OCBC Bank (Malaysia) Berhad
(Incorporated in Malaysia)

Basel II Pillar 3 Market Disclosures
31 December 2019

The disclosure in this section refers to OCBC Bank (M) Berhad Group position. OCBC Bank (M) Berhad Group consists of OCBC Bank (Malaysia) Berhad and OCBC Al-Amin Bank Berhad which are members of the Overseas-Chinese Banking Corporation Group in Singapore.

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(Incorporated in Malaysia)

BASEL II PILLAR 3 MARKET DISCLOSURES – 31 DECEMBER 2019

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ATTESTATION BY CHIEF EXECUTIVE OFFICER PURSUANT TO RISK WEIGHTED CAPITAL ADEQUACY FRAMEWORK (BASEL II) – DISCLOSURE REQUIREMENTS (PILLAR 3)

The risk disclosures set out in the Risk Management Chapter and Basel II Pillar 3 Market Disclosure are generally in conformance with the Bank Negara Malaysia Risk Weighted Capital Adequacy Framework (Basel II) – Disclosure Requirements (Pillar 3) and Capital Adequacy Framework for Islamic Banks (CAFIB-Basel II) – Disclosure Requirements (Pillar 3) for the Group as at 31 December 2019.

DATO' ONG ENG BIN
CHIEF EXECUTIVE OFFICER

Kuala Lumpur

Risk Management

OCBC (M) Group (hereinafter referred to as the Group) consists of OCBC Bank (Malaysia) Berhad (OCBC Bank) and OCBC Al-Amin Bank Berhad (OCBC Al-Amin) which are members of the Oversea-Chinese Banking Corporation Group (OCBC Group) in Singapore.

RISK MANAGEMENT IN OCBC (M) GROUP

At OCBC (M) Group, our corporate values – Lasting Value, Integrity, Forward-Looking, Respect and Responsibility – together with our risk principles guide the approach in the management of our risk exposures.

We have established a risk management framework that encompasses good governance, sound policies, robust lines of defence, right expertise as well as significant investments in technology, underpinned by a corporate culture that demands accountability and ownership as well as high ethical standards. This then ensures that the risks taken are:

- consistent with our corporate strategy and within established risk appetite;
- well-understood, evaluated and supported by robust quantitative analyses and stress testing;
- adequately compensated with expected returns;
- managed holistically by evaluating risk interactions across the different risk types;
- efficiently and comprehensively captured, aggregated and reported;
- reviewed by an independent risk function with adequate resources, authority and expertise; and
- accompanied by contingency plans to ensure resilience against potential crises or unexpected events

Risk ownership is a shared responsibility between the business, risk and compliance functions as elaborated in the Risk Governance and Organisation section.

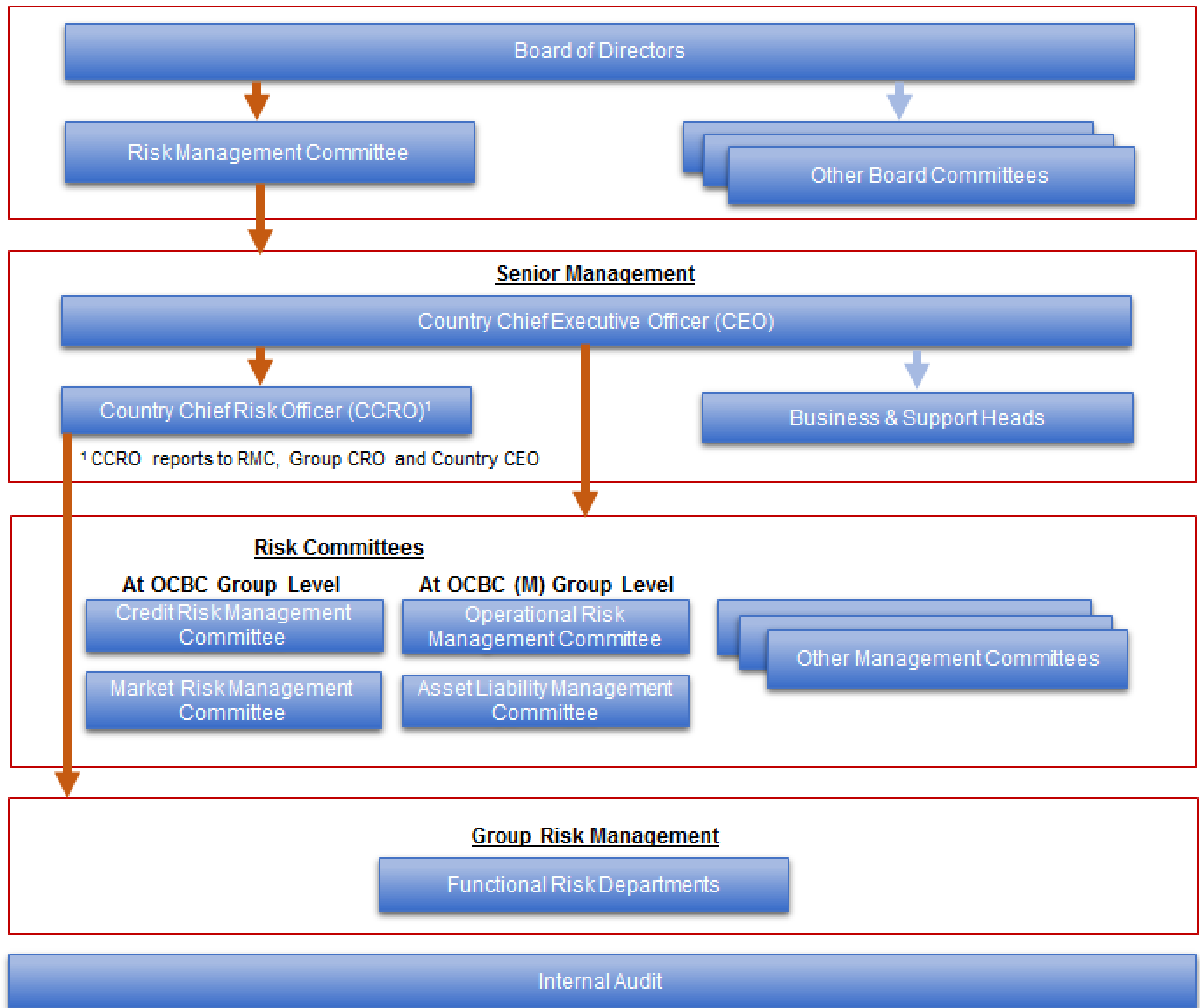
While the categorisation of risks can be complex and interrelated, we generally categorise the principal risks we take into the following types:

Principal Risks	Definition
Credit Risk	Credit risk is the risk of loss of principal and/or income arising from the failure of an obligor or counterparty to meet its financial or contractual obligations.
Market Risk	Market risk is the risk of loss of income and/or market value due to fluctuations in risk factors such as interest rates, foreign exchange rates, credit spreads, equity and commodity prices or changes in volatility or correlations between risk factors.
Liquidity Risk	Liquidity risk is the risk arising from the inability to meet financial obligations as they fall due without incurring unacceptable costs or losses from funding capital and asset liquidation.
Interest Rate Risk in the Banking Book	Interest Rate Risk in the Banking Book is the risk to the bank's earnings arising from adverse changes in interest rates that affect Banking Book positions.
Operational Risk	Operational risk is the risk of loss resulting from inadequate or failed internal processes, people, systems and management or from external events. This includes compliance risk, legal risk and reputational risk.

Please refer to the respective sections for details of our risk management approach for each of the principal risk types.

Our risk management approach is a disciplined process to identify, assess, measure, control, monitor and report our risk positions at the granular and aggregate levels. Assessments of potential shifts in risk drivers and the impact on risk types are regularly made and risk mitigation strategies are taken where necessary. There are multiple drivers of risks. They emanate from factors such as the economic, business and physical environment, business decisions, market positions, geopolitical shifts, regulatory changes, fraud and human error. These drivers impinge on one or more of the risk types mentioned above with consequential impact to earnings and asset quality as well as to reputation, customer franchise, and ability to do business

RISK GOVERNANCE AND ORGANISATION



The chart above illustrates the risk governance and oversight structure in the Group. The Board of Directors (Board) has the ultimate responsibility for the effective management of risk and establishes the corporate strategy and approves the risk appetite within which senior management should execute the strategy.

The Risk Management Committee (RMC) is the designated board committee that oversees the Group's overall risk management philosophy are aligned with the corporate strategy and within

the approved risk appetite. It also ensures that the overall risk management organisation is implemented and effective. Based on the approved risk appetite, RMC approves various quantitative guidance and qualitative expectations and these are cascaded to major business units and risk functions to guide risk-taking. Risk drivers, risk profiles across major lines of business and risk types, as well as major risk policies and compliance matters are regularly reviewed by the senior management, Country Chief Executive Officer (Country CEO) and RMC. These matters are reviewed and discussed in greater detail at the dedicated risk committees for major risk types.

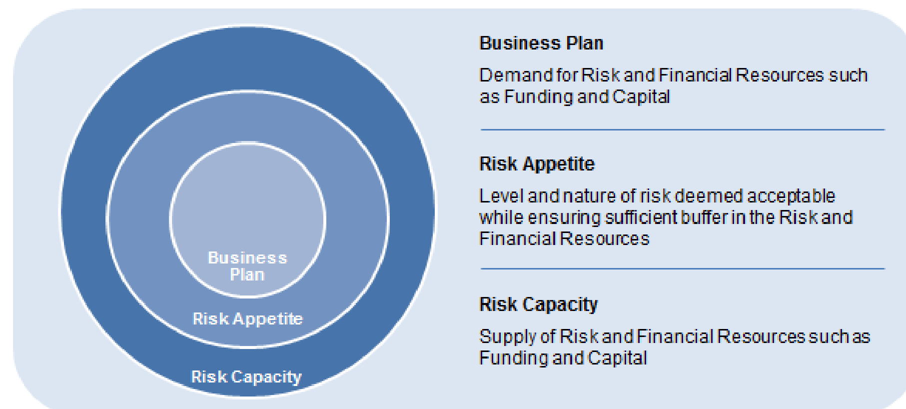
Group Risk Management (GRM) is an independent risk and control oversight function that principally executes the risk management framework and principles. It provides risk committees, the RMC and the Board regular risk reports and updates on material information with regard to risks. Functions in GRM are primarily organised by major risk types. Risk management staff work closely with the business and other support units to ensure that risks are well managed. In addition, it oversees the New Product Approval Process (NPAP) to ensure that all inherent risks associated with new products and services are comprehensively identified, managed and mitigated, including compliance with regulatory requirements.

Three Lines of Defence
All employees are responsible for identifying and managing risk – an accountability that is embedded in our corporate culture and robust internal control environment. This is operationalised through a three-line defence structure.

Three Lines of Defence		
First Line	**Second Line**	**Third Line**
Day-to-day Risk Management	**Risk and Control Oversight**	**Independent Assurance**
Business and Support Units own and manage risks generated from their business activities on a day-to-day basis. It executes business activities which are consistent with our Group's strategy and risk appetite and operates within the approved boundaries of our policies, limits and ensure compliance with applicable laws and regulations.	**The Risk and Control Function** independently assesses the risk-taking activities undertaken by the first line of defence. It establishes relevant risk management frameworks, policies, processes and risk systems, and provides independent identification, assessment, monitoring and reporting of the Group's risk profiles, portfolio concentrations and material risk issues.	**Internal Audit** independently provide assurance to the Country CEO, Audit Committee and the Board of the adequacy and effectiveness of our risk management and internal control systems by evaluating the overall risk awareness and control consciousness of the management in discharging its supervisory and oversight responsibilities.

RISK APPETITE

The Board sets the Group's risk appetite, which defines the level and nature of risks that we are willing to take on behalf of shareholders in the conduct of our business, while maintaining our commitments to customers, debt holders, employees, regulators, and other stakeholders. Our intention is to manage risks prudently for the long-term viability of the Group while balancing the interests of all stakeholders.



Our risk appetite takes into account the forward-looking operating environment and any downside risks. Business plans are guided by our risk appetite through policies, limits and processes to ensure that we operate within our available risk capacity.

Senior business and risk managers participate in regular forums to discuss the operating environment and potential "dark clouds" that may have a significant impact on our earnings or solvency. These are quantified via stress tests as well as segment-specific and ad hoc event-specific portfolio reviews to assess the potential impact of alternative scenarios on the Group's earnings and capital.

An annual Internal Capital Adequacy Assessment Process (ICAAP) incorporating stress test is conducted to evaluate if our business plans allow us to maintain sound capital levels under both the forward-looking operating environment and severe stress scenarios. Appropriate risk-mitigating actions are taken to manage downside risks.

CREDIT RISK MANAGEMENT

Credit risk arises from our lending activities to retail, corporate and institutional customers. It also includes counterparty and issuer credit risks arising from our trading and investment banking activities.

Credit Risk Management Approach

Our Credit Risk Management Framework captures the complete credit risk management cycle. It is operationalized through policies and procedures covering the identification, assessment, measurement, monitoring and control of credit risk at the enterprise level.

We also have Responsible Financing Framework and supporting policies that integrate Environmental, Social and Governance (ESG) considerations into our credit risk evaluation and approval process. Through the framework, sustainability is integrated across our corporate lending activities from strategic and portfolio to transaction level. Please refer to the OCBC Group's Sustainability Report for more information on responsible financing.

Our credit risk management approach varies depending on the characteristics or nature of the portfolios or customer segments. Please refer to Table 1 for more information. There are specific policies and procedures for major customer segments.

Table 1: Credit Risk Management Approach for Major Customer Segments	
Consumers and Small Businesses	• Credit risks are managed on portfolio basis. • Credits are extended through credit programmes with predefined portfolio and transaction limits, acquisition strategy, product structure, as well as customer selection, lending and collateral criteria. • Application models in the credit decision process enable efficient, objective and consistent risk evaluation and decision. • Bankruptcy, credit bureau checks, systems and processes such as source identification of credit origination and independent verification of documentation are used to detect fraud. • Comprehensive risk management information systems (MIS) are used to track and monitor the performance of the portfolios. • Behavioural models are used for the early identification of problem loans.
Corporate and Institutional Customers	• Credits extended are individually assessed, risk rated and further evaluated by experienced credit officers. • Credit extensions are guided by predefined target market and risk acceptance criteria. • Credit decisions are made after comprehensive qualitative and quantitative risk assessment, including a thorough understanding of the customer and customer group's interdependencies. • Credits are jointly approved by business and credit risk units to ensure objectivity and shared risk ownership.

Managing Counterparty Credit Risk
Counterparty Credit Risk (CCR) is the risk that the counterparty may default on its obligations in a financial contract. CCR management covers credit exposures to counterparties in both the banking and trading books which typically arise from our trading, derivatives and debt securities activities. Counterparty risk exposures are measured under the Current Exposure Method, with regulatory prescribed add-ons that represent the potential future exposure, in addition to the net replacement cost of the Over-the-Counter (OTC) derivatives.

Credit limits are established for each counterparty based on our assessment of the counterparty's creditworthiness, the suitability and appropriateness of the product offered and alignment with approved trading mandates and investment strategies. Credit risk mitigation tools are also used to manage CCR where appropriate. Please refer to Credit Risk Mitigation Section for details.

Credit exposures are independently managed through daily limit monitoring, excesses escalation and approval, and timely risk reporting.

Credit Portfolio Management
Credit portfolio management focuses on managing the 'collective or aggregate risk' of our credit portfolio, rather than the credit risk to an individual borrower. We have developed and implemented a range of capabilities to better understand, measure and monitor credit risk at a portfolio level. These capabilities include:

- **Portfolio Segmentation:** This is the process of grouping credit exposures that are similar in nature. It involves the use of attributes that represent common business drivers such as country, industry and product type, as well as common risk drivers such as exposure to material downside risks like a property bubble.

- **Portfolio Modelling:** This includes the use of internal rating models to quantify the exposure risk, default risk and potential losses of our borrowers. Please refer to Table 2 for information

on our internal rating models. We also use stress testing models to simulate the potential increase in our credit losses and credit risk-weighted assets under stressed scenarios.

Table 2: Internal Rating Models

Internal credit rating models and their parameters – probability of default (PD), loss given default (LGD) and exposure at default (EAD) – are used in limit setting, credit approval, portfolio monitoring and reporting, remedial management, stress testing, internal assessment of the capital adequacy and impairment allowances.

Our Model Risk Management Framework and Credit Rating Model Framework are used to govern the development, validation, application and performance monitoring of rating models. Approval for the adoption and continued use of material models rests with the RMC. The models are developed with the active participation of credit experts from risk-taking and risk-control units and subject to independent validation before implementation to ensure that all aspects of the model development process have met our internal standards. In addition, Internal Audit conducts an annual independent review of the ratings assignment process, the effectiveness of the independent validation and the accuracy of the rating system operation. All rating models are assessed against internal and regulatory requirements and approved by regulators for use in capital assessment.

While our internal risk grades are not explicitly mapped to external credit ratings, they may correlate with external credit ratings in terms of the PD ranges as factors used to rate obligors would be similar - an obligor rated poorly by an external credit rating agency is likely to have a weak internal risk rating.

The table below describes the approach used to estimate the key parameters for Advanced Internal Ratings Based (A-IRB) and Foundation Internal Ratings Based (F-IRB) credit risk models used to calculate Credit RWA.

Key Components of Internal Ratings Based (IRB) Models

IRB Models and Portfolios	PD	LGD and EAD
A-IRB approach includes major retail portfolios such as residential mortgages, credit cards and small businesses lending	• Estimated based on the application and behaviour scores of obligors. • The PD models are calibrated to the expected long-term average one-year default rate over an economic cycle.	• Product, collateral and geographical characteristics are major factors. • LGD models are calibrated to reflect the economic loss under downturn conditions. • EAD models are also calibrated to reflect the long-run average or economic downturn conditions, if relevant.
F-IRB (Non-Supervisory Slotting) approach includes major wholesale portfolios such as Bank, Non-Bank Financial Institutions, Corporate Real Estate (including Income Producing Real Estate) and General Corporate	• PD models are statistical based or expert judgement models that use both quantitative and qualitative factors to assess an obligor's repayment capacity and are calibrated to the expected long-term average one-year default rate over an economic cycle.	• Estimated based on rules prescribed in Bank Negara Malaysia (BNM) Risk-Weighted Capital Adequacy Framework (RWCAF).

	• Expert judgement models based on inputs from internal credit experts are typically used for portfolios with low defaults.	
F-IRB (Supervisory Slotting) approach includes other specialised lending portfolios such as Project Finance, Object Finance and Commodities Finance	• For portfolios on supervisory slotting, risk grades derived from internal models are mapped to the five supervisory slotting categories prescribed in BNM RWCAF.	• Estimated based on rules prescribed in BNM RWCAF.

- **Portfolio Reporting:** This includes internal and external reporting of portfolio risk information to respective stakeholders. These reports provide a better understanding of how the quality of our credit portfolio is evolving in response to the changing operating environment and downside risks. Regular risk reports covering detailed credit exposures, credit migration, expected losses and risk concentrations by business segment are provided to the CRMC, CEO, RMC and the Board for review and make timely, better-informed decisions.

With the insights provided by portfolio modelling and reporting, we shape our portfolio via appropriate allocation of risk and financial resources (such as funding and capital) to support growth opportunities. We also use these insights to set credit concentration limits that manage the downside risk from adverse changes in the operating environment. The design of such credit concentration limits takes into consideration direct risk drivers (such as economic sector, industry, geographic location) and indirect risk drivers (such as collateral type or credit protection by a single counterparty) arising from credit risk mitigation.

Credit Risk Mitigation
Credit risk mitigation techniques are used to reduce credit risk. Where possible, we take collateral from the borrower as a secondary recourse to mitigate credit risk. However, risk mitigation is not a substitute to the proper assessment of the obligor's ability to repay which remains the primary repayment source.

The key considerations for eligible credit risk mitigants are set out in our credit policies. These criteria include legal certainty and enforceability, correlation, liquidity, marketability, counterparty risk of the protection provider and collateral-specific minimum operational requirements. Eligible physical and financial collateral types include cash, real estate, marketable securities, standby letters of credit and credit insurances.

Appropriate haircuts are applied to the market value of the collateral to reflect its underlying nature, quality, liquidity and volatility. Collateral is independently valued on regular basis with frequency determined by its type, liquidity and volatility. Collateral holdings are regularly monitored to avoid concentration risk as the Group seeks to diversify across asset classes and markets. Guarantees from individuals, corporates, and institutions are accepted as a form of support. Where guarantees are recognised as credit risk mitigants via the PD substitution approach, eligibility criteria and guidelines are in place.

Netting, collateral arrangements, early termination options and central clearing mechanisms are common risk mitigation tools for managing counterparty credit risk. The credit risk associated with contractual obligations is reduced by netting agreements in legally approved jurisdictions where all amounts with the counterparty are settled on a net basis if a default occurs. Collateral arrangements, typically covered under market standard documentation such as International

Swaps and Derivatives Association (ISDA) and Credit Support Annexes (CSA), include a minimum threshold amount where additional collateral is to be posted by either party if the mark-to-market exposures exceed an agreed threshold. The eligible collateral is subject to a haircut to cover potential adverse market volatility and the minimum threshold amount may be subject to regulatory margin requirements where applicable. Agreements may also contain rating triggers to allow for termination of the transactions or require posting of additional collateral in the event of a rating downgrade.

Remedial Management
The Group safeguards its position through proactive and regular monitoring of our portfolios. We have a robust process to detect vulnerable borrowers with signs of potential credit deterioration at an early stage for close monitoring and review via various internal credit forums or committees.

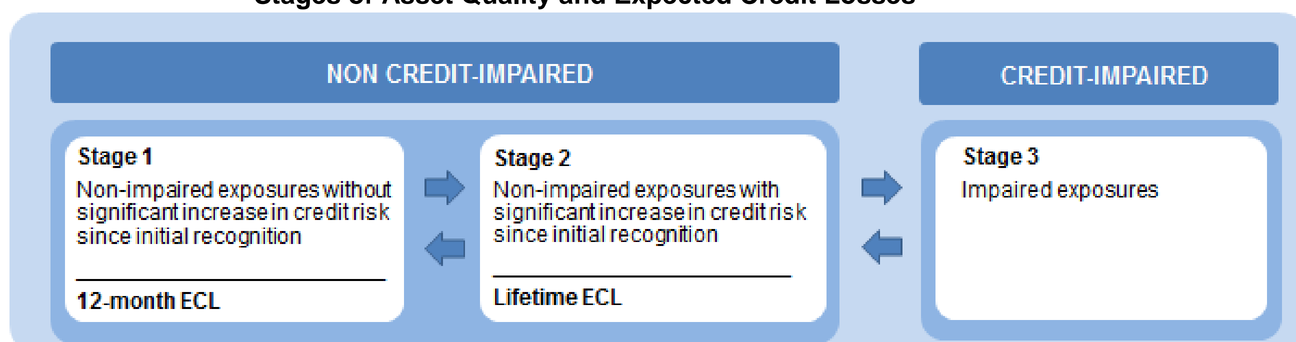
Credit exposures are categorised as "Pass", "Special Mention" or "Impaired Loans" (ILs). ILs are further categorised into "Substandard", "Doubtful" or "Loss". The categorisation of credit exposures is based on our assessment of the borrowers' ability to repay their financial obligations. ILs may be upgraded to non-impaired status when there is an established trend of credit improvement, supported by an assessment of the borrower's repayment capability, cash flows and financial position.

Credit exposures are classified as restructured assets when the Group grants concessions to borrowers who are unable to meet their original repayment obligations. A restructured credit exposure is classified into the appropriate impaired loans grades based on the assessment of the borrower's financial condition and ability to repay under the restructured terms. Such credit exposure must comply fully with the restructured terms before it can be restored to non-impaired status.

Dedicated remedial management units manage the restructuring and recovery of ILs for wholesale portfolios. The objective is to rehabilitate ILs where possible or maximise recoveries for ILs that are on exit strategy. For the retail portfolios, we develop appropriate risk-based and time-based collection strategies to maximise recoveries. We use data such as delinquency buckets and adverse status tags for delinquent retail loans to constantly analyse, fine-tune and prioritise our collection efforts.

Impairment Allowances for Loans
Sufficient impairment allowances are maintained to absorb credit losses inherent in our loan portfolio. Allowance for Expected Credit Losses (ECL) is recognised for credit impaired and non-credit impaired exposures in accordance with Malaysian Financial Reporting Standard (MFRS) 9 - Financial Instruments through a forward looking ECL model. ECL allowances are assessed and measured based on the stages of asset quality.

Stages of Asset Quality and Expected Credit Losses



Please refer to Note 2 in the OCBC Group's Financial Statements for more information on impairment allowances.

MARKET RISK MANAGEMENT

Market risk arises mainly from our trading, client servicing and balance sheet management activities.

Market Risk Management Approach
The Group's Market Risk Management Framework covers the identification, assessment, measurement, monitoring, and control of risks. Market risk policies and procedures are established to provide common guidelines and standards for managing market risk. Our market risk management strategy and limits are regularly reviewed and established under the Group's risk appetite and business strategies, taking into account prevailing macroeconomic and market conditions.

Market Risk Identification
Risk identification is addressed via the Group's internal NPAP at product inception. Market risks are also identified by our risk managers from their on-going interactions with the business units.

Market Risk Measurements
Value-At-Risk
Value-at-risk (VaR), as a key market risk measure for our trading activities, is a component of aggregate market risk appetite. VaR is measured and monitored by its individual market risk components, namely interest rate risk, foreign exchange risk, equity risk and credit spread risk, as well as at the consolidated level. Our VaR model is based on a historical simulation at a 99% confidence level and over a one-day holding period. As VaR is a statistical measure based on historical market fluctuations, past changes in market risk factors may not accurately predict forward-looking market conditions all the time. Under the defined confidence threshold, losses on a single trading day may exceed VaR, on average, once every 100 days.

Other Risk Measures
Apart from VaR, there are numerous other market risk measures used in monitoring the market risk of the Treasury positions. Present Value of a Basis Point (PV01) - which measures the change in value of interest rate sensitive exposures resulting from one basis point increase across the entire yield curve - is an important interest rate risk measure monitored on a daily basis. FX Net Open Position (NOP) measures the exposure to each currency while present value of a basis point increase in Credit Spreads (CS01) measures the change in value of credit sensitive exposures resulting from one basis point increase in the credit spread. Risk measures used also include FX basis limits, notional limits and derivative greeks for specific exposure types.

Stress Testing and Scenario Analysis
We perform stress testing and scenario analysis to further assess the potential losses arising from low probability but plausible extreme market conditions. The stress scenarios are regularly reviewed and fine-tuned to ensure that they remain relevant to our trading activities and risk profile as well as prevailing and forecasted economic conditions. This analysis determines if the potential losses from such extreme market conditions are within our risk tolerance. Besides the regular stress scenarios, ad-hoc stress scenarios are also performed for specific market conditions to assess the potential impact.

Risk Monitoring and Control
Limits
Only authorised trading activities for approved products may be undertaken by the various trading units. All trading risk positions are monitored by independent support units on a daily basis against approved and allocated market risk limits. Trading activities are conducted within approved mandates and dynamically hedged to remain within market risk limits. High utilisations alert are sent to traders and head of desk when utilisations exceeds 70%. Limit excesses and

triggers are promptly reported and escalated to senior management and committees as per the Market Risk Limit Control Policy.

Model Validation
Model validation is also an integral part of our risk control process. Financial models are used to value and measure the risk of the financial instruments. These models are governed by the Model Risk Management Framework which ensures that the models used are fit for their intended purpose through internal verification and periodic review. We source market rates independently for risk measurements and valuations to enhance the integrity of the trading P&L and risk measures generated by these models.

Back-Testing
To ensure the continued integrity of our VaR model, we regularly back-test the VaR estimates against actual daily trading P&Ls and theoretical P&Ls. Back-test exceptions are promptly investigated and results are escalated to senior management.

ASSET LIABILITY MANAGEMENT

Asset liability management refers to the strategic management of the Group's balance sheet structure and liquidity requirements. It covers liquidity sourcing and diversification as well as interest rate management.

Asset Liability Management Approach
Our Asset Liability Management Framework focuses on managing the exposures arising from the Group's balance sheet. We monitor our liquidity risk and interest rate risk in the banking book (IRRBB) profiles against approved risk limits under both business-as-usual and stressed scenarios. These are based on the standards established in the framework, policies and procedures which are subject to regular reviews to ensure that they remain relevant in the context of the prevailing market conditions and practices.

We have robust internal control processes and automated systems to support our asset liability management approach. We are also embarking on system upgrades to improve risk reporting and roll out new functionalities to support the changing regulatory landscape.

Liquidity Risk
The objective of liquidity risk management is to ensure that we have sufficient funds to meet contractual and regulatory financial obligations and to undertake new transactions.

Liquidity monitoring is performed daily within a framework for projecting cash flows on a contractual and behavioural basis. Indicators such as liquidity and deposit concentration ratios are used to establish the level of optimal funding mix and asset composition. Funding strategies are established to provide effective diversification and stability in funding sources across tenors and products. Simulations of liquidity exposures under stressed market scenarios are performed and the results are used to adjust liquidity risk management strategies, policies and positions, as well as develop contingency funding plans. We maintain liquid assets in excess of regulatory requirements to strengthen our ability to meet liquidity needs during a crisis. These liquid assets comprise central bank reserves and marketable securities.

Interest Rate Risk in the Banking Book
The primary goal of the management of IRRBB is to ensure that interest rate risk exposures are maintained within defined risk tolerances and are consistent with our risk appetite. The material sources of IRRBB are repricing risk, basis risk and optionality risk.

We use a range of calculation methodology to measure IRRBB from an earnings and economic value perspective on a monthly basis. One method involves the simulation of the impact of

various interest rate scenarios on the Group's net interest income and the economic value of equity (EVE). Other measures include interest rate sensitivity measures such as PV01 and repricing gap profile analysis. Behavioural models are used to assess interest rate risks in relation to loan prepayment, time deposit early redemption and the profile of non-maturity deposits.

OPERATIONAL RISK MANAGEMENT

Operational risk is inherent in all banking products, activities, processes and systems. The effective management of operational risk is a fundamental element of our risk management programme.

Operational Risk Management Approach
Our Operational Risk Management Framework ensures operational risks are properly identified, managed, monitored, mitigated, and reported in a structured and consistent manner. It enables us to fulfil our fiduciary duties, comply with legal and regulatory requirements, mitigate other risk factors and manage any reputational risk impact. We aim to manage both expected and unexpected losses, including those caused by catastrophic events. These two objectives act as parameters to manage our risk as we pursue new business opportunities.

Each business unit undertakes self-assessments on a regular basis by evaluating the robustness of its risk and control environment, including compliance with all legal and regulatory requirements. Performance metrics are also used to detect early warning signals and to drive appropriate management actions before the risks result in material losses. Operational risk data is also analysed and reported regularly to senior management. Senior management attests annually to the CEOand notifies RMC on the adequacy and effectiveness of the internal controls and risk management systems and highlights accompanying remedial plans to address any outstanding key control deficiencies.

To mitigate operational losses, we have insurance programmes to protect the Bank and its employees against adverse events. These programmes cover losses relating to crime, cyber risks, professional indemnity, directors' and officers' liability, property damage and public liability.

In addition, the subject-specific key risks that we focus on include but are not limited to the following:

Key Risks	How is risk managed?
Technology, Information and Cyber Risk	• Through framework and programmes which adopt a defence-in-depth approach to manage technology, information and cyber risks. The framework and programmes comprise: – Guidelines to promote the safe adoption of emerging technologies. – Appropriate controls to ensure the confidentiality, integrity and availability of our information assets, including regular security reviews and audits to test the control effectiveness. – Robust cyber defence capabilities, cyber risk vigilance and awareness, social engineering testing, incident response, crisis management and business continuity and insurance protection. It also includes active senior management involvement to prevent, detect and respond to the evolving cyber threat landscape. • By active engaging and sharing cyber threat information with industry players such as BNM Cyber Working Group and Paynet Cyber Resilience Working Group. *Please refer to the OCBC Group's Sustainability Report for more information on cyber resilience.*

Fraud Risk	• Through fraud risk management and whistle-blowing programmes to prevent and detect fraud or misconduct. These programmes comprise: – Internal and external whistle-blowing channels for employees and the public. – Independent investigations into fraud incidents with regular reporting (including root cause analysis, extent of damage, remedial actions and recovery steps for major incidents) to the ORC and RMC. – Fraud awareness for staff and customers. • Via robust anti-fraud detection systems to monitor transactions and detect any compromised devices interacting with our online banking platforms. • By having Internal Audit independently review all fraud and whistle-blowing cases. The outcome is reported to the Audit Committee.
Anti-Money Laundering (AML)/ Countering the Financing of Terrorism (CFT) and Sanctions Risk	• Through a robust group wide AML/CFT and sanctions framework and programme that are aligned with BNM, MAS and sanctions regulations, as well as with international organisations, such as the Financial Action Task Force (FATF), Basel Committee and Wolfsberg Group. The framework and programme comprise: – AML/CFT & Sanctions policy, guidelines and procedures covering key pillars such as customer due diligence, transaction monitoring, escalation protocol and investigation process. – Dedicated AML/CFT committee with members from senior management to oversight AML/CFT matters. – Risk assessment methodologies leveraging our existing monitoring and screening platform, data analytics to assess customer, product and geographical risks, as well as risk surveillance platform to monitor emerging financial crime trends and typologies. – Building staff competency through targeted specialised training, including certified courses recognised by the Asian Institute of Chartered Bankers.
Legal and Regulatory Risk	• Through a legal and compliance risk management framework which defines the required environment and organisational components to ensure compliance with relevant laws, regulations, rules and standards. The framework is complemented by stringent and robust compliance policies, procedures and guidelines based on international best practices which are adapted to our requirements, and regular training to staff.
Third-Party Risk	• Through a programme which sets the control expectations to manage the risk arising from the use of third-party service providers, including the oversight by a multi-disciplinary management group. • Active sharing of practices and keeping abreast of industry developments via the Association of Banks in Malaysia (ABM).

Business Continuity Risk	• Through a programme to minimise the interruption to essential business activities and services during a crisis. The programme comprises: – Robust recovery strategies and business recovery plans which are reviewed and tested annually. – Regular exercises to enhance awareness and the robustness of the programme. – Annual attestation by senior management to the RMC on the business continuity readiness, extent of alignment with regulator's guidelines and declaration of acceptable residual risk.
Physical and People Security Risk	• Through a programme to address the physical and security risks to people and assets. This programme comprises: – Active monitoring of external events that may pose a threat to OCBC locations, people and assets. – Provision of advisories and response procedures to better prepare the Bank and our employees to handle risk events, including risks posed to staff on business travel.
Fiduciary Risk	• Through a fiduciary risk management programme to manage risks associated with fiduciary relationships arising from managing funds or providing other agency services. The programme provides guidelines on identification, assessment, monitoring and mitigation of fiduciary risk exposures to ensure compliance with applicable corporate standards.
Reputational Risk	• Through a reputational risk management policy which focuses on understanding and managing our responsibilities towards our stakeholders and protecting our reputation. This includes the identification, assessment, monitoring and mitigation of reputational risk exposures, as well as effective information sharing and engagement with our stakeholders.

SHARIAH GOVERNANCE

Overview

OCBC Al-Amin Bank Berhad (OABB) is governed under Islamic Financial Services Act 2013 (IFSA) which requires Islamic Financial Institutions (IFI) to ensure that its aims and operations, business, affairs and activities are Shariah compliant and in accordance with the advice or ruling issued by the Shariah Advisory Council (SAC). BNM has issued the Shariah Governance Framework (SGF) that sets out the expectations on an IFI's Shariah governance structures, processes and arrangements to ensure that all its operations and business activities are in accordance with Shariah. SGF also provides a comprehensive guidance to the board, Shariah Committee and management of the IFI in discharging its duties in matters relating to Shariah and outlines the functions relating to Shariah review, Shariah audit, Shariah risk management and Shariah research. In 2019, BNM issued the revised policy document on Shariah Governance that outlines strengthened regulatory expectations for effective Shariah governance arrangements that are well-integrated with business and risk strategies of the IFI. In this respect, OABB operationalizes the SGF requirements in its internal Shariah Governance Framework.

Shariah Risk Management

Shariah risk management is a function that systematically identifies, measures, monitors and reports Shariah non-compliance risks in the operations, business, affairs and activities of OABB. Shariah non-compliance risk refer to the risk of legal or regulatory sanctions, financial loss or non-financial implications including reputational damage, which OABB may suffer arising from failure to comply with the rulings of the Shariah Advisory Council of Bank Negara Malaysia (SAC), standards on Shariah matters issued by BNM pursuant to section 29(1) of the IFSA, or decisions or advice of the OABB's Shariah Committee. The Shariah risk management function involves:

(i) integrate Shariah non-compliance risk considerations with enterprise-wide risk management;
(ii) identify Shariah non-compliance risk exposures in the business operations and activities of OABB;
(iii) assess Shariah non-compliance risk and measure the potential impact of the risk exposures to OABB;
(iv) establish appropriate risk mitigation measures;
(v) monitor Shariah non-compliance risk exposures and effectiveness of the risk mitigation measures;
(vi) report to the board, Shariah committee and senior management on the Shariah non-compliance risk exposures; and
(vii) constructively challenge decisions that may give rise to Shariah non-compliance risks.

All potential Shariah Non-Compliance Events (SNCEs) are submitted to OABB's Shariah Committee for their deliberation and decision. All actual SNCEs as confirmed by the Shariah Committee are to be reported to BNM within the required timeframe. In ensuring a robust oversight on Shariah non-compliance risk, periodic reporting on Shariah non-compliance risk is submitted to Risk Management Committee.

Note:
In this document, for whatever that is related to Islamic Banking, the following terms shall apply:

1. Risk Weighted Capital Adequacy Framework (RWCAF) also refers to Capital Adequacy Framework for Islamic Bank (CAFIB) (inclusive of Disclosure Requirements for Pillar 3 where applicable);
2. Loan also refers to Financing;
3. Borrower also refers to Customer;
4. Interest also refers to Profit;
5. Interest Rate also refers to Benchmark Rate;
6. Lending also refers to Financing.

Basel II Pillar 3 Market Disclosure

OCBC Bank (M) Berhad Group – Position as at 31 December 2019)

The purpose of this disclosure is to provide the information in accordance with BNM Risk Weighted Capital Adequacy Framework (Basel II) – Disclosure Requirements (Pillar 3) and Capital Adequacy Framework for Islamic Bank (CAFIB - Basel II) – Disclosure Requirements (Pillar 3) Guidelines. This supplements the disclosure in the Risk Management Chapter as well as related information in the Notes to the Financial Statements.

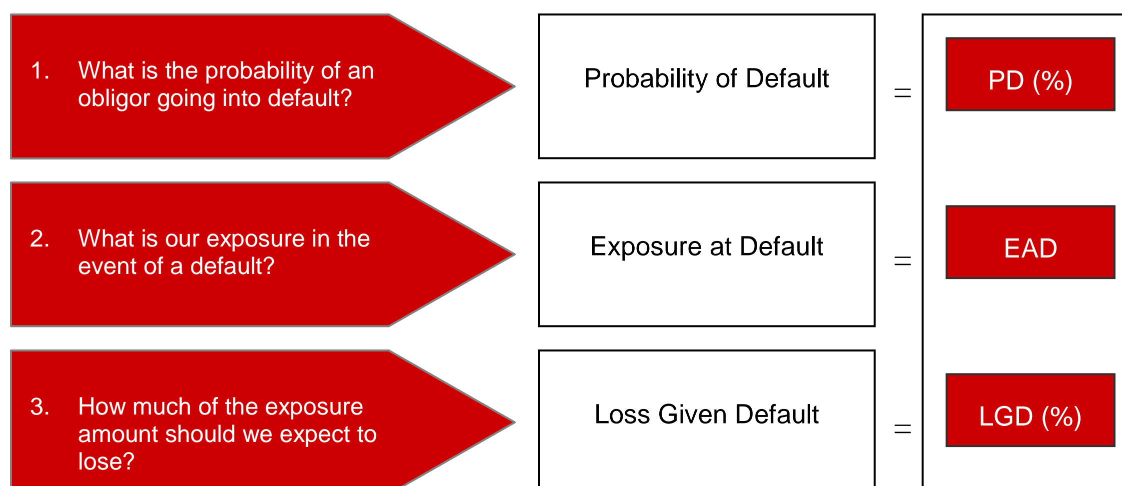
Exposures and Risk Weighted Assets (RWA) by Portfolio

	EAD[1] RM million	RWA RM million
Credit Risk		
Standardised Approach		
Corporate	50	50
Sovereign & Central Bank	15,812	100
Public Sector Entities	612	92
Retail	237	252
Equity	105	105
Securitisation	-	-
Others	773	456
Total Standardised	**17,589**	**1,055**
Internal Ratings-Based (IRB) Approach		
Foundation IRB		
Corporate	40,281	34,786
Bank	4,643	699
Advanced IRB		
Residential Mortgage	28,336	3,674
Qualifying Revolving Retail	1,988	658
Other Retail - Small Business	9,745	3,315
Specialised Lending under Supervisory Slotting Criteria	194	236
Total IRB	**85,187**	**43,368**
Total Credit Risk	**102,776**	**44,423**
Market Risk		
Standardised Approach		1,503
Total Market Risk		**1,503**
Operational Risk		
Standardised Approach[2]		4,885
Total Operational Risk		**4,885**
Total RWA		**50,811**

Note:
[1] EAD refers to exposure at default after credit risk mitigation
[2] OCBC Bank (M) Berhad Group and OCBC Bank (M) Berhad have adopted the Standardised Approach, with effect from 2012, while OCBC Al-Amin Bank Berhad is on the Basic Indicator Approach.

CREDIT RISK

With Basel II implementation, OCBC Bank (M) Berhad Group has adopted the Internal Ratings-Based (IRB) Approach for major credit portfolios, where 3 key parameters – Probability of Default (PD), Exposure at Default (EAD) and Loss Given Default (LGD) are used to quantify credit risk.



Credit Exposures under Standardised Approach

Credit exposures under standardised approach are mainly exposures to sovereign and central bank. Rated exposures relate mainly to sovereign and central bank while unrated exposures relate mainly to Islamic personal financing and other assets.

Risk Weight	EAD RM million
0%	16,354
20% - 35%	49
50% - 90%	327
100%	718
>100%	36
Total	**17,484**
Rated exposures	16,431
Unrated exposures	1,052

Note: Excludes Equity

Equity Exposures under Standardised Approach

Equity exposures for regulatory capital computation are risk weighted in accordance with BNM Risk-Weighted Capital Adequacy Framework (Basel II – Risk-Weighted Assets Computation) under the standardised approach.

Risk Weight	EAD RM million
100%	105
Total	**105**

Securitisation Exposures

There is no securitization and re-securitisation exposure in the banking and trading books as at 31 December 2019.

Specialised Lending Exposures under Supervisory Slotting Criteria

Specialised lending exposures include project and object financing.

	EAD RM million	Average Risk Weight
Strong	-	-
Good	-	-
Satisfactory	194	122%
Weak	-	-
Default	-	NA
Total	**194**	**122%**

Credit Exposures under Foundation Internal Ratings-Based Approach (F-IRBA)

Corporate exposures are mainly exposures to corporate and institutional customers, major non-bank financial institutions as well as financing of income-producing real estate. Bank exposures are mainly exposures to commercial banks.

Corporate Exposures

PD Range	EAD RM million	Average Risk Weight
up to 0.05%	545	14%
> 0.05 to 0.5%	12,793	46%
> 0.5 to 2.5%	16,936	92%
> 2.5 to 9%	8,081	139%
> 9%	990	193%
Default	936	NA
Total	**40,281**	**86%**

Bank Exposures

PD Range	EAD RM million	Average Risk Weight
up to 0.05%	2,741	11%
> 0.05 to 0.5%	1,716	17%
> 0.5 to 2.5%	186	62%
> 2.5 to 9%	#	155%
> 9%	-	-
Default	-	NA
Total	**4,643**	**15%**

"#" represents amount less than RM0.5 million

Credit Exposures under Advanced Internal Ratings-Based Approach (A-IRBA)

Residential Mortgages are loans to individuals secured by residential properties. Qualifying Revolving Retail exposures are credit card facilities to individuals. Other Retail – Small Business exposures include lending to small businesses and commercial property loans to individuals.

Residential Mortgages

	EAD	Undrawn Commitment	EAD Weighted Average	
PD Range	RM million	RM million	LGD	Risk Weight
up to 0.5%	21,010	1,744	12%	7%
> 0.5 to 3%	4,606	272	12%	17%
> 3 to 10%	819	15	13%	50%
> 10%	1,298	16	13%	71%
100%	603	18	19%	27%
Total	**28,336**	**2,065**	**12%**	**13%**

Qualifying Revolving Retail Exposures

	EAD	Undrawn Commitment	EAD Weighted Average	
PD Range	RM million	RM million	LGD	Risk Weight
up to 0.5%	1,341	2,130	76%	10%
> 0.5 to 3%	423	286	76%	44%
> 3 to 10%	152	47	76%	129%
> 10%	66	18	78%	213%
100%	6	-	75%	0%
Total	**1,988**	**2,481**	**76%**	**33%**

Other Retail - Small Business Exposures

	EAD	Undrawn Commitment	EAD Weighted Average	
PD Range	RM million	RM million	LGD	Risk Weight
up to 0.5%	6,396	1,628	33%	18%
> 0.5 to 3%	2,023	121	45%	53%
> 3 to 10%	338	29	37%	60%
> 10%	669	24	38%	81%
100%	319	12	42%	102%
Total	**9,745**	**1,814**	**37%**	**34%**

Actual Loss and Expected Loss for Exposures under Foundation and Advanced IRB Approaches

Actual loss refers to net impairment loss allowance and direct write-off to the statement of profit or loss during the year. Expected loss ("EL") represents model derived and/or regulatory prescribed estimates of future loss on potential defaults over a one-year time horizon. Comparison of the two measures has limitations because they are calculated using different methods. EL computations are based on LGD and EAD estimates that reflect downturn economic conditions and regulatory minimums, and PD estimates that reflect long run through-the-cycle approximation of default rates. Actual loss is based on accounting standards and represents the point-in-time impairment experience for the financial year.

	Actual Loss for the 12 months ended 31 December 2019 RM million	Regulatory Expected Loss (Non-defaulted) as at 31 December 2018 RM million
Corporate	92	291
Bank	-	3
Other Retail - Small Business	15	127
Retail	38	91
Total	**145**	**512**

Exposures Covered by Credit Risk Mitigation

	Eligible Financial Collateral RM million	Other Eligible Collateral RM million	Amount by which credit exposures have been reduced by eligible credit protection RM million
Standardised Approach			
Corporate	14	-	-
Sovereign & Central Bank	-	-	-
Public Sector Entities	-	-	430
Retail	25	-	-
Others	#	-	-
Total	**39**	**-**	**430**
Foundation IRB Approach			
Corporate	1,055	10,499	159
Bank	215	-	-
Total	**1,270**	**10,499**	**159**

Note:
1. Not all forms of collateral or credit risk mitigation are included for regulatory capital calculations.
2. Does not include collateral for exposures under Advanced IRB Approach and Specialised Lending.

"#" represents amount less than RM0.5 million

Counterparty Credit Risk Exposures

	RM million
Replacement Cost	743
Potential Future Exposure	1,898
Less: Effects of Netting	874
EAD under Current Exposure Method	**1,767**
Analysed by type:	
Foreign Exchange Contracts	995
Interest Rate Contracts	711
Equity Contracts	22
Gold and Precious Metals Contracts	-
Other Commodities Contracts	5
Credit Derivative Contracts	34
Less: Eligible Financial Collateral	215
Net Derivatives Credit Exposure	**1,552**

Note: Not all forms of collateral or credit risk mitigation are included for regulatory capital calculations.

Credit Derivatives

	Notional Amount RM million	
	Bought	**Sold**
Credit Derivatives Swap		
for own credit portfolio	-	-
for intermediation activities	477	477
Total	**477**	**477**

Note: Credit derivatives for own credit portfolio include trading portfolio and hedges, if any.

MARKET RISK

Exposure, Risk Weighted Assets and Capital Requirement by Market Risk Type under Standardised Approach

	Gross Exposure		Risk Weighted	Min. Capital
	Long Position	Short Position	Assets	Requirement
	RM million	RM million	RM million	RM million
Interest Rate Risk	24,682	23,435	859	69
Foreign Currency Risk	205	599	601	48
Equity Risk	-	-	-	-
Commodity Risk	33	32	27	2
Inventory Risk	-	-	-	-
Options Risk	1	-	16	1
Total	**24,921**	**24,066**	**1,503**	**120**

EQUITY EXPOSURES

Equity exposures comprised investments in quoted and unquoted equity instruments. There is no exposure to quoted equity as at 31 December 2019.

Disclosures on accounting policy and fair value measurement of equity securities are in Notes to the Financial Statements 2C(b)(ii), 2P and 40.

Carrying Value of Equity Exposures

	RM million
Quoted equity exposure - AFS	-
Unquoted equity exposure - AFS	105
Quoted equity exposure - Associates	-
Unquoted equity exposure - Associates	-
Total	**105**

Realised and Unrealised Gains and Losses

	RM million
Gains/(losses) from disposal of AFS equities	-
Unrealised gains/(losses) included in fair value reserve	92
Total	**92**

Interest Rate Risk in Banking Book

Based on a 50 bp parallel rise in yield curves on the OCBCM's exposure to major currency i.e. Malaysian Ringgit, net interest income is estimated to increase by MYR129.2 million, or approximately +8.6% of reported net interest income. The corresponding impact from a 50 bp decrease is an estimated reduction of MYR124.7 million in net interest income, or approximately -8.3% of reported net interest income.