Risk Management Organisation

CONTROL BODIES

GENERAL MANAGEMENT RESPONSIBLE FOR GROUP RISKS

One of the Group Risks Division's responsibilities is to ensure that credit, market and operational risks are monitored and controlled. General Management is responsible for:

• Defining the Group's risk policy;

• Defining and managing the credit approval and monitoring processes;

• Implementing a risk control system relating to credit, market and operational risks.

General Management responsible for Group Risks comprises four units:

- Group Risk Management Division

- Loan Commitments Permanent Monitoring Division

- Loan Commitments Analysis Division

- Africa Counterparty Risk and Cross-Departmental Projects Division

GOVERNANCE BODIES

GROUP RISKS COMMITTEE

BMCE Bank of Africa Group's Risk Committee is a body reporting directly to BMCE Bank's Board of Directors whose remit extends to the Bank, its direct and indirect subsidiaries and other entities included within the Group's scope of consolidation.

The Group Risks Committee assists the Board of Directors in matters such as strategy and risk management. In particular, it ensures that overall risk policy is adapted to the risk profile of both the Bank and the Group, the degree of risk aversion, its systemic importance, its size and its capital base.

AUDIT AND INTERNAL CONTROL COMMITTEE

BMCE Bank of Africa Group's Audit and Internal Control Committee is a body reporting directly to BMCE Bank's Board of Directors whose remit extends to subsidiaries and other entities included within the Group's scope of consolidation.

The Group Audit and Internal Control Committee assists the Board of Directors in matters such as internal control, by ensuring that the existing internal control system and resources are:

• Consistent and compatible so as to be able to monitor and control risk at both the Bank and subsidiary levels and produce information required by regulatory authorities as part of a consolidated approach to Group monitoring;

• Adapted to the Bank's organisational structure as well as the activities of entities under the Bank's control;

• The financial information intended for the Board of Directors is reliable and accurate such that the legitimate interests of shareholders, depositors and other stakeholders are safeguarded;

• Examine the parent and consolidated financial statements prior to submitting them to the Board of Directors for approval.

GENERAL MANAGEMENT COMMITTEE

The General Management Committee is responsible for translating and monitoring the Group's corporate strategy into operational initiatives and measures.

This Committee, which meets weekly, is also responsible for steering the Bank's business, managing its internal control and risk management systems, monitoring HR and overseeing commercial, institutional and financial communications.

GROUP RISK STEERING AND MANAGEMENT COMMITTEE

The General Management Committee is responsible for translating and monitoring the Group's

The Group Risk Steering and Management Committee is a sub-committee of BMCE Bank of Africa Group's General Management Committee. It helps the latter manage and monitor, at the operational level:

• The Group's risk steering policy (BMCE Bank PLC and its direct and indirect subsidiaries);

• And ensures that the Group's activities comply with risk policies and the limits set.

The Committee ensures that risk steering policy relating to credit, market, country and operational risks is efficient and monitors the Group's risk profile to ensure that it is consistent with its risk appetite.

CREDIT COMMITTEES

Senior Credit Committee

The Senior Credit Committee reviews and approves, on a weekly basis, credit applications from customers of the Bank and of the Group within its delegated powers. Operating rules and powers differ depending on the level of risks incurred, as well as the nature of the Bank's credit portfolio segment in question – Business, Corporate or Personal & Professional Banking customers. The scope of the Credit Committee also covers Group entities.

This committee is chaired by the Bank's Chairman and Chief Executive Officer with the Group Executive Managing Director as Vice-Chairman. It is composed of senior managers of the Bank.

Regional Credit Committee

The delegated powers enjoyed by the Regional Credit Committee enable it to rule on counterparties at the regional level in accordance with the existing scheme of delegation.

LOAN COMMITMENTS MONITORING COMMITTEE

As part of its portfolio monitoring remit, the Loan Commitments Monitoring Committee (central CSE and regional CSE) meets on a monthly basis to follow up on the various initiatives to regularise, recover and clean-up accounts showing anomalies. The Committee also reviews customer dossiers that are eligible for downgrade and decides on what action to take.

CREDIT RISK

The Bank's credit division operates in accordance with the general credit policy approved by the Group's senior management. The Group's requirements in terms of ethics, reporting lines, compliance with procedures and discipline in risk analysis are guiding principles.

This general policy is further divided into specific policies and procedures depending on the character of specific operations or counterparties.

CREDIT APPROVAL PROCESS

General principles

The credit approval process across at every level of *BMCE Bank of Africa* Group is guided by the troika principle and is based on the following principles:

• The credit approval process is the same for all types of credit application in that it ensures that the troika principle (at least) is met. Therefore, at least 3 people, including at least one person from the Risk function, must approve any credit application except in a number of predetermined exceptional cases.

• After prior cross-examination, decisions are taken jointly by the Risk and Commercial functions with regard to dossiers assigned by delegation of powers at the local as well as central levels as part of a multi-level pyramid structure. Should both functions fail to find a consensus, the dossier may be referred to a higher hierarchical level which will act as potential arbiter.

• An escalation procedure exists (L+1) in the event of any disagreement between the Risk and Commercial functions.

Bodies

The following provides a summary overview of the credit approval process:

• Responsibility for putting together the credit application dossier is incumbent on the Commercial function due to it having a commercial relationship with the customer;

• A cross-examination of the credit application dossier is carried out by credit analysts from the Risk function;

• Decisions are taken jointly by the Risks and Commercial functions based on their respective levels of delegations of power;

• Responsibility for setting up the loan rests with the back-office, a body that is independent of the Risk and Commercial functions.

A choice of decision-making channels

To make the notification process more straightforward, each credit application made must adhere to the single decision principle.

Credit decisions are either taken by circulating the dossier or by holding a Credit Committee, via a manual or electronic process.

Delegation of powers

The credit decision-making process is based on a system of delegation of powers that derives from the powers granted by an entity's Board of Directors to employees or groups of employees, within the limits deemed appropriate.

Powers may be sub-delegated on the basis of the organisational structure, business volumes, products and risks.

Powers are delegated to employees on an intuitu personae basis as a function of their critical thinking capabilities, experience, personal and professional attributes and training.

Approval rules

Credit approval decisions are subject to review by the Troika or Credit Committees in accordance with the approval levels.

The existing credit delegation system defined the number of decision levels as follows:

• An initial 'local' level within each subsidiary;

• A 'hub' level (BoA Group and International Banking);

• A 'central' level within BMCE Bank.

Powers may be sub-delegated to the local level within the entity on the basis of the organisational structure, business volumes, products and risks.

The contents of a credit application dossier

Any application to set up a credit line must meet the product's eligibility criteria in accordance with each credit product's profile factsheet. Any credit decision is made on the basis of a standard credit application dossier, the format of which is defined in conjunction with the relevant Commercial and Risk functions and in coordination with Group Risks.

A credit application dossier is prepared for each counterparty or transaction to which the entity wishes to make a commitment or to which the entity has already made a commitment in the case of an annual review or a renewal on the basis of the documents provided by the customer as specified in the product checklists.

The documents checklist to be provided by the customer and the analysis framework are standard at Group level and are governed by the type of credit in question. The contents of a credit application dossier must provide decision-makers with the necessary qualitative and quantitative information and analysis to enable them to make an informed credit decision.

The Commercial function responsible for preparing the credit application dossier is also responsible for its contents.

The credit application dossier remains the sole reference document required to take a credit decision. It must therefore bear be properly signed and stamped to be valid at the requisite level of the responsibility chain.

SYSTEM FOR CONTROLLING AND MONITORING CREDIT RISK

The system for monitoring and steering credit risk provides second level control. It operates independently of monitoring carried out by commercial units on a daily basis.

The system may be adapted to the specific character of each subsidiary in concertation with the Group Risks Division.

The controls carried out by the Group Risks Division are primarily aimed at ensuring that the advanced alert system is efficient both in terms of risk management and the Commercial function being able to anticipate potential risks so that the Bank's loan portfolio is managed appropriately. The Group Risks Division, through the Loan Commitments Permanent Monitoring Division, also ensures that the Commercial function is properly monitored and alerts to any conspicuous shortcomings.

The main operational responsibilities of the Group Risks Division, as part of its remit for monitoring and steering credit risks, may be summarised as follows:

• Ensure a priori controls

• Ensure a posteriori controls

• Identify and monitor the portfolio of loan commitments according to a number of analytical criteria such as product type, maturity, beneficiary, business sector, branch, geographical zone etc.

• Set and monitor concentration limits

• Detect high-risk accounts and ensure that they are monitored

• Classify the non-performing loan portfolio according to regulatory criteria and recognise the appropriate provisions

• Conduct stress tests

• Produce and file regulatory reports and ensure internal steering.

STEERING THE PORTFOLIO OF LOAN COMMITMENTS

The portfolio of loan commitments of the Group and its entities is steered using a number of indicators of risk resulting when credit approval is given as well as those arising during the life of the loan.

Multi-criteria analysis of the loan portfolio is a way of controlling risks retrospectively. This consists of identifying and tracking all loan commitments of the Group and its entities based on a number of criteria such as products, maturities, customers, business groups, customer segments, counterparty ratings, asset categories (healthy and non-performing), business sectors, agencies, geographical areas, types of security etc. Multi-criteria analysis is a credit risk management tool.

The Credit Risks unit is responsible for carrying out multi-criteria analysis of the loan portfolio. It is also responsible for reporting on credit risks, both within the Group to the Risk Committees and to senior management, and externally, to regulators.

MONITORING HIGH-RISK ACCOUNTS

High-risk accounts represent a risk that is likely to subsequently increase and therefore result in a cost to the Bank. They consist of loan commitments which show either a visible deterioration in risk quality as measured against quantitative criteria or a potential deterioration in risk quality as measured against qualitative criteria. These accounts' loans commitments are rigorously monitored by the Bank's various entities.

High-risk accounts comprise:

• Debit balances on demand accounts for which no actual credit entry has been recorded over a period to cover at least the overdraft fees charged to these accounts as well as a significant portion of the said debit balances;

• Outstanding amortised loans that have not been settled within 30 days of their maturity date;

• Outstanding loans that are repayable by means of a single repayment and that have not been honoured within 30 days of their maturity date;

• Trade receivables discounted by the Bank and returned unpaid;

• Persistent overruns, beyond one month, by comparison with the authorisations granted. So as to avoid incurring any operational risks, however, the entities will monitor, on a weekly basis, the authorised overruns of a certain level (at the discretion of each local entity).

• Outstanding loans whose recovery may be potentially jeopardised by any of the following factors – a major structural financial imbalance, the counterparty's deterioration, events and disputes concerning the main shareholders (death, adjustment or liquidation ...) or a particularly difficult operating environment.

These criteria constitute the minimal conditions for detecting high-risk accounts.

The Commercial function, given its knowledge and daily monitoring of its relationships, together with Group Risks, may identify and classify any other account as being a high-risk account if they deem it necessary.

Assessment, intervention and the complementary nature of the relationship that exists between the Commercial and Risk functions are key to identifying the various criteria required for an account to be registered as high-risk.

Responsibility for monitoring these risks on a daily basis rests with the Commercial function. However, responsibility for detecting these high-risk accounts on a monthly basis rests with the Risk function. Detection is carried out on the basis of quantitative criteria extracted from IT applications and operating systems. As soon as the characteristics of these risks have been identified and confirmed as high-risk, the Risk function will request an explanation from the Commercial function. The latter will then use every possible means at its disposal to ensure that the loan is recovered.

LOAN CLASSIFICATION

After carrying out the monthly review of the Bank's portfolio and an analysis of high-risk accounts, each subsidiary reviews its regulatory loan classification as required by local regulatory requirements.

This review is carried out by the committees responsible for monitoring loan commitments on the recommendation of each entity's Risk function. The decisions taken by these committees are implemented by transferring these accounts from the "healthy" to the "non-performing, requires provisioning" category and subsequently monitoring them.

RATINGS SYSTEM

BMCE Bank SA has an internal ratings system covering several customer segments.

Ratings system's guiding principles

One and only one rating

A rating is attributed to each customer. Each customer is treated as a Group third party code. The ratings process is carried out for each Group third party code so that a third party has one and only one rating. BMCE Bank therefore ensures that one and only one rating is assigned to each assessed counterparty.

Ratings Integrity

In accordance with regulatory guidelines, ratings attributions and their periodic revisions must be carried out or approved by a party that does not directly benefit from the loan being approved. This concept of integrity when assigning a rating is a key aspect of the credit risk management charter, which seeks to encourage and ensure that the ratings process is truly independent.

Ratings Uniqueness

For each of the Bank's third parties, a specific code is assigned to each counterparty type. Each third party is therefore rated using a template corresponding to a benchmark counterparty. As a result, for each third party, which has a particular and therefore unique counterparty type, the appraisal is carried out with the help of a single ratings template, but with characteristic data that are specific to the counterparty in question. BMCE Bank is therefore able to ensure that the rating assigned to each counterparty is unique.

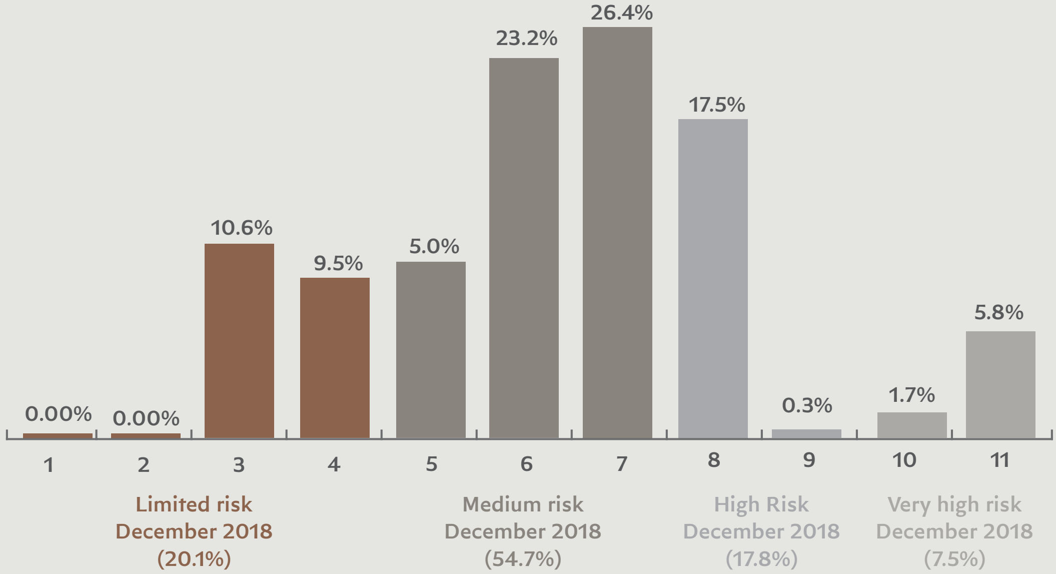
DESCRIPTION OF THE CHARACTERISTICS OF THE INTERNAL RATINGS MATRIX BY RISK CATEGORY

Ratings scale

Based on the ratings scale adopted by *BMCE Bank of Africa* Group, the final counterparty rating ranges from 1 to 11 :

	CATEGORY	CLASS	DEFINITION
Investment grade	Limited risk	1	Extremely stable short- and medium-term ; very stable long-term; solvent despite serious disruptions;
		2	Very stable short- and medium- term; stable long-term; sufficiently solvent despite persistently negative events;
		3	Solvent short- and medium-term despite significant difficulties; moderately negative developments can be withstood long-term;
		4	Very stable short-term; no expected change to threaten the loan in the coming year; sufficiently solid medium-term to be able to survive; long-term outlook still uncertain;
	Medium risk	5	Stable short-term; no expected change to threaten the loan in the coming year; can only withstand small negative developments medium-term;
		6	Ability limited to withstand unexpected negative developments;
		7	Ability very limited to withstand unexpected negative developments;
Sub-investment grade	High risk	8	Ability limited to repay interest and principal on time; any change in internal and external economic and commercial conditions will make it difficult to fulfil obligations;
		9	Incapable of repaying interest and principal on time; fulfilling obligations dependent on favourable internal and external commercial and economic conditions;
	Very high risk	10	Very high risk of default; incapable of repaying interest and principal on time; partial default in repayment of interest and capital;
		11	Total default in repayment of interest and capital.

Breakdown of loan commitments by risk category at 31 December 2018



SCORING SYSTEM FOR RETAIL CUSTOMERS

The scoring system for retail customers consists of statistically modelling defaulting retail customers and their risk behaviour.

A behavioural scoring matrix (Basel II standard) for customers in employment has been operational since 2013. The matrix is displayed in the Customer Relationship Management (CRM) system with additional remarks provided. It is updated on a daily basis.

A credit approval scoring matrix for retail customers with an instant loan employed by companies with whom the Bank has an arrangement has been modelled.

The Corporate ratings model is linked to the Retail Customer ratings model by the ratings model for company arrangements.

A decision-based credit approval system for consumer credit was introduced and implemented by the Bank in October 2018.

A scoring matrix for Moroccans living abroad was modelled, approved and rolled-out in 2017.

A behavioural ratings model for professional customers was finalised and developed in 2014. It was rolled out in 2015. The model was back-tested and readjusted in 2017.

A behavioural ratings model for SMEs was introduced and implemented at the end of 2017 and displayed in the Customer Relationship Management (CRM) system with scores ranging from A to K.

WARRANTIES

The Group receives various types of warranty as loan collateral. As a general rule, collateral requirements are governed by two factors: the type of credit requested and the quality of the counterparty.

The Group systematically mortgages all property which it has financed (housing loans and loans for property development) and requests that customers take out insurance cover.

Similarly, funding for public procurement of goods, capital equipment and business premises are systematically guaranteed by pledges on the items funded and insurance cover is also required.

In addition to these warranties, the Group generally strengthens its position by requesting personal guarantees from counterparties whenever it is deemed necessary, depending on the quality of the latter.

CONCENTRATION LIMITS

Credit risk management is based on a system in which a risk opinion and formal risk limits are attributed to strategic initiatives at the business line level, such as in the event of a new business or product launch. For *BMCE Bank of Africa* Group, the risk of credit risk concentration may result from exposure to:

- Individual counterparties
- Interest groups
- Counterparties from the same business sector.

INDIVIDUAL COUNTERPARTIES

The Group monitors individual concentrations at the parent and consolidated levels on a monthly basis. It closely monitors the commitments of its largest 10, 20 and 100 customers by commitment.

INTEREST GROUPS

Portfolio diversification by counterparty is monitored on a regular basis, particularly within the framework of the Group's individual concentration policies. Credit risk exposure to counterparties or groups of counterparties with relatively sizeable loans, of more than 5% of the Bank's capital, are specifically monitored, both on an individual and consolidated basis.

Furthermore, controlling major risks also ensures that the aggregate risk incurred for each beneficiary does not exceed 20% of the Group's net consolidated capital, as required by Moroccan banking industry regulations. *BMCE Bank of Africa* Group ensures that it complies with the concentration thresholds stipulated in the *Bank Al-Maghrib* directive

COUNTERPARTIES FROM THE SAME BUSINESS SECTOR

The chosen methodology for setting sector limits is based on a statistical model which includes historical default rates and the number of counterparties by business sector and by risk category -rating.

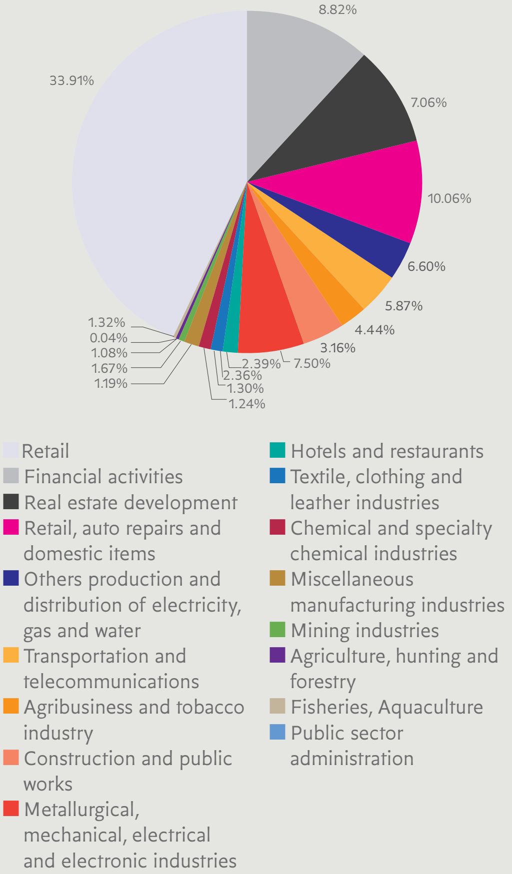
The objective is to model the probability of default by using appropriate econometric techniques and a dependent random variable whose value is derived from the number of default occurrences.

This procedure is based on the assumption that counterparties are independent and that the defaulting events are not correlated. The key concept underlying this methodology is the probability of default for a given counterparty. This probability is measured by using the rate of default of the rating-business sector pair.

The model also enables the Bank to identify priority sectors for credit expansion in the context of the Bank's development plan as well as bad loan experience by sector. This approach, adopted by the Group Risks Division, is complemented by back-testing the model every six months.

Sector-specific limits are reviewed every six months in consultation with commercial units and the Bank's Economic Intelligence Centre which provide operational experience as well as estimates of macroeconomic and industry growth. The opinions of these entities help to challenge and provide further confirmation of the model's suitability in a given economic context.

BREAKDOWN OF THE GROUP'S LOAN COMMITMENTS TO CUSTOMERS BY BUSINESS SECTOR AT 31 DECEMBER 2018 :



Conducting stress tests

BMCE Bank of Africa Group conducts half-yearly stress tests so as to evaluate the vulnerability of its loan portfolio in the event of a change in circumstances or deterioration in the quality of counterparties.

Stress tests are conducted in order to assess the Group's resilience in the face of unexpected, extreme events. Operationally, they consist of simulating scenarios in the event of default of a certain percentage of the Group's counterparties. The ultimate aim is to quantify the impact on provisions and therefore on prudential capital.

A review is conducted twice a year to ensure that the various scenarios chosen are appropriate. This assessment is conducted on the basis of anticipated goals for carrying out stress tests and each time that market conditions suggest that a potentially unfavourable change is likely to seriously impact the Group's ability to withstand it.

The Group Risk Steering and Management Committee and the Group Risks Committee are informed of the results of the stress tests.

LEVEL OF EXPOSURE TO COUNTERPARTY RISK BASED ON METHODS APPLIED TO OFF-BALANCED SHEET ITEMS

CREDIT RISK-WEIGHTED ASSETS	DEC 18
Type of Exposure	**Risk-Weighted Assets post-CRM**
Balance-sheet items	156 625 743
Off balance sheet items: financing commitments	4 358 746
Off balance sheet items : warranty commitments	10 241 650
Counterparty Risk: temporary disposals of securities relating to the bank portfolio	-
Counterparty Risk: temporary disposals of securities relating to the trading portfolio	98 280
Counterparty Risk: derivative products relating to the bank portfolio	-
Counterparty Risk: derivative products relating to the trading portfolio	381 731
Other assets/Other items	28 524 134
Settlement Risk	302 161
Total	**200 532 446**

MARKET RISK

Management of market risk at BMCE Bank of Africa Group adheres to regulatory standards as defined by supervisory authorities in application of best international management practices as defined by the Basel Accords.

Market transactional risk is defined as the risk of incurring losses on balance sheet and off-balance sheet positions as a result of fluctuations in market prices. For BMCE Bank of Africa Group, this type of risk encompasses:

- Interest rate risk ;
- Foreign currency risk ;
- Credit risk for market transactions.

FINANCIAL INSTRUMENTS MAPPING

The following table shows products traded as part of BMCE Bank of Africa Group's trading portfolio, mapped by risk factor :

Foreign exchange products	Change cash
	FX spot
	FX forwards
	FX derivatives
	FX swaps
Equity products	Equities
	Equity/index derivatives
	Equity mutual funds
Fixed income products	I- Corporate and interbank loans/ borrowings
	Fixed rate -MAD and foreign currencies-
	Floating rate -MAD and foreign currencies-
	II- Negotiable debt securities and other debt securities
	II-1 Sovereign securities
	Fixed rate -MAD-
	Floating rate -MAD and foreign currencies-
	II-2 Securities issued by credit institutions and companies
	Fixed rate -MAD-
	Floating rate -MAD and foreign currencies-
	III- Stock lending/borrowing
	Stock lending/borrowing
	Repos/Reverse repos
	IV- Interest rate derivatives
	Interest rate *swaps*
	Swap futures
	Forward Rate Agreement
	V- Fixed income mutual funds
	Money market mutual funds
	Bond mutual funds
Commodity derivatives and credit derivatives	Commodity *futures*
	Commodity *futures* and options
	Credit default swaps -CDS-
	Credit linked notes -CLN-

GOVERNANCE

The main contributors to BMCE Bank of Africa Group's market risk management policy are as follows:

• General Management, which implements market risk management strategies and policies approved by the Board of Directors;

• The Group Risks Committee, which defines Group market risk management policy and approves any change in steering risks in market operations implemented by any of the Group's entities;

• The Group Market Risks Committee, which ensures that the system for monitoring BMCE Bank of Africa Group's market risks is effective and consistent with policy for managing the Group's market risks;

• The Group Market Risks Department which, as a separate department from the Group's front-office, centralises management of BMCE Bank of Africa Group's market risk; this gives it maximum objectivity in steering market risks and in arbitrating between the different market activities;

• The Risk management units of BMCE Bank of Africa Group entities which ensure first level control of market activities within their own entities and report back to Group Risk Management;

• Internal Audit, which ensures implementation of market risk management policy and rigorous compliance with procedures.

MARKET RISK MANAGEMENT SYSTEM

BMCE Bank of Africa Group's market risk management system is structured around three main aspects:

• Limits ;

• Risk indicators ;

• Capital requirements.

LIMITS

Counterparty limits on market transactions

The approval process for counterparty limits and applications to overrun those limits in market transactions is governed within BMCE Bank of Africa Group via a system of delegation of powers within a framework of procedures specific to each counterparty type.

Limits are set beforehand for market transactions in accordance with a scheme of delegation based on the troika principle.

Market limits :

In order to control market risk within BMCE Bank of Africa Group and to diversify the trading portfolio, a set of market limits has been jointly adopted. These limits reflect the Group's risk profile and help it steer market risk effectively by arbitrating between the various market activities. BMCE Bank of Africa Group's set of market limits comprise the following:

• Stop-loss limits by activity over different time horizons ;

• Position limits ;

• Trading limits.

Market limits are determined using VaR. The system for managing limits is dynamic by taking into account fluctuations in various risk factors as well as existing correlations so as to best appraise the extent to which the trading portfolio is diversified.

Regulatory limits

In addition to limits adopted for internal purposes, BMCE Bank Group of Africa also complies with regulatory limits defined by Bank Al-Maghrib including:

• Limits on foreign currency positions which should not exceed 10% of shareholders' equity;

• Limits on the overall foreign exchange position which should not exceed 20% of shareholders' equity.

RISK INDICATORS

The following risk indicators, reflecting the level of exposure to market risk, are used by BMCE Bank of Africa Group :

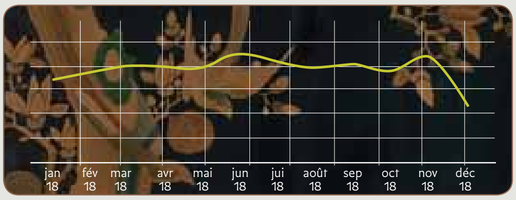
Overall value-at-Risk (VaR) and by asset class

Value-at-Risk is a technique used to quantify overall market risk. It helps to quantify the risk incurred by calculating the potential loss over a given time horizon and the degree of probability.

Unlike traditional risk indicators, Value-at-Risk combines several risk factors and measures their interaction, thereby taking into consideration portfolio diversification.

BMCE Bank Group *of Africa* calculates overall *Value-at-Risk* by asset class on a daily basis as well as carrying out back-testing.

CHANGES IN VaR (1 DAY) IN 2018



***Stress-testing* by risk factor**

BMCE Bank of Africa Group conducts stress tests in order to evaluate the vulnerability of the Group's trading portfolio under extreme scenarios. Stress tests encompass every component of the trading portfolio by simulating all risk factors that might impact it. The results of stress tests in terms of the impact from interest rate risk and foreign exchange risk on the trading portfolio are outlined below.

At 31 December 2018, the results of stress tests were as follows :

a- Fixed income portfolio

1st scenario : A 25 basis point parallel shift in the yield curve

This scenario would result in a MAD 81 million impact on the P&L.

2nd scenario : TA 50 basis point parallel shift in the yield curve.

This scenario would result in a MAD 161 million impact on the P&L.

b- Equity portfolio

• **1st scenario** : A 15% fall in the value of the equity portfolio.

This scenario would result in a MAD 4 million impact on the P&L.

• **2nd scenario** : A 25% fall in the value of the equity portfolio.

This scenario would result in a MAD 6 million impact on the P&L.

c- Foreign exchange

• **1st scenario** : A 2.5% rise or fall in the value of the dirham.

This scenario would result in a MAD 56 million impact on the P&L.

• **2nd scenario** : A 5% rise or fall in the value of the dirham.

This scenario would result in a MAD 113 million impact on the P&L.

The results of the stress tests show that the Group has sufficient capital to withstand adverse stress scenarios and to be able to comply with regulatory standards, even in crisis situations.

CAPITAL USE

BMCE Bank Group of Africa uses Risk Authority software to calculate capital requirements under the standardised approach for market risks. This enables it to meet regulatory requirements in terms of reporting and monitor capital requirements regarding the Group's trading portfolio.

The Group's consolidated capital requirements in respect of market risk at 31 December 2018 were as follows :

CAPITAL REQUIREMENTS BY TYPE	CAPITAL REQUIRED
Capital required in respect of fixed income risk	546 923
Capital required in respect of equity risk	59 376
Capital required in respect of foreign exchange risk	28 017
Total capital required in respect of market risk	634 316
Total market risk-weighted assets	**7 928 949**

METHOD FOR VALUING TRADING PORTFOLIO ITEMS

Dirham-denominated fixed income and money market instruments

Market values of fixed income and money market assets are calculated on Kondor+ using the dirham yield curve for fixed income and money market assets on the basis of the dirham rate curve published by *Bank Al-Maghrib* and on each transaction's characteristics.

Money Market and fixed income mutual funds

A number of mutual funds publish net asset values on a daily basis while others are updated weekly.

Mutual funds are valued on the basis of net asset value calculated on a daily or weekly basis.

Foreign currency-denominated fixed income products

Foreign currency-denominated fixed income products are valued on Kondor+ on the basis of the yield curves for the foreign currencies in question and on each transaction's characteristics.

Foreign exchange options

Foreign exchange options are valued on the following basis: volatility curve, yield curves (EUR, MAD and USD) and foreign exchange crosses for the three currencies.

The foreign exchange options position is included in the overall foreign exchange position using the delta equivalent method.

Overall foreign exchange position

The value of foreign exchange positions does not include the 0.2% levied by *Bank Al-Maghrib* on each spot trade.

Branch-based foreign exchange transactions are executed at BMCE Bank's fixing rate (non-negotiable rate).

A final statement of orders awaiting execution is transmitted to the Foreign Exchange Desk on day «N» which deals with it immediately. On «N+1» in the morning, the Middle Office receives a statement comprising possible amendments to branch network positions and updates Kondor+.

Positive Fair Value of Contracts (Warranties)

Warranties relating to market risks relate to "repo" agreements. The latter are securities sold under repurchase agreements in order to raise funds.

COUNTRY RISK

In a constantly changing world and within the constraints of the Group's overseas growth strategy and regulatory requirements, the introduction of a country risk management system will enable the Group to identify, measure and control its cross-border risks.

The Country Risk unit's adopted methodology is based on the following points :

Country risk management policy

The country risk management policy aims to define a framework for overseeing all overseas business activities that generate risks for the Bank. It establishes management standards and rules in order to harmonise regulatory requirements and in-company governance.

Country risk reporting

Monthly reporting by overseas subsidiaries and the parent company enables the Group Risks Division to assess each country's potential risk factors and help to establish risk-mitigation strategies.

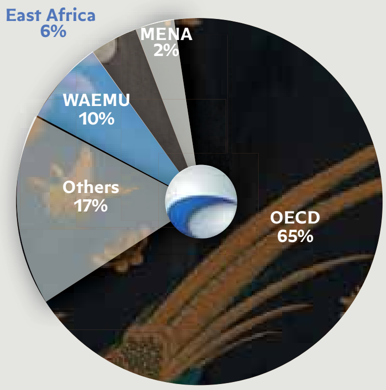
Identifying cross-border risks

BMCE Bank of Africa Group is exposed to international risks through the various types of commitment made by the Bank to non-resident counterparties in dirhams or in foreign currencies.

These include :

- Loans to non-residents ;
- Trade finance business ;
- Foreign assets ;
- Market operations.

Breakdown of BMCE Bank's risk exposure by geographical zone at 31/12/2018



Consolidation

Country risk commitments are identified in such a way as to establish a position for each subsidiary as well as for the Group, providing an overview of the Group's overall exposure to cross-border risks.

Alerts system introduced

This system consists of monitoring regulatory, economic and financial factors by tracking all the prominent events occurring during the week. These items are disseminated to all interested parties in a Monthly Report.

An additional module monitors country risk trends and consists of specific research and in-company requests.

Ratings system

BMCE Bank of Africa Group bases its country risk assessments on the ratings of external agencies such as Coface, S&P and Moody's...

Setting limits

When establishing country limits for loan commitments, BMCE Bank of Africa Group takes into consideration :

- An assessment of an issuer's risk profile ;
- Risk appetite ;
- The breakdown and diversification of the loan portfolio of each subsidiary and of the Group, while complying with the maximum permitted concentration by country based on a percentage of Tier 1 capital.

These limits are monitored on a permanent basis. Requests to exceed country limits are assessed on the basis of the levels of decision-making powers in force.

Stress tests

Stress tests are conducted on a regular basis to ensure that the Bank is able to withstand scenarios of extreme deterioration in country risk and to quantify the impact on the Bank's balance sheet and profitability.

Provisioning

A provision is recognised for country risk whenever it materialises, in the event of debt rescheduling, a political crisis or any other factor which may negatively impact the Bank's profitability.

An annual review is systematically carried out to reassess the country supposedly in default, which may potentially require the Group to recognise a provision.

OPERATIONAL RISK

Operational risk is defined as the risk of loss due to inadequate or failing internal procedures, employee error, systems failure or external events, which are liable to impact the smooth running of the business.

Operational risk management policy

Aim of managing operational risk

Operational risk management policy has three aims :

• Identify, analyse and evaluate operational risks ;

• Evaluate internal controls ;

• Monitor operational risks via alert indicators.

Operational risk is managed by adopting preventive and/or corrective action for the major risks identified.

The risk management system is regularly reviewed and monitored to ensure its ongoing improvement.

Classification

Operational risks or losses may be analysed, classified and ranked on the basis of the following factors: cause, effect (financial impact or otherwise), score, qualification, level of control and event type under Basel.

Links to other risk types (market risk/credit risk)

The management of operational risks is potentially linked to managing other risks (market risk/credit risk) at two levels :

• At a general level, analysis of the Bank's overall level of risk aversion (in terms of allocation of capital) must be carried out and "trans-risks" monitored;

• At a specific level, a number of operational risks may be the cause of market risk or credit risk.

Operational risk management organisation

The framework governing operational risk management within BMCE Group of Africa is based on three main objectives:

• Define a target policy consistent with BMCE Bank of Africa Group's business organisation inspired by best practice;

• Involve and empower business lines and subsidiaries in the day-to-day management of operational risk management;

• Ensure that the audit-control and the operational risk management functions are kept separate.

Operational risk management at BMCE Bank of Africa Group involves four major entities:

• The Group Operational Risk division at BMCE Bank's head office;

• BMCE Bank's branch network;

• BMCE Bank's business divisions;

• Subsidiaries.

Operational risks coordinators have been appointed by the aforementioned entities. These include:

• Operational Risk Correspondents (CRO) ;

• Operational Risk Coordinators (CORO) ;

• Operational Risk Liaison Officers (RRO).

The operational risk management's remit also extends to Group subsidiaries.

Governance of operational risk management

Governance of operational risks within BMCE Group of Africa is organised by three operational risk Committees :

• Group Operational Risk Committee – incorporated within the Group Risks Committee ;

• Operational Risk Monitoring (Business Lines) Committee ;

• Operational Risk (Subsidiaries) Committee.

These committees are tasked with periodically :

• Reviewing changes in operational risk exposure and in the environment for controlling such risks ;

• Identifying the main areas of risk in terms of activities and risk types ;

• Reviewing the state of progress of the preventive and corrective action plans drawn up with a view to covering and dealing with the major operational risks ;

• Reviewing the amount of capital to be allocated to operational risks, the cost of preventive action required and the cost of insurance.

Fundamental methodology principles

BMCE Bank of Africa Group's operational risk management policy is underpinned by two strategic priorities :

• Reduce exposure to operational risks ;

• Optimise capital requirements relating to hedging operational risks.

The internal system for measuring operational risks is closely linked to the Group's day-to-day risk management process via :

• Risk events collection ;

• Mapping operational risks ;

• Key risk indicators.

The data produced form an integral part of these processes of monitoring and controlling the operational risk profile.

The senior management of the entity in question, General Management and the Board of Directors are regularly notified of operational risk exposure and any losses incurred. The management system is properly documented, ensuring compliance with a formalised set of controls and internal procedures and corrective measures in the event of non-compliance.

Internal and/or external auditors are invited to periodically review management processes and systems for measuring operational risk. These audits relate to units' activities and the independent operational risk management function.

Operational risk management at BMCE Bank of Africa Group has been entirely automated by means of specialised MEGA CRM software. This software, which has been deployed by the Bank and its Moroccan and European subsidiaries, is now used to collect risk events and map operational risks and key risk indicators.

Operational risk control and mitigation

Several types of attitude may be envisaged to manage operational risks:

• Reinforce checks ;

• Hedge risks, especially via insurance contracts ;

• Avoid risks, in particular, by redeploying activities ;

• Draw up business continuity plans ;

• Closely monitor to ensure that risk limits or assigned thresholds are complied with.

BMCE Group of Africa has a very strong control policy, resulting in a significant reduction in operational risks. However, in terms of operational risk management, over and above its risk control policy, the Group is at liberty to find the best possible solution on a case by case basis, depending on the different types of risks described above.

Additionally, the Group has insurance policies to mitigate risks such as damage to office buildings, fraud, theft of valuable items and third-party liability cover...

Business Continuity Plan

The Business Continuity Plans, which have been implemented by BMCE Bank of Africa's entities and maintained in good working order, are primarily aimed at ensuring the continuity of each Group entity's essential operations in the event of a disaster (survival principle of the firm), while continuing to comply with regulatory requirements.

The goal of the Group's overall business continuity system is to enable it to manage situations that may affect some or all of its entities in an appropriate, consistent, synchronised and effective manner.

This system is adapted to the Group's organisational structure and is based on bodies and procedures that guarantee its effectiveness.

The Business Continuity Plan covers disasters affecting human resources, information systems, logistical systems and service providers if these are deemed to be critical to the Bank's operations, as well as various other resources deemed indispensable to it being able to deliver critical services to external parties to whom the Bank has an obligation.

BMCE Bank of Africa's business continuity system is underpinned by the following goals :

• Comply with the survival principle ;

• Mitigate or cover the risks so as to contain the remnants within the limits decided by the entities' management team and Group strategy, taking into account the cost and effectiveness of the solutions that are to be put in place ;

• Ensure that the business continuity plans are coordinated, standardised and consistent with regard to the Group's decentralised organisational structure ;

• Keep the situation under control in the event of a crisis;

• Comply with regulations and the recommendations of the regulatory authority including Bank Al-Maghrib's Directive DN 47/G/2007 Circular 4/W/2014.

Capital adequacy

BMCE Bank of Africa Group has opted for the standardised approach as prescribed by Bank Al-Maghrib circulars, requiring that banks have a Tier 1 capital ratio of 9% and an overall capital adequacy ratio of 12% on both a parent company and consolidated basis.

BMCE Bank of Africa Group's calculated ratios comply with Bank Al-Maghrib's regulatory requirements

COMPOSITION OF SHARE CAPITAL AND CAPITAL ADEQUACY

Main characteristics of items constituting shareholders' equity

At 31 December 2018, BMCE Bank's share capital stood at MAD 1,794,633,900 made up of 1,794,633,900 ordinary shares, each with a nominal value of 10 dirhams. The shares are fully paid-up. Each ordinary share entitles the holder to one voting right.

At 31 December 2018, fixed maturity subordinated debt stood at almost MAD 6.2 billion.

Measurement of capital adequacy

BMCE Group of Africa has opted for the standardised approach to calculating risk-weighted assets as prescribed by Bank Al-Maghrib (BAM) circulars. Since 30 June 2014, capital adequacy ratios have been calculated in accordance with Basel III regulatory standards as defined by BAM.

The method for calculating capital was reviewed in the light of these new regulations and temporary measures have been adopted for a period until 2019.

The circulars governing these declarations are as follows :

• Circular No. 26/G/2006 relating to calculating capital requirements based on the standardised approach for hedging credit institutions' credit, market and operational risks ;

• Circular No. 8/G/2010 relating to calculating capital requirements based on internal approaches for hedging credit institutions' credit, market and operational risks ;

• Circular No. 14/G/13 relating to capital requirements for credit institutions.

COMPOSITION OF CAPITAL AND CAPITAL ADEQUACY AT 31/12/2018

Tier 1 capital	**20 324 973**
Items to be included in Tier 1 capital	**23 979 471**
Share Capital	
Consolidated reserves, including premiums related to share capital and not included in hidden reserves	16 091 348
Retained earnings	
Net income for the previous period	1 651 430
Minority interests	4 442 059
Items to be deducted from Tier 1 capital	**3 654 497**
Goodwill	1 032 114
Other adjustments to Tier 1 capital	1 445 705
Non-current assets	987 396
Other deductions	189 282
Additional core capital	**2 000 000**
Perpetual subordinated debt	2 000 000
Items to be deducted from capital	**98 740**
Non-current assets	98 740
Tier 2 capital	**7 184 305**
Perpetual subordinated debt	6 223 562
Revaluation differences	
Hidden reserves	202 256
Items to be deducted from capital	**127 740**
Non-current assets	98 740
Other deductions	29 000
Total	**29 282 799**

Capital Requirements by Risk Type	**Dec. 2018**
Risk-weighted credit risks	200 532 446
Risk-weighted market risks	7 928 949
Risk-weighted operational assets	23 582 527
Total risk-weighted assets	232 043 923
Tier 1 Capital	22 226 234
Tier 1 Capital ratio	9.6%
Total admissible capital	29 282 799
Capital adequacy ratio	12.6%

Parent company	**Dec-18**	**June-19**	**Dec-19**	**June-20**
Tier 1 capital	12 760	12 333	16 042	17 335
Total capital	18 290	18 169	21 727	22 620
Risk-weighted assets	125 348	130 400	132 581	136 344
Tier 1 capital ratio	10.2%	9.50%	12.1%	12.7%
Capital adequacy ratio	14.6%	13.90%	16.4%	16.6%

Consolidated	**Dec-18**	**June-19**	**Dec-19**	**June-20**
Tier 1 capital	22 226	23 222	26 847	29 547
Total capital	29 283	30 227	33 702	36 002
Risk-weighted assets	232 044	242 259	248 593	258 680
Tier 1 capital ratio	9.6%	9.6%	10.8%	11.4%
Capital adequacy ratio	12.6%	12.5%	13.6%	13.9%

International subsidiaries' implementation of the risk management system

In 2018, as part of the implementation phase of the Convergence Programme, in line with the Group's ambitions, risk control systems continued to be rolled-out at new subsidiaries with a view to covering the Group's entire geographical remit.

CREDIT RISK MANAGEMENT SYSTEM

Batch 1: Organisation, scheme of delegation, steering and reporting

The roll-out of the credit risk management system (Batch 1) was completed at 15 BOA subsidiaries (Burkina Faso, Benin, Côte d'Ivoire, Senegal, Niger, Madagascar, Mali, Kenya, Uganda, Tanzania, Mer Rouge, Ghana, DRC, Togo and France), the Moroccan subsidiaries, LCB, BBI London and Madrid.

Batch 2: Stress tests and concentration ratios

Work carried out during 2018 resulted in a new and more simplified model for managing concentration limits.

The roll-out of the credit risk management system (Batch 2) (stress tests and concentration ratios) was completed at 7 BOA subsidiaries within the WAEMU zone (Burkina Faso, Benin, Côte d'Ivoire, Senegal, Niger, Mali and Togo) as well as for BOA France and the Moroccan subsidiaries.

OPERATIONAL RISK MANAGEMENT SYSTEM

The roll-out of the operational risk management system has now been completed for almost all BMCE Bank of Africa Group's subsidiaries.

Operational risks have been mapped for each subsidiary covering 15 operational areas (Batches 1 & 2), the exception being BOA Rwanda and BOA Burundi. Batch 2 is yet to be completed for BOA DRC, BOA Group Hub, BBI London and the Moroccan subsidiaries. An annual review of the operational risk map is expected to be carried out by each subsidiary in compliance with the Group's operational risk management policy.

GROUP RISK COMMUNITY

BMCE Bank of Africa Group's Risk Community has now reached a certain level of maturity as a result of a common set of risk policies and practices.

Training leading to the Group Risk Community's Associate in Risk Management (ARM) certificate is provided to members by the Business Risk Academy.

This training enables employees working in the Risk division to acquire knowledge about specific risk management techniques. It is designed to meet the challenges posed by risk management while promoting interaction between members of the Risk Community, generating synergies between subsidiaries and fostering a common risk-based culture.

In 2018, the Group Risk Community's main achievements in respect of ARM training were as follows:

• 65 French-speaking employees and 15 English-speaking employees successfully completed Module 54;

• 32 French-speaking employees and 14 English-speaking employees successfully completed Modules 54 and 56;

• 14 French-speaking employees successfully completed three ARM modules (54, 55 and 56) and are expected to obtain ARM certification as soon as the Ethics module has been signed off.

GROUP RISK PROJECTS STEERING

The Risk projects management policy, which is implemented across the entire Group, aims to ensure effective and efficient management of Risk projects in line with BMCE Bank of Africa Group's divisional strategy.

In 2018, the work of the unit responsible for managing Group risk projects primarily focused on managing BMCE Bank PLC projects and Group-wide projects. The committee responsible for steering Group risk projects met on three occasions in 2018.

Risk projects portfolio

The various Group Risk projects are structured into four blocks - Standards and methods, Organisation and processes, IT systems and Risk functions. These projects relate to the work carried out by the Group Risks Division's different departments in relation to BMCE Bank PLC as well as Group projects.

The Group Risks Division's project portfolio consists of about 40 projects. Fifteen or so projects were completed in 2018 while the others remain in progress.

• **Group Loan Commitments Database (BEG)** is an indispensable solution to enable the Group Risk function to steer and monitor credit risk at the consolidated level.

BEG consolidates the third parties and loan commitments of all financial entities included within BMCE Bank of Africa Group's scope of consolidation:

- Management information – thirds parties, authorisations, outstandings, incidents, warranties and provisions;

- Accounting information – accounting balance to be able to reconcile the management information

> Data for third parties and loan commitments for the 23 BMCE Bank of Africa Group subsidiaries (BMCE Bank, 16 BOA subsidiaries, 3 Moroccan subsidiaries, LCB, BBI Madrid and BBI London) are included within the Group Loan Commitments Database.

> In addition, in order to meet the central bank's regulatory requirements, the Basel II/Basel III regulatory requirements for the WAEMU zone and of the BMCE Bank of Africa Group's internal management needs, BEG was updated in 2018 by the IT department, working in partnership with the BOA Benin pilot site's Risk function.

> Implementation of BEG and RAY was completed for the BOA subsidiaries within the WAEMU zone (Burkina Faso, Benin, Côte d'Ivoire, Senegal, Niger and Togo). Implementation is envisaged in 2019 for BOA MALI, the other BOA subsidiaries and the other Moroccan and European subsidiaries.

Other Risk projects overseen in 2018 were as follows:

• The new delegation of powers system was rolled-out and automated in respect of credit instruction solutions;

• Reviewing of internal ratings and scoring models;

• Work on introducing a new solution for managing doubtful and non-performing loans within the framework of the solution being administered by the Risk function;

• Work on stabilising and improving the OSCA solution for monitoring accounts showing anomalies;

• Work on enhancing and cleaning up the BGI incidents database – improving the reliability of accounts in arrears, automating processes for dealing with frozen accounts and persistent overruns;

• Work on introducing a new scheme of delegation for credit approval and overruns;

• Work on migrating towards the latest version of the MEGA CRM system for managing operational risk.