



OCBC Bank (Malaysia) Berhad
(Incorporated in Malaysia)

Basel II Pillar 3 Market Disclosures 31 December 2018

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.

BASEL II PILLAR 3 MARKET DISCLOSURES – 31 DECEMBER 2018

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OCBC Bank (Malaysia) Berhad
(Incorporated in Malaysia)

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 2018.

DATO' ONG ENG BIN
CHIEF EXECUTIVE OFFICER

Kuala Lumpur

Risk Management

OCBC (M) Group (hereinafter referred 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

Effective risk management is critical to the long-term sustainability of the Group. To achieve this, we have identified the following key high-level risk management fundamentals to forge a common approach to managing risk at the enterprise level.

- **Risk Culture** – The Board and top management sets the tone for a strong risk culture. This is framed by Risk Management Committee (RMC), supported by a Risk Culture framework, with robust internal control environment. The framework embeds and reinforces a systematic approach to managing risk across the Group to ensure awareness, competency and accountability of practices. All customer-facing business units, product teams, independent functional risk management units and support units are actively involved in the risk management process.
- **Risk Appetite** – The Board sets the Group’s risk appetite, which defines the level and nature of risks that the Group is willing to take. The risk appetite addresses the key considerations of its stakeholders and takes into account its risk and financial resource capacity in relation to regulatory requirements as well as the medium- to long-term operating environment. The Group’s risk appetite is aligned with the strategic business goals and risk-adjusted return expectations and is operationalized through specific risk appetite statements for key businesses and subsidiaries. In addition, portfolio risk limits are cascaded from the risk appetite and used to establish business-operating boundaries.
- **Risk Management Frameworks** – The overarching risk management framework developed for each principal risk type is supported by policies, methodologies, tools, processes and controls. These are built around robust governance structures to ensure that they are effective and comprehensive in the identification, measurement, monitoring and control, and reporting of risks.
- **Holistic Risk Management** – Risks are managed holistically by evaluating risk interactions across the different risk types. Both business and risk-control units actively participate in regular forums to identify and assess top and emerging risks and opportunities arising from changes in the business environment. Quantitative stress testing and sensitivity analysis supplemented with qualitative analysis help senior management to quantify the impact that potential adverse events pose to our portfolios and the Group’s earnings. The results and recommended risk-response strategies are considered in business strategy formulation, capital adequacy assessment and risk limits setting.
- **Independent Review** – Internal Audit conducts risk-based audits to provide independent assurance that our risk management systems as well as control and governance processes are effective and comply with both regulatory requirements and internal rules and standards. Internal Audit also evaluates the overall risk awareness and control consciousness of the management in discharging its supervisory and oversight responsibilities through a Management Control Oversight Rating (MCOR). This evaluation is done based on a collective view of awareness, aptitude and attitude factors.

RISK GOVERNANCE AND ORGANISATION

At OCBC (M) Group, the Board establishes the Group's risk appetite and risk management principles. The Risk Management Committee (RMC) is the principal board committee that oversees the Group's risk management with the following key responsibilities:

- sets the Group's overall risk management philosophy, ensuring it is in line with the Group strategy and within the risk appetite as approved by the Board.
- reviews risk disclosure policy and risk management principles for the approval of the Board.
- oversees the Group's risk management systems for identifying, measuring, monitoring and control, and reporting of risk exposures and ensuring the adequacy of risk management practices.
- approves risk management frameworks, major risk policies and material risk models.

The RMC is supported by Group Risk Management Division (GRM), which is headed by the Country Chief Risk Officer (Country CRO). GRM is an independent risk and control oversight function that supports the Group's business development within a prudent, consistent and effective risk management framework and governance structure. GRM establishes relevant risk management frameworks, policies and procedures, risk measurements and methodologies; it also reviews and monitors the Group's risk profiles and portfolio concentrations. Any significant vulnerabilities and risk issues are highlighted to the respective risk management committees. Various risk reports, including key stress test results and action plans, are also submitted regularly to senior management, RMC and the Board.

The independence of risk management from business functions ensures that we achieve the necessary balance between risk-taking and return considerations. The compensation of risk officers is also determined independently from other business areas and reviewed by the Nominating and Remuneration Committee to ensure it remains market-competitive. Additionally, we have a Material Risk Takers (MRTs) framework to define and identify MRTs – employees whose authorities and actions are identified as having material influence on our long-term performance. Specific compensation measures would commensurate with the risks the MRTs are authorised to take.

Senior management actively manages risks through various risk management committees at OCBC Group level such as the Credit Risk Management Committee¹ and the Market Risk Management Committee, as well as various risk management committees at Group level such as the Asset and Liability Management Committee and the Operational Risk Management Committee. GRM facilitates a regular and structured emerging risk forum to identify and deliberate on potential dark clouds and opportunities. Identified emerging risks are actively monitored and updated to reflect changes in the operating environment, and serve as inputs into other risk management areas such as stress testing and portfolio limit setting. Both risk-taking and risk control units are represented in the risk management committees, emphasising shared risk management responsibilities.

All new products and services are governed by the New Product Approval Process (NPAP) which is managed by GRM and approved by the New Product Approval Committee (NPAC). This process provides a platform to ensure that all risks associated with new products and services are comprehensively identified, assessed, managed and mitigated before launch.

¹ *The Credit Risk Management Committee at OCBC (M) Group is responsible in reviewing and managing the Group's credit portfolio, as well as aligning credit risk management with business strategy and planning.*

BASEL REQUIREMENTS

The Group has implemented the Bank Negara Malaysia (BNM) Risk-Weighted Capital Adequacy Framework (“RWCAF”) for banks incorporated in Malaysia, including enhanced quality of regulatory capital base under Basel III. As part of enhanced public disclosures on risk profile and capital adequacy, the Group has made additional disclosures since 2010. Please refer to the Group Basel II Pillar 3 Market Disclosure for more information.

For credit risk, the Group has adopted the Foundation Internal Ratings-Based (F-IRB) approach and supervisory slotting criteria to calculate credit risk-weighted assets for major wholesale portfolios, and the Advanced Internal Ratings-Based (A-IRB) approach for major consumer and small business lending portfolios. Other credit portfolios are on the Standardised Approach (SA). They will be progressively migrated to the internal ratings-based approaches, where appropriate. The regulatory capital to be set aside for credit risk-weighted assets depends on various factors, including internal risk grades, product type, counterparty type, and maturity.

For market risk, the Group has adopted the Standardised Approach. Risk weights for market risk assets are specified according to the instrument category, maturity period, credit quality grade, as well as other factors and applied to the corresponding notional amount as prescribed under BNM. For operational risk, the Group has adopted the Standardised Approach (TSA) while its Islamic subsidiary, OCBC Al-Amin, is on the Basic Indicator Approach (BIA). Under the regulatory guidelines for TSA, operational risk-weighted assets are derived by applying specified factors to the annual gross income for the prescribed business lines while BIA requires a fixed percentage of positive annual gross income over the previous three years.

The Group conducts the Internal Capital Adequacy Assessment Process (ICAAP) assessment annually to evaluate whether the Group is able to maintain sound capital levels after considering business plans and material risks under both base case and severe stress scenarios. Management actions are proposed where necessary to ensure that the Group remains prudently managed.

Implementing the Basel framework is an integral part of our efforts to refine and strengthen our risk management. We closely follow on-going industry and regulatory developments, including higher liquidity and capital requirements.

CREDIT RISK MANAGEMENT

Credit risk arises from the risk of loss of principal or income on the failure of an obligor or counterparty to meet its contractual obligations. As our primary business is commercial banking, the Group is exposed to credit risks from its lending activities. Trading and investment banking activities also expose the Group to counterparty and issuer credit risks. For derivative transactions, the total credit exposure is quantified by the transactions' current positive mark-to-market value of the underlying instruments plus an appropriate add-on factor to cater for potential future exposure.

Credit Risk Management Oversight and Organisation

The Credit Risk Management Committee (CRMC) is the senior management group that supports the RMC and Country Chief Executive Officer (CEO). It oversees the execution of the Group's Credit Risk Management (CRM) framework and policies, including the effectiveness of our risk infrastructure, methodologies and systems in ensuring that credit risk taking is consistent with our risk appetite and aligned with the relevant business strategy. The CRMC also reviews the credit profile of material portfolios, recommends and monitors exposure undertaken against risk limits and highlights any material risk issues to the CEO and RMC.

The Credit Risk Management (CRM) department ensure the execution of the CRM framework, policies and procedures. This department also independently manage credit risk to ensure that risk-returns are within our risk appetite, target markets, limits and risk standards. The Group also has dedicated risk control functions that are responsible for portfolio risk monitoring, risk measurement methodology, risk reporting and remedial management.

Regular risk reports are provided to the CRMC, CEO, RMC and the Board in a timely, objective, and transparent manner for review. These reports include detailed credit exposures, credit migration, expected losses, and risk concentrations by business segment. Regular stress tests and portfolio reviews are conducted to assess the potential impact of emerging risk on our credit exposures, including interactions among credit, market and liquidity events. The results of the stress tests and portfolio reviews are factored into the adjustment and refinement of risk-taking strategies, as well as credit and concentration limits to remain within our risk appetite.

Credit Risk Management Approach

The Group's CRM framework encapsulates the complete cycle of credit risk management. It covers the identification, assessment, measurement, monitoring as well as the control and mitigation of credit risks. It also articulates the importance of proactive credit risk management.

The Group seeks to undertake credit risks that meet its target market and risk acceptance criteria, lending parameters and risk-return expectations for sustainable performance. In addition to effective risk management practices, the sound judgement of our experienced credit officers is also key to our successful risk management.

The Group has a Responsible Financing framework and policy in place that sets out its overall approach towards the management of Environmental, Social and Governance (ESG) risks, including the integration of ESG considerations into its credit and risk evaluation process for its lending and capital market activities. The Group has also developed sector-specific policies for Agriculture, Forestry, Energy, Mining and Metals that set out the criteria and thresholds for transactions involving these elevated ESG risk industries. Transactions with high ESG or reputational risk are escalated to the Reputational Risk Review Group for clearance. Please refer to the OCBC Group's Sustainability Report for more information on Responsible Financing.

Lending to Consumers and Small Businesses

Credit risks for consumer and small businesses are managed on a portfolio basis under credit programmes such as mortgages, credit cards, unsecured loans, commercial property loans, and business term loans. Credit extended under these programmes should fall within the portfolio and transaction limits, customer selection criteria and acquisition strategy, product structure, lending criteria, as well as acceptable collateral and advance ratio. Apart from the bankruptcy and credit bureau checks, systems and processes such as source identification of credit origination and independent verification of documentation are used to detect fraud. The performance of the portfolio is closely monitored on a monthly basis using management information system (MIS) analytics. Application models are also used in the credit decision process for most of our products to enable efficient, objective and consistent risk evaluation and decisions. Behavioural models are used for early identification of potential problem loans.

Lending to Corporate and Institutional Customers

Credit extended to corporate and institutional customers are individually assessed, risk-rated and further reviewed and evaluated by experienced credit officers. Credit decisions are made after comprehensive qualitative and quantitative risk assessment, including a thorough understanding of the customer and customer group's interdependencies, and their ability and willingness to meet their financial obligations. Credit extensions are guided by predefined target market and risk acceptance criteria. Collateral and other credit support are also taken into consideration to mitigate credit risk where appropriate. To ensure objectivity in credit extension, co-grantor approvals and shared risk ownership are required from both business and credit risk units.

Credit Risk from Investment or Trading Activities

Counterparty credit risks arising from our trading, derivatives and debt securities activities are actively managed to protect against potential losses in replacing a contract if a counterparty fails to meet its obligations. If on a bilateral basis, in most cases, the transactions will be governed under International Swaps and Derivatives Association (ISDA) agreements as well as Credit Support Annexes (CSAs) or an equivalent to allow for close-out netting if the counterparty defaults.

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

Internal Credit Rating Models

Internal credit rating models are an integral part of the Group's credit risk management, credit decision-making process, and capital assessment. These internal rating models and the parameters – probability of default (PD), loss given default (LGD), and exposure at default (EAD) – are factors used in limit setting, credit approval, portfolio monitoring and reporting, remedial management, stress testing, internal assessment of the capital adequacy and impairment allowances.

Model risk is managed under our Model Risk Management framework and Credit Rating Model framework, to govern the development, validation, application and performance monitoring of rating models. Approval for 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 internal standards.

The models are subject to annual (or more frequent) review and independent validation to ensure that they are performing as expected and that the assumptions used in model development remain appropriate. 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.

The Group's internal risk grades are not explicitly mapped to external credit ratings. Nevertheless, our internal risk grades may correlate to external credit ratings in terms of the probability of default ranges as factors used to rate obligors would be similar; an obligor rated poorly by an external rating agency is likely to have a weaker internal risk rating.

A-IRB for Major Consumer and Small Business Portfolios

The Group has adopted the A-IRB approach for major consumer portfolios, including residential mortgages, credit cards and small business lending. Internal rating models, developed from internal data, are used to estimate PD, LGD, and EAD parameters for each of these portfolios. Application and Behaviour scores of obligors are key inputs to the PD models. Product and collateral characteristics are major factors used in the LGD and EAD models. The PD models are calibrated to the expected long-term average one-year default rate over an economic cycle, while the LGD models are calibrated to reflect the economic loss under downturn conditions.

F-IRB for Major Wholesale Portfolios

The Group's major wholesale portfolios, namely bank, non-bank financial institution, corporate real estate (including income-producing real estate specialised lending) and general corporate, are on the F-IRB approach. Under this approach, internal models are used to estimate the PD for each obligor, while LGD and EAD parameters are prescribed by BNM. These 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. Expert judgement models are typically used for portfolios with low defaults following inputs from internal credit experts. The models also comply with the regulatory criteria for parameterisation. For other specialised lending portfolios namely project finance, object finance and commodities finance, risk grades derived from internal models are mapped to the five supervisory slotting categories as prescribed in BNM RWCAF. The risk weights prescribed for these slotting categories are used to determine the regulatory capital requirements.

Standardised Approach for Other Portfolios

Other credit portfolios, such as exposures to sovereigns and Islamic personal financing are under the Standardised Approach. These portfolios will be assessed for migration to the internal ratings-based approaches where appropriate. Regulatory prescribed risk weights based on asset class and external ratings from approved credit rating agencies, where available, are used to determine regulatory capital. Approved external rating agencies include Standard & Poor's, Moody's, Fitch, Rating Agency Malaysia (RAM) and Malaysian Rating Corporation Berhad (MARC).

Credit Risk Control

Credit Risk Mitigation

Credit facility is granted primarily based on the borrower's credit quality and repayment capacity from operating cashflows for corporates and institutions, and personal income or wealth (after assessing the total debts and commitments) for individuals. Where possible, the Group takes credit risk mitigants as a secondary recourse to mitigate credit risk. The Group accepts collateral and credit protection such as cash, real estate, marketable securities, trade receivables, standby letters of credit and credit insurances. We have policies in place to set out the criteria for collateral to be recognised as eligible credit risk mitigants. This includes factors such as legal certainty and enforceability, priority, correlation, marketability, liquidity, counterparty risk of the protection provider, as well as collateral-specific minimum operational requirements. Valuations are performed by independent qualified appraisers and the value of collateral is monitored on a regular basis. The frequency of valuation depends on the type, liquidity and volatility of the collateral. Appropriate haircuts are applied to the market value of collateral to reflect the underlying nature, quality, liquidity and volatility of the collateral. The Group also accepts guarantees from individuals, corporates, and institutions mainly 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.

To manage counterparty credit risk, eligible financial collaterals may be taken to partially or fully cover mark-to-market exposures on outstanding positions, with a haircut to cover potential adverse market volatility. Collateral agreements, typically covered under market standard documentation such as ISDA, 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 credit risk associated with contractual obligations is reduced by the netting agreements in legally-approved jurisdictions, so that if an event of default occurs, all amounts with the counterparty are settled on a net basis. Agreements may also contain rating triggers where additional collateral posting is required in the event of a rating downgrade.

Managing Credit Risk Concentrations

Credit risk concentrations may arise from lending to single borrower, a group of connected borrowers, or diverse groups of borrowers affected by similar economic or market conditions. Where appropriate, limits are set and monitored to control concentrations by borrower, group of connected borrowers, product and industry. These limits are aligned with the Group's risk appetite, business strategy, capacity and expertise. Impact on earnings and capital are also considered in limit-setting.

While we are steadily diversifying our exposures, we have significant exposure to the real estate market in Malaysia. Dedicated specialist real estate units manage this risk by focusing on client selection, collateral quality, project viability, and real estate cycle trends. Regular stress tests are also conducted to identify potential vulnerabilities on the real estate portfolio.

The Group is in compliance with BNM Circular on Guidelines on Lending to the Broad Property Sector (BPS) and Lending for the Purchase of Shares and Units of Unit Trust Funds dated 29/03/1997, which limits BPS exposure to not more than 20% of its total outstanding loans, advances and financing.

Remedial Management

The Group has an established process to constantly assess our portfolios to detect potential problem credits at an early stage. As we value long-term customer relationships, we understand that some customers may be facing temporary financial distress and prefer to work closely with them at the onset of their difficulties. We recognise the opportunity to promote customer loyalty and retention in such instances, even as we enforce strict discipline and place a priority on remedial management to minimise credit loss.

The Group classifies credit exposures according to its assessment of the borrowers' ability to repay their financial obligations from normal sources of income. Credit exposures are categorised as "Pass" or "Special Mention", while impaired loans (ILs) are categorised as "Substandard", "Doubtful" or "Loss". Upgrading of ILs to performing status can only be done when there is an established trend of credit improvement.

Credit exposures are classified as restructured assets when the Group has granted concessions in restructured repayment terms to borrowers who are facing difficulties in meeting the original repayment schedules. 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 a credit exposure must comply fully with the restructured terms before it can be restored to performing loan status.

The Group has dedicated remedial management units to manage these problem credits for the wholesale portfolios. For the retail portfolios, appropriate risk-based and time-based collection strategies are developed to maximise recoveries. The Group also uses analytical data such as delinquency buckets and adverse status tags for delinquent retail loans to constantly fine-tune and prioritise its collection efforts.

Impairment Allowances

The Group maintains impairment allowances that are sufficient to absorb credit losses inherent in its loan portfolio. Impairment allowances are guided by Malaysian Financial Reporting Standard (MFRS) 9 - Financial Instruments.

For credit-impaired portfolio, Stage 3 Expected Credit Loss (ECL) is assessed individually based on a reasonable and well documented estimate of the net present value of the future cash flows that the Group determines to be recoverable from the borrower. The date of the projected recovery of the cash flows is used to determine the "Lifetime" of the ECL. For homogenous unsecured retail loans such as credit card receivables, full individual impairment allowances are taken on credit-impaired loans. Credit-impaired loans are written off against Stage 3 ECL after taking into consideration the realisable value of collateral, if any, when in the judgement of the management, there is no prospect of recovery.

For non-credit impaired portfolio, the Stage 1 and 2 ECL are assessed collectively and measured based on 12-month ECL if the credit risk of a credit exposure has not increased significantly since initial recognition and lifetime ECL where there is significant increase in credit risk, respectively.

Ceasing of Interest Accrual on Loans, Advances and Financing

When a loan is classified as impaired, interest income ceases to be recognised in the income statement on an accrual basis. However, this non-accrual of interest does not preclude the Group's entitlement to the interest income as it merely reflects the uncertainty in the collection of such interest income. Once a loan, advance or financing has been written down against impairment allowance, interest/finance income is recognised using the interest/profit rate used to discount the future cash flows for the purpose of measuring the impairment allowance.

Collateral Held Against Credit Impaired Loans

The Group's credit impaired loans are largely secured by real estate in Malaysia. The realisable value of the collateral is used to determine the adequacy of the collateral coverage. Cross collateralisation will only apply when exposures are supported by proper legal documentation.

MARKET RISK MANAGEMENT

Market risk is the risk of loss of income and/or market value due to fluctuations in factors such as interest rates, foreign exchange rates, credit spreads, equity and commodity prices, or changes in volatility or correlations of such factors. The Group is exposed to market risks from its trading, client servicing and balance sheet management activities.

The Group's market risk management strategy and market risk limits are established within the Group's risk appetite and business strategies, taking into account macroeconomic and market conditions. Market risk limits are subject to regular reviews.

Market Risk Management Oversight and Organisation

The Asset Liability Management Committee (ALCO) is the senior management group that supports RMC and the CEO in managing market risk. ALCO has oversight over the market risk management objectives, framework, and policies governing prudent market risk taking, which are backed by risk methodologies, measurement systems, and internal controls.

ALCO is chaired by the CEO and Corporate Treasury is the ALCO Secretariat. Market Risk Management (MRM) is the independent risk-control unit responsible for operationalising the Market Risk Management framework to support business growth while ensuring adequate risk control and oversight.

Market Risk Management Approach

Market risk management is a shared responsibility. Business units are responsible for proactively managing risk within their approved trading strategies and investment mandates, while MRM department acts as the independent monitoring unit to ensure sound governance. The key risk management activities of identification, measurement, monitoring, control, and reporting are regularly reviewed to ensure effective risk management under prevailing 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 the Group's 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. The 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 Analyses

The Group performs 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 the Group's trading activities and risk profile as well as prevailing and forecast economic conditions. This analysis determines if the potential losses from such extreme market conditions are within the Group's 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 the approved and allocated market risk limits. Trading activities are conducted within approved mandate and dynamically hedged to ensure compliance with 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 the Group's 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. Market rates used for risk measurements and valuations are sourced independently, thereby adding further to the integrity of the trading P&L and risk measures generated by the financial models used in managing market risk exposures.

Back-Testing

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

System and Infrastructure Upgrade

Robust internal control processes and automated systems have been designed and implemented to support our market risk management approach. These processes and systems are also reviewed regularly and enhanced to ensure effectiveness in supporting the increasingly complex Treasury instruments. The Group is also embarking on system upgrades to improve risk reporting and roll out new functionalities to support the changing regulatory landscape.

ASSET LIABILITY MANAGEMENT

Asset liability management is the strategic management of the Group's balance sheet structure and liquidity requirements, covering liquidity sourcing and diversification and interest rate management.

Asset Liability Management Oversight and Organisation

ALCO is the senior management group that is responsible for the management of the Group's balance sheet and liquidity risks. The ALCO is chaired by the CEO and includes senior management from the business, risk and support units.

Asset Liability Management Approach

The asset liability management (ALM) framework comprises liquidity risk management, and interest rate risk management.

Liquidity Risk

The objective of liquidity risk management is to ensure that there are sufficient funds to meet contractual and regulatory financial obligations and to undertake new transactions.

The Group's liquidity management process involves establishing liquidity management policies, limits and regular monitoring against them. The Group also performs short-term liquidity stress tests based on institution specific and market-wide liquidity stress scenarios. The results of the stress tests are used to adjust liquidity risk management strategies and to develop effective contingency funding plans.

Liquidity monitoring is performed daily within a framework for projecting cash flows on a contractual and behavioural basis. Simulations of liquidity exposures under stressed market scenarios are performed and the results are taken into account in the risk management processes. Indicators such as liquidity and deposit concentration ratios are used to maintain an optimal funding mix and asset composition. Funding strategies are established to provide effective diversification and stability in funding sources across tenors and products. In addition, liquid assets in excess of regulatory requirements are maintained for contingency use in the event of a liquidity crisis. These liquid assets comprise statutory reserve, eligible securities as well as marketable shares and debt securities.

Interest Rate Risk in the Banking Book

The primary goal of the management of Interest Rate Risk in the Banking Book (IRRBB) is to ensure that interest rate risk exposures are maintained within defined risk tolerances.

Interest rate risk is the risk to earnings and capital arising from exposure to adverse movements in market interest rates. The material sources of interest rate risk are gap risk, basis risk and option risk. A range of techniques are employed to measure these risks from an earnings and economic value perspective. 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 as well as repricing gap profile analysis. Triggers are set based on the Group's strategy and risk appetite. The results are used to adjust interest rate risk management strategies, policies and positions.

Limits are established to manage interest rate exposures and reviewed regularly to ensure they remained relevant in the context of the prevailing external environment. Control systems are in place to monitor the risk profile against the approved risk thresholds.

OPERATIONAL RISK MANAGEMENT

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people, systems and management, or from external events. Operational risk management enables us to fulfil our fiduciary duties, comply with legal and regulatory requirements and mitigate other risk factors. This will also help manage any reputational risks impact. The Group aims to manage both expected and unexpected losses, including those caused by catastrophic events. The twin objectives act as parameters to manage our risk as we pursue new business opportunities.

Operational Risk Management Oversight and Organisation

The Operational Risk Management Committee (ORC) is the senior management group that supports RMC and the CEO in managing operational risk. It supports the Group's business strategy by ensuring that operational risk is within acceptable tolerance levels and approved risk appetites. ORC also ensures that the Group's operational risk management programmes are appropriate and effective.

The Operational Risk Management (ORM) department establishes the ORM framework, supporting policies and techniques. It also independently oversees operational risk monitoring and controls that reside within business, products and process owners. ORM programmes are actively implemented through the respective Operational Risk Partners (ORP) or managers in the business units. ORM department has also developed an industry-recognised accreditation programme to raise the competency levels of ORPs.

Operational Risk Management Approach

The Group adopts an ORM framework that ensures operational risks are properly identified, managed, monitored, mitigated, and reported in a structured and consistent manner. The framework is underpinned by strong risk management and control culture.

Each business unit undertakes self-assessments on a regular basis by assessing the robustness of its risk and control environment, including compliance with all legal and regulatory requirements. Self-assessment declarations are subject to risk-based independent reviews. Performance metrics are also used to detect early warning signals and to drive appropriate management actions before the risks result in material losses. To enhance controls over trading activities and data loss prevention, we have specific risk units to perform end-to-end surveillance over these areas.

Senior management attests annually to the CEO, RMC and Board Audit Committee (BAC), 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. Operational risk data is analysed and reported regularly to senior management.

To mitigate against operational losses, insurance programmes are in place 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 the Group focuses on include but are not limited to:

Outsourcing Risk Management

The Group recognises the risks associated with outsourcing arrangements. As part of the Group's outsourcing risk management programme, we have a multi-disciplinary outsourcing management group to manage outsourcing risks in a structured, systematic and consistent manner.

Physical and People Security Risk Management

The Group has a programme to ensure that physical and security risk to people and assets are adequately addressed. The physical security programme includes active monitoring of external events that may pose a threat to OCBC locations, people and assets, and provides advisory and response procedures to better prepare the Bank and its employees against risk events. The Group also has procedures in place to address risk posed to staff on business travel. To mitigate physical security risks, we are enhancing the access control management of our buildings.

Business Continuity Risk Management

The Group has a comprehensive and robust business continuity management programme that aims to minimise the interruption to essential business activities and services during a crisis. This is achieved through the implementation of robust recovery strategies and business recovery plans which are reviewed and tested annually. Senior management also provides an annual attestation to the RMC which includes a measurement of the programme's maturity and the extent of alignment to BNM guidelines as well as a declaration of acceptable residual risk.

Fraud Risk Management

The Group's fraud risk management and whistle-blowing programmes aim to prevent and detect fraud or misconduct. The Group adopts a zero-tolerance stance in relation to fraud and conducts independent investigations into such incidents. Fraud incident reports - including root cause analysis, extent of damage, remedial actions and recovery steps of major incidents - are regularly reported to ORC and RMC. Internal Audit also independently reviews all fraud and whistle-blowing cases where findings are reported to BAC.

The Group also continues to invest in new technologies to detect potential fraudulent transactions. This includes enhancing its Fraud Surveillance System to monitor transactions on online banking, credit card and ATM channels. New technologies were also deployed to detect financial malware on devices interacting with our Internet and mobile banking platforms. These capabilities will be further enhanced through extending the scope of coverage, utilising machine learning and AI.

Technology, Information and Cyber Security Risk Management

The Group adopts a "defence-in-depth" approach to ensure that technology, information and cyber risks are properly assessed, monitored, mitigated and reported. Appropriate controls are in place to ensure confidentiality, integrity, and availability of our information assets. The Group also conducts regular security reviews and audits to validate the effectiveness of these controls.

The Group has comprehensive policies and extensive programmes in place to focus on cyber defence capabilities, cyber risk vigilance and awareness, social engineering testing, incident response, crisis management, as well as insurance protection against damages arising from cyber-attacks. The Group reviews relevant external events on a regular basis and derive learning lessons to enhance its cyber resilience. Senior Management is also actively involved in decision-making on strategies to prevent, detect and respond to evolving cyber threat landscape.

Reputational Risk Management

Reputational risk is the current and prospective risk to earnings and capital arising from adverse perception of the Group's image among customers, counterparties, shareholders, investors and regulators. We have a reputational risk management policy which focuses on understanding and managing our responsibilities towards our different stakeholders as well as protecting our reputation. A key emphasis of the programme is effective information sharing and engagement with stakeholders.

Fiduciary Risk Management

The Group has a fiduciary risk management programme to manage risks associated with fiduciary relationships from managing funds or providing other agency services. The programme

provides guidelines on regular identification, assessment, monitoring and mitigation of fiduciary risk exposures, to ensure the Group's compliance with applicable corporate standards.

Legal and Regulatory Risk Management

The Group holds itself to high standards when conducting business and at all times observes and complies with applicable laws, rules and standards. The Group has an established compliance risk programme which defines the required environment and organisational components for managing the risk in a structured, systematic and consistent manner. Each business unit is responsible for having adequate and effective controls to manage both regulatory and legal risks. Senior management provides the CEO and Board of Directors with an annual Regulatory Compliance Certification regarding the state of regulatory compliance.

Anti-Money Laundering / Countering the Financing of Terrorism Risk Management

The Group has a robust framework and programme for combating money laundering, countering the financing of terrorism and guarding against sanctions violations that is implemented across the organisation. The framework and programme comprises policies and procedures, risk assessment methodologies, senior management governance oversight structure, escalation protocol, monitoring and investigation processes, transaction monitoring and screening systems and management reporting platforms. The core pillars of the framework are aligned to BNM's Guidelines on Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) – Banking and Deposit-Taking Institutions (Sector 1) and are also in line with the principles or guidelines set by international organisations, such as the Financial Action Task Force (FATF), Basel Committee and Wolfsberg Group.

The Group's programme is aimed at managing and mitigating potential exposure to existing and emerging money laundering and terrorism financing (ML/TF) risks emanating from the various customer segments, products and services and delivery channels. It includes observance of sanctions required by BNM.

The Group's AML/CFT programme is subject to internal and external audits as well as regulatory inspections. The Board and senior management have oversight of the programme, which is reviewed regularly to ensure that it remains robust and relevant in the context of the evolving regulatory landscape and operating environment.

The Group recognises that its employees play an integral role in our AML/CFT efforts and has emphasised the importance of staying vigilant against ML/TF and sanctions risks to its business and network. To ensure that our employees understand these risks, they must undergo basic training when they join the bank and regular refresher training thereafter. The Group also provides specific training to enable relevant employees to carry out their respective roles and to keep abreast of developments in the financial industry. The Board and senior management are trained regularly to enable them to oversee our AML/CFT programme. The training encompasses AML/CFT and sanctions regulations, case studies depicting local or transnational criminal activities and new or developing typologies.

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). Pursuant to this requirement in IFSA, 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 this respect, OABB operationalizes the SGF requirements in its internal Shariah Governance Framework.

Shariah Risk Management

Shariah risk management is a function to systematically identify, measure, monitor and control Shariah non-compliance risk to mitigate any potential Shariah non-compliance. It forms a part of the Islamic bank's integrated risk management framework. Shariah non-compliance risks refer to possible failures to meet the obligation to Shariah principles. The Shariah risk management function involves:

- i. Facilitating risk management activities related to inherent and potential Shariah risk in the business and operation activities;
- ii. Formulating and recommending risk management policies and guidelines; and
- iii. Developing and implementing Shariah risk awareness program for OABB.

All potential Shariah Non-Compliance Events (SNCEs) are submitted to the bank's Shariah Committee for their deliberation and decision. All Actual SNCEs 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 the 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 2018)

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	22	22
Sovereign & Central Bank	15,954	138
Public Sector Entities	1,348	230
Retail	364	367
Equity	99	99
Securitisation	-	-
Others	646	475
Total Standardised	18,433	1,331
Internal Ratings-Based (IRB) Approach		
Foundation IRB		
Corporate	39,914	33,679
Bank	5,797	901
Advanced IRB		
Residential Mortgage	29,743	3,978
Qualifying Revolving Retail	1,704	594
Other Retail - Small Business	10,030	3,369
Specialised Lending under Supervisory Slotting Criteria	34	41
Total IRB	87,222	42,562
Total Credit Risk	105,655	43,893
Market Risk		
Standardised Approach		1,235
Amount Absorbed by PSIA		-
Total Market Risk		1,235
Operational Risk		
Standardised Approach ²		4,659
Total Operational Risk		4,659

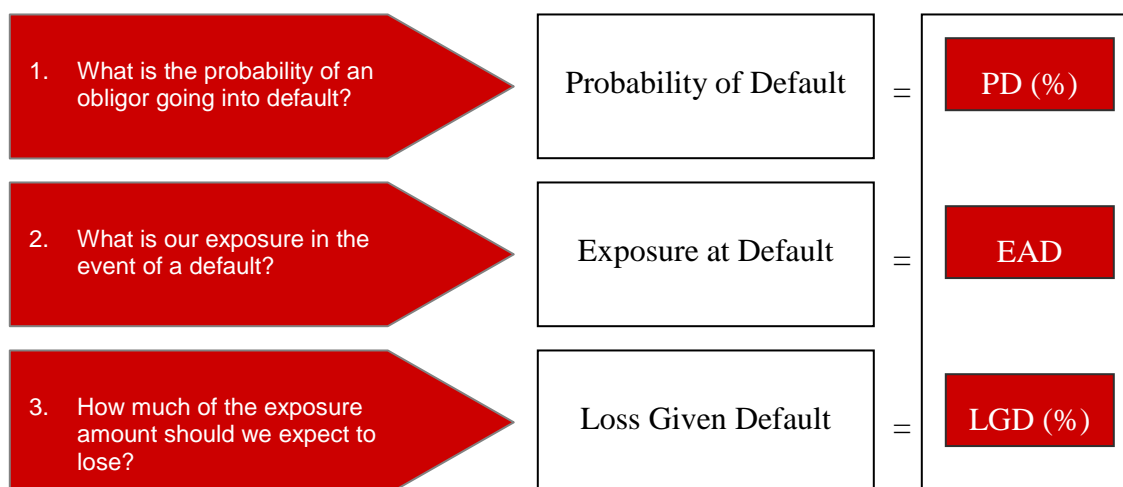
Note:

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%	16,631
20% - 35%	241
50% - 90%	609
100%	823
>100%	30
Total	18,334
Rated exposures	17,263
Unrated exposures	1,071

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.

Equity Exposures under Standardised Approach

Risk Weight	EAD RM million
100%	99
Total	99

Securitisation Exposures

There is no securitization and re-securitisation exposure in the banking and trading books as at 31 December 2018.

Specialised Lending Exposures under Supervisory Slotting Criteria

Specialised lending exposures include project and object financing.

	EAD RM million	Average Risk Weight
Strong	-	-
Good	-	-
Satisfactory	34	122%
Weak	-	-
Default	-	NA
Total	34	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%	1,530	15%
> 0.05 to 0.5%	13,360	49%
> 0.5 to 2.5%	16,322	95%
> 2.5 to 9%	6,416	137%
> 9%	1,307	203%
Default	979	NA
Total	39,914	84%

Bank Exposures

PD Range	EAD RM million	Average Risk Weight
up to 0.05%	2,566	10%
> 0.05 to 0.5%	3,108	19%
> 0.5 to 2.5%	123	57%
> 2.5 to 9%	#	155%
> 9%	#	182%
Default	-	NA
Total	5,797	16%

"#" 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

PD Range	EAD RM million	Undrawn Commitment RM million	EAD Weighted Average	
			LGD	Risk Weight
up to 0.5%	21,824	1,726	12%	7%
> 0.5 to 3%	5,055	239	12%	17%
> 3 to 10%	952	13	13%	51%
> 10%	1,348	13	13%	72%
100%	564	13	19%	27%
Total	29,743	2,004	12%	13%

Qualifying Revolving Retail Exposures

PD Range	EAD RM million	Undrawn Commitment RM million	EAD Weighted Average	
			LGD	Risk Weight
up to 0.5%	1,147	1,866	76%	10%
> 0.5 to 3%	339	229	76%	45%
> 3 to 10%	145	46	76%	128%
> 10%	66	20	78%	214%
100%	7	-	75%	0%
Total	1,704	2,161	76%	35%

Other Retail - Small Business Exposures

PD Range	EAD RM million	Undrawn Commitment RM million	EAD Weighted Average	
			LGD	Risk Weight
up to 0.5%	6,655	1,549	32%	17%
> 0.5 to 3%	1,820	103	40%	48%
> 3 to 10%	425	55	38%	62%
> 10%	788	4	38%	82%
100%	342	17	42%	125%
Total	10,030	1,728	35%	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 2018 RM million	Regulatory Expected Loss (Non-defaulted) as at 31 December 2017 RM million
Corporate	175	251
Bank	-	3
Other Retail - Small Business	(18)	138
Retail	4	93
Total	161	485

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	6	-	-
Sovereign & Central Bank	-	-	-
PSE			843
Retail	34	-	-
Others	#	-	-
Total	40	-	843
Foundation IRB Approach			
Corporate	1,163	11,084	557
Bank	340	-	-
Total	1,503	11,084	557

Note:

- Not all forms of collateral or credit risk mitigation are included for regulatory capital calculations.
- 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	697
Potential Future Exposure	1,652
Less: Effects of Netting	634
EAD under Current Exposure Method	1,715
Analysed by type:	
Foreign Exchange Contracts	1,214
Interest Rate Contracts	425
Equity Contracts	15
Gold and Precious Metals Contracts	-
Other Commodities Contracts	2
Credit Derivative Contracts	59
Less: Eligible Financial Collateral	341
Net Derivatives Credit Exposure	1,374

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	438	438
Total	438	438

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

	<u>Gross Exposure</u>		Risk Weighted Assets	Min. Capital Requirement
	Long Position	Short Position		
	RM million	RM million	RM million	RM million
Interest Rate Risk	22,914	20,956	1,018	81
Foreign Currency Risk	40	189	189	15
Equity Risk	-	-	-	-
Commodity Risk	13	13	10	1
Inventory Risk	-	-	-	-
Options Risk	1	-	19	1
Total	22,968	21,158	1,236	98

EQUITY EXPOSURES

Equity exposures comprised investments in quoted and unquoted equity instruments. There is no exposure to quoted equity as at 31 December 2018.

Disclosures on accounting policy and fair value measurement of equity securities are in Notes to the Financial Statements 2C(b)(iii), I(a)(ii) and 41(A)(i)(c).

Carrying Value of Equity Exposures

	RM million
Quoted equity exposure - AFS	-
Unquoted equity exposure - AFS	99
Quoted equity exposure - Associates	-
Unquoted equity exposure - Associates	-
Total	99

Realised and Unrealised Gains and Losses

	RM million
Gains/(losses) from disposal of AFS equities	-
Unrealised gains/(losses) included in fair value	86
Total	86

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 MYR134.2 million, or approximately +8.9% of reported net interest income. The corresponding impact from a 50 bp decrease is an estimated reduction of MYR132.3 million in net interest income, or approximately -8.8% of reported net interest income.