Risk Management Report

Risk governance at Macquarie

Role of the Board

The primary role of the Board is to promote Macquarie's long-term health and prosperity. The Board is committed to oversight of Macquarie's performance, risk management and culture and to promoting the creation of enduring value by supporting its purpose to realise opportunities for the benefit of our clients, community, shareholders and our people. Macquarie's robust risk management framework supports the Board in its role. The Board is ultimately responsible for the framework, including oversight of its operation by Management.

Role of management

The Group Heads of the Operating and Central Service Groups are responsible for the implementation of the risk management framework in their groups. They are required semi-annually to attest that key risks have been identified and are adequately controlled in their groups. These management representations support the sign-off of the half year and the full year financial statements.

Three lines of defence

The assumption of risk is made within a calculated and controlled framework that assigns clear risk roles and responsibilities represented by 'three lines of defence':

- primary responsibility for risk management lies with the business. The risk owner is the first line of defence. An important part of the role of all staff throughout Macquarie is to ensure they manage risks appropriately
- the Risk Management Group (RMG) forms the second line of defence and independently assesses all material risks
- Internal Audit, as the third line, provides independent and objective risk-based assurance on the compliance with, and effectiveness of, Macquarie's financial and risk management framework.

Risk management framework

Overview

Macquarie's risk management framework is the totality of systems, structures, policies, processes and people within Macquarie that identify, measure, monitor, report and control or mitigate internal and external sources of material risk. Material risks are those that could have a material impact, financial or non-financial on Macquarie. Macquarie's material risks include conduct, reputation, environmental and social (including climate change), credit, equity, market, liquidity, operational, cyber and information security, regulatory and compliance, legal and tax risks. The risk management framework applies to all business activities across Operating and Central Service Groups.

Details about the risks we manage are available at **macquarie.com/risk-management**

Key components

Core risk management principles

Macquarie's principles have remained stable and continue to be effective. These are:

- **ownership of risk at the business level:** Group Heads are responsible for ownership of all material risks that arise in, or because of, the business' operations, including identification, measurement, control and mitigation of these risks. Before taking decisions, clear analysis of the risks is sought to ensure those taken are consistent with the risk appetite and strategy of Macquarie
- **understanding worst case outcomes:** Macquarie's risk management approach is based on examining the consequences of worst case outcomes and determining whether these are acceptable and within Macquarie's risk appetite. This approach is adopted for all material risk types and is often achieved by stress testing. Macquarie operates a number of sophisticated quantitative risk management processes, but the foundation of the approach is the informed consideration of both quantitative and qualitative inputs by highly experienced professionals
- **requirement for an independent sign-off by RMG:** Macquarie places significant importance on having a strong, independent Risk Management Group charged with signing off all material risk acceptance decisions. It is essential that RMG has the capability to do this effectively. RMG has invested in recruiting skilled professionals, including those with trading or investment banking experience. For all material proposals, RMG's opinion must be sought at an early stage in the decision-making process. The approval document submitted to Senior Management must include independent input from RMG on risk and return.

Risk Management Group

RMG, which forms the second line of defence, is an independent and centralised function responsible for assessing, accepting and managing risks across Macquarie. RMG designs and oversees the implementation of the risk management framework. RMG is structured into specialist teams, depicted below, and employs an integrated approach to risk analysis and management across risk classes. RMG's assessment and monitoring of risks involves a collaborative effort across the teams to ensure a detailed analysis takes place both at the individual and aggregate risk level.

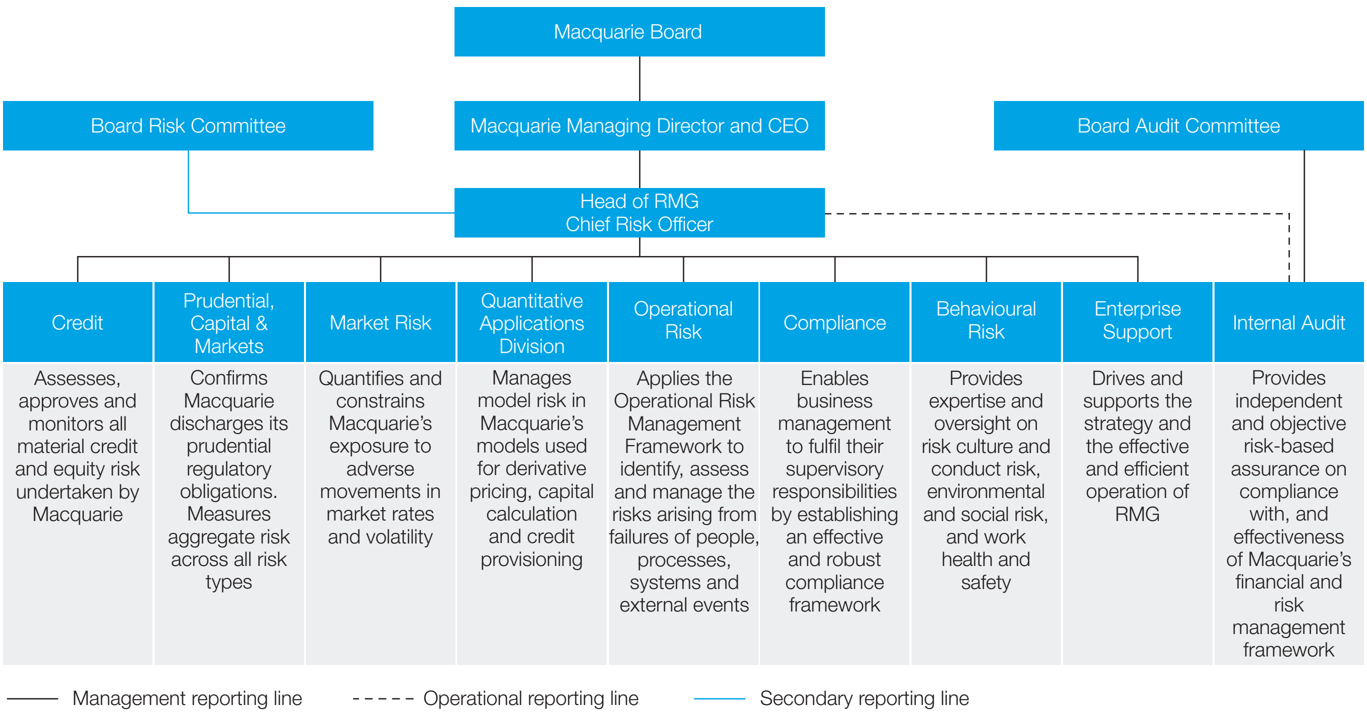
RMG's oversight of risk is based on the following five principles:

- **Independence:** RMG is independent of Macquarie's Operating and Central Service Groups. The Head of RMG, as Macquarie's CRO, reports directly to the CEO with a secondary reporting line to the BRiC. RMG approval is required for all material risk acceptance decisions
- **Centralised prudential management:** RMG's responsibility covers the whole of Macquarie. It assesses risks from a Macquarie-wide perspective and provides a consistent approach across the Group
- **Approval of all new business activities:** The Operating and Central Service Groups cannot undertake new businesses or activities, offer new products, enter new markets, or undertake significant projects without first consulting RMG. RMG reviews and assesses the risks and sets prudential limits. Where appropriate, these limits are approved by the Executive Committee and the Board
- **Continuous assessment:** RMG continually reviews risks to account for changes in market circumstances and developments within Macquarie's business
- **Frequent monitoring and reporting:** The risk profile of Macquarie with respect to all material risks is monitored by RMG on an ongoing basis. Centralised systems exist to allow RMG to monitor financial risks daily. Reporting on all material risks is provided to Senior Management and the Board.

Internal audit

The Internal Audit Division, as the third line, provides independent and objective risk-based assurance to the Board Audit Committee (BAC), other Board Committees and Senior Management on the compliance with, and effectiveness of, Macquarie's financial and risk management framework. Internal Audit assesses whether material risks have been properly identified and key controls have been properly designed and are operating effectively and sustainably to mitigate those material risks.

The Head of Internal Audit reports to the BAC and has unrestricted access to the Committee and its Chairman. At each BAC meeting the Head of Internal Audit meets privately with the non-executive BAC members. The Head of Internal Audit reports operationally to the CRO for day-to-day management. The BAC reviews and monitors the remuneration of the Head of Internal Audit, after seeking input from the CRO. The BAC approves any appointment, replacement, reassignment or dismissal of the Head of Internal Audit.



Risk appetite management

Macquarie's risk appetite is the degree of risk that Macquarie is prepared to accept in pursuit of its strategic objectives and business plan. This is detailed in Macquarie's Board approved Risk Appetite Statement (RAS). The RAS describes Macquarie's risk appetite, being the nature and amount of risk that Macquarie is willing to accept in pursuit of an appropriate and resilient long-term return on its capital. The RAS states transactions must generate returns proportionate to the risks. Accordingly, a risk and return analysis is required for all significant new deals, products and businesses.

The RAS is accessible to all staff and is referred to in the *Code of Conduct*. The principles of the RAS are implemented primarily through the following mechanisms:

Policies

Policies are a key tool to ensure that risks taken are consistent with the Board approved RAS. They set out the principles that govern the acceptance and management of risks. They are designed to influence and determine all major decisions and actions, and all activities must take place within the boundaries set by them.

Limits

In many cases, limits translate risk appetite principles into hard constraints on individual businesses. These consist of granular limits for specific risk types as well as the Global Risk Limit that constrains Macquarie's aggregate level of risk. Macquarie sets the Global Risk Limit with reference not only to capital but also to earnings so that in a prolonged, severe downturn, earnings and surplus capital are sufficient to cover losses and maintain market confidence in Macquarie.

Under Macquarie's 'no limits, no dealing' approach, compliance with specific limits is monitored by the Business and RMG. These granular limits are set to allow the Businesses to achieve their near-term plans while promoting a reassessment of the opportunity and associated risks as the limit is approached.

New product and business approval process

All new businesses and significant changes to existing products, processes or systems are subject to a rigorous, interactive approval process that adheres to the principles stated in the RAS. This results in constructive dialogue on risk matters between RMG and the relevant business.

This formal process is designed so that the proposed transaction or operation can be managed properly, without creating unwanted risks for Macquarie. All relevant risks are reviewed to ensure they are identified and addressed prior to implementation. These risks are also monitored on an ongoing basis. The approvals of RMG, Financial Management Group, Legal and Governance and other relevant stakeholders within Macquarie are obtained. RMG also checks that all necessary internal approvals are obtained prior to commencement. The Operational Risk division within RMG oversees the new product and business approval process.

Risk culture

A sound risk culture has been integral to Macquarie's risk management framework since inception. Primary responsibility for risk management in Macquarie, including risk culture, is at the business level. The Board, assisted by the BRiC, is responsible for:

- reviewing, endorsing and monitoring Macquarie's approach to risk culture and conduct
- forming a view on Macquarie's risk culture and the extent to which it supports the ability of Macquarie to operate consistently within its risk appetite.

Macquarie's approach to maintaining an appropriate risk culture is based on the following three components:

Setting behavioural expectations

Senior Management, with oversight from the Board, set behavioural expectations. Staff are made aware that Macquarie's principles of *What We Stand For: Opportunity, Accountability and Integrity* must form the basis of all behaviours and actions. These behavioural expectations are specified in the Board approved *Code of Conduct*, which is actively promoted by management and cascaded through the organisation.

Leading and executing

Management implements behavioural expectations through:

- leadership actions and communication
- organisational governance
- incentives and consequence management
- organisational and individual capability.

Monitoring, measuring and reporting

Macquarie monitors and measures its risk culture to gauge effectiveness while promoting continuous improvement. Mechanisms include:

- Reports incorporating behavioural elements (such as policy and limit breaches) are prepared by all Businesses, RMG, HR and Macquarie's Integrity Office and escalated, where relevant, according to our governance framework. These include regular reports relating to risk culture which are provided to Senior Management and the Board
- The Risk Culture team in RMG Behavioural Risk uses a well developed assessment process. It undertakes risk culture reviews across the Operating and Central Service Groups to assess the relative strengths and areas for development within a business or function.

These mechanisms facilitate a feedback loop of sharing good practice and lessons learnt to enable cultural realignment where necessary.

Remuneration and Consequence Management

Macquarie's remuneration framework and consequence management process is designed to promote accountability, encourage and reward appropriate behaviours and discourage inappropriate behaviours.

The Board considers that the effective alignment of remuneration with prudent risk-taking is fundamental to its remuneration approach. Performance-based remuneration reflects an individual's performance which includes an assessment of a range of factors including risk management and compliance as well as behavioural measures to promote good conduct and commitment to the *Code of Conduct* and *What We Stand For*. In addition, the remuneration framework is characterised by significant retention and long deferral periods which enables risk outcomes to be taken into account over long periods.

The Board and Board Committees continue to take risk and conduct matters very seriously. There are robust processes in place to ensure that risk, reputation and conduct related matters, as well as financial losses and impairments, and other breaches of the risk management framework are specifically considered when assessing performance and determining remuneration outcomes. These processes may result in a downward adjustment to group and/or individual profit share allocations where appropriate.

Effective consequence management is a key component of Macquarie's risk culture. Macquarie aims to apply consequences for non-compliance in a timely manner, and as fairly and consistently as possible.

See the Remuneration Report for more details on Macquarie's Remuneration Framework and Consequence Management process

Conduct risk

Macquarie defines conduct risk as the risk of behaviour or action taken by individuals employed by, or on behalf of, Macquarie or taken collectively in representing Macquarie that may have a negative outcome for our clients, counterparties, the communities and markets in which we operate, our staff, or Macquarie.

Such behaviour or action may include:

- breaches of laws or regulations
- disregard for Macquarie's principles of *What We Stand For* or the *Code of Conduct*
- negligence and/or a lack of reasonable care and diligence.

Conduct risk can arise inadvertently or deliberately in any of Macquarie's businesses.

Macquarie's approach to conduct risk management is integrated in our risk management framework and is consistent with our three lines of defence model. Risk-taking must be consistent with Macquarie's principles of *What We Stand For: Opportunity, Accountability and Integrity* which must form the basis of all behaviours and actions. These behavioural expectations are outlined in the Board approved *Code of Conduct*.

Macquarie has a range of controls and processes in place to identify and manage conduct risk, including:

- new and emerging conduct risks are identified through the annual strategy and business planning process
- conduct risks that may arise when Macquarie establishes a new business or product, or makes a significant change to an existing business, product, process or system are identified and assessed through the new business and product approval process
- independent monitoring and surveillance conducted by RMG, in addition to front line supervisory activities performed by the business
- the Risk and Control Self-Assessment incorporates a conduct risk lens, requiring businesses to identify and assess their key conduct risks
- where incidents occur, we investigate the underlying contributing behaviours, the impacts and resolve the issues appropriately and in a timely manner. Behavioural matters are addressed in accordance with our Consequence Management Guideline
- performance-based remuneration reflects an individual's performance, which includes assessment of a range of factors including risk management and behavioural measures
- an Integrity Office that is an independent point of contact for staff to safely raise concerns about misconduct, unethical behaviour or breaches of the *Code of Conduct*
- a global Staff Hotline for staff who wish to speak up anonymously.

Market and credit risk

Year end performance indicators

Macquarie monitors and measures a range of risks as outlined above in the risk management framework overview. The following graphs provide historical and current year information on key market and credit risks.

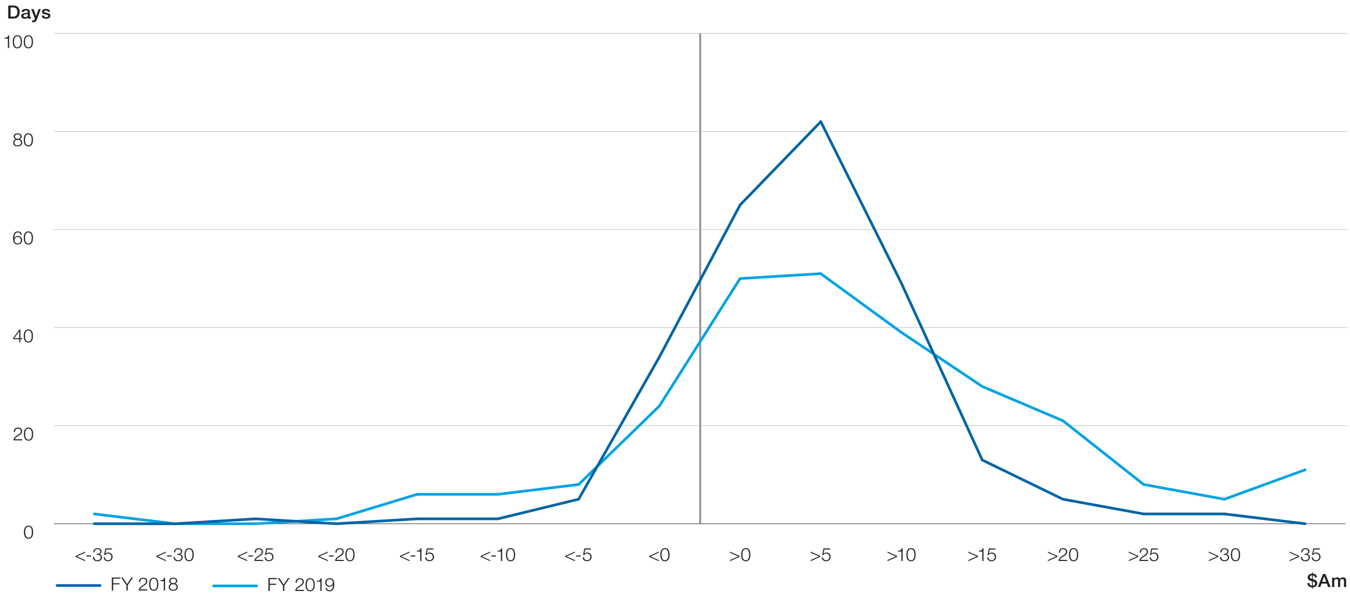
Trading revenue

The effectiveness of Macquarie's risk management framework can be partially measured by Macquarie's daily trading results. These are daily profit and loss results that are directly attributable to market based activity from Macquarie's trading desks.

Macquarie's market risk activities continue to be based on earning income from client-facing businesses. The majority of trading income is derived from client activities rather than outright proprietary trading activity.

Macquarie's trading results over time have shown consistent profits and low volatility. This is evident in the graph below and reflects the client-based nature of trading activities. In FY2019 Macquarie made a net trading profit on 213 out of 260 trading days (2018 results: 218 out of 260 trading days) and trading loss profiles were consistent with previous years.

Daily trading profit and loss

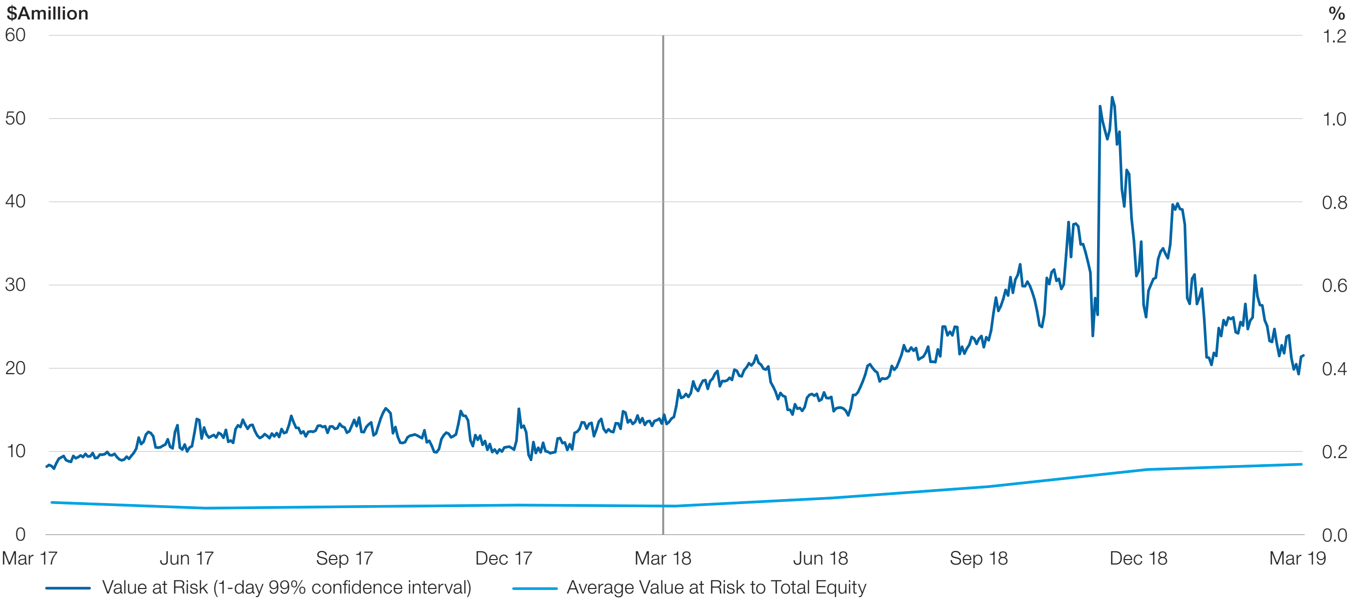


Value-at-Risk

VaR provides a statistically based summary of overall market risk in Macquarie. The magnitude of VaR reflects changes in positions as well as changes in market volatility, correlations and enhancements to the model. The integrity of the VaR model is regularly tested against daily profit and loss.

Macquarie's market risk increased throughout the year, driven by higher market volatility within the US gas market, and commodity exposure driven by regional spreads in US Gas. VaR remains modest in comparison to capital and earnings. It represents less than 0.2% of total equity.

Aggregate VaR



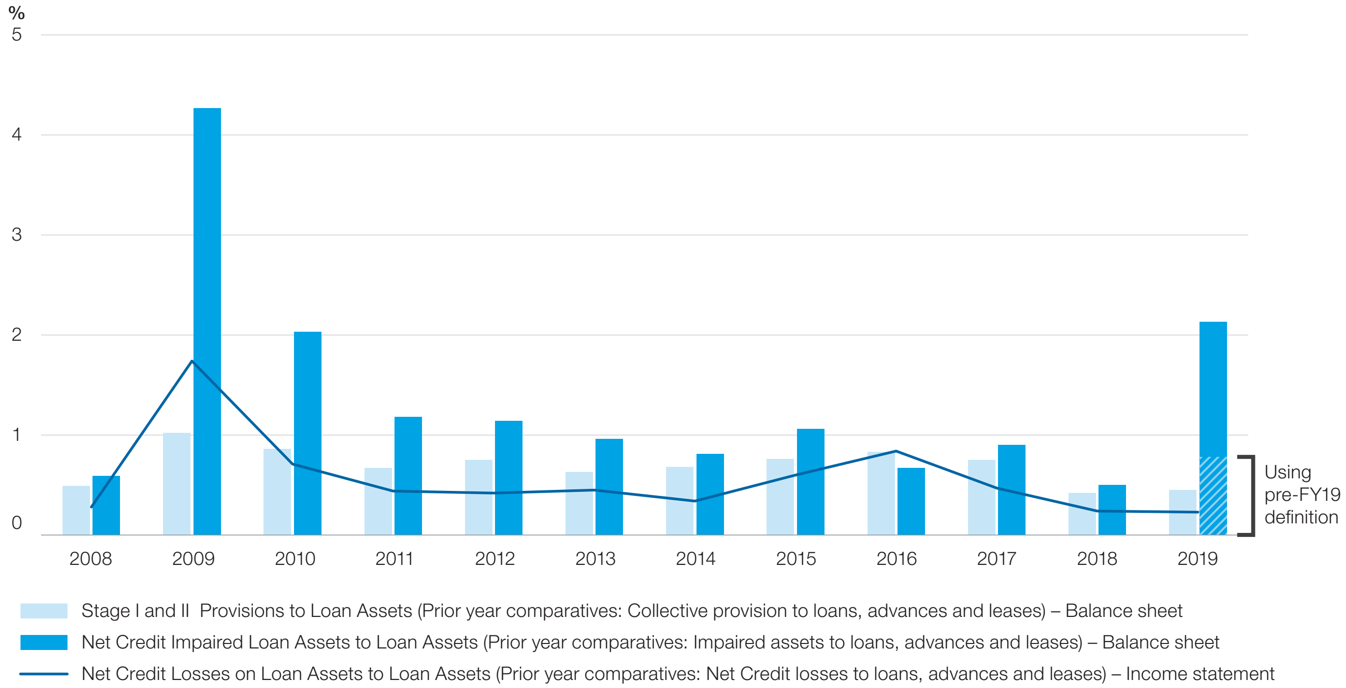
Loan impairment review

Macquarie prospectively adopted AASB 9 *Financial Instruments* (AASB 9) effective 1 April 2018. As permitted by AASB 9, prior year comparative information was not restated. The standard contains new requirements for the classification and measurement of certain financial instruments, new hedge accounting requirements and, from a credit provisioning perspective, introduced an expected credit loss methodology, which differed to the incurred loss methodology applied in prior years.

In addition to the above, AASB 9 introduced new disclosure requirements. Note 35.1 to the financial statements *Credit risk* now discloses loan asset exposures by stage of credit performance. Note 12 to the financial statements *Expected credit losses* discloses expected credit losses on loan assets by stage of credit performance. The 2019 numbers presented below are calculated with reference to this information. Loan assets categorised as stage III in terms of AASB 9 are now defined as 'credit impaired'. As noted, AASB 9 did not require the restatement of comparative information, and for that reason the comparative numbers in the graph below have not been restated.

Underlying credit quality, as indicated by impaired assets and credit losses, has remained relatively stable in FY19 compared to recent years. The increase in net stage III loan assets in FY19 is largely the result of the definition of 'impairment' changing under AASB 9. In the chart below, the FY19 value for impaired assets to loan assets, has been indicated on the basis of the previous definition for comparative purposes[(1)].

Ratio of Provisions and Credit Impaired Loan Assets to Loans Assets



Notes to prior year comparatives[(2)]:

- Loans, advances and leases excluded securitised mortgages, securitised Macquarie Capital loans/leases, segregated futures funds and receivables in the form of fees.
- The collective provision is intended to cover losses inherent in the existing overall credit portfolio which are not yet specifically identifiable.
- Net impaired assets and net losses excluded investment securities.
- Net credit losses represented the total P&L impact in the stated period due to additional individual provisions and direct write-offs (net of any write-backs).

(1) Excludes FY19 loans classified as FVTPL.
(2) The information for the financial years ended 31 March 2008–2019 is based on results using the Australian Accounting Standards that were effective and adopted by the Consolidated Entity at the reporting dates. Reporting periods have been restated only to the extent as required by the accounting standards. The financial reporting periods may hence not be fully comparable with one another as a result of changes in accounting standards' requirements.