



Interim financial statements (unaudited)

as at 30 September 2019

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Balance sheet

As at

SDR millions	Note	30 September 2019	31 March 2019
Assets			
Cash and cash equivalents	2	45,188.5	60,756.4
Securities purchased under resale agreements		62,324.1	62,904.4
Loans and advances		43,841.1	41,856.5
Government and other securities		89,261.0	97,055.6
Gold and gold loans		21,601.0	19,654.3
Derivative financial instruments		2,690.4	2,564.9
Accounts receivable and other assets		4,544.9	6,115.2
Land, buildings and equipment	3	185.4	188.3
Total assets		269,636.4	291,095.6
Liabilities			
Currency deposits		205,648.5	241,604.6
Securities sold under repurchase agreements		–	549.1
Gold deposits		13,598.4	11,333.4
Derivative financial instruments		1,599.6	1,455.4
Accounts payable		26,923.6	15,116.8
Other liabilities		1,127.5	1,087.0
Total liabilities		248,897.6	271,146.3
Shareholders' equity			
Share capital	5	698.9	698.9
Less: shares held in treasury	5	(1.7)	(1.7)
Statutory reserves		16,650.7	16,326.3
Profit and loss account		221.6	461.1
Other equity accounts		3,169.3	2,464.7
Total shareholders' equity		20,738.8	19,949.3
Total liabilities and shareholders' equity		269,636.4	291,095.6

Profit and loss account

For the six months ended 30 September

SDR millions	Note	2019	2018
Interest income	6	138.6	113.5
Interest expense	7	(226.7)	(214.6)
Net income on financial assets and liabilities at fair value through profit and loss		391.7	444.4
Net interest and valuation income		303.6	343.3
Net gain on sales of currency assets at fair value through other comprehensive income		70.1	2.0
Net fee income		1.4	2.1
Net foreign exchange movement		3.1	18.2
Total income		378.2	365.6
Administrative expense		(145.2)	(134.8)
Depreciation		(11.4)	(10.3)
Operating expense		(156.6)	(145.1)
Net profit		221.6	220.5

Effective 1 April 2018, the Bank applied a new classification and measurement approach for its financial instruments in its annual report for the financial year ended 31 March 2019. The Bank has also updated the presentation of the profit and loss account. The new financial instrument classification terminology and presentation have been used for both years in the profit and loss account. As a result, the presentation of the 2018 figures has been changed from the previous year's interim financial statements, as described in Note 1 of the latest annual financial statements.

Statement of comprehensive income

For the six months ended 30 September

SDR millions	2019	2018
Net profit	221.6	220.5
Other comprehensive income / (loss)		
Items that are or may be reclassified subsequently to profit and loss		
Currency assets at fair value through other comprehensive income		
Net change in fair value during the year	260.4	(41.9)
Net change in expected credit loss impairment provision	1.8	–
Reclassification to profit and loss	(70.1)	(2.0)
Net movement on currency assets at fair value through other comprehensive income	192.1	(43.9)
Gold at fair value through other comprehensive income		
Net change in fair value during the year	516.8	(194.1)
Reclassification to profit and loss	–	–
Net movement on gold at fair value through other comprehensive income	516.8	(194.1)
Items that will not be reclassified to profit and loss		
Re-measurement of defined benefit obligations	(4.3)	(3.9)
Total comprehensive income / (loss)	926.2	(21.4)

Effective 1 April 2018, the Bank applied a new classification and measurement approach for its financial instruments in its annual report for the financial year ended 31 March 2019. The Bank has also updated the presentation of the statement of comprehensive income. As a result, the presentation of the 2018 figures has been changed from the previous year's interim financial statements as described in Note 1 of the latest annual financial statements.

Statement of cash flows

For the six months ended 30 September

<i>SDR millions</i>	2019	2018
Cash flow from / (used in) operating activities		
Interest and similar income received	179.1	164.3
Interest and similar expenses paid	(223.1)	(216.8)
Net fee income	1.4	2.1
Net foreign exchange transaction gain	9.9	6.4
Administrative expense	(145.2)	(134.8)
Adjustments for non-cash flow items		
Net income on financial assets and liabilities at fair value through profit and loss.	391.7	444.4
Net foreign exchange translation movement	(6.8)	11.8
Change in accruals and amortisation	(44.0)	(48.6)
Change in operating assets and liabilities		
Currency deposits	(35,574.5)	(5,127.1)
Currency banking assets	19,317.8	(23,382.3)
Gold deposits	2,265.0	(518.5)
Gold banking assets	(1,428.9)	4,555.5
Accounts receivable and other assets	(3.0)	125.4
Accounts payable and other liabilities	103.7	423.7
Net derivative financial instruments	18.7	(3,816.5)
Net cash flow used in operating activities	(15,138.2)	(27,511.0)
Cash flow from / (used in) investment activities		
Change in currency investment assets	265.6	1,710.2
Change in gold investment assets	(1.0)	0.3
Change in securities sold under repurchase agreements in investment portfolios	(549.1)	(1,959.6)
Capital expenditure on land, buildings and equipment	(8.5)	(5.8)
Net cash flow used in investment activities	(293.0)	(254.9)

<i>SDR millions</i>		2019	2018
Cash flow from / (used in) financing activities			
Dividends paid	8	(136.7)	(131.2)
Net cash flow used in financing activities		(136.7)	(131.2)
Total net cash flow		(15,567.9)	(27,897.1)
Net effect of exchange rate changes on cash and cash equivalents		903.5	(1,110.3)
Net movement in cash and cash equivalents		(16,471.4)	(26,786.8)
Net change in cash and cash equivalents		(15,567.9)	(27,897.1)
Cash and cash equivalents, beginning of financial year	2	60,756.4	73,615.8
Cash and cash equivalents, end of reporting period	2	45,188.5	45,718.7

Effective 1 April 2018, the Bank applied a new classification and measurement approach for its financial instruments. The Bank has also updated the presentation of the statement of cash flows. The new financial instrument classification terminology and presentation have been used for both years in the statement of cash flows. As a result, the presentation of the 2018 figures has been changed from the previous year's interim financial statements as described in Note 1 of the latest annual financial statements.

Movements in shareholders' equity

For the six months ended 30 September 2019

	SDR millions	Note	Share capital	Shares held in treasury	Statutory reserves	Profit and loss	Other equity accounts		Shareholders' equity
							Defined benefit obligations	Gold and securities revaluation	
Balance as at 31 March 2019	698.9		(1.7)	16,326.3	461.1	(238.3)	2,703.0	19,949.3	
Payment of 2018/19 dividend	8		-	-	-	(136.7)	-	-	(136.7)
Allocation of 2018/19 profit			-	-	324.4	(324.4)	-	-	-
Total comprehensive income			-	-	-	221.6	(4.3)	708.9	926.2
Balance as at 30 September 2019	698.9		(1.7)	16,650.7	221.6	(242.6)	3,411.9	20,738.8	

For the six months ended 30 September 2018

	SDR millions	Note	Share capital	Shares held in treasury	Statutory reserves	Profit and loss	Other equity accounts		Shareholders' equity
							Defined benefit obligations	Gold and securities revaluation	
Balance as at 31 March 2018	698.9		(1.7)	15,950.1	508.1	(210.1)	2,410.3	19,355.6	
Change in accounting policy		-	-	(0.7)	-	-	0.7	-	-
Balance as at 1 April 2018	698.9		(1.7)	15,949.4	508.1	(210.1)	2,411.0	19,355.6	
Payment of 2017/18 dividend	8	-	-	-	(131.2)	-	-	-	(131.2)
Allocation of 2017/18 profit		-	-	376.9	(376.9)	-	-	-	-
Total comprehensive loss		-	-	-	220.5	(3.9)	(238.0)	-	(21.4)
Balance as at 30 September 2018	698.9		(1.7)	16,326.3	220.5	(214.0)	2,173.0	19,203.0	

Accounting policies

The accounting policies adopted by the Bank for these interim financial statements are consistent with those described in the Bank's Annual Report. The interim financial statements contain selected disclosures, but do not contain all the information provided in the Bank's annual financial statements. They should be read in conjunction with the Bank's latest Annual Report.

Effective 1 April 2018, the Bank applied a new classification and measurement approach for its financial instruments and updated the presentation of its financial statements. This change of accounting policy is described in more detail in Note 1 to the 2019 annual financial statements and is reflected in the comparative information presented in these interim financial statements.

All figures in these financial statements are presented in SDR millions unless otherwise stated. Amounts are rounded to the nearest SDR 0.1 million, and consequently there may be small differences both within and between disclosures.

1. Use of estimates

The preparation of the financial statements requires the Bank's Management to make assumptions and use estimates to arrive at reported amounts. In doing so, Management exercises judgment based on reliable information. Actual results could differ significantly from these estimates.

In the preparation of these interim financial statements, the significant judgments made by Management were similar to those applied in the annual financial statements and there have been no material revisions to the nature of the amounts reported in the annual financial statements.

2. Cash and cash equivalents

Cash and cash equivalents comprise sight accounts at central and commercial banks, as well as notice accounts at commercial banks. The balances are analysed in the table below:

As at

<i>SDR millions</i>	30 September 2019	31 March 2019
Balance at central banks	44,676.5	60,164.2
Balance at commercial banks	99.7	34.5
Total cash and sight accounts	44,776.2	60,198.7
Notice accounts	412.3	557.7
Total cash and cash equivalents	45,188.5	60,756.4

3. Land, buildings and equipment, and depreciation

There have been no material purchases or sales of fixed assets during the reporting period. The depreciation charge for the period ended 30 September 2019 was SDR 11.4 million (30 September 2018: SDR 10.3 million).

4. Currency deposits

Currency deposits comprise the following products:

As at

SDR millions	30 September 2019	31 March 2019
Repayable at one to three days' notice		
Amortised cost		
Sight and notice deposit accounts	19,645.1	13,006.6
Fair value through profit and loss		
Medium-Term Instruments (MTIs)	28,502.9	41,332.6
Callable MTIs (CMTIs)	4,641.5	4,515.9
Fixed-Rate Investments at the BIS (FIXBIS)	62,705.7	74,178.8
	115,495.2	133,033.9
Other currency deposits		
Fair value through profit and loss (FVPL)		
Floating Rate Investments at the BIS (FRIBIS)	1,088.1	1,029.4
Fixed-term deposits	87,976.9	107,325.6
Dual Currency Deposits (DCDs)	1,088.3	215.7
	90,153.3	108,570.7
Total currency deposits	205,648.5	241,604.6

5. Share capital

The Bank's share capital consists of:

As at

SDR millions	30 September 2019	31 March 2019
Authorised capital: 600,000 shares, each of SDR 5,000 par value, of which SDR 1,250 is paid up	3,000.0	3,000.0
Issued capital: 559,125 shares	2,795.6	2,795.6
Paid-up capital (25%)	698.9	698.9

The number of shares eligible for dividend is:

As at	30 September 2019	31 March 2019
Issued shares	559,125	559,125
Shares held in treasury	(1,000)	(1,000)
Outstanding shares eligible for dividend	558,125	558,125

Shares held in treasury consist of 1,000 shares of the Albanian issue which were suspended in 1977.

6. Interest income

For the six months ended 30 September

SDR millions	2019	2018
Assets at amortised cost		
Cash and cash equivalents	8.2	8.5
Gold loan and sight accounts denominated in gold	0.5	-
	8.7	8.5
Financial assets classified at FVOCI		
Securities purchased under resale agreements	-	1.0
Government and other securities	123.6	96.5
	123.6	97.5
Interest income on liabilities classified at amortised cost	6.3	7.5
Total interest income	138.6	113.5

7. Interest expense

For the six months ended 30 September

SDR millions	2019	2018
Liabilities classified at amortised cost		
Currency deposits: sight and notice deposit accounts	(158.4)	(124.7)
Gold deposits	-	-
Securities sold under repurchase agreements	-	(0.9)
	(158.4)	(125.6)
Interest expense on assets classified at amortised cost or FVOCI	(68.3)	(89.0)
Total interest expense	(226.7)	(214.6)

8. Dividends

On 5 July 2019, the Bank paid a dividend of SDR 136.7 million for the financial year 2018/19 (2017/18: SDR 131.2 million).

9. Fair value hierarchy

The Bank categorises its financial instrument fair value measurements using a hierarchy that reflects the observability of inputs used in measuring that value. A valuation level is assigned according to the least observable input that is significant to the fair value measurement in its entirety. The fair value hierarchy used by the Bank comprises the following levels:

Level 1 – Instruments valued using unadjusted quoted prices in active markets for identical financial instruments.

Level 2 – Instruments valued with valuation techniques using inputs which are observable for the financial instrument either directly (ie as a price) or indirectly (ie derived from prices for similar financial instruments). This includes observable interest rates, spreads and volatilities.

Level 3 – Instruments valued using valuation techniques where the significant inputs are not observable in financial markets.

As at 30 September 2019

SDR millions	Level 1	Level 2	Total
Financial assets classified at FVPL			
Securities purchased under resale agreements	–	62,324.1	62,324.1
Loans and advances	–	43,841.1	43,841.1
Government and other securities	64,473.9	8,243.2	72,717.1
Derivative financial instruments	0.6	2,689.8	2,690.4
Financial assets classified at FVOCI			
Government and other securities	15,507.9	1,036.0	16,543.9
Total financial assets accounted for at fair value	79,982.4	118,134.2	198,116.6
Financial liabilities classified at FVPL			
Currency deposits	–	(186,003.4)	(186,003.4)
Derivative financial instruments	(0.5)	(1,599.1)	(1,599.6)
Total financial liabilities accounted for at fair value	(0.5)	(187,602.5)	(187,603.0)

As at 31 March 2019

SDR millions	Level 1	Level 2	Total
Financial assets classified at FVPL			
Securities purchased under resale agreements	-	62,355.2	62,355.2
Loans and advances	-	41,856.5	41,856.5
Government and other securities	54,787.5	26,212.3	80,999.8
Derivative financial instruments	1.5	2,563.4	2,564.9
Financial assets classified at FVOCI			
Securities purchased under resale agreements	-	549.2	549.2
Government and other securities	15,335.5	720.3	16,055.8
Total financial assets accounted for at fair value	70,124.5	134,256.9	204,381.4
Financial liabilities classified at FVPL			
Currency deposits	-	(228,598.0)	(228,598.0)
Derivative financial instruments	(1.2)	(1,454.2)	(1,455.4)
Total financial liabilities accounted for at fair value	(1.2)	(230,052.2)	(230,053.4)

A. Financial instruments not measured at fair value

In accordance with its accounting policies, the Bank accounts for certain financial instruments at amortised cost. Using the same valuation techniques as used for fair valued financial instruments, Management estimates that the fair values of these financial instruments would be materially the same as the carrying values shown in these financial statements for both 30 September 2019 and 31 March 2019. If the valuation of these instruments were categorised using the fair value hierarchy, the valuation of "Gold loans" and "Securities sold under repurchase agreements" would be considered level 2. All other amortised cost financial instruments would be considered level 1.

B. Impact of changes in the Bank's creditworthiness

The fair value of the Bank's liabilities may be affected by any change in its creditworthiness. If the Bank's creditworthiness deteriorated, the value of its liabilities should decrease, and the change in value would be reflected as a movement in other comprehensive income. The Bank regularly assesses its creditworthiness as part of its risk management processes. The Bank's assessment of its creditworthiness did not indicate a change which could have had an impact on the fair value of the Bank's liabilities during the period under review.

10. Related parties

The Bank considers the following to be its related parties:

- the members of the Board of Directors;
- the senior officials of the Bank;
- close family members of the above individuals;
- the Bank's post-employment benefit arrangements; and
- central banks whose Governor is a member of the Board of Directors and institutions that are connected with those central banks.

A listing of the members of the Board of Directors and senior officials is shown in the sections of the Annual Report entitled "Board of Directors" and "BIS Management". Note 13 of the financial statements in the annual report for the financial year ended 31 March 2019 provides details of the Bank's post-employment benefit arrangements.

A. Related party individuals

Related party transactions with members of the Board of Directors and senior officials in the period ended 30 September were similar in nature to those disclosed in the most recent Annual Report. No related party transactions that took place with members of the Board of Directors and senior officials materially affected the financial position or performance of the Bank during the financial period.

B. Related party customers

The BIS provides banking services to its customers, which are predominantly central banks, monetary authorities and international financial institutions. In fulfilling this role, the Bank, in the normal course of business, enters into transactions with customers which are related parties (as defined above). These transactions include making advances, and taking currency and gold deposits. It is the Bank's policy to enter into transactions with related party customers on terms and conditions similar to those of transactions with other, non-related party customers. The following tables show balances relating to these transactions, which are representative of the general level of business undertaken with related party customers during the year.

Balances with related party customers

As at	30 September 2019			31 March 2019		
	Balance sheet total	Balance with related parties	%	Balance sheet total	Balance with related parties	%
SDR millions / percentages	SDR millions	SDR millions	%	SDR millions	SDR millions	%
Assets						
Cash and cash equivalents	45,188.5	44,672.0	98.9	60,756.4	60,145.7	99.0
Securities purchased under resale agreements	62,324.1	6,408.9	10.3	62,904.4	6,325.9	10.1
Government and other securities	89,261.0	3,509.0	3.9	97,055.6	3,135.0	3.2
Gold and gold loans	21,601.0	21,457.4	99.3	19,654.3	19,419.3	98.8
Derivative financial instruments	2,690.4	54.7	2.0	2,564.9	60.1	2.3
Accounts receivable and other assets	4,544.9	1.2	-	6,115.2	0.1	-
Liabilities						
Currency deposits	(205,648.5)	(86,125.0)	41.9	(241,604.6)	(96,421.0)	39.9
Gold deposits	(13,598.4)	(10,454.9)	76.9	(11,333.4)	(8,946.8)	78.9
Derivative financial instruments	(1,599.6)	(9.0)	0.6	(1,455.4)	(8.8)	0.6

Main profit and loss items arising from transactions with related party customers

For the six months ended 30 September	2019			2018		
	Profit and loss total	Balance with related parties	%	Profit and loss total	Balance with related parties	%
SDR millions / percentages	SDR millions	SDR millions	%	SDR millions	SDR millions	%
Interest income	138.6	5.4	3.9	113.5	5.1	4.5
Interest expense	(226.7)	(139.9)	61.7	(214.6)	(149.4)	69.6
Net income on financial assets and liabilities at fair value through profit and loss						
Financial assets	1,149.2	73.3	6.4	483.3	14.6	3.0
Financial liabilities	(2,210.9)	(864.1)	39.1	(1,525.0)	(603.4)	39.6
Derivative financial instruments	1,453.4	43.9	3.0	1,486.1	26.9	1.8

11. Contingent liabilities

In the opinion of the Bank's Management, there were no significant contingent liabilities as at 30 September 2019 (31 March 2019: nil).

Capital adequacy

1. Capital adequacy framework

As an international financial institution that is overseen by a Board composed of Governors of major central banks and that has no national supervisor, the Bank is committed to maintaining its superior credit quality and financial strength, in particular in situations of financial stress.

The Bank assesses its capital adequacy on a continuous basis. Its capital planning process focuses on two elements: an economic capital framework and a financial leverage framework. The disclosures in this section relating to credit, market, operational and liquidity risk are based on the Bank's own assessment of capital adequacy derived in accordance with these two BIS frameworks.

Regulatory capital ratios are not used as indicators of BIS capital adequacy because key aspects of the business model for the BIS banking activities are not adequately captured. In the main, these relate to the high level of solvency targeted by the Bank as well as the way regulatory capital ratios reflect portfolio concentrations and interest rate risk in the banking book.

To facilitate comparability, the Bank has implemented a framework that is consistent with guidance issued by the Basel Committee on Banking Supervision (BCBS). Following this, the Bank discloses a Tier 1 capital ratio (Pillar 1), risk-weighted assets and more detailed related information. In addition, the Bank calculates for reference a Common Equity Tier 1 capital ratio, leverage ratio and Liquidity Coverage Ratio.

The Bank maintains a capital position substantially in excess of the regulatory minimum requirement in order to ensure its superior credit quality.

Effective 1 April 2019, the Bank updated its capital adequacy framework and related capital planning process. Where relevant, the comparative figures presented in these interim financial statements for 31 March 2019 have been restated to the new basis.

2. Economic capital

The Bank's economic capital methodology relates its risk-bearing capacity to the amount of economic capital needed to absorb potential losses arising from its exposures. Consistent with guidance from the BCBS, the risk-bearing capacity is defined as Common Equity Tier 1 capital which is based on components of the Bank's equity as set out in the following table.

Common Equity Tier 1 capital includes the profit and loss account. It is adjusted by the Bank's current estimate of the amount of the profit and loss account that will be paid as a dividend (the "Dividend adjustment"), to ensure that Common Equity Tier 1 capital includes only the component of the profit and loss account that is expected to be allocated to statutory reserves.

As at

SDR millions	30 September 2019	31 March 2019 ¹
Share capital	698.9	698.9
Statutory reserves per balance sheet	16,650.7	16,326.3
Less: shares held in treasury	(1.7)	(1.7)
Share capital and reserves	17,347.9	17,023.5
Securities revaluation account	327.1	135.1
Gold revaluation account	3,084.8	2,567.9
Re-measurement of defined benefit obligations	(242.6)	(238.3)
Other equity accounts	3,169.3	2,464.7
Expected loss	(53.3)	(34.0)
Intangible assets	(29.8)	(28.3)
Prudential adjustments	(83.1)	(62.3)
Profit and loss account	221.6	461.1
Dividend adjustment	(71.2)	(136.7)
Common Equity Tier 1 capital	20,584.5	19,750.3

¹ Restated to reflect the revised capital adequacy framework and related capital planning process.

As part of the capital planning process, Management allocates economic capital to risk categories within its risk-bearing capacity. Allocations are made to each category of financial risk (ie credit and market risk) as well as operational risk. Capital is also assigned to a minimum cushion of capital that is not utilised by risk categories ("minimum capital cushion") providing an additional margin of safety. The difference between its risk-bearing capacity and the total economic capital utilisation, the "available economic capital", is available for further risk taking.

Reflecting the high level of solvency targeted by the Bank, the economic capital framework measures economic capital to a 99.99% confidence level assuming a one-year horizon, except for FX settlement risk. The amount of economic capital set aside for FX settlement risk is based on an assessment by Management. The Bank's economic capital framework is subject to regular review and calibration.

The following table summarises the Bank's economic capital allocation and utilisation as well as the resulting available economic capital:

SDR millions	30 September 2019		31 March 2019 ¹	
	Allocation	Utilisation	Allocation	Utilisation
Insolvency and transfer risk	6,600.0	5,540.8	6,600.0	5,362.0
FX settlement risk	300.0	300.0	300.0	300.0
Credit risk	6,900.0	5,840.8	6,900.0	5,662.0
Market risk	4,200.0	3,671.3	4,200.0	3,455.0
Operational risk	1,100.0	1,100.0	1,100.0	1,100.0
Minimum capital cushion	3,087.7	3,087.7	2,962.3	2,962.3
Total economic capital (A)	15,287.7	13,699.8	15,162.3	13,179.3
Common Equity Tier 1 capital (B)		20,584.5		19,750.3
Available economic capital (B) - (A)		6,884.7		6,571.0

¹ Restated to reflect the revised capital adequacy framework and related capital planning process.

3. Financial leverage

The Bank complements its capital adequacy assessment with a prudently managed financial leverage framework. The Bank monitors its financial leverage using a ratio that compares the Bank's Common Equity Tier 1 capital with its total exposure. The exposure measure is supplemented by the inclusion of committed and uncommitted facilities, and pension fund assets.

The following table shows the calculation of the Bank's financial leverage ratio:

SDR millions	30 September 2019	31 March 2019 ¹
Common Equity Tier 1 capital (A)	20,584.5	19,750.3
Total balance sheet assets	269,636.4	291,095.6
Derivatives	2,444.3	2,874.0
Securities purchased under resale agreements	4.5	-
Committed and uncommitted facilities	4,060.2	3,897.4
Pension fund assets	1,193.3	1,164.3
Exposure adjustments	7,702.3	7,935.7
Total BIS exposure (B)	277,338.7	299,031.3
BIS leverage ratio (A) / (B)	7.4%	6.6%

¹ Restated to reflect the revised capital adequacy framework and related capital planning process.

4. Capital ratios

The economic capital framework and the financial leverage framework described above are the main tools used for assessing the Bank's capital adequacy. Risk-weighted assets, minimum capital requirements and capital ratios are disclosed to facilitate comparability. Guidance issued by the BCBS includes several approaches for calculating risk-weighted assets and the corresponding minimum capital requirements. In principle, the minimum capital requirements are determined by taking 8% of the risk-weighted assets.

For credit risk, the Bank has adopted the advanced internal ratings-based approach for the majority of its exposures. Under this approach, the risk weighting for a transaction is determined by the relevant Basel II risk weight function using the Bank's own estimates for key inputs. Expected loss is calculated for credit risk exposures subject to the advanced internal ratings-based approach and is calculated at the balance sheet date. In accordance with the requirements of the Basel frameworks, the expected loss is compared with write-offs, if applicable, and any shortfall is deducted from the Bank's Tier 1 capital. For securitisation exposures and relevant other assets, the Bank has adopted the standardised approach. Under this approach, risk weightings are mapped to exposure types.

Risk-weighted assets for market risk are derived following an internal models approach. For operational risk, the advanced measurement approach is used. Both these approaches rely on value-at-risk (VaR) methodologies.

More details on the assumptions underlying the calculations are provided in the sections on credit risk, market risk and operational risk.

A. Tier 1 capital ratio

The following table summarises the relevant exposure types and approaches as well as the risk-weighted assets and related minimum capital requirements for credit risk, market risk and operational risk under the Basel II framework:

As at	Approach used	30 September 2019			31 March 2019		
		Amount of exposure	Risk-weighted assets	Minimum capital requirement	Amount of exposure	Risk-weighted assets	Minimum capital requirement
SDR millions		(A)	(B)		(A)	(B)	
Credit risk							
Exposure to sovereigns, banks and corporates	Advanced internal ratings-based approach, where (B) is derived as (A) x 8%	183,611.6	22,498.5	1,799.9	204,923.0	17,154.2	1,372.3
Securitisation exposures and other assets	Standardised approach, where (B) is derived as (A) x 8%	314.5	237.3	19.0	316.2	221.4	17.7
Market risk							
Exposure to foreign exchange risk and gold price risk	Internal models approach, where (A) is derived as (B) / 8%	-	7,901.4	632.1	-	6,812.1	545.0
Operational risk							
	Advanced measurement approach, where (A) is derived as (B) / 8%	-	8,882.1	710.6	-	10,031.1	802.5
Total		39,519.3	3,161.6		34,218.8	2,737.5	

The capital ratio measures capital adequacy by comparing the Bank's Tier 1 capital with its risk-weighted assets. The Tier 1 capital ratio, consistent with the Basel II framework, is provided in the following table:

As at

SDR millions	30 September 2019	31 March 2019
Share capital and reserves	17,347.9	17,023.5
Re-measurement of defined benefit obligations	(242.6)	(238.3)
Negative securities revaluation account	-	-
Tier 1 capital	17,105.3	16,785.2
Expected loss	(53.3)	(34.0)
Tier 1 capital net of expected loss (A)	17,052.0	16,751.2
Total risk-weighted assets (B)	39,519.3	34,218.8
Tier 1 capital ratio (A) / (B)	43.1%	49.0%

B. Common Equity Tier 1 capital ratio

To facilitate comparability, information on risk-weighted assets and related minimum capital requirements calculated under the Basel III framework is provided in the following table. Credit risk-weighted assets differ, mainly due to the asset value correlation multiplier for large financial institutions. Relating to market risk, Basel III risk-weighted assets are calculated as the sum of the Basel II market risk-weighted assets (presented in the previous section) and market risk-weighted assets derived from a stressed VaR.

	As at	Approach used	30 September 2019			31 March 2019		
			Amount of exposure	Risk-weighted assets (A)	Minimum capital requirement (B)	Amount of exposure	Risk-weighted assets (A)	Minimum capital requirement (B)
<i>SDR millions</i>								
Credit risk								
Exposure to sovereigns, banks and corporates	Advanced internal ratings-based approach, where (B) is derived as (A) x 8%	183,611.6	26,856.7	2,148.5	204,923.0	20,111.3	1,608.9	
Securitisation exposures and other assets	Standardised approach, where (B) is derived as (A) x 8%	314.5	237.3	19.0	316.2	221.4	17.7	
Market risk								
Exposure to foreign exchange risk and gold price risk	Internal models approach, where (A) is derived as (B) / 8%	-	25,467.7	2,037.4	-	22,037.9	1,763.0	
Operational risk								
	Advanced measurement approach, where (A) is derived as (B) / 8%	-	8,882.1	710.6	-	10,031.1	802.5	
Total			61,443.8	4,915.5		52,401.7	4,192.1	

The Common Equity Tier 1 capital ratio calculated under the Basel III framework relates the Bank's Common Equity Tier 1 capital to the above risk-weighted assets, as set out in the following table:

	As at	<i>SDR millions</i>	30 September 2019		31 March 2019 ¹	
			Total Common Equity Tier 1 capital (A)	Total risk-weighted assets (B)	20,584.5	19,750.3
Total Common Equity Tier 1 capital (A)			20,584.5	19,750.3		
Total risk-weighted assets (B)			61,443.8	52,401.7		
Common Equity Tier 1 capital ratio (A) / (B)			33.5%	37.7%		

¹ Restated to reflect the revised capital adequacy framework and related capital planning process.

Risk management

1. Risks faced by the Bank

The Bank supports its customers, predominantly central banks, monetary authorities and international financial institutions, in the management of their reserves and related financial activities.

Banking activities form an essential element of meeting the Bank's objectives and ensure its financial strength and independence. The BIS engages in banking activities that are customer-related as well as activities that are related to the investment of its shareholders' equity, each of which may give rise to financial risk comprising credit risk, market risk and liquidity risk. The Bank is also exposed to operational risk.

Within the risk frameworks defined by the Board of Directors, the Management of the Bank has established risk management policies designed to ensure that risks are identified, appropriately measured and controlled as well as monitored and reported.

2. Credit risk

Credit risk arises because a counterparty may fail to meet its obligations in accordance with the agreed contractual terms and conditions. A financial asset is considered past due when a counterparty fails to make a payment on the contractual due date.

The Bank manages credit risk within a framework and policies set by the Board of Directors and Management. These are complemented by more detailed guidelines and procedures at the level of the independent risk management function.

A. Credit risk assessment

Credit risk is continuously controlled at both a counterparty and an aggregated level. The independent risk management function performs individual counterparty credit assessments following a well defined internal rating process. As part of this process, counterparty financial statements and market information are analysed. The rating methodologies depend on the nature of the counterparty. Based on the internal rating and specific counterparty features, the Bank sets a series of credit limits covering individual counterparties and countries. Internal ratings are assigned to all counterparties. In principle, the ratings and related limits are reviewed at least annually. The main assessment criterion in these reviews is the ability of the counterparties to meet interest and principal repayment obligations in a timely manner.

Credit risk limits at the counterparty level are approved by the Bank's Management and fit within a framework set by the Board of Directors.

On an aggregated level, credit risk, including default and country transfer risk, is measured, monitored and controlled based on the Bank's economic capital calculation for credit risk. To calculate economic capital for credit risk, the Bank uses a portfolio VaR model. Management limits the Bank's overall exposure to credit risk by allocating an amount of economic capital to credit risk.

B. Default risk

The following tables show the exposure of the Bank to default risk, without taking into account any impairment allowance collateral held or other credit enhancements available to the Bank. Credit risk is mitigated through the use of collateral and legally enforceable netting or set-off agreements. The corresponding assets and liabilities are not offset on the balance sheet.

The exposures set out in the tables below are based on the gross carrying value of the assets on the balance sheet as categorised by sector, geographical region and credit quality. The gross carrying value is the fair value of the financial instruments, except in the case of very short-term financial instruments (sight and notice accounts) and gold. Provisions for estimated credit losses on instruments valued at amortised cost are not included in the exposure amounts. Commitments are reported at their notional amounts. Gold and gold loans exclude gold bar assets held in custody, and accounts receivable and other assets do not include unsettled liabilities issued, because these items do not represent credit exposures of the Bank.

The vast majority of the Bank's assets are invested in sight accounts at central banks, or in securities issued by governments and financial institutions rated A- or above by at least one of the major external credit assessment institutions. Limitations on the number of high-quality counterparties in these sectors mean that the Bank is exposed to single-name concentration risk.

Default risk by asset class and issuer type

The following tables show the exposure of the Bank to default risk by asset class and issuer type, without taking into account any impairment loss allowance, collateral held or other credit enhancements available to the Bank. "Public sector" includes international and other public sector institutions.

As at 30 September 2019

SDR millions	Sovereign and central banks	Public sector	Banks	Corporate	Securitisation	Total
On-balance sheet exposure						
Cash and cash equivalents	44,668.9	401.6	118.0	-	-	45,188.5
Gold and gold loans	523.7	-	143.6	-	-	667.3
Securities purchased under resale agreements	6,408.9	-	35,949.9	19,965.3	-	62,324.1
Loans and advances	5,210.5	-	38,630.6	-	-	43,841.1
Government and other securities	62,223.5	9,332.4	8,502.6	9,085.0	117.5	89,261.0
Derivative financial instruments	114.4	14.6	2,561.1	0.3	-	2,690.4
Accounts receivable and other assets	4.9	1.2	38.2	9.5	-	53.8
Total on-balance sheet exposure	119,154.8	9,749.8	85,944.0	29,060.1	117.5	244,026.2
Commitments						
Undrawn unsecured facilities	220.1	-	-	-	-	220.1
Total commitments	220.1	-	-	-	-	220.1
Total exposure	119,374.9	9,749.8	85,944.0	29,060.1	117.5	244,246.3

As at 31 March 2019

SDR millions	Sovereign and central banks	Public sector	Banks	Corporate	Securitisation	Total
On-balance sheet exposure						
Cash and cash equivalents	60,154.6	539.3	62.5	–	–	60,756.4
Gold and gold loans	298.7	–	235.0	–	–	533.7
Securities purchased under resale agreements	6,325.9	–	37,525.7	19,052.8	–	62,904.4
Loans and advances	4,074.6	–	37,781.9	–	–	41,856.5
Government and other securities	72,284.0	10,072.9	6,353.8	8,226.4	118.5	97,055.6
Derivative financial instruments	120.7	4.4	2,438.4	1.4	–	2,564.9
Accounts receivable and other assets	4.0	2.0	60.5	6.2	–	72.7
Total on-balance sheet exposure	143,262.5	10,618.6	84,457.8	27,286.8	118.5	265,744.2
Commitments						
Undrawn secured facilities	216.2	–	–	–	–	216.2
Total commitments	216.2	–	–	–	–	216.2
Total exposure	143,478.7	10,618.6	84,457.8	27,286.8	118.5	265,960.4

Default risk by geographical region

The following tables represent the exposure of the Bank to default risk by asset class and geographical region, without taking into account any impairment loss allowance, collateral held or other credit enhancements available to the Bank. Exposures are allocated to regions based on the country of incorporation of each legal entity.

As at 30 September 2019

SDR millions	Africa and Europe	Asia-Pacific	Americas	International institutions	Total
On-balance sheet exposure					
Cash and cash equivalents	18,085.5	26,670.8	30.9	401.3	45,188.5
Gold and gold loans	667.3	–	–	–	667.3
Securities purchased under resale agreements	50,521.3	1,358.7	10,444.1	–	62,324.1
Loans and advances	29,959.7	8,776.3	5,105.1	–	43,841.1
Government and other securities	28,045.8	35,455.8	22,266.9	3,492.5	89,261.0
Derivative financial instruments	2,165.2	380.9	130.8	13.5	2,690.4
Accounts receivable and other assets	48.8	2.0	1.8	1.2	53.8
Total on-balance sheet exposure	129,493.6	72,644.5	37,979.6	3,908.5	244,026.2
Commitments					
Undrawn unsecured facilities	–	220.1	–	–	220.1
Total commitments	–	220.1	–	–	220.1
Total exposure	129,493.6	72,864.6	37,979.6	3,908.5	244,246.3

As at 31 March 2019

SDR millions	Africa and Europe	Asia-Pacific	Americas	International institutions	Total
On-balance sheet exposure					
Cash and cash equivalents	38,473.0	21,707.4	36.7	539.3	60,756.4
Gold and gold loans	533.7	-	-	-	533.7
Securities purchased under resale agreements	49,981.1	2,925.8	9,997.5	-	62,904.4
Loans and advances	30,049.4	6,549.8	5,257.3	-	41,856.5
Government and other securities	26,560.7	41,508.5	23,809.9	5,176.5	97,055.6
Derivative financial instruments	1,916.4	360.9	283.7	3.9	2,564.9
Accounts receivable and other assets	69.2	1.3	0.2	2.0	72.7
Total on-balance sheet exposure	147,583.5	73,053.7	39,385.3	5,721.7	265,744.2
Commitments					
Undrawn unsecured facilities	-	216.2	-	-	216.2
Total commitments	-	216.2	-	-	216.2
Total exposure	147,583.5	73,269.9	39,385.3	5,721.7	265,960.4

Default risk by counterparty / issuer rating

The following tables show the exposure of the Bank to default risk by class of financial asset and counterparty / issuer rating, without taking into account any impairment allowance, collateral held or other credit enhancements available to the Bank. The ratings shown reflect the Bank's internal ratings expressed as equivalent external ratings.

As at 30 September 2019

SDR millions	AAA	AA	A	BBB	BB and below	Unrated	Total
On-balance sheet exposure							
Cash and cash equivalents	16,246.8	2,085.5	26,732.1	124.0	0.1	-	45,188.5
Gold and gold loans	-	523.7	143.6	-	-	-	667.3
Securities purchased under resale agreements	-	26,374.2	29,137.6	6,812.3	-	-	62,324.1
Loans and advances	2,785.2	359.8	37,798.7	472.1	2,425.3	-	43,841.1
Government and other securities	5,362.1	35,227.0	41,864.9	6,807.0	-	-	89,261.0
Derivative financial instruments	-	56.0	2,549.5	63.1	9.9	11.9	2,690.4
Accounts receivable and other assets	37.5	0.6	0.9	1.7	1.9	11.2	53.8
Total on-balance sheet exposure	24,431.6	64,626.8	138,227.3	14,280.2	2,437.2	23.1	244,026.2
Commitments							
Undrawn unsecured facilities	-	-	-	220.1	-	-	220.1
Total commitments	-	-	-	220.1	-	-	220.1
Total exposure	24,431.6	64,626.8	138,227.3	14,500.3	2,437.2	23.1	244,246.3

As at 31 March 2019

SDR millions	AAA	AA	A	BBB	BB and below	Unrated	Total
On-balance sheet exposure							
Cash and cash equivalents	31,969.6	6,788.7	21,869.9	128.2	–	–	60,756.4
Gold and gold loans	–	298.7	235.0	–	–	–	533.7
Securities purchased under resale agreements	–	25,378.6	30,700.4	6,825.4	–	–	62,904.4
Loans and advances	1,692.1	929.0	36,384.0	468.9	2,382.5	–	41,856.5
Government and other securities	8,117.4	37,311.3	46,829.7	4,797.2	–	–	97,055.6
Derivative financial instruments	–	37.8	2,429.0	87.5	7.1	3.5	2,564.9
Accounts receivable and other assets	0.2	0.6	31.6	29.3	0.5	10.5	72.7
Total on-balance sheet exposure	41,779.3	70,744.7	138,479.6	12,336.5	2,390.1	14.0	265,744.2
Commitments							
Undrawn unsecured facilities	–	–	–	216.2	–	–	216.2
Total commitments	–	–	–	216.2	–	–	216.2
Total exposure	41,779.3	70,744.7	138,479.6	12,552.7	2,390.1	14.0	265,960.4

C. Credit risk mitigation

Netting

Netting agreements give the Bank a legally enforceable right to net transactions with counterparties under potential future conditions, notably an event of default. Such master netting or similar agreements apply to counterparties with which the Bank conducts most of its derivative transactions, as well as to counterparties used for repurchase and reverse repurchase agreement transactions. Where required, netting is applied when determining the amount of collateral to be requested or provided, but the Bank does not typically settle assets and liabilities on a net basis during the normal course of business. As such, the amounts shown on the Bank's balance sheet are the gross amounts.

Collateral

The Bank mitigates credit risk by requiring counterparties to provide collateral. The Bank receives collateral in respect of most derivative contracts and reverse repurchase agreements and for advances made under collateralised facility agreements. During the term of these transactions, further collateral may be called or collateral may be released based on the movements in value of both the underlying instrument and the collateral that has been received. The Bank is required to provide collateral in respect of repurchase agreements and may provide collateral in respect of some derivative contracts.

For derivative contracts and reverse repurchase agreements, the Bank accepts as collateral high-quality sovereign, state agency and supranational securities and, in a limited number of cases, cash. For advances made under collateralised facility agreements, collateral accepted includes currency deposits with the Bank, units in the BIS Investment Pools and gold.

Under the terms of its collateral arrangements, the Bank is permitted to sell ("re-hypothecate") collateral received on derivative contracts and reverse repurchase agreements, but upon expiry of the transaction must return equivalent financial instruments to the counterparty. At 30 September 2019, the Bank had not lent out any of the collateral it held (31 March 2019: nil).

The fair value of collateral held which the Bank had the right to sell was:

As at

<i>SDR millions</i>	30 September 2019	31 March 2019
Collateral held in respect of:		
Derivatives	1,013.2	848.9
Securities purchased under resale agreements	30,238.2	43,421.5
Total	31,251.4	44,270.4

Financial assets and liabilities subject to netting or collateralisation

The tables below show the categories of assets and liabilities which are either subject to collateralisation, or for which netting agreements would apply under potential future conditions such as the event of default of a counterparty.

The amount of collateral required is usually based on valuations performed on the previous business day, whereas the Bank's balance sheet reflects the valuations of the reporting date. Due to this timing difference, the valuation of collateral can be higher than the valuation of the underlying contract in the Bank's balance sheet. The amount of the collateral obtained is also impacted by thresholds, minimum transfer amounts and valuation adjustments ("haircuts") specified in the contracts. In these tables, the mitigating effect of collateral has been limited to the balance sheet value of the underlying net asset.

For the purpose of this disclosure, the amounts of financial instruments received or pledged as collateral presented have been capped by the relevant netting agreement so as not to exceed the net amount of financial assets or liabilities presented on the balance sheet; i.e., over-collateralisation, where it exists, is not reflected in the table.

<i>As at 30 September 2019</i>	<i>Effect of risk mitigation</i>					<i>Analysed as:</i>	
	Gross carrying amount as per balance sheet	Adjustments for settlement date effects	Enforceable netting agreements	Collateral (received) / provided (limited to balance sheet value)	Exposure after risk mitigation	Amounts not subject to risk mitigation agreements	Amounts subject to risk mitigation agreements
<i>SDR millions</i>							
Financial assets							
Securities purchased under resale agreements	62,324.1	(25,853.0)	-	(36,466.6)	4.5	-	4.5
Advances	2,425.3	-	-	(2,425.3)	-	-	-
Derivative financial instruments	2,690.4	-	(1,156.7)	(1,012.5)	521.2	42.6	478.6
Financial liabilities							
Derivative financial instruments ¹	(1,599.6)	-	1,156.7	50.7	-	-	-

¹ The Bank has pledged as collateral a total of SDR 105.1 million of its debt securities to fulfil the collateral requirements for the derivative contracts. The counterparties have an obligation to return these securities to the Bank.

As at 31 March 2019

	SDR millions	Effect of risk mitigation				Analysed as:	
		Gross carrying amount as per balance sheet	Adjustments for settlement date effects	Enforceable netting agreements	Collateral (received) / provided (limited to balance sheet value)	Exposure after risk mitigation	Amounts not subject to risk mitigation agreements
Financial assets							
Securities purchased under resale agreements	62,904.4	(13,438.4)	-	(49,458.5)	7.5	-	7.5
Advances	2,382.5	-	-	(2,382.5)	-	-	-
Derivative financial instruments	2,564.9	-	(1,082.9)	(848.9)	633.1	46.0	587.1
Financial liabilities							
Securities sold under repurchase agreements	(549.1)	-	-	549.1	-	-	-
Derivative financial instruments	(1,455.4)	-	1,082.9	-	-	-	-

E. Minimum capital requirements for credit risk

Exposure to sovereigns, banks and corporates

For the calculation of risk-weighted assets for exposures to sovereigns, banks and corporates, the Bank has adopted an approach that is consistent with the advanced internal ratings-based approach.

As a general rule, under this approach risk-weighted assets are determined by multiplying the credit risk exposures with risk weights derived from the relevant Basel II risk weight function using the Bank's own estimates for key inputs. These estimates for key inputs are also relevant to the Bank's economic capital calculation for credit risk.

The credit risk exposure for a transaction or position is referred to as the exposure at default (EAD). The Bank determines the EAD as the notional amount of on- and off-balance sheet credit exposures, except for securities and derivative contracts. The EAD for derivatives is calculated using an approach consistent with the internal models method proposed under the Basel II framework. In line with this methodology, the Bank calculates effective expected positive exposures that are then multiplied by a factor alpha as set out in the framework.

Key inputs to the risk weight function are a counterparty's estimated one-year probability of default (PD) as well as the estimated loss-given-default (LGD) and maturity for each transaction.

Due to the high credit quality of the Bank's investments and the conservative credit risk management process at the BIS, the Bank is not in a position to estimate PDs and LGDs based on its own default experience. The Bank calibrates each counterparty PD estimate through a mapping of internal rating grades to external credit assessments taking external default data into account. Similarly, LGD estimates are derived from external data. Where appropriate, these estimates are adjusted to reflect the risk-reducing effects of collateral obtained giving consideration to market price volatility, re-margining and revaluation frequency. With effect from March 2018, the LGD estimates for central bank deposits were lowered to better reflect their risk characteristics, thereby reducing the estimated capital utilisation. The recognition of the risk-reducing effects of collateral obtained for derivative contracts, reverse repurchase agreements and collateralised advances is accounted for in calculating the EAD.

The table below details the calculation of risk-weighted assets. The exposures are measured taking netting and collateral benefits into account. The total amount of exposures reported in the table as at 30 September 2019 includes SDR 63.9 million for interest rate contracts (31 March 2019: SDR 107.4 million)

and SDR 462.1 million for FX and gold contracts (31 March 2019: SDR 481.6 million). In line with the Basel II framework, the minimum capital requirement is determined as 8% of risk-weighted assets.

As at 30 September 2019

Internal rating grades expressed as equivalent external rating grades	Amount of exposure	Exposure-weighted PD %	Exposure-weighted average LGD %	Exposure-weighted average risk weight %	Risk-weighted assets
SDR millions / percentages	SDR millions				SDR millions
AAA	23,863.3	0.01	12.4	1.6	379.6
AA	44,329.1	0.03	38.9	11.8	5,230.7
A	107,651.4	0.06	42.8	12.8	13,725.9
BBB	7,751.9	0.21	56.0	40.6	3,146.1
BB and below	15.9	76.39	58.7	102.0	16.2
Total	183,611.6				22,498.5

As at 31 March 2019

Internal rating grades expressed as equivalent external rating grades	Amount of exposure	Exposure-weighted PD %	Exposure-weighted average LGD %	Exposure-weighted average risk weight %	Risk-weighted assets
SDR millions / percentages	SDR millions				SDR millions
AAA	41,353.6	0.01	8.9	1.3	544.7
AA	51,423.2	0.02	34.5	7.7	3,941.5
A	106,354.7	0.04	44.6	10.0	10,594.8
BBB	5,784.9	0.21	56.1	35.7	2,062.7
BB and below	6.6	5.02	58.7	159.8	10.5
Total	204,923.0				17,154.2

At 30 September 2019, the minimum capital requirement for credit risk related to exposures to sovereigns, banks and corporates was SDR 1,799.9 million (31 March 2019: SDR 1,372.3 million).

The following table summarises the impact of collateral arrangements on the amount of credit exposure after taking netting into account:

	Amount of exposure after taking netting into account	Benefits from collateral arrangements	Amount of exposure after taking into account netting and collateral arrangements
SDR millions			
As at 30 September 2019	242,395.0	58,783.4	183,611.6
As at 31 March 2019	264,828.8	59,905.8	204,923.0

Securitisation exposures

The Bank invests in securitisation exposures based on traditional, ie non-synthetic, securitisation structures. Given the scope of the Bank's activities, risk-weighted assets under the Basel II framework are determined according to the standardised approach for securitisation. Under this approach, external credit assessments of the securities are used to determine the relevant risk weights. External credit assessment institutions used for this purpose are Moody's Investors Service, Standard & Poor's and Fitch Ratings. Risk-weighted assets are then derived as the product of the market values of the exposures and the associated risk weights. In line with the Basel II framework, the minimum capital requirement is determined as 8% of risk-weighted assets.

The following table shows the Bank's investments in securitisation analysed by type of securitised assets:

As at 30 September 2019

SDR millions	External rating	Amount of exposures	Risk weight	Risk-weighted assets
Securities backed by other receivables (government-sponsored)	AAA	117.5	20%	23.5
Securities backed by mortgages		1.5	1250%	18.3
Total		119.0		41.8

As at 31 March 2019

SDR millions	External rating	Amount of exposures	Risk weight	Risk-weighted assets
Securities backed by other receivables (government-sponsored)	AAA	118.5	20%	23.7
Total		118.5		23.7

At 30 September 2019, the minimum capital requirement for securitisation exposures was SDR 3.3 million (31 March 2019: SDR 1.9 million).

3. Market risk

The Bank is exposed to market risk through adverse movements in market prices. The main components of the Bank's market risk are gold price risk, interest rate risk and foreign exchange risk. The Bank measures market risk and calculates economic capital based on a VaR methodology using a Monte Carlo simulation technique. Risk factor volatilities and correlations are estimated, subject to an exponential weighting scheme, over a six-year observation period. Furthermore, the Bank computes sensitivities to certain market risk factors.

In line with the Bank's objective of maintaining its superior credit quality, economic capital is measured at the 99.99% confidence level assuming a one-year holding period. The Bank calculates the economic capital utilisation for market risk on the basis of a stressed market data set. The Bank's Management manages market risk economic capital usage within a framework set by the Board of Directors. VaR limits are supplemented by operating limits.

To ensure that models provide a reliable measure of potential losses over the one-year time horizon, the Bank has established a comprehensive regular backtesting framework, comparing daily performance with corresponding VaR estimates. The results are analysed and reported to Management.

The Bank also supplements its market risk measurement based on VaR modelling and related economic capital calculations with a series of stress tests. These include severe historical scenarios, adverse hypothetical macroeconomic scenarios and sensitivity tests of gold price, interest rate and foreign exchange rate movements.

A. Gold price risk

Gold price risk is the exposure of the Bank's financial condition to adverse movements in the price of gold.

The Bank is exposed to gold price risk principally through its holdings of gold investment assets. These gold investment assets are held in custody or placed on deposit with commercial banks. At 30 September 2019, the Bank's net gold investment assets were 102 tonnes with a value of SDR 3,587.6 million (31 March 2019: 102 tonnes, SDR 3,069.8 million), approximately 17% of its equity (31 March 2019: 15%). The Bank sometimes also has small exposures to gold price risk arising from its banking activities with central and commercial

banks. Gold price risk is measured within the Bank's VaR methodology, including its economic capital framework and stress tests.

B. Interest rate risk

Interest rate risk is the exposure of the Bank's financial condition to adverse movements in interest rates including credit spreads. The Bank is exposed to interest rate risk through the interest-bearing assets relating to the management of its equity held in its investment portfolios and investments relating to its banking portfolios. The investment portfolios are managed using a fixed-duration benchmark of bonds.

The Bank measures and monitors interest rate risk using a VaR methodology and sensitivity analyses taking into account movements in relevant money market rates, government bond yields, swap rates and credit spreads.

The following tables show the impact on the Bank's equity of a 1% upward shift in the relevant yield curve per time band:

As at 30 September 2019

SDR millions	Up to 6 months	6 to 12 months	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	Over 5 years	Total
Euro	(1.8)	(9.5)	(28.5)	(39.0)	(47.4)	(32.3)	(7.7)	(166.2)
Japanese yen	25.7	0.2	-	0.1	-	-	-	26.0
Pound sterling	1.0	(2.6)	(5.8)	(11.3)	(15.5)	(7.4)	(0.2)	(41.8)
Renminbi	(1.1)	(3.7)	(7.8)	(2.0)	(11.4)	(14.0)	(15.3)	(55.3)
Swiss franc	8.6	(0.2)	(0.5)	(0.3)	(0.2)	(0.5)	(2.9)	4.0
US dollar	(12.6)	(15.7)	(9.7)	(26.0)	(34.3)	(22.4)	(195.9)	(316.6)
Other currencies	(0.3)	0.4	(0.9)	(0.9)	(1.0)	(1.0)	(0.2)	(3.9)
Total	19.5	(31.1)	(53.2)	(79.4)	(109.8)	(77.6)	(222.2)	(553.8)

As at 31 March 2019

SDR millions	Up to 6 months	6 to 12 months	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	Over 5 years	Total
Euro	(0.3)	(8.3)	(32.4)	(38.5)	(39.8)	(26.9)	(21.0)	(167.2)
Japanese yen	28.2	0.3	(0.1)	(0.2)	0.2	-	-	28.4
Pound sterling	(1.4)	(1.5)	(5.6)	(16.3)	(14.1)	(5.7)	-	(44.6)
Renminbi	(0.7)	(2.7)	(9.0)	(3.2)	(6.6)	(10.3)	(23.6)	(56.1)
Swiss franc	15.9	(0.1)	(0.5)	(0.5)	(0.3)	(0.4)	(3.2)	10.9
US dollar	(3.7)	(9.5)	(11.4)	(23.0)	(38.4)	(43.0)	(170.7)	(299.7)
Other currencies	0.6	(0.1)	-	0.4	(0.2)	-	-	0.7
Total	38.6	(21.9)	(59.0)	(81.3)	(99.2)	(86.3)	(218.5)	(527.6)

C. Foreign exchange risk

The Bank's functional currency, the SDR, is a composite currency comprising fixed amounts of USD, EUR, JPY, GBP and renminbi. Currency risk is the exposure of the Bank's financial condition to adverse movements in exchange rates. The Bank is exposed to foreign exchange risk primarily through the assets relating to the management of its equity. The Bank is also exposed to foreign exchange risk through managing its customer deposits and through acting as an intermediary in foreign exchange transactions. The Bank reduces its foreign exchange exposures by matching the relevant assets to the constituent currencies of the SDR on a regular basis, and by limiting currency exposures arising from customer deposits and foreign exchange transaction intermediation.

Minimum capital requirements for market risk

For the calculation of minimum capital requirements for market risk under the Basel II framework, the Bank has adopted a banking book approach consistent with the scope and nature of its business activities.

Consequently, market risk-weighted assets are determined for gold price risk and foreign exchange risk, but not for interest rate risk. The related minimum capital requirement is derived using the VaR-based internal models method. Under this method, VaR calculations are performed using the Bank's VaR methodology, assuming a 99% confidence level and a 10-day holding period.

The actual minimum capital requirement is derived as the higher of the VaR on the calculation date and the average of the daily VaR measures on each of the preceding 60 business days (including the calculation date) subject to a multiplication factor of three plus a potential add-on depending on backtesting results. For the period under consideration, the number of backtesting outliers observed remained within the range where no add-on is required. The following table summarises the market risk development relevant to the calculation of minimum capital requirements and the related risk-weighted assets over the reporting period:

As at	30 September 2019			31 March 2019		
	VaR	Risk-weighted assets (A)	Minimum capital requirement (B)	VaR	Risk-weighted assets (A)	Minimum capital requirement (B)
<i>SDR millions</i>						
Market risk, where (A) is derived as (B) / 8%	210.7	7,901.4	632.1	181.7	6,812.1	545.0

4. Operational risk

Operational risk is defined by the Bank as the risk of financial loss, or damage to the Bank's reputation, or both, resulting from one or more risk causes, as outlined below:

- Human factors: insufficient personnel, lack of requisite knowledge, skills or experience, inadequate training and development, inadequate supervision, loss of key personnel, inadequate succession planning, or lack of integrity or ethical standards.
- Failed or inadequate processes: a process is poorly designed or unsuitable, or is not properly documented, understood, implemented, followed or enforced.
- Failed or inadequate systems: a system is poorly designed, unsuitable or unavailable, or does not operate as intended.
- External events: the occurrence of an event having an adverse impact on the Bank but outside its control.

Operational risk includes legal risk, but excludes strategic risk.

The Bank's operational risk management framework, policies and procedures comprise the management and measurement of operational risk, including the determination of the relevant key parameters and inputs, business continuity planning and the monitoring of key risk indicators.

The Bank has established a procedure of immediate reporting for operational risk-related incidents. The Operational Risk Management unit develops action plans with the respective units and follows up on their implementation on a regular basis.

For the measurement of operational risk economic capital and operational risk-weighted assets, the Bank has adopted a VaR approach using a Monte Carlo simulation technique that is consistent with the advanced measurement approach proposed under the Basel II framework. In line with the assumptions of the Basel II framework, the quantification of operational risk does not take reputational risk into account. Internal and external loss data, scenario estimates and control self-assessments to reflect changes in the business and control environment of the Bank are key inputs in the calculations. In quantifying its operational risk, the Bank has reviewed parts of its quantification methodology during the reporting period to take into account the protection it may obtain from selected insurance coverage.

Minimum capital requirements for operational risk

In line with the key parameters of the Basel II framework, the calculation of the minimum capital requirement for operational risk is determined assuming a 99.9% confidence level and a one-year time horizon. The following table shows the minimum capital requirements for operational risk, and the related risk-weighted assets:

As at	30 September 2019			31 March 2019		
	VaR	Risk-weighted assets	Minimum capital requirement	VaR	Risk-weighted assets	Minimum capital requirement
SDR millions	(A)	(B)		(A)	(B)	
Operational risk, where (A) is derived as (B) / 8%	710.6	8,882.1	710.6	802.5	10,031.1	802.5

5. Liquidity risk

Liquidity risk arises when the Bank may not be able to meet expected or unexpected current or future cash flows and collateral needs without affecting its daily operations or its financial condition.

Outstanding balances in the currency and gold deposits from central banks, international organisations and other public institutions are the key drivers of the size of the Bank's balance sheet. The Bank is exposed to funding liquidity risk mainly because of the short-term nature of its deposits and because it undertakes to repurchase at fair value certain of its currency deposit instruments at one or two business days' notice. In line with the Bank's objective to maintain a high level of liquidity, it has developed a liquidity management framework, including a ratio, based on conservative assumptions for estimating the liquidity available and the liquidity required.

Liquidity ratio

The Bank has adopted a liquidity risk framework taking into account regulatory guidance issued by the Basel Committee on Banking Supervision related to the Liquidity Coverage Ratio (LCR). The framework is based on a liquidity ratio that compares the Bank's available liquidity with a liquidity requirement over a one-month time horizon assuming a stress scenario. In line with the Basel III liquidity framework, the underlying stress scenario combines an idiosyncratic and a market crisis. However, the liquidity ratio differs in construction from the LCR to reflect the nature and scope of the BIS banking activities – in particular, the short-term nature of the Bank's assets and liabilities. Within the Bank's liquidity framework, the Board of Directors has set a limit for the Bank's liquidity ratio which requires the liquidity available to be at least 100% of the potential liquidity requirement.

The liquidity available is determined as the cash inflow from financial instruments over a one-month horizon, along with potential additional liquidity which could be generated from the disposal of highly liquid securities, or by entering into sale and repurchase agreements for a part of the Bank's remaining unencumbered high-quality liquid securities. In calculating the amount of potential additional liquidity, an assessment is performed to identify securities which are of high credit quality and highly liquid. This is followed by a projection of the amounts that could reasonably be generated through selling these securities or entering into repurchase transactions.

The Bank determines the liquidity required as the sum of the cash outflow from financial instruments over a one-month horizon, the estimated early withdrawal of currency deposits, and the estimated drawings of undrawn facilities. As regards currency deposits, it is assumed that all deposits that mature within the time horizon are not rolled over and that a proportion of non-maturing currency deposits is withdrawn from the Bank prior to contractual maturity. At 30 September 2019, the estimated outflow of currency deposits in response to the stress scenario amounted to 48.3% (31 March 2019: 50.4%) of the total stock of currency deposits. Moreover, it is assumed that undrawn facilities committed by the Bank would be fully drawn by customers, along with a proportion of undrawn uncommitted facilities.

The following table shows the Bank's estimated liquidity available, the liquidity required and the resulting liquidity ratio:

As at

SDR billions	30 September 2019	31 March 2019
Liquidity available		
Estimated cash inflows	92.3	127.8
Estimated liquidity from sales of highly liquid securities	32.0	40.9
Estimated sale and repurchase agreements	5.6	2.8
Total liquidity available (A)	129.9	171.5
Liquidity required		
Estimated withdrawal of currency deposits	96.7	118.6
Estimated drawings of facilities	2.2	2.1
Estimated other outflows	1.0	0.1
Total liquidity required (B)	99.9	120.8
Liquidity ratio (A) / (B)	130.1%	142.1%

For reference, the Bank also calculates an LCR following the principles set out in the guidance issued by the BCBS. At 30 September 2019, the Bank's LCR stood at 164.2% (31 March 2019: 196.2%).