	BB	Ba2	0.5	0.5	488	422	1	-	0.2
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.2	1.3	1,929	2,031	27	-	0.7
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	5.2	5.2	651	721	27	1	3.0
10.00 to <100.00	B-	B-	B3	18.1	21.0	363	294	19	-	3.1
Corporate Small Business asset sub-class										
0.00 to < 0.15	A	A	A2	0.1	0.1	1	4	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	179	200	-	-	0.1
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	518	477	1	-	0.2
0.50 to <0.75	BB	BB	Ba2	0.5	0.5	559	519	-	-	0.1
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.4	1.4	2,833	3,090	8	1	0.4
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	5.2	5.3	2,271	2,362	34	2	1.6
10.00 to <100.00	B-	B-	B3	18.3	18.0	527	435	19	-	4.7
Specialised lending asset sub-class - IPRE										
0.00 to < 0.15	A	A	A2	-	-	-	-	-	-	0.0
0.15 to <0.25	BBB	BBB	Baa2	0.2	0.2	151	128	-	-	0.2
0.25 to <0.50	BB+	BB+	Ba1	0.4	0.4	319	290	-	-	0.1
0.50 to <0.75	BB	BB	Ba2	0.5	0.5	148	118	-	-	0.0
0.75 to < 2.50	BB- to B+	BB- to B+	Ba3 to B1	1.2	1.4	976	902	3	-	0.3
2.50 to < 10.00	B+ to B-	B+ to B-	B1 to B3	3.6	3.8	531	474	12	-	1.3
10.00 to <100.00	B-	B-	B3	19.7	21.1	13	13	1	-	23.5

⁸ Average Historical Annual Default Rate % refers to average of annual observed default rate over a minimum of last five years.

As at 31 December 2018

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 ⁸ %
						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)				-	-	-	-			
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			
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			

⁸ Average Historical Annual Default Rate % refers to average of annual observed default rate over a minimum of last five years.

10.14 IRBA - Backtesting of PD per portfolio (cont'd)

The following table shows the backtesting of PD of retail portfolios whose exposures are under A-IRBA for capital computation. The retail portfolio comprises of Residential Mortgage, QRRE and Other Retail exposures. Refer to UOB Annual Report Credit Risk Management Section for the percentage of RWA covered by the retail exposures.

Increase in new defaulted obligors for Other retail exposures asset sub-class (excluding exposure to small business) for PD range 10% to <100% in the Annual Reporting Period is due to non-borrowing accounts with overdue fees that do not meet the minimum balances. Without these accounts, there are only 5,916 defaulted obligors in the annual reporting period (compared to 6,161 defaulted obligors as at 31 December 2018) and 214 new defaulted obligors in the annual reporting period (which are similar with last year report).

As at 31 December 2019

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 ⁸ %
						End of Previous Annual Reporting Period	End of Annual Reporting Period			
Residential mortgage asset sub-class										
0.00 to < 0.15				0.1	0.1	16,294	16,780	12	-	0.1
0.15 to <0.25				0.2	0.2	45,666	48,508	151	-	0.1
0.25 to <0.50				0.3	0.3	86,699	87,614	105	-	0.1
0.50 to <0.75				0.7	0.6	39,348	39,621	132	6	0.3
0.75 to < 2.50				1.3	1.3	44,640	45,406	340	12	0.7
2.50 to < 10.00				3.9	3.7	16,377	15,751	488	13	2.4
10.00 to <100.00				27.8	22.3	7,868	7,816	1,539	4	17.1
100.00 (Default)				100.0	100.0	3,213	3,621			
QRRE asset sub-class										
0.00 to < 0.15				0.1	0.1	480,888	499,538	392	-	0.1
0.15 to <0.25				0.2	0.2	157,509	165,425	243	-	0.1
0.25 to <0.50				0.3	0.3	724,082	726,367	1,201	111	0.1
0.50 to <0.75				0.6	0.7	314,082	331,034	2,069	11	0.5
0.75 to < 2.50				1.5	1.5	348,549	344,624	3,893	132	0.9
2.50 to < 10.00				5.7	5.3	215,722	219,899	10,220	841	3.3
10.00 to <100.00				24.6	23.7	127,959	127,990	26,811	26	16.5
100.00 (Default)				100.0	100.0	11,799	13,240			
Other retail exposures asset sub-class (excluding exposures to small business)										
0.00 to < 0.15				0.1	0.1	2,936	3,001	9	-	0.1
0.15 to <0.25				0.2	0.2	29,547	27,598	148	-	0.2
0.25 to <0.50				0.3	0.4	975	1,013	11	-	0.3
0.50 to <0.75				0.6	0.6	24,765	25,498	139	5	0.3
0.75 to < 2.50				1.7	1.3	20,095	20,871	154	10	0.4
2.50 to < 10.00				5.2	5.4	72,771	76,008	3,237	272	3.4
10.00 to <100.00				26.0	25.7	39,342	62,766	20,009	13,879	11.7
100.00 (Default)				100.0	100.0	5,137	6,157			
Other retail small business exposures asset sub-class										
0.00 to < 0.15				0.1	0.1	304	278	-	-	0.1
0.15 to <0.25				0.2	0.2	3,382	3,366	2	-	0.1
0.25 to <0.50				0.4	0.4	10,288	10,470	23	-	0.1
0.50 to <0.75				0.5	0.5	4,976	4,961	20	-	0.2
0.75 to < 2.50				1.3	1.3	14,634	14,934	121	6	0.7
2.50 to < 10.00				4.7	4.5	5,438	5,745	173	10	2.4
10.00 to <100.00				21.0	22.0	1,330	1,330	246	-	16.5
100.00 (Default)				100.0	100.0	769	768			

⁸ Average Historical Annual Default Rate % refers to average of annual observed default rate over a minimum of last five years.

As at 31 December 2018

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 ⁸ %
						End of Previous Annual Reporting Period	End of Annual Reporting Period			
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			
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			
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			

⁸ Average Historical Annual Default Rate % refers to average of annual observed default rate over a minimum of last five years.

10.15 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 2019, total exposures for specialised lending under Supervisory Slotting Criteria remained relatively stable. The increase in RWA was driven by an increase in loan tenure for exposures under Project Finance asset class.

As at 31 December 2019

\$m

Specialised lending											
Other than HVCRE											
Regulatory categories	Remaining maturity	On-balance sheet amount	Off-balance sheet amount	Risk weight	Exposure amount					RWA	Expected Losses
					PF	OF	CF	IPRE	Total		
Strong	< 2.5 years	945	13,151	50%	393	-	977	151	1,521	806	-
	≥ 2.5 years	1,953	436	70%	1,912	-	58	309	2,280	1,691	9
Good	< 2.5 years	523	2,505	70%	228	45	91	336	700	519	3
	≥ 2.5 years	811	221	90%	307	183	-	483	973	929	8
Satisfactory		335	76	115%	139	3	-	240	382	465	11
Weak		42	1	250%	-	-	0	42	42	112	3
Default		225	31	-	-	213	3	10	225	-	113
Total		4,835	16,420		2,978	444	1,130	1,572	6,123	4,523	146

As at 30 June 2019

\$m

Specialised lending											
Other than HVCRE											
Regulatory categories	Remaining maturity	On-balance sheet amount	Off-balance sheet amount	Risk weight	Exposure amount					RWA	Expected Losses
					PF	OF	CF	IPRE	Total		
Strong	< 2.5 years	1,513	14,395	50%	974	-	1,030	180	2,184	1,157	-
	≥ 2.5 years	1,260	457	70%	1,276	-	46	281	1,603	1,189	6
Good	< 2.5 years	536	2,795	70%	226	50	203	292	770	572	3
	≥ 2.5 years	683	200	90%	284	202	-	345	831	793	7
Satisfactory		393	93	115%	147	13	-	294	454	554	13
Weak		8	0	250%	-	-	-	8	8	22	1
Default		266	31	-	-	254	3	10	266	-	133
Total		4,660	17,972		2,906	519	1,282	1,411	6,117	4,287	163

11 Counterparty Credit Risk (CCR)

11.1 Qualitative disclosures related to CCR

Please refer to UOB Annual Report 2019, Risk Management section – Credit Risk.

11.2 Analysis of CCR Exposure by Approach

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

As at 31 December 2019

		(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)	2,241	3,451			5,688	2,334
2	CCR internal models method (for derivatives and SFTs)			-	-	-	-
3	FC(SA) (for SFTs)					-	-
4	FC(CA) (for SFTs)					20,471	503
5	VaR for SFTs					-	-
6	Total						2,837

As at 30 June 2019

		(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)	2,174	3,696			5,663	2,483
2	CCR internal models method (for derivatives and SFTs)			-	-	-	-
3	FC(SA) (for SFTs)					-	-
4	FC(CA) (for SFTs)					19,394	668
5	VaR for SFTs					-	-
6	Total						3,151

11.3 CVA Risk Capital Requirements

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

As at 31 December 2019

		(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	5,218	1,769
4	Total portfolios subject to the CVA risk capital requirement	5,218	1,769

As at 30 June 2019

		(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	5,204	1,911
4	Total portfolios subject to the CVA risk capital requirement	5,204	1,911

11.4 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.

As at 31 December 2019

\$m	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Risk weight									
Asset classes	0%	10%	20%	50%	75%	100%	150%	Others	Total Credit Exposure
Central government and central bank	-	-	-	1	-	-	-	-	1
PSE	-	-	1	13	-	-	-	-	14
MDB	68	-	-	-	-	-	-	-	68
Bank	-	-	5	65	-	-	-	-	70
Corporate	-	-	1	1	-	220	-	-	221
Regulatory retail	-	-	-	-	1	-	-	-	1
Other exposures	-	-	-	-	-	12	-	-	12
Total	68	-	6	80	1	232	-	-	386

As at 30 June 2019

\$m	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Risk weight									
Asset classes	0%	10%	20%	50%	75%	100%	150%	Others	Total Credit Exposure
Central government and central bank	30	-	-	1	-	-	-	-	31
PSE	-	-	12	23	-	-	-	-	35
MDB	35	-	-	-	-	-	-	-	35
Bank	-	-	10	65	-	0	-	-	76
Corporate	0	-	3	1	0	245	-	-	249
Regulatory retail	-	-	-	-	2	-	-	-	2
Other exposures	-	-	-	-	-	5	-	-	5
Total	65	-	25	90	2	250	-	-	433

11.5 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 2019, the increase in EAD was mainly due to higher repurchase transactions with bank counterparties, partially offset by reduction in repurchase transactions from Corporate and Sovereign asset classes.

11.5 IRBA – CCR Exposures by Portfolio and PD Range (cont'd)

(A) Main parameters used for calculations of CCR capital requirements for FIRB models

As at 31 December 2019

PD range %	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	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	2,957	0.0	6	10	0.2	6	0
0.15 to <0.25	6	0.2	1	45	0.0	2	24
0.25 to <0.50	64	0.4	1	45	0.0	22	34
0.50 to <0.75	-	-	-	-	-	-	-
0.75 to < 2.50	-	-	-	-	-	-	-
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	3,028	0.0	8	11	0.2	29	1
Bank asset sub-class							
0.00 to < 0.15	13,308	0.1	129	12	0.3	497	4
0.15 to <0.25	1,348	0.2	17	9	0.4	105	8
0.25 to <0.50	639	0.3	12	17	0.1	92	14
0.50 to <0.75	330	0.6	5	1	0.1	3	1
0.75 to < 2.50	139	1.5	6	8	0.1	18	13
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to <100.00	0	27.9	1	45	0.0	0	268
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	15,764	0.1	170	12	0.3	717	5
Corporate asset sub-class							
0.00 to < 0.15	589	0.1	28	21	1.2	67	11
0.15 to <0.25	1,536	0.2	33	7	0.5	131	9
0.25 to <0.50	1,807	0.4	105	14	0.7	363	20
0.50 to <0.75	589	0.5	84	14	0.8	133	23
0.75 to < 2.50	1,776	1.3	358	13	0.7	511	29
2.50 to < 10.00	180	3.6	76	48	0.8	230	128
10.00 to <100.00	6	27.8	13	45	0.1	16	268
100.00 (Default)	1	100.0	2	40	1.0	-	-
Sub-total	6,484	0.7	699	14	0.7	1,451	22
Corporate small business asset sub-class							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to <0.25	3	0.2	38	45	0.5	1	23
0.25 to <0.50	2	0.4	60	42	0.5	1	34
0.50 to <0.75	91	0.5	58	45	0.1	41	45
0.75 to < 2.50	22	1.2	243	43	0.7	14	64
2.50 to < 10.00	9	7.3	186	44	0.9	12	136
10.00 to <100.00	0	21.4	17	37	0.7	0	174
100.00 (Default)	0	100.0	3	40	0.3	-	-
Sub-total	128	1.1	605	45	0.3	69	54
Specialised lending asset sub-class - IPRE							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to <0.25	16	0.2	17	45	3.1	8	51
0.25 to <0.50	100	0.4	52	45	2.6	67	67
0.50 to <0.75	16	0.5	13	45	2.0	11	69
0.75 to < 2.50	90	1.0	60	45	2.7	88	98
2.50 to < 10.00	25	3.3	5	45	2.1	34	134
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	247	0.9	147	45	2.6	208	84
Total (sum of portfolios)	25,650	0.3	1,629	13	0.4	2,474	10

11.5 IRBA – CCR Exposures by Portfolio and PD Range (cont'd)

(A) Main parameters used for calculations of CCR capital requirements for FIRB models

As at 30 June 2019

PD range %	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	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	3,510	0.0	7	8	0.1	13	0
0.15 to <0.25	13	0.2	1	45	0.0	3	24
0.25 to <0.50	-	-	-	-	-	-	-
0.50 to <0.75	-	-	-	-	-	-	-
0.75 to < 2.50	5	0.9	1	45	0.0	3	62
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to <100.00	6	27.6	2	7	2.0	2	37
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	3,534	0.1	11	8	0.1	21	1
Bank asset sub-class							
0.00 to < 0.15	9,421	0.1	130	16	0.3	560	6
0.15 to <0.25	2,423	0.2	16	16	0.2	253	10
0.25 to <0.50	741	0.4	8	1	0.2	11	1
0.50 to <0.75	209	0.6	3	2	0.1	5	2
0.75 to < 2.50	152	1.5	8	1	0.1	3	2
2.50 to < 10.00	0	4.3	3	45	0.0	0	120
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	12,947	0.1	168	15	0.3	833	6
Corporate asset sub-class							
0.00 to < 0.15	362	0.1	24	41	2.0	79	22
0.15 to <0.25	1,568	0.2	35	10	0.6	175	11
0.25 to <0.50	2,136	0.4	117	15	0.6	446	21
0.50 to <0.75	223	0.5	95	45	2.3	171	77
0.75 to < 2.50	3,106	1.5	346	7	0.4	449	14
2.50 to < 10.00	251	4.2	77	38	1.5	298	118
10.00 to <100.00	13	25.9	28	21	1.2	15	113
100.00 (Default)	1	100.0	1	40	1.0	-	-
Sub-total	7,661	1.0	723	14	0.6	1,633	21
Corporate small business asset sub-class							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to <0.25	3	0.2	52	44	0.3	1	19
0.25 to <0.50	3	0.4	66	43	0.7	1	40
0.50 to <0.75	74	0.5	59	45	0.3	35	47
0.75 to < 2.50	7	1.5	241	42	1.2	6	79
2.50 to < 10.00	5	4.3	204	41	0.6	4	96
10.00 to <100.00	0	17.7	22	35	0.3	0	145
100.00 (Default)	0	100.0	4	43	0.4	-	-
Sub-total	91	0.8	648	44	0.4	46	51
Specialised lending asset sub-class - IPRE							
0.00 to < 0.15	-	-	-	-	-	-	-
0.15 to <0.25	25	0.2	19	45	3.0	13	50
0.25 to <0.50	93	0.4	43	45	2.9	63	68
0.50 to <0.75	31	0.5	13	45	2.1	22	70
0.75 to < 2.50	89	0.9	49	45	3.1	91	102
2.50 to < 10.00	25	3.3	5	45	2.6	34	140
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	264	0.8	129	45	2.9	223	85
Total (sum of portfolios)	24,497	0.4	1,679	14	0.4	2,757	11

11.5 IRBA – CCR Exposures by Portfolio and PD Range (cont'd)

(B) Main parameters used for calculations of CCR capital requirements for AIRB models

As at 31 December 2019

PD range %	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	EAD post- CRM \$m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWA \$m	RWA density %
Other retail small business exposures asset sub-class							
0.00 to < 0.15	0	0.1	5	61	-	0	11
0.15 to <0.25	0	0.2	30	61	-	0	25
0.25 to <0.50	0	0.4	67	67	-	0	44
0.50 to <0.75	0	0.5	32	57	-	0	45
0.75 to < 2.50	1	1.5	145	69	-	0	85
2.50 to < 10.00	0	3.3	122	81	-	0	120
10.00 to <100.00	0	22.3	2	81	-	0	195
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	1	1.6	403	70	-	1	77
Total (sum of portfolios)	1	1.6	403	70	-	1	77

As at 30 June 2019

PD range %	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	EAD post- CRM \$m	Average PD %	Number of obligors	Average LGD %	Average maturity Years	RWA \$m	RWA density %
Other retail small business exposures asset sub-class							
0.00 to < 0.15	0	0.1	5	71	-	0	13
0.15 to <0.25	0	0.2	33	74	-	0	30
0.25 to <0.50	0	0.4	64	74	-	0	48
0.50 to <0.75	0	0.5	34	69	-	0	54
0.75 to < 2.50	1	1.4	156	76	-	1	91
2.50 to < 10.00	0	3.7	127	81	-	0	121
10.00 to <100.00	0	20.8	5	81	-	0	188
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	2	1.9	424	76	-	2	83
Total (sum of portfolios)	2	1.9	424	76	-	2	83

11.6 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 2019, the increase in collaterals posted and received for SFT transactions was mainly due to increase in repurchase agreement transactions. The decrease in collaterals used in derivative transactions is in line with the sale of assets by a wholly owned subsidiary of the Group, UOB Bullion and Futures Limited.

As at 31 December 2019

\$m	(a)	(b)	(c)	(d)	(e)	(f)
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
Cash domestic currencies	-	1	-	142	595	764
Cash other currencies	-	325	-	1,251	2,062	17,297
Domestic sovereign debt	-	15	-	-	757	972
Other sovereign debt	-	-	-	41	7,506	450
Government agency debt	-	-	-	-	-	-
Corporate bonds	-	-	-	99	8,982	1,264
Equity securities	-	-	-	-	-	-
Other collateral	-	-	-	-	-	-
Total	-	340	-	1,533	19,903	20,746

As at 30 June 2019

\$m	(a)	(b)	(c)	(d)	(e)	(f)
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
Cash domestic currencies	-	640	-	411	563	873
Cash other currencies	-	432	-	1,326	2,095	16,213
Domestic sovereign debt	-	-	-	-	786	561
Other sovereign debt	-	-	-	182	8,141	400
Government agency debt	-	-	-	-	6	215
Corporate bonds	-	-	-	101	7,666	1,863
Equity securities	-	-	-	-	-	-
Other collateral	-	-	-	-	-	-
Total	-	1,072	-	2,021	19,258	20,126

11.7 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 2019, the increase in credit derivative exposures was mainly from total return swaps.

As at 31 December 2019

		(a)	(b)
		Protection bought	Protection sold
\$m			
	Notionals		
1	Single-name credit default swaps	27	13
2	Index credit default swaps	81	-
3	Total return swaps	887	-
4	Total notionals	994	13
	Fair values		
5	Positive fair value (asset)	0	0
6	Negative fair value (liability)	27	-

As at 30 June 2019

		(a)	(b)
		Protection bought	Protection sold
\$m			
	Notionals		
1	Single-name credit default swaps	108	97
2	Index credit default swaps	81	-
3	Total return swaps	739	-
4	Total notionals	928	97
	Fair values		
5	Positive fair value (asset)	4	0
6	Negative fair value (liability)	8	-

11.8 RWA flow statements under CCR internal models method

UOB does not use CCR Internal Models Method.

12 Securitisation

12.1 Qualitative disclosures related to securitisation exposures

Please refer to UOB Annual Report 2019, Risk Management section – Credit Risk.

12.2 Securitisation Exposures in the Banking Book

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

Compared with 30 June 2019, the increase in securitisation exposures mainly arose from residential mortgage-backed securities.

As at 31 December 2019

		(a)	(b)	(c)
		UOB acts as investor		
\$m		Traditional	Synthetic	Sub-total
1	Total retail	1,930	-	1,930
2	of which: residential mortgage	1,838	-	1,838
3	of which: credit card	92	-	92
4	Total wholesale	31	-	31
5	of which: commercial mortgage	31	-	31

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

As at 30 June 2019

		(a)	(b)	(c)
		UOB acts as investor		
\$m		Traditional	Synthetic	Sub-total
1	Total retail	1,622	-	1,622
2	of which: residential mortgage	1,529	-	1,529
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.

12.3 Securitisation Exposures in the Trading Book

The Group currently has no securitisation exposures in the Trading book.

12.4 Securitisation Exposures in the Banking Book and associated Regulatory Capital Requirements – UOB acting as Originator or as Sponsor

Currently, UOB has no securitisation exposures in the Banking Book where the Group acts as sponsor.

12.5 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 2019, the increase in securitisation exposures mainly arose from residential mortgage-backed securities with lower risk weights.

As at 31 December 2019

	(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	SEC-SA	1250%	SEC-IRBA	SEC-ERBA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA	SEC-SA	1250%
\$m																	
1 Total exposures	1,838	-	123	-	-	-	1,744	217	-	-	239	31	-	-	24	3	-
2 Traditional securitisation	1,838	-	123	-	-	-	1,744	217	-	-	239	31	-	-	24	3	-
3 of which: securitisation	1,838	-	123	-	-	-	1,744	217	-	-	239	31	-	-	24	3	-
4 of which: retail underlying	1,838	-	92	-	-	-	1,713	217	-	-	219	31	-	-	22	3	-
5 of which: wholesale	-	-	31	-	-	-	31	-	-	-	20	-	-	-	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

12.5 Securitisation Exposures in the Banking book and associated Regulatory Capital Requirements – UOB acting as Investor (cont'd)

As at 30 June 2019

	(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	SEC-SA	1250%	SEC-IRBA	SEC-ERBA	SEC-SA	1250%	SEC-IRBA	SEC-ERBA	SEC-SA	1250%
\$m																	
1 Total exposures	1,529	-	114	-	8	-	1,405	238	8	-	199	32	94	-	20	3	9
2 Traditional securitisation	1,529	-	114	-	8	-	1,405	238	8	-	199	32	94	-	20	3	9
3 of which: securitisation	1,529	-	114	-	8	-	1,405	238	8	-	199	32	94	-	20	3	9
4 of which: retail underlying	1,529	-	85	-	8	-	1,376	238	8	-	180	32	94	-	18	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

13 Market Risk

13.1 Qualitative Disclosures related to Market Risk and Internal Model Approach (IMA)

Please refer to UOB Annual Report 2019, Risk Management section – Market Risk.

13.2 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 2019, the decrease in RWA was mainly due to lower interest rate and foreign exchange risk, offset by increase in commodity risk.

As at 31 December 2019

\$m		(a)
		RWA
	Products excluding Options	
1	Interest Rate Risk (General and Specific)	2,387
2	Equity Risk (General and Specific)	50
3	Foreign Exchange Risk	5,127
4	Commodity Risk	1,116
	Options	
5	Simplified Approach	
6	Delta-Plus Method	
7	Scenario Approach	1,278
8	Securitisation	
9	Total	9,959

As at 30 June 2019

\$m		(a)
		RWA
	Products excluding Options	
1	Interest Rate Risk (General and Specific)	2,922
2	Equity Risk (General and Specific)	32
3	Foreign Exchange Risk	5,702
4	Commodity Risk	611
	Options	
5	Simplified Approach	
6	Delta-Plus Method	
7	Scenario Approach	1,369
8	Securitisation	
9	Total	10,637

13.3 RWA Flow Statements of Market Risk Exposures under IMA and IMA Values for Trading Portfolios

These disclosures are not applicable as the Group has not adopted IMA for market risk regulatory capital requirements.

13.4 Comparison of VaR Estimates with Gains or Losses

Please refer to UOB Annual Report 2019, Risk Management section – Market Risk.

14 Operational Risk

Please refer to UOB Annual Report 2019, Risk Management section – Operational Risk.

15 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.

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 \$803 million and \$1,676 million (2018: negative \$779 million and \$1,589 million) respectively, driven mainly by the Group's SGD and USD positions.

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.

Please refer to UOB Annual Report 2019, Risk Management section – Interest Rate Risk in the Banking Book for more information.

16 Liquidity Coverage Ratio Disclosures

16.1 Liquidity Coverage Ratio

The Liquidity Coverage Ratio (“LCR”) ensures that a Bank has sufficient unencumbered high quality liquid assets (“HQLA”) to survive a significant stress scenario for the next 30 days. The Group’s LCR disclosure is as per MAS Notice 651 “Liquidity Coverage Ratio Disclosure”.

Quarterly average All Currency LCR and Singapore Dollar LCR of 149% and 315% respectively were comfortably above the regulatory requirements of 100%. 92 calendar days’ data points were used in calculating the average figures. Compared to 3Q2019, increase in All Currency LCR was mainly due to lower average unsecured wholesale funding; partially offset by lower HQLA. Decrease in SGD Dollar LCR was mainly due to lower HQLA. The main drivers of LCR are the net cumulative outflow driven mainly by deposit profile and the portfolio of high quality liquid asset which would cause some volatility on a day to day basis. The Group’s HQLA composition comprised 94%⁹ Level 1 HQLA and the remaining in Level 2A and 2B HQLA. Deposit strategies are regularly discussed in Group ALCO with monitoring on deposit concentration and currency mismatch etc. The Group’s exposures to derivatives and potential collateral calls were incorporated into the LCR outflows.

Daily liquidity management is centrally managed under Global Markets-Portfolio & Liquidity Management with regular discussion with Central Treasury and relevant Business Units. Liquidity limits and triggers were established to limit the Group’s liquidity exposure. Balance Sheet Risk Management oversees the liquidity risk management in the Group. Contingency funding plans are in place to identify potential liquidity crisis using a series of early warning indicators as well as crisis escalation process and related funding strategies.

Please refer to:

- UOB Annual Report 2019, Risk Management section – Liquidity Risk for governance of liquidity risk management, funding strategy and liquidity risk mitigation techniques.
- UOB Annual Report 2019, Note 44 Financial Risk Management section for Balance sheet and off-balance sheet items broken down into maturity buckets and resultant liquidity gaps.

⁹ after LCR weighting

For the quarter ended 31 December 2019

\$m		Total Unweighted Value Average	Total Weighted Value Average
HIGH-QUALITY LIQUID ASSETS			
1	Total high-quality liquid assets (HQLA)		57,419
CASH OUTFLOWS			
2	Retail deposits and deposits from small business customers, of which:	121,186	10,301
3	Stable deposits	30,400	1,520
4	Less stable deposits	90,786	8,781
5	Unsecured wholesale funding, of which:	107,137	56,779
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	17,321	4,074
7	Non-operational deposits (all counterparties)	84,485	47,375
8	Unsecured debt	5,331	5,331
9	Secured wholesale funding		94
10	Additional requirements, of which:	34,260	7,164
11	Outflows related to derivative exposures and other collateral requirements	2,953	2,371
12	Outflows related to loss of funding on debt products	1	1
13	Credit and liquidity facilities	31,306	4,792
14	Other contractual funding obligations	3,846	3,846
15	Other contingent funding obligations	12,911	706
16	TOTAL CASH OUTFLOWS		78,890
CASH INFLOWS			
17	Secured lending (eg reverse repos)	9,228	4,413
18	Inflows from fully performing exposures	48,475	32,083
19	Other cash inflows	4,466	3,536
20	TOTAL CASH INFLOWS	62,169	40,032
		Total Adjusted Value	
21	TOTAL HQLA		57,419
22	TOTAL NET CASH OUTFLOWS		38,859
23	LIQUIDITY COVERAGE RATIO (%)		149

For the quarter ended 31 December 2019

\$m		Total Unweighted Value Average	Total Weighted Value Average
HIGH-QUALITY LIQUID ASSETS			
1	Total high-quality liquid assets (HQLA)		21,318
CASH OUTFLOWS			
2	Retail deposits and deposits from small business customers, of which:	81,495	6,761
3	Stable deposits	27,759	1,388
4	Less stable deposits	53,735	5,374
5	Unsecured wholesale funding, of which:	26,603	11,509
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	6,822	1,530
7	Non-operational deposits (all counterparties)	19,450	9,648
8	Unsecured debt	331	331
9	Secured wholesale funding		-
10	Additional requirements, of which:	18,256	7,347
11	Outflows related to derivative exposures and other collateral requirements	6,054	5,930
12	Outflows related to loss of funding on debt products	-	-
13	Credit and liquidity facilities	12,202	1,417
14	Other contractual funding obligations	932	932
15	Other contingent funding obligations	102	87
16	TOTAL CASH OUTFLOWS		26,636
CASH INFLOWS			
17	Secured lending (eg reverse repos)	492	2
18	Inflows from fully performing exposures	11,625	6,397
19	Other cash inflows	14,636	14,447
20	TOTAL CASH INFLOWS	26,753	20,846
		Total Adjusted Value	
21	TOTAL HQLA		21,318
22	TOTAL NET CASH OUTFLOWS		6,774
23	LIQUIDITY COVERAGE RATIO (%)		315

17 Net Stable Funding Ratio Disclosures

The Net Stable Funding Ratio ("NSFR") measures the amount of available stable funding relative to the amount of required stable funding in a bank and promotes resilience over a longer time horizon. The bank is required to maintain a stable funding profile in relation to the composition of their assets and off-balance sheet activities.

The Group is subjected to NSFR standards effective January 2018. NSFR disclosure is as per MAS Notice 653 "Net Stable Funding Ratio Disclosure". NSFR for 31 December 2019 and 30 September 2019 were 111% and 107% respectively, above the regulatory requirement of 100%. Increase in NSFR in the 4th quarter was largely due to higher stable funding from retail and wholesale deposits. In the 3rd quarter, decrease in NSFR was largely due to growth in long term loans. The main drivers of NSFR are the composition and profile of deposits and capital in relation to loans. Interdependent asset and liabilities reported include government funded loans and gold savings accounts backed by gold in accordance with criteria stated in MAS Notice 652.

As at 31 December 2019

\$m	ASF Item	Unweighted value by residual maturity				Weighted value
		No maturity	< 6 months	6 months to < 1 yr	≥ 1 yr	
1	Capital:	37,644	500	-	6,967	44,610
2	Regulatory capital	37,644	500	-	5,803	43,447
3	Other capital instruments	-	-	-	1,163	1,163
4	Retail deposits and deposits from small business customers:	87,552	46,854	7,247	1,667	131,019
5	Stable deposits	23,067	13,988	198	352	35,743
6	Less stable deposits	64,485	32,867	7,049	1,315	95,276
7	Wholesale funding:	57,574	123,143	12,102	10,032	73,224
8	Operational deposits	20,431	-	-	-	10,216
9	Other wholesale funding	37,143	123,143	12,102	10,032	63,009
10	Liabilities with matching interdependent assets	-	289	93	488	-
11	Other liabilities:	6,574		5,348		798
12	NSFR derivative liabilities			5,055		
13	All other liabilities and equity not included in the above categories	6,574	52	-	240	798
14	Total ASF					249,651
RSF Item						
15	Total NSFR high-quality liquid assets (HQLA)					3,230
16	Deposits held at other financial institutions for operational purposes	-	-	-	-	-
17	Performing loans and securities:	15,534	125,220	25,011	170,184	201,315
18	Performing loans to financial institutions secured by Level 1 HQLA	-	7,497	191	8	853
19	Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	4,964	34,122	4,545	6,476	16,257
20	Performing loans to non-financial corporates, loans to retail and small business customers, and loans to sovereigns, central banks and public sector entities (PSEs), of which:	8,835	73,902	12,997	92,040	121,817
21	With a risk weight of less than or equal to 35% under paragraphs 7.3.13 to 7.3.20 and 7.3.24 to 7.3.26 of MAS Notice 637	-	283	173	5,138	3,577
22	Performing residential mortgages, of which:	-	1,453	1,441	66,321	49,332
23	With a risk weight of less than or equal to 35% under paragraph 7.3.29 of MAS Notice 637	-	1,266	1,256	53,175	37,859
24	Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	1,735	8,246	5,838	5,339	13,055
25	Assets with matching interdependent liabilities	-	289	93	488	-
26	Other assets:	16,868		12,403		17,964
27	Physical traded commodities, including gold	1,435				1,220
28	Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs			546		464
29	NSFR derivative assets			5,904		848
30	NSFR derivative liabilities before deduction of variation margin posted			5,954		-
31	All other assets not included in the above categories	15,433	-	-	-	15,433
32	Off-balance sheet items			180,116		1,488
33	Total RSF					223,998
34	Net Stable Funding Ratio (%)					111

As at 30 September 2019

\$m	ASF Item	Unweighted value by residual maturity				Weighted value
		No maturity	< 6 months	6 months to < 1 yr	≥ 1 yr	
1	Capital:	36,840	500	500	6,807	44,397
2	Regulatory capital	36,840	500	500	5,897	43,487
3	Other capital instruments	-	-	-	910	910
4	Retail deposits and deposits from small business customers:	84,432	47,499	6,827	1,822	128,545
5	Stable deposits	22,645	13,980	193	372	35,349
6	Less stable deposits	61,786	33,519	6,634	1,450	93,196
7	Wholesale funding:	53,632	129,705	13,331	10,756	70,529
8	Operational deposits	16,808	-	-	-	8,404
9	Other wholesale funding	36,823	129,705	13,331	10,756	62,125
10	Liabilities with matching interdependent assets	-	277	81	475	-
11	Other liabilities:	5,878		5,728		600
12	NSFR derivative liabilities			5,435		
13	All other liabilities and equity not included in the above categories	5,878	-	53	241	600
14	Total ASF					244,071
RSF Item						
15	Total NSFR high-quality liquid assets (HQLA)					3,433
16	Deposits held at other financial institutions for operational purposes	-	-	-	-	-
17	Performing loans and securities:	14,444	130,571	21,032	171,874	205,193
18	Performing loans to financial institutions secured by Level 1 HQLA	-	7,280	334	-	895
19	Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	4,096	34,809	3,981	6,142	16,029
20	Performing loans to non-financial corporates, loans to retail and small business customers, and loans to sovereigns, central banks and public sector entities (PSEs), of which:	8,746	78,071	10,585	94,637	126,655
21	With a risk weight of less than or equal to 35% under paragraphs 7.3.13 to 7.3.20 and 7.3.24 to 7.3.26 of MAS Notice 637	-	283	175	5,189	3,610
22	Performing residential mortgages, of which:	-	1,446	1,421	65,782	48,899
23	With a risk weight of less than or equal to 35% under paragraph 7.3.29 of MAS Notice 637	-	1,255	1,237	53,111	37,825
24	Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	1,602	8,965	4,711	5,312	12,715
25	Assets with matching interdependent liabilities	-	277	81	475	-
26	Other assets:	16,075		13,639		17,385
27	Physical traded commodities, including gold	1,427				1,213
28	Assets posted as initial margin for derivative contracts and contributions to default funds of CCPs			466		396
29	NSFR derivative assets			6,563		1,128
30	NSFR derivative liabilities before deduction of variation margin posted			6,610		-
31	All other assets not included in the above categories	14,648	-	-	-	14,648
32	Off-balance sheet items			179,219		1,602
33	Total RSF					227,613
34	Net Stable Funding Ratio (%)					107

Please refer to UOB Annual Report 2019, Remuneration section.

19 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	
ASF	Available Stable Funding	G-SIB	Global Systemically Important Bank
B		H	
BIA	Basic Indicator Approach	HVCRE	High-Volatility Commercial Real Estate
C		I	
CAR	Capital Adequacy Ratio	IAA	Internal Assessment Approach
CCF	Credit Conversion Factor	IAM	Internal Assessment Method
CCP	Central Counterparty	IMA	Internal Models Approach
CCR	Counterparty Credit Risk	IMM	Internal Models Method
CCyB	Countercyclical Capital Buffer	IPRE	Income-Producing Real Estate
CET1	Common Equity Tier 1	IRBA	Internal Ratings-Based Approach
CF	Commodities Finance	L	
CR	Credit Risk	LGD	Loss Given Default
CRE	Commercial Real Estate	M	
CRM	Credit Risk Mitigation	MDB	Multilateral Development Bank
CVA	Credit Valuation Adjustment	MR	Market Risk
E		N	
EAD	Exposure at Default	NBFI	Non Bank Financial Institutions
EL	Expected Loss	NCI	Non-Controlling Interests
EPE	Expected Positive Exposure	O	
EQ	Equity Exposures	OF	Object Finance
ES	Expected Shortfall		

19 ABBREVIATIONS (cont'd)

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	TLAC	Total Loss-Absorbing Capacity
Q		V	
QRRE	Qualifying Revolving Retail Exposures	VaR	Value-at-Risk
R			
RBM	Ratings-Based Method		
RSF	Required Stable Funding		
RW	Risk Weight		
RWA	Risk-Weighted Assets		
S			
S&P	Standard & Poor's		
SA	Standardised Approach		
SA(CR)	Standardised Approach to Credit Risk		
SA(EQ)	Standardised Approach for Equity Exposures		
SA(MR)	Standardised Approach to Market Risk		
SA(OR)	Standardised Approach to Operational Risk		
SEC-IRBA	Securitisation Internal Ratings-Based Approach		
SEC-ERBA	Securitisation External Ratings-Based Approach		
SEC-SA	Securitisation Standardised Approach		
SF	Supervisory Formula		
SFRS	Singapore Financial Reporting Standards		
SFTs	Securities Financing Transactions		
SME	Small-and Medium-sized Enterprises		