Risk Management

Risk governance at Macquarie

Role of the Board

The role of the Board is to promote the long-term interests of Macquarie, taking into account Macquarie's specific and broader responsibilities to its shareholders, funders, clients, staff and the communities in which it operates. The Board is committed to oversight of Macquarie's performance, risk management, engagement with regulators and culture and to promoting the creation of enduring value by realising 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

Macquarie's approach to risk management adopts the 'three lines of defence' model in which risk ownership responsibilities are functionally independent from oversight and assurance:

- 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 provides independent and objective review and challenge, oversight, monitoring and reporting in relation to Macquarie's 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 aggregate, asset, conduct, credit, environmental and social (including climate change), equity, financial crime, legal, liquidity, market, operational (including cyber and information security), regulatory and compliance, reputational, strategic, tax, and work health and safety risks. The risk management framework applies to all 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 approach to risk management is based on stable and robust core risk management principles. 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 function 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 from a range of disciplines, including those with trading or advisory and capital markets 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 independent and objective review and challenge, oversight, monitoring and reporting in relation to Macquarie's material risks. RMG designs and oversees the implementation of the risk management framework. RMG is structured into specialist functional divisions, 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 divisions to ensure a detailed analysis takes place both at the individual and aggregate risk level.

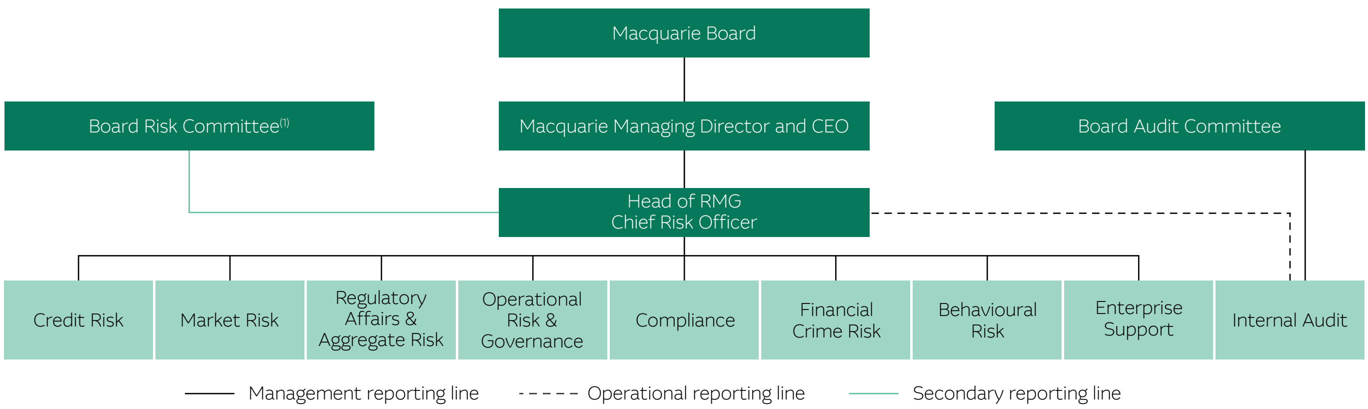
RMG's oversight of risk is based on the following five principles:

- **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 risk management**: RMG's responsibility covers the whole of Macquarie. It assesses risks from a Macquarie-wide perspective and provides a consistent approach across Macquarie
- **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 risk and sets limits. Where appropriate, these limits are approved by the Executive Committees 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, including its governance, systems, structures, policies, processes and people for managing material risks. Internal Audit assesses whether material risks have been properly identified by management and key internal controls have been properly designed and are operating effectively and sustainably to mitigate those material risks.

The BAC has primary power of direction over the Internal Audit Division and is accountable for reviewing the effectiveness of the Internal Audit function. The Head of Internal Audit reports functionally to the BAC and is primarily accountable to them. The Head of Internal Audit has unrestricted access to the Committee and its Chair and meets privately with the BAC members regularly during the year. The BAC monitors and reviews the performance, degree of independence and remuneration of the Head of Internal Audit. The BAC also approves any appointment and removal of the Head of Internal Audit. The Head of Internal Audit reports operationally to the CRO for day-to-day management.



(1) The Board Risk Committee assists the Board by providing oversight of Macquarie's risk management framework and advising the Board on Macquarie's risk appetite, risk culture and risk management strategy. In addition, the Board Governance and Compliance Committee assists the Board in fulfilling its responsibility for monitoring the regulatory and compliance risk framework of Macquarie, including the conduct risk management framework, and reviews and monitors Macquarie's work health and safety, environmental and social risk management policies and customer and client reporting.

Risk Management

Continued

Risk appetite management

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 is detailed in the Board-approved Risk Appetite Statement (RAS). 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:

Risk tolerances

Risk tolerances have been established to ensure that we only accept risks that are consistent with our risk appetite.

Financial risks

Limits translate risk appetite principles into hard constraints, being the Global Risk Limit that constrains Macquarie's aggregate level of risk as well as granular limits for specific financial risks.

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. The potential financial impact of a non-financial risk event is also included in the Global Risk Limit.

Macquarie operates under a strict principle of 'no limits, no dealing'. 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.

Non-financial risks

We seek the highest standards in addressing non-financial risks. Macquarie monitors and reports on a range of metrics for non-financial risks that provide a measure of our risk profile for these risks.

These metrics provide a basis for analysis and communication of risk, for forcing explicit consideration of the risk profile, raising awareness of risks and facilitating debate and actions in relation to potential future risks.

Further explanation on Environmental, Social and Governance (ESG) and Work Health and Safety risks in particular is set out in the **ESG** section of this report.

Policies

Policies are key tools for ensuring that risks taken are consistent with Macquarie's risk appetite. They are designed to influence and determine all major decisions and actions, and all activities must take place within the boundaries set by them.

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. 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.

Stress testing

Stress testing is an integral component of Macquarie's risk management framework and a key input to the capital adequacy assessment process. Stress testing incorporates enterprise-wide scenario analyses in which losses and capital are driven by the chosen economic parameters of a scenario. The scenarios as well as their economic parameters are tailored to Macquarie's portfolio.

Stress testing is used to validate that Macquarie's capital targets and associated triggers remain appropriate given the risk profile of the portfolio. It is also used to identify areas of potential concentration in Macquarie's portfolio as well as being a key measure of aggregate risk appetite, calibrated to Macquarie's ability to withstand severe stress.

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 three components:

Setting behavioural expectations

Senior Management, with oversight from the Board, set behavioural expectations. The way we fulfil Macquarie's purpose is defined by our principles of *What We Stand For*: Opportunity, Accountability and Integrity. Staff are made aware that these principles 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 Operating and Central Service Groups, including reports prepared by RMG, HR and Macquarie's Integrity Office and escalated, where relevant, according to our governance framework. These include regular reports relating to risk culture that are provided to Senior Management and the Board
- the Risk Culture team in RMG Behavioural Risk uses a well-developed assessment process, governed by the Risk Culture Framework. The team undertakes independent 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 learned to enable cultural alignment.

Remuneration and consequence management

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

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, action or omission 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, actions or omissions 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
- failure to escalate improper conduct.

Conduct risk can arise inadvertently or deliberately in any of Macquarie's Operating and Central Service Groups.

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 and record where they are the root cause of the incident
- 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.

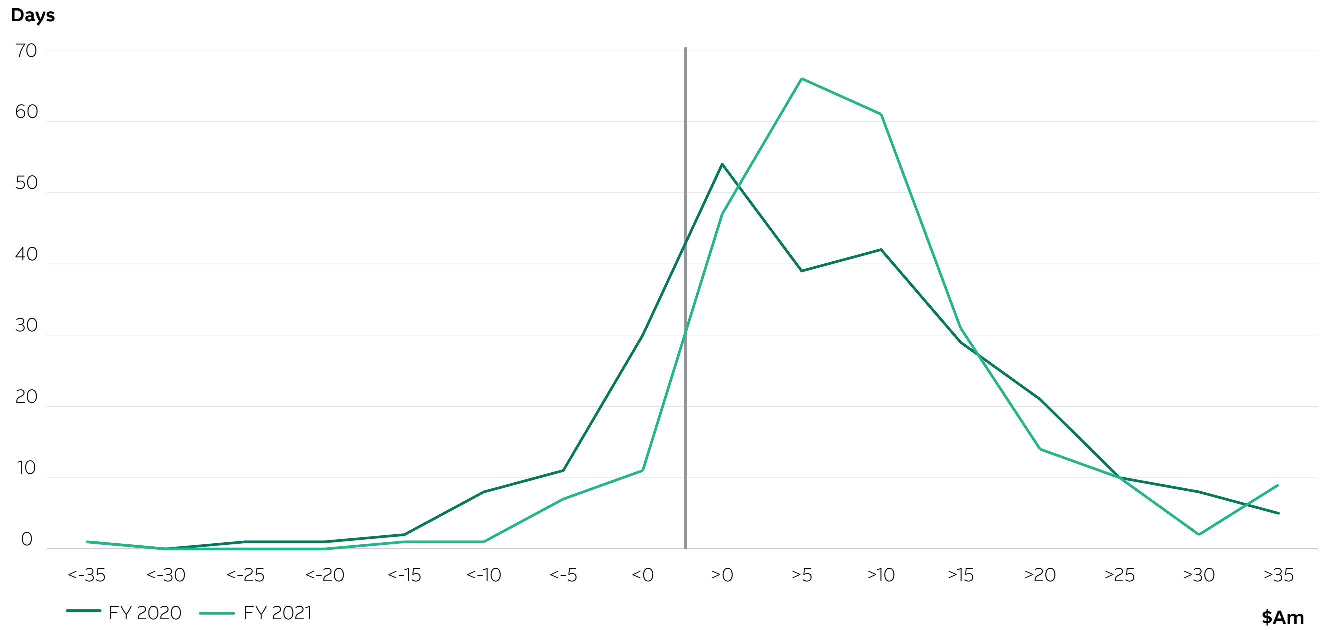
Trading revenue

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 FY2021 Macquarie made a net trading profit on 240 out of 261 trading days (2020 results: 208 out of 262 trading days) and trading loss profiles were consistent with previous years.

Daily trading profit and loss

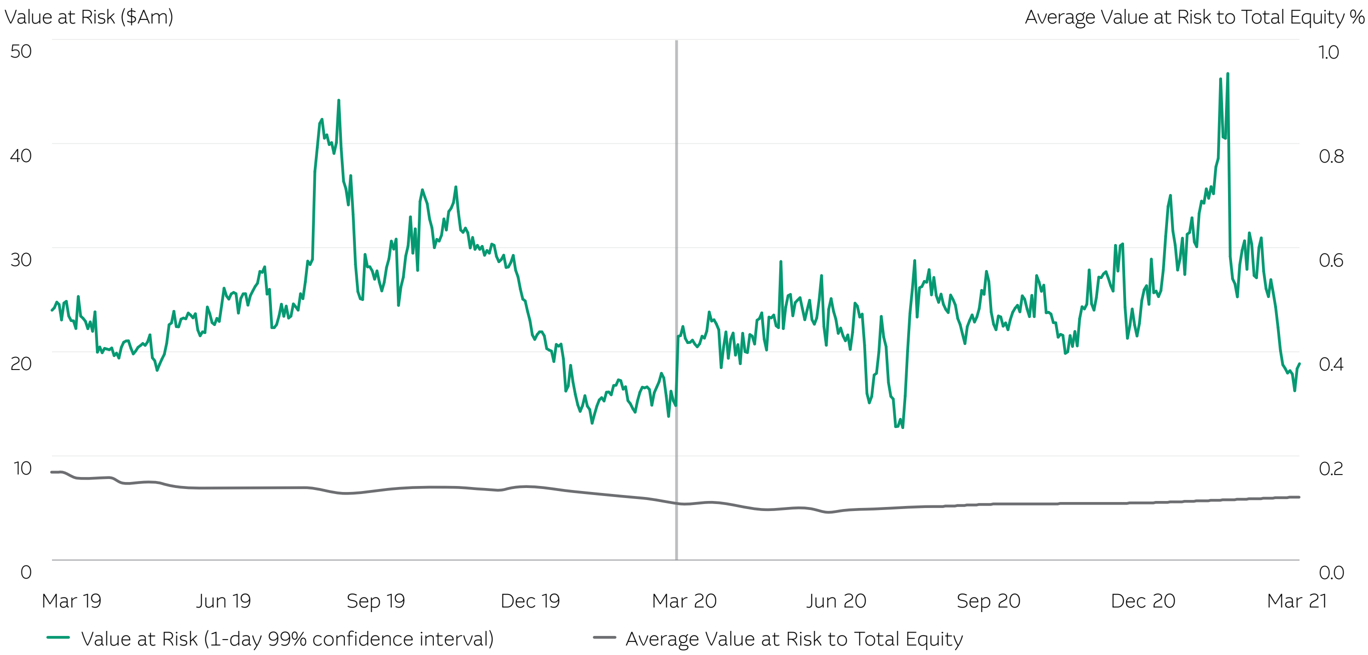


Value at Risk (VaR)

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 remained in line with the previous year, driven by higher market volatility along with commodity exposure driven by oil and gas activity. VaR reached a maximum towards the end of the year as a result of the extreme cold weather in the US. VaR remains modest in comparison to capital and earnings, representing less than 0.2% of total equity.

Aggregate VaR



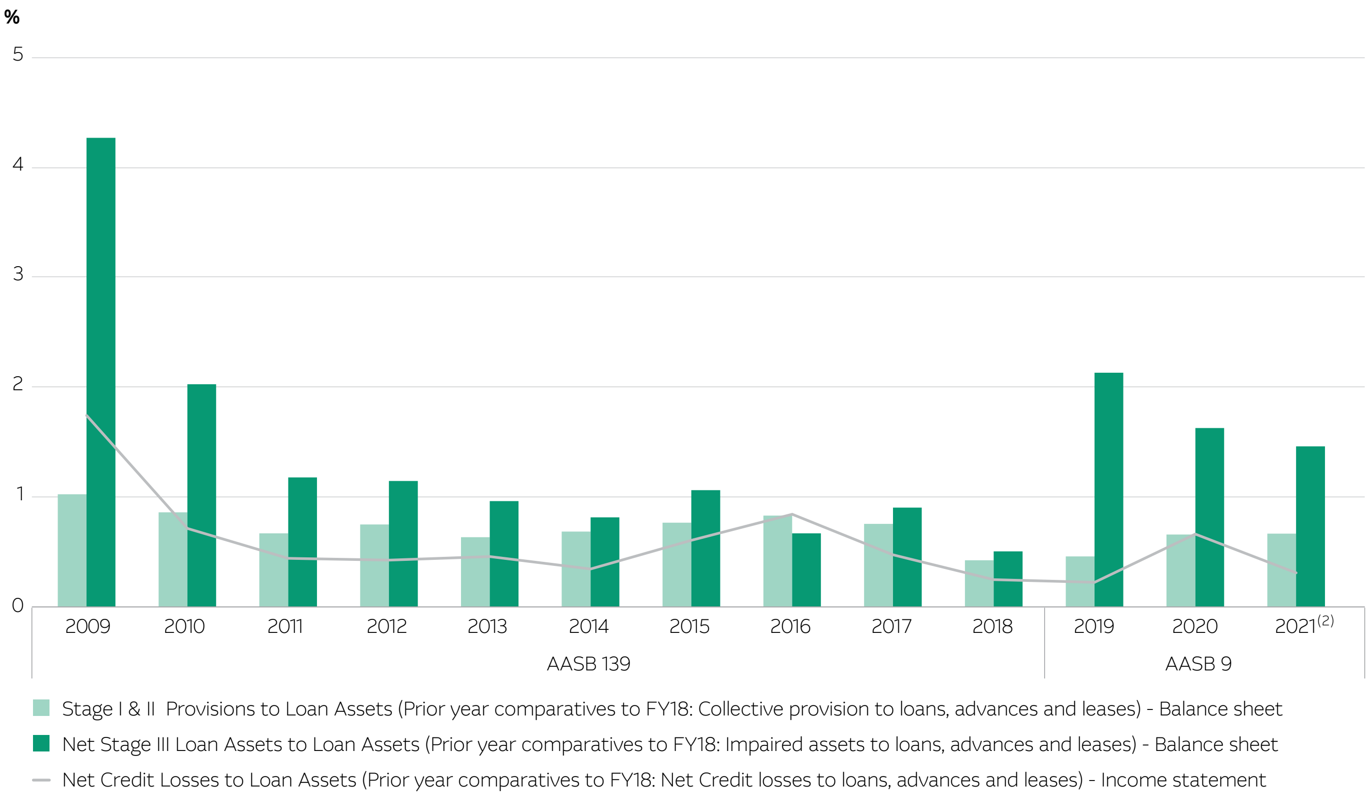
Loan impairment review

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. AASB 9 contains requirements for the classification and measurement of certain financial instruments, hedge accounting requirements and, from a credit provisioning perspective, introduced an expected credit loss methodology, which differed to the incurred loss methodology applied prior to FY2019.

For AASB 9 disclosures refer to Note 36.1 *Credit risk* to the financial statements including disclosure of loan asset exposures by stage of credit performance. Note 13 *Expected credit losses* to the financial statements discloses expected credit losses on loan assets by stage of credit performance. The 2021 numbers presented below are calculated with reference to this information. Loan assets categorised as Stage III in terms of AASB 9 are 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 in FY2021, as indicated by Stage I & II provisions and credit losses, has remained broadly consistent compared to FY2020. The level of Stage I & II provisions to loan assets and net credit losses to loans assets is primarily caused by the deterioration of market conditions and market uncertainty, as a result of COVID-19 (as disclosed in the Notes to the financial statements).

Ratio of Provisions and Credit Impaired Loan Assets to Loans Assets



Notes to prior year comparatives[3]

- 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, direct write-offs (net of any write-backs) and change in Stage I & II provisions.

(2) The decrease in the ratio of Net Stage III Loan Assets to Loan Assets during FY2021 is attributable to the growth in the mortgage portfolio and the carrying value of loans within Stage III remaining relatively comparable to the prior year.
(3) The information for the financial years ended 31 March 2009-2021 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.