

MBL Basel III Pillar 3 Capital Disclosures

September 2022

Macquarie Bank Limited
ACN 008 583 542



Macquarie Bank Limited
ABN 46 008 583 542

No.1 Martin Place
Sydney NSW 2000
GPO Box 4294
Sydney NSW 1164

Telephone
Facsimile
Telex 122246
DX 10287 SSE
SWIFT MACQAU2S

(61 2) 8232 3333 Money Market 8232 3600 Facsimile 8232 4227
(61 2) 8232 7780 Foreign Exchange 8232 3666 Facsimile 8232 3019
Metals and Mining 8232 3444 Facsimile 8232 3590
Futures 9231 1028 Telex 72263
Debt Markets 8232 3815 Facsimile 8232 4414



**MACQUARIE
BANK**

ASX Release

MACQUARIE BANK RELEASES SEPTEMBER PILLAR 3 DISCLOSURE DOCUMENT

22 November 2022 – The Macquarie Bank Limited September 2022 Pillar 3 disclosure document was released today. These disclosures have been prepared in accordance with the Australian Prudential Regulation Authority (APRA) requirements of Prudential Standard APS 330: Public Disclosure.

Contents

Introduction.....	2
1. Overview.....	3
2. Risk Governance and Risk Management Framework	6
3. Capital Structure.....	8
4. Capital Adequacy	10
5. Credit Risk Measurement.....	14
6. Calculation of Credit Risk Exposures	26
7. Provisioning.....	31
8. Credit Risk Mitigation	35
9. Securitisation.....	39
10. Credit Valuation Adjustment.....	50
11. Exposure to Central Counterparties.....	51
12. Market Risk.....	52
13. Equity Risk.....	56
14. Operational Risk.....	58
15. Leverage Ratio Disclosures.....	60
16. Liquidity Coverage Ratio Disclosure.....	63
17. Net Stable Funding Ratio Disclosures	66
Appendix 1 Regulatory Capital Reconciliation	71
Appendix 2 List of Entities Deconsolidated from the Level 2 Regulatory Group for APRA Reporting Purposes.....	79
Appendix 3 List of APRA Quantitative Tables.....	81
Appendix 4 Glossary of Terms	82
Disclaimer.....	86

Introduction

Macquarie Bank Limited (MBL) is an Authorised Deposit taking Institution (ADI) regulated by the Australian Prudential Regulation Authority (APRA). MBL is accredited under the Foundation Internal Ratings Based Approach (FIRB) for credit risk, the Advanced Measurement Approach (AMA) for operational risk, the Internal Model Approach (IMA) for market risk and interest rate risk in the banking book. These advanced approaches place a higher reliance on a bank's internal capital measures and therefore require a more sophisticated level of risk management and risk measurement practices.

APRA has implemented the Basel III framework, and in some areas has introduced stricter requirements (APRA superequivalence). This report details MBL's disclosures as required by APRA Prudential Standard APS 330: Public Disclosure as at 30 September 2022 together with the 31 March 2022 comparatives where appropriate.

This report also describes Macquarie's risk management policies and risk management framework and the measures adopted to monitor and report within this framework. Detailed in this report are the major components of capital structure, the key risk exposures and the associated capital requirements. The key risk exposures are credit risk (including securitisation exposures, credit valuation adjustment, and exposures to central counterparties), market risk, operational risk and interest rate risk in the banking book. Each of these risks are individually discussed in later sections of this report where the individual risk components, measurement techniques and management practices are detailed. This report also presents information on the leverage and liquidity ratios.

Ratios for Common Equity Tier 1, Total Tier 1, Total capital, Leverage and Liquidity are set out below.

APS 330 Table 6 (g)

Capital, Liquidity and Leverage Ratios – Level 2 regulatory group	As at 30 September 2022	As at 31 March 2022
Common Equity Tier 1 capital ratio	12.8%	11.5%
Tier 1 capital ratio	14.6%	13.2%
Total capital ratio	18.8%	16.8%
Leverage ratio	4.7%	5.0%
Liquidity coverage ratio ^{1,2}	183%	195%
Net stable funding ratio ³	116%	125%
Capital Ratios – Level 1 regulatory group⁴		
Common Equity Tier 1 capital ratio	12.2%	10.8%
Tier 1 capital ratio	14.1%	12.6%
Total capital ratio	18.5%	16.2%

APRA requires Authorised Deposit taking Institutions (ADIs) to have a minimum ratio of Tier 1 capital to risk weighted assets (RWA) of 8.5% at both Level 1 and Level 2, including the 2.5% capital conservation buffer, with at least 7.0% in the form of Common Equity Tier 1 capital. In addition, APRA may impose ADI specific minimum capital ratios which may be higher than these levels.

At 30 September 2022, the Macquarie Level 1 and Level 2 regulatory group capital and liquidity ratios are above the regulatory minimum required by APRA, and the Board imposed internal minimum requirement. The countercyclical capital buffer requirement for Macquarie Level 2 regulatory group is less than 1 basis point.

¹ The Liquidity Coverage Ratio for the 3 months to 30 September 2022 is calculated from 64 daily LCR observations (31 March 2022 is calculated from 62 daily LCR observations).

² APRA imposed a 15% add-on to the Net Cash Outflow (NCO) component of the LCR calculation, effective from 1 April 2021. In response to a further liquidity reporting incident identified in January 2022 which had the impact of understating total NCOs, APRA re-calibrated the LCR NCO add-on to 25%, effective from 1 May 2022 onwards. Accordingly, the 3 month average LCR to 31 March 2022 includes a 15% NCO add-on and the 3 month average LCR to 30 September 2022 includes a 25% NCO add-on. This reporting incident was resolved for the LCR for both the 3 months to 30 September 2022 and 31 March 2022.

³ APRA imposed a 1% decrease to the Available Stable Funding component of the NSFR calculation, effective from 1 April 2021. This adjustment to Available Stable Funding is included in the NSFR at 30 September 2022 and 31 March 2022.

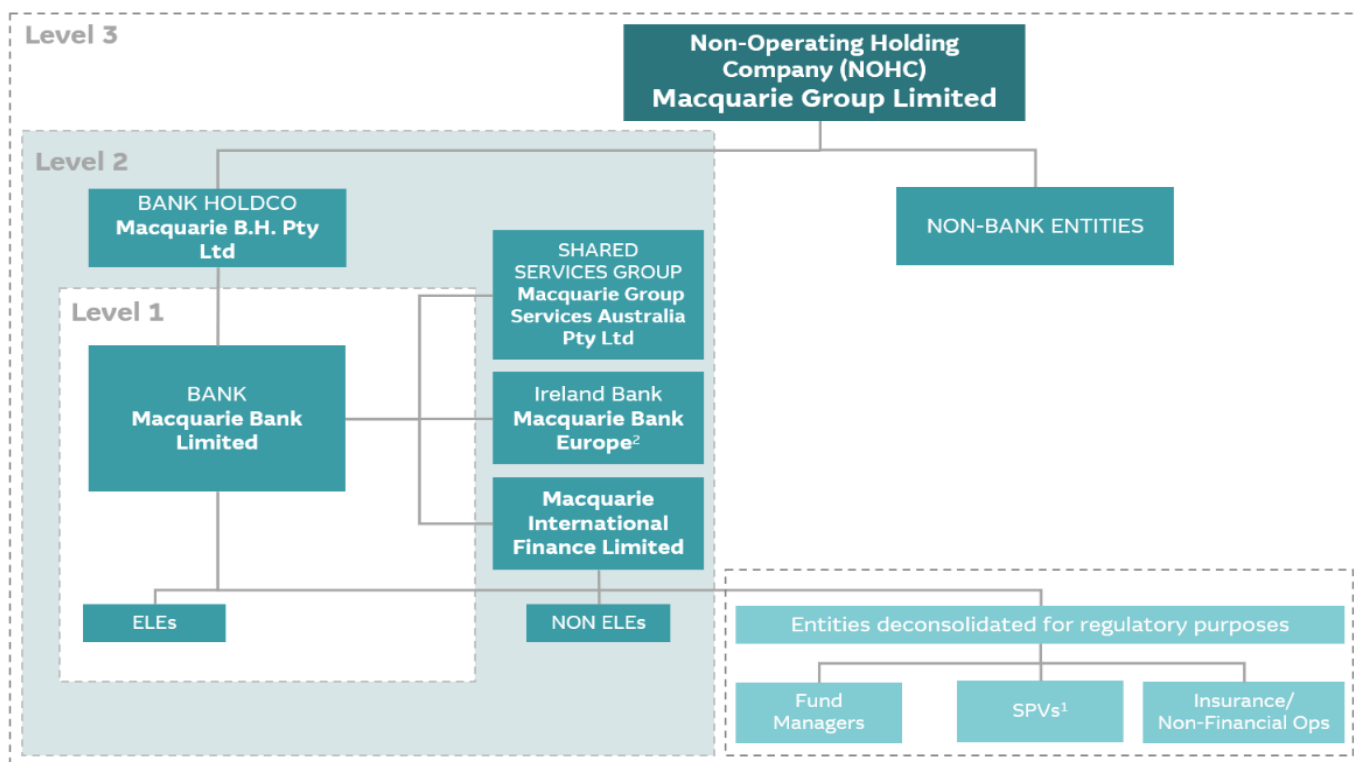
⁴ APRA imposed a Level 1 operational capital overlay of \$A500m on MBL, effective from 1 April 2021.

1. Overview

1.1 Scope of Application

MBL, as an approved ADI, is required to comply with the disclosure requirements of APS 330 on a Level 2 basis.

The regulatory consolidated group is different to the accounting consolidated group and identifies three different levels of consolidation as illustrated below:



1. These are securitisation vehicles that achieve Regulatory Capital Relief per APS 120.

2. Disclosure of Macquarie Bank Europe's Pillar 3 document is available on Macquarie's website.

Reporting levels are in accordance with APRA definitions contained in APRA Prudential Standard APS 110: Capital Adequacy.

MBL and certain subsidiaries which meet the APRA definition of Extended Licensed Entities (ELE) are reported to APRA as Level 1. Level 2 consists of MBL, its subsidiaries and its immediate parent (Macquarie B.H. Pty Ltd) but excludes certain subsidiaries of MBL which are required to be deconsolidated for APRA reporting purposes. Equity investments into these entities by the Level 2 group are required to be deducted from Common Equity Tier 1 (CET1) capital under APRA Prudential Standard APS 111 Capital Adequacy: Measurement of Capital. The subsidiaries which are deconsolidated for regulatory purposes include mortgage and leasing special purpose vehicles (SPVs) for which Macquarie has satisfied APS 120 Attachment A operational requirements for regulatory capital relief and entities conducting insurance, funds management and non-financial operations. These deconsolidated entities result in the Macquarie Level 2 group for regulatory purposes differing from MBL and its subsidiaries, the Consolidated Entity for accounting purposes. Therefore, the disclosures made in this report are for a different group of entities to those made in the financial report of MBL and its subsidiaries, the Consolidated Entity. A list of entities deconsolidated for Level 2 reporting purposes is included in Appendix 2.

References in this report to Macquarie refer to the Level 2 regulatory group as described above. Unless otherwise stated, all disclosures in this report represent the Level 2 regulatory group prepared on an APRA Basel III basis.

MBL is part of the larger Macquarie Group Limited Consolidated Group (MGL Group), which includes Macquarie Group Limited (MGL) and its subsidiaries (referred to as 'Level 3'). APS 330 does not require disclosures relating to the Level 3 Group, however, some limited Level 3 disclosures are made in this report (refer Section 4.0).

Comments on policies in this report generally reflect policies adopted across the MGL Group, unless it is stated that the policies are specific to any one part of the group.

1.2 Frequency

The qualitative disclosures in this report are required to be updated on an annual basis and more frequently if significant changes to policies are made. This report has been updated as at 30 September 2022 and policies disclosed within are effective at this time. The capital adequacy and summarised credit risk exposure quantitative disclosures are published on a quarterly basis. All other quantitative disclosures are published semi-annually in conjunction with Macquarie's half year (30 September) and annual (31 March) reporting cycles.

1.3 Report Conventions

The disclosures in this report are not required to be audited by an external auditor. However, the disclosures have been prepared on a basis consistent with information submitted to APRA. Under the revised APS 310 Audit and Related Matters, the information submitted to APRA is required to be either audited or reviewed by an external auditor at Macquarie's year end, being 31 March.

Averages have been prepared in this report for certain disclosures as required by APS 330.

All numbers in this report are in Australian Dollars and have been rounded to the nearest million, unless otherwise stated.

Where necessary, comparative information has been restated to conform with changes in the current year, unless otherwise stated.

The Appendices include a Glossary of Terms used throughout this document.

1.4 Overview of the Basel III Regulatory Capital Framework

Basel III is designed to raise the resilience of the banking sector by strengthening the regulatory capital framework. The framework seeks to increase the sensitivity to risk in the capital calculations and to ensure that this is aligned with an ADI's internal processes for assessing risk. Consequently, there are a number of different approaches to risk calculation that allows use of internal models to calculate regulatory capital. A bank may be accredited to use the advanced approaches when it can demonstrate the integrity and sophistication of its risk management framework. It must also ensure that its internal estimates of risk are fully integrated into corporate governance functions as well as internal calculations of capital. Further to this, the most advanced approaches are available if a bank has sufficient depth and history of default data to enable it to generate its own Loss Given Default (LGD) and Probability of Default (PD) estimates based on its own loss experience.

The requirements of Basel III are contained within three broad sections or 'Pillars'.

1.4.1 Pillar 1

The first section of the Basel III framework covers the rules by which Risk Weighted Assets (RWA) and capital adequacy must be calculated.

Macquarie has been approved by APRA to apply the FIRB approach for credit risk capital calculation. This approach utilises the PD and internal rating assigned to the obligor. The exposure is weighted using this internal PD and a LGD value set by APRA. Credit Conversion Factors are applied to off balance sheet exposures based on the nature of the exposure. Operational risk is calculated using the AMA.

Market risk and interest rate risk in the banking book is calculated using the internal model approach.

1.4.2 Pillar 2

Pillar 2 (the Supervisory Review Process) of the Basel III framework requires ADIs to make their own assessments of capital adequacy in light of their risk profile and to have a strategy in place for maintaining their capital levels. Macquarie's Internal Capital Adequacy Assessment Process (ICAAP) addresses its requirements under Pillar 2.

The ICAAP is part of Macquarie's overall risk management framework; its key features include:

- Comprehensive risk assessment process
- Internal assessment of capital adequacy using Macquarie's economic capital model (refer Section 4.1)
- Risk appetite setting (refer Section 4.2)
- Capital management plans designed to ensure the appropriate level and mix of capital given Macquarie's risk profile; and
- Regular reporting of capital adequacy and monitoring of risk profile against risk appetite.

Macquarie's ICAAP is subject to Board and Senior Management oversight and internal control review.

1.4.3 Pillar 3

These disclosures have been formulated in response to the requirements of Pillar 3 of the Basel III Framework. APRA has laid down the minimum standards for market disclosure in its APS 330.

This report includes a breakdown of both on and off-balance sheet exposures, RWA and Liquidity measures. The report consists of sections covering:

- Risk Governance and Risk Management Framework
- Capital Structure
- Capital Adequacy
- Credit Risk Measurement
- Calculation of Credit Risk Exposures
- Provisioning
- Credit Risk Mitigation
- Securitisation
- Credit Valuation Adjustment
- Exposures to Central Counterparties
- Market Risk
- Equity Risk
- Operational Risk
- Leverage Ratio
- Liquidity Coverage Ratio
- Net Stable Funding Ratio

2. Risk Governance and Risk Management Framework

2.1 Risk Governance at Macquarie

Role of the Board

The role of the MBL Board is to promote the long-term interests of MBL, taking into account obligations it must discharge as an authorised deposit-taking institution.

The MBL Board is ultimately responsible for MBL's risk management framework and the oversight of its operation by Management. The MBL Board approves the MBL Risk Appetite Statement and the Group's Risk Management Strategy, monitors material risks faced by MBL and reviews how they are managed.

Role of Management

The Group Heads of the Operating and Central Service Groups are responsible for 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 which sets risk ownership responsibilities functionally independent from oversight and assurance:

- Primary responsibility for day-to-day 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, the Macquarie's financial and risk management framework.

2.2 Macquarie's Risk Management Framework

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 all 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.

Core risk management principles

Macquarie's approach to risk management is based on stable and robust core risk management principles. These are:

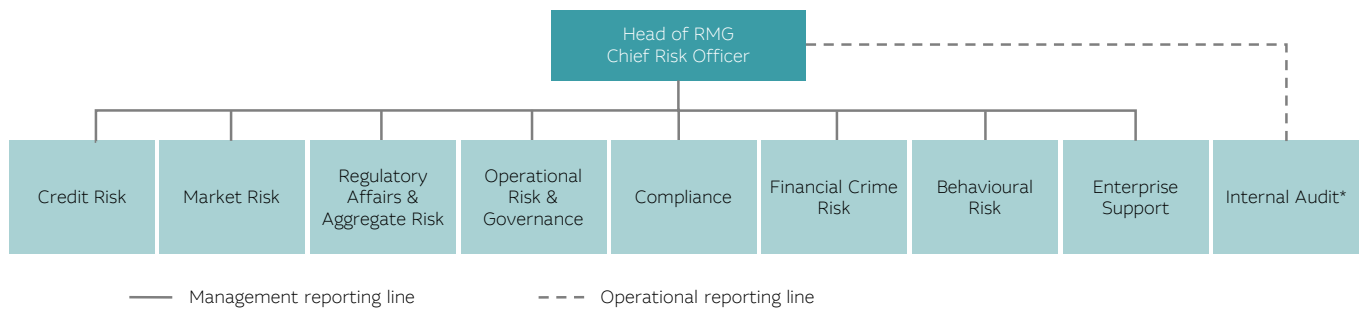
- **Ownership of risk at the business level:** Group Heads are responsible for ownership of material risks that arise in, or because of, the business' operations, including identification, measurement, control and mitigation of these risks. Before making decisions, clear analysis of the risks is sought 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.

2.3 Risk Management Group Structure

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 adopts 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.



* The Head of Internal Audit reports functionally to the Board Audit Committee and is primarily accountable to it.

2.4 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. The Internal Audit division assesses whether material risks have been properly identified by management and reported to the Board, and whether 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 BAC 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. For audit matters relating to RMG, the role of the CRO will be replaced by the CEO.

3. Capital Structure

3.1 Total Available Capital

The Macquarie Level 2 regulatory group capital supply is detailed in the table below.

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Common Equity Tier 1 capital		
Paid-up ordinary share capital	10,140	9,562
Retained earnings	9,198	7,962
Reserves	1,315	434
Gross Common Equity Tier 1 capital	20,653	17,958
Regulatory adjustments to Common Equity Tier 1 capital:		
Goodwill	41	36
Deferred tax assets	912	853
Net other fair value adjustments	257	47
Intangible component of investments in subsidiaries and other entities	38	37
Loan and lease origination fees and commissions paid to mortgage originators and brokers	630	582
Shortfall in provisions for credit losses	231	302
Equity exposures	975	952
Capitalised Software	17	22
Other Common Equity Tier 1 capital deductions	144	152
Total Common Equity Tier 1 capital deductions	3,245	2,983
Net Common Equity Tier 1 capital	17,408	14,975
Additional Tier 1 capital		
Additional Tier 1 capital instruments	2,468	2,297
Gross Additional Tier 1 capital	2,468	2,297
Deductions from Additional Tier 1 capital	-	-
Net Additional Tier 1 capital	2,468	2,297
Total Net Tier 1 capital	19,876	17,272
Tier 2 capital		
Tier 2 capital instruments and other	5,798	4,645
Total capital base	25,674	21,917

3.2 Common Equity Tier 1 Capital

Macquarie's Common Equity Tier 1 capital under Basel III consists of ordinary share capital, retained earnings and certain reserves.

3.3 Additional Tier 1 Capital

Macquarie's Tier 1 capital consists of Common Equity Tier 1 capital and Additional Tier 1 capital (hybrids).

Macquarie's Additional Tier 1 capital consists of Macquarie Additional Capital Securities (MACS), Bank Capital Notes 2 (BCN2) and Bank Capital Notes 3 (BCN3).

MACS were issued by MBL, acting through its London Branch in March 2017. MACS are subordinated, unsecured notes that pay discretionary, non-cumulative, semi-annual fixed rate cash distributions. Subject to certain conditions the MACS may be redeemed on 8 March 2027, or every 5th anniversary thereafter. MACS can be exchanged for a variable number of fully paid MGL ordinary shares on an acquisition event (where a person acquires control of MBL or MGL); where MBL's Common Equity Tier 1 capital ratio falls below 5.125%; or where APRA determines MBL would be non-viable without an exchange or a public sector injection of capital (or equivalent support).

BCN2 were issued by MBL in June 2020 and are quoted on the Australian Securities Exchange. The BCN2 pay discretionary, quarterly floating rate cash distributions equal to three-month BBSW plus 4.70% per annum margin, adjusted for franking credits. These instruments are non-cumulative and unsecured and may be redeemed at face value on 21 December 2025, 21 June 2026 or 21 December 2026 (subject to certain conditions being satisfied) or earlier in specified circumstances. The BCN2 can be converted into a variable number of MGL ordinary shares (subject to certain conditions being satisfied) on these redemption dates; mandatorily exchanged on 21 December 2028; exchanged earlier upon an acquisition event (with the acquirer gaining control of MGL or MBL); or where APRA determines MBL would be non-viable without an exchange or a public sector injection of capital (or equivalent support).

BCN3 were issued by MBL in August 2021 and are quoted on the Australian Securities Exchange. The BCN3 pay discretionary, quarterly floating rate cash distributions equal to three-month BBSW plus 2.90% per annum margin, adjusted for franking credits. These instruments are non-cumulative and unsecured and may be redeemed at face value on 7 September 2028, 7 March 2029, or 7 September 2029 (subject to certain conditions being satisfied) or earlier in specified circumstances. The BCN3 can be converted into a variable number of MGL ordinary shares (subject to certain conditions being satisfied) on these redemption dates; mandatorily exchanged on 8 September 2031; exchanged earlier upon an acquisition event (with the acquirer gaining control of MGL or MBL); or where APRA determines MBL would be non-viable without an exchange or a public sector injection of capital (or equivalent support).

3.4 Tier 2 Capital

Macquarie's Tier 2 capital consists of a portion of certain credit loss reserves plus subordinated debt instruments.

MBL has issued cumulative convertible subordinated debt amounting to \$US750 million in June 2015, \$A750 million in May 2020, \$US750 million in June 2020, \$US1,000 million in March 2021, \$A750 million in June 2021, \$A850 million in June 2022 which are Basel III compliant. This is reported at the value of liability at the period end date adjusted for any amortisation required under APS 111.

3.5 Restrictions on Capital

The Macquarie group maintains an internal capitalisation framework to ensure a prudent approach to managing subsidiary capitalisation and ratings. Various restrictions or costs exist on the transfer of capital within the Macquarie accounting consolidated group. For example:

- Regulated and licensed entities such as Australian Financial Services Licensed (AFSL) entities are required to maintain minimum capital levels to comply with their regulatory requirements. Macquarie seeks to maintain a sufficient level of capital within these entities to ensure compliance with these regulations
- Where retained earnings are transferred from related entities, tax costs may be payable on repatriation which may reduce the actual amount of available capital
- As an ADI, Macquarie is subject to the prudential limits imposed by APRA Prudential Standard APS 222 Associations with Related Entities
- FMG and RMG also manage and monitor internal limits on exposures to related entities which, combined with APRA's prudential limits, seeks to minimise contagion risk.

4. Capital Adequacy

4.1 Capital Management

Macquarie's capital management strategy is to maximise shareholder value through optimising the level and use of capital resources, whilst also providing the flexibility to take advantage of opportunities as they may arise.

The capital management objectives are to:

- Continue to support Macquarie's credit rating
- Ensure sufficient capital resources to support Macquarie's business and operational requirements
- Maintain sufficient capital to exceed regulatory requirements; and
- Safeguard Macquarie's ability to continue as a going concern.

Macquarie's capital management strategy uses both internal and external measures of capital. Internally, Macquarie has developed an economic capital model that is used to quantify MGL Group and MBL's aggregate level of risk. The economic capital framework complements the management of specific risk types such as equity, credit, market and operational risk by providing an aggregate view of MGL Group and MBL's risk profile.

The economic capital model is used to support business decision making and has two main applications:

- Capital adequacy assessment; and
- Risk adjusted performance measurement.

Capital adequacy is assessed for both MGL Group and the Level 1 and 2 regulatory groups on a regulatory basis and on an economic basis, with capital requirements assessed as follows:

Economic capital adequacy means an internal assessment of capital adequacy, designed to ensure Macquarie has sufficient capital to absorb potential losses and provide creditors with the required degree of protection.

Potential losses are quantified using the Economic Capital Adequacy Model (**ECAM**). These potential losses are compared to the capital resources available to absorb loss, consisting of book equity and eligible hybrid equity. Earnings are also available to absorb losses, however, only a fraction of potential earnings is recognised as a buffer against losses.

The Non-Bank Group's capital requirement is calculated using Macquarie's ECAM. The ECAM is based on similar principles and models as the Basel III regulatory capital framework for banks, as shown in the table below with both calculating capital at a one year, 99.9% confidence level. This 99.9% confidence level is broadly consistent with the acceptable probability of default implied by Macquarie's credit ratings.

Entity	Regulatory	Economic
Level 2 regulatory group	Capital to cover RWA and regulatory deductions, according to APRA's ADI prudential standards	Internal model, covering exposures of the Bank Group
Level 1 regulatory group	Capital to cover RWA and regulatory deductions, according to APRA's ADI prudential standards	n/a
MGL Group	Level 2 regulatory group capital requirement plus economic capital requirement of the Non-Bank Group	Internal model, covering all exposures of the MGL Group

Risk ¹	Basel III	ECAM
Credit	Capital requirement generally determined by Basel III IRB formula, with some parameters specified by the regulator (e.g. loss given default)	Capital requirement generally determined by Basel III IRB formula, but with internal estimates of key parameters
Equity	Harmonised Basel III: 250%, 300% or 400% risk weight, depending on the type of investment, Deduction from Common Equity Tier 1 above a threshold APRA Basel III: 100% Common Equity Tier 1 deduction ²	Extension of Basel III credit model to cover equity exposures. Capital requirement between 34% and 84% of face value; average 54%
Market	3 times 10-day 99% Value at Risk (VaR) plus 3 times 10-day 99% Stressed Value at Risk (SVaR), plus a specific risk charge	Scenario based approach
Operational	Advanced Measurement Approach	Advanced Measurement Approach

The MGL Group and the Level 1 and 2 regulatory groups are currently well capitalised. The capital surplus is available to support growth, provide strategic flexibility and accommodate regulatory change and capital volatility. In order to reduce volatility in Macquarie's capital position, Macquarie actively manages the sensitivity of its capital position to foreign currency movements.

The capital adequacy results are reported to the MGL Board and senior management on a regular basis, together with projections of capital adequacy under a range of scenarios.

4.2 Risk Appetite Setting

Macquarie's risk appetite is the degree of risk that the Group 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 businesses to achieve their near-term plans while promoting a reassessment of the opportunity and associated risks as the limit is approached.

¹ The ECAM also covers non-traded interest rate risk and the risk on assets held as part of business operations, including fixed assets, goodwill, intangible assets and capitalised expenses.

² Includes all Banking Book equity investments, plus net long Trading Book holdings in financial institutions.

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 and governance division within RMG oversees the new product and business approval process.

The Risk Appetite Test - An aggregate stress test

The key tool that the Board uses to quantify aggregate risk appetite is the Risk Appetite Test. This is a Macquarie wide stress test that seeks to confirm that we maintain throughout, and emerge from a severe economic downturn with sufficient capital to meet our minimum regulatory requirements without taking any mitigating actions.

The Risk Appetite Test asserts that potential losses must be less than the Global Risk Limit, which comprises underlying earnings that Macquarie can achieve in a downturn (downturn forward earnings capacity) plus surplus regulatory capital. Consideration is also given to the year-by-year outcome of the modelled downturn scenario to ensure that market confidence is maintained.

Operating Groups and Divisions estimate downturn forward earnings capacity under a downturn scenario provided to them by RMG. RMG reviews the estimates for consistency with scenario assumptions and across groups.

Aggregate risk breaks down into two categories:

- **Business risk**, meaning decline in earnings through deterioration in volumes and margins due to market conditions; and
- **Potential losses**, including potential credit losses, write downs of equity investments, operational risk losses and losses on trading positions.

Business risk is captured by the difference in base case and downturn forward earnings estimates. Potential losses are quantified using stress testing models, which translate scenario parameters (GDP, unemployment, interest rates etc) into loss and transition rates. A principal use of the Risk Appetite Test is in setting the Equity Risk Limit (ERL). This limit constrains Macquarie's aggregate level of risk arising from principal equity positions, managed fund holdings, property equity investments and other equity investments. Any changes to the ERL are sized to ensure that even under full use of this limit and allowing for growth in other risk types, the requirements of the Risk Appetite Test will be met.

4.3 Risk Weighted Assets (RWA)

RWA are a risk-based measure of exposures used in assessing overall capital usage of the Level 2 regulatory group. When applied against eligible regulatory capital the overall capital adequacy ratio is determined. RWA are calculated in accordance with APRA Prudential Standards.

The table below sets out the RWA exposures for the Macquarie Level 2 regulatory group.

APS 330 Table 6 (b) to (f)

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Credit risk		
Subject to IRB approach		
Corporate	42,018	39,861
SME Corporate	4,474	4,529
Sovereign	3,572	3,542
Bank	2,060	1,659
Residential Mortgages	28,477	26,802
Other Retail	2,344	2,856
Retail SME	1,980	2,474
Total RWA subject to IRB approach	84,925	81,723
Specialised lending exposures subject to slotting criteria¹	9,658	8,983
Subject to Standardised approach		
Corporate	41	52
Residential Mortgages	532	581
Other Retail	1,052	1,026
Total RWA subject to Standardised approach	1,625	1,659
Credit risk RWA for securitisation exposures	602	718
Credit Valuation Adjustment RWA	13,213	12,294
Exposures to Central Counterparties RWA	576	525
RWA for Other Assets	2,918	2,585
Total Credit risk RWA	113,517	108,487
Market risk RWA	10,773	10,230
Operational risk RWA	10,495	10,335
Interest rate risk in the banking book RWA	1,579	1,588
Total RWA	136,364	130,640

¹ Specialised lending exposures subject to supervisory slotting criteria are measured using APRA determined risk weightings.

5. Credit Risk Measurement

5.1 Credit Risk Overview

Credit risk is defined as the risk that a counterparty will fail to complete its contractual obligations when they fall due (default risk) or changes in the creditworthiness of the obligor (migration risk). The consequent loss is either the amount of the loan or financial obligation not paid back, the change in the value of a non-traded debt instrument, or the loss incurred in replicating a trading contract with a new counterparty.

RMG Credit maintains a comprehensive and robust framework for the identification, analysis and monitoring of credit risks arising in each business. Key aspects of this framework are detailed below.

5.2 Credit Risk Management

Macquarie's philosophy on credit risk management reflects the principle of separating prudential control from operational management. The responsibility for approval of initial credit limits is delegated to specific individuals.

Credit risk approvals reflect two principles:

- A requirement for dual sign off; and
- A requirement that, above specified limits, all credit exposures must be approved outside the business line proposing to undertake them.

5.2.1 Approval of Exposures

The MGL and MBL Boards are responsible for establishing the framework for approving credit exposures. The MGL and MBL Boards delegate discretions to approve credit exposure to designated individuals within the Group whose capacity to prudently exercise authority has been assessed.

Operating Groups are assigned modest levels of credit discretions. Credit exposures above these levels are assessed independently by RMG and approved by experienced RMG staff, MBL CEO, MGL CEO, MBL Board and MGL Board as required.

Macquarie enforces a strict 'no limit, no dealing' rule. All proposed transactions are analysed and approved by designated individuals before they can proceed.

All wholesale credit exposures are assessed at least once a year, or more frequently if required. Retail credit exposures are monitored on a portfolio basis.

5.2.2 Assessment of Macquarie Ratings

All corporate, sovereign and bank counterparties (wholesale) customer limits and exposures are allocated a Macquarie Group rating (MQ rating) which broadly correspond with Standard and Poor's (S&P) and Moody's Investor Services credit ratings. Each MQ rating has been assigned a PD derived from Standard and Poor's long-term average one year default rates for similarly rated obligors. A LGD percentage is additionally assigned to each limit and exposure, reflecting the economic loss estimated to result if default occurs, taking into account the security supporting the credit exposure.

Ratings provided by External Credit Assessment Institutions (ECAI) are considered throughout the rating process but are supplementary to the internal rating process.

The table on next page outlines the internal MQ Ratings relative to ECAI ratings.

MQ ratings are used to:

- Assess the default risk of credit exposures for management reporting, credit approval of limits, risk attribution and regulatory purposes
- Assist in credit decisions by providing guidelines and tools that promote a more consistent analytical approach
- Assist in the process of sharing credit knowledge (including knowledge of specialised and unique companies, industries and products); and

- Provide a basis for disclosing and reporting to investors and the market.

Each MQ rating band is associated with an estimate of the PD by the counterparty on its financial obligations and provides a consistent measure across the Level 2 regulatory group. Applicable at either the borrower or transaction level, a rating must be justified and set as part of the credit approval and review process.

The ratings process combines a quantitative analysis by way of scoring industry specific risk factors and a qualitative assessment based on expert judgement.

Rating System

Macquarie	S&P	Moody's
MQ1	AAA	Aaa
MQ2	AA+	Aa1
	AA	Aa2
	AA-	Aa3
MQ3	A+	A1
MQ4	A	A2
MQ5	A-	A3
MQ6	BBB+	Baa1
MQ7	BBB	Baa2
MQ8	BBB-	Baa3
MQ9	BB+	Ba1
MQ10	BB	Ba2
MQ11	BB-	Ba3
MQ12	B+	B1
MQ13	B	B2
MQ14	B-	B3
MQ15	CCC+	Caa1
	CCC	Caa2
	CCC-	Caa3
MQ16	CC	Ca
	C	C
MQ99	D	D

For wholesale counterparties, Macquarie utilises a number of industry templates and a sovereign template to assess the appropriate MQ ratings. These industry templates are designed to ensure that Macquarie ratings take into account the different risk factors that affect different industries. Analysts are required to input a range of quantitative and qualitative factors and then consider the MQ rating output. At the same time as considering the appropriate MQ rating, analysts are also required to consider the appropriate LGD. For economic capital purposes, LGDs are stressed estimates, taking into account the security, jurisdiction, seniority and quality of the balance sheet. For regulatory capital, MBL uses the APRA supervisory estimates for LGDs.

For retail counterparties, PDs and LGDs are assigned to retail pools. Retail exposures are allocated to pools, such that each pool has homogenous risk. PDs and LGDs are calculated using the following methods:

- **PDs:** calculate the long run average default rate from the internal and external default data available for each pool. When internal data is not available in sufficient quantity, external data is used but only in the case where it is relevant to the pool.
- **LGDs:** consider a downturn scenario and the loss that would be incurred for this scenario on defaulted loans in each pool.

Macquarie applies a standard definition of default, which is that an obligor is considered defaulted when it is either (i) 90 days past due; or (ii) unlikely to pay. 'Unlikely to pay' is defined in Macquarie policies based on APRA standards.

All templates and models are validated annually by RMG Model Risk Management with oversight from the Credit Models Review Committee. Validation includes the following activities:

- Validation of wholesale MQ ratings templates
- Wholesale ratings migration analysis
- Validation of wholesale PD, LGD and Exposure at Default (EAD) estimates
- Validation of retail PD, LGD and EAD estimates; and
- Validation of any new or changes to existing credit risk models.

Macquarie has developed system functionality to support the allocation of internal ratings. This application ensures that all supporting factors and weightings are stored together with the system generated rating. Approvers have access to all of these details through the credit approval process. Details are also maintained of any rating override which must be accompanied by specific commentary from the credit analyst, and which is subject to regular review.

Macquarie considers that ratings are an integral part of determining the creditworthiness of the obligor. However, Macquarie does not believe that model and template output should replace thorough and thoughtful analysis. In addition to the system details, credit analysts must also provide specific justification of the internal rating as part of their overall credit analysis of each counterparty. Credit approvers consider and approve the internal rating for the counterparty in relation to the size and tenor of their proposed credit limits.

All proposals for significant deals, products and businesses must contain an analysis of risk adjusted returns, based on the ECAM which for credit exposures is a function of the assessed credit rating (together with other factors such as maturity and estimates of LGD). In assessing these proposals, the Executive Committee and Board consider these returns together with other relevant factors. They therefore form an important element in ensuring the visibility and impact of the MQ rating to the overall risk acceptance decision.

Risk adjusted performance metrics for each business unit are prepared on a regular basis and distributed to senior management and the Board as well as to business units. These performance metrics are based on Regulatory Capital and Economic Capital usage and are a factor when allocations of performance-based remuneration are determined for each business.

5.2.3 Measuring and Monitoring Exposures

Credit exposures are calculated differently according to the nature of the obligation. Materially all loan assets are reported at amortised cost, whereas derivative contracts are reported at fair value according to both internal and external regulatory measures of Counterparty Credit Exposure. Exposures are assessed in the context of the replacement cost of the contract should the counterparty default prior to the maturity of the trade. For regulatory purposes, EAD is calculated according to the Standardised Approach to Counterparty Credit Risk (SA CCR) outlined in APRA ADI Prudential Standards 180 (APS 180) and comprises of replacement cost (RC) and potential future exposure (PFE). The RC is a function of derivative revaluation, collateralisation and the terms of any variation margin agreement in place with a counterparty. The PFE is a function of the outstanding notional of derivative contracts with a counterparty, the nature of these contracts, the level of collateralisation and whether these contracts are subject to variation margining. The sum of the RC and the PFE is subject to a regulatory prescribed scaling factor, the alpha multiplier, which equals 1.4.

The internal measure of counterparty credit exposure is calculated as a function of market movements. A range of exposure profiles are calculated using models based simulated scenarios through the life of the portfolio, the resultant exposure is then ranked to reflect different confidence levels. At a minimum, counterparty credit limits are set for all businesses against a consistent low probability (high confidence) profile. The effect of this limit framework is to ensure that there is a low probability of exposures exceeding the original approved limit. The models and parameters used to determine future asset prices and consequent portfolio exposures are reviewed and approved by RMG quarterly, significant changes in volatility or market conditions result in more frequent reviews.

High confidence level exposure measures are supplemented by regular and ad hoc exposure sensitivity analysis to evaluate the effect of extreme stress on the portfolio.

Exposure relating to derivatives are calculated on a net basis where appropriate legal netting arrangements are in effect. The details of what products can be netted for each counterparty are recorded in legal documentation systems. These systems are tightly integrated into the exposure calculation functionality and serve to ensure that netting is only performed when the legal basis for this has been formally assessed and confirmed.

Where trading gives rise to settlement risk, this risk is normally assessed at full face value of the settlement amount. However, Macquarie utilises a number of market standard clearing mechanisms to ensure that the bulk of settlements are effected on a secured basis or through exchanges where a Delivery vs payment (DVP) settlement process is ensured.

Contingent exposures arising from the issuance of guarantees, letters of credit and performance bonds are also reported daily.

On and off-balance sheet exposures are considered together for approval, monitoring and reporting purposes. Credit exposures of all types are calculated and reported daily.

Each business is responsible for calculating their credit exposures to ensure that they stay within credit limits. In addition, these exposures are supplied to RMG Credit on a daily basis for centralised limit monitoring. Any excesses identified are investigated and escalated as appropriate to both business line and RMG management. All wholesale limits and ratings are reviewed at least once a year, or more frequently if necessary, to ensure any deterioration is identified and reflected in an adjustment to limits and/or their MQ rating. Furthermore, other indicators of deterioration in credit quality are regularly monitored, such as share price and credit default swap spread movements, covenant breaches and external credit ratings downgrades. Where appropriate, these are reported to senior management and where recoverability is in doubt, appropriate provisions are held.

A review of the Credit, Equity and Asset Portfolio analysing exposure concentrations by counterparty, region, industry and credit quality is carried out quarterly and reported to the Board semi-annually. Policies are in place to manage and limit large exposures to single counterparties and sectoral concentrations.

5.2.4 Credit Assurance

Credit Assurance (CA) is a centralised function within RMG which independently verifies the effectiveness of Macquarie's credit risk management. The role of the CA is to provide an independent assurance of analysis and process to support credit quality and the effectiveness of credit controls.

Key responsibilities are:

- Assuring the quality of wholesale credit approvals through sample testing
- Reporting on the effectiveness (design and performance) of RMG Credit's critical controls including sample testing to ensure compliance with key Credit policies and the effectiveness of critical controls; and
- Overseeing Business (Retail) CA functions in Banking and Financial Services (BFS) and Commodities and Global Markets (CGM).

RMG CA reports to the RMG Head of Operational Risk and Governance to ensure independence. In addition to regular reporting to senior management and the Chief Risk Officer, CA is required to report at least annually to the Board. In the interim, matters that require Board attention are reported via the Chief Risk Officer.

5.3 Macquarie's Credit Risk Exposures

Credit exposures are disclosed in the following pages based on:

- Geographic distribution
- Maturity profile
- Measurement approach
- Risk weight banding; and
- Risk grade.

Disclosures in this section have been prepared on a gross credit exposure basis. Gross credit risk exposure relates to the potential loss that Macquarie would incur as a result of a default by an obligor. The gross credit risk exposures are calculated as the exposure at default on drawn and undrawn facilities along with derivatives and repurchase agreements. The exposure at default is calculated in a manner consistent with APRA Prudential Standards.

Exposures have been based on a Level 2 regulatory group as defined in Section 1.1. The gross credit risk exposures in this section will differ from the disclosures in the MBL and its subsidiaries, the Consolidated Entity financial report as gross credit risk exposures include off balance sheet exposures but exclude the exposures of subsidiaries which have been deconsolidated for APRA reporting purposes.

The exposures below exclude the impact of:

- Credit risk mitigation (discussed in Section 8)
- Securitisation exposures (discussed in Section 9)
- CVA (discussed in Section 10)
- Central counterparty exposures (discussed in Section 11)
- Trading book on balance sheet exposures (discussed in Section 12); and
- Equity exposures (discussed in Section 13).

APS 330 Table 7(b)

Portfolio Type	As at	As at
	30 September 2022	31 March 2022
	\$m	\$m
Corporate ¹	93,157	78,899
SME Corporate ²	8,507	8,218
Sovereign	50,102	51,350
Bank	10,347	8,691
Residential Mortgages	119,502	108,288
Other Retail	6,027	6,957
Retail SME	2,989	3,641
Other Assets ³	7,498	5,728
Total Gross Credit Exposure	298,129	271,772

¹ Corporate includes specialised lending exposure of \$6,850 million as at 30 September 2022 (31 March 2022: \$6,383 million).

² SME Corporate includes specialised lending exposure of \$3,368 million as at 30 September 2022 (31 March 2022: \$3,015 million).

³ The major components of Other Assets are unsettled trades, related party exposures, and fixed assets.

APS 330 Table 7(b) (continued)

	As at 30 September 2022			Total \$m	Average exposures ¹ \$m
	On balance Sheet \$m	Off balance sheet			
		Non-market related \$m	Market related \$m		
Subject to IRB approach					
Corporate	22,932	12,400	50,934	86,266	79,365
SME Corporate	4,134	1,005	-	5,139	5,171
Sovereign	44,811	4,977	314	50,102	50,726
Bank	3,549	2,997	3,801	10,347	9,519
Residential Mortgages	103,830	14,809	-	118,639	112,993
Other Retail	4,372	-	-	4,372	4,803
Retail SME	2,978	11	-	2,989	3,315
Total IRB approach	186,606	36,199	55,049	277,854	265,892
Specialised Lending	5,187	1,659	3,372	10,218	9,808
Subject to Standardised approach					
Corporate	-	41	-	41	47
Residential Mortgages	846	17	-	863	902
Other Retail	1,655	-	-	1,655	1,690
Total Standardised approach	2,501	58	-	2,559	2,638
Other Assets	5,919	740	839	7,498	6,613
Total Gross Credit Exposures	200,213	38,656	59,260	298,129	284,951

¹ Average exposures have been calculated on 30 September 2022 and 31 March 2022 spot positions.

APS 330 Table 7(b) (continued)

	As at 31 March 2022			Total \$m	Average exposures ¹ \$m
	On balance Sheet \$m	Off balance sheet			
		Non-market related \$m	Market related \$m		
Subject to IRB approach					
Corporate	19,860	10,474	42,130	72,464	68,558
SME Corporate	4,087	1,116	-	5,203	5,117
Sovereign	44,638	6,526	186	51,350	41,423
Bank	1,686	3,149	3,856	8,691	8,556
Residential Mortgages	91,988	15,359	-	107,347	99,587
Other Retail	5,233	-	-	5,233	5,642
Retail SME	3,634	7	-	3,641	3,950
Total IRB approach	171,126	36,631	46,172	253,929	232,831
Specialised Lending	5,013	1,125	3,260	9,398	9,116
Subject to Standardised approach					
Corporate	-	52	-	52	69
Residential Mortgages	941	-	-	941	989
Other Retail	1,724	-	-	1,724	1,607
Total Standardised approach	2,665	52	-	2,717	2,665
Other Assets	4,040	848	840	5,728	6,910
Total Gross Credit Exposures	182,844	38,656	50,272	271,772	251,520

¹ Average exposures have been calculated on 31 March 2022 and 30 September 2021 spot positions.

APS 330 Table 7(f) & (i)

	As at 30 September 2022				For the 6 months to 30 September 2022	
	Gross Credit Exposure \$m	Impaired Facilities \$m	Past Due > 90 days \$m	Specific Provisions \$m	Charges for Specific Provisions \$m	Write-offs ¹ \$m
Subject to IRB approach						
Corporate ²	93,116	368	134	(151)	(17)	-
SME Corporate ²	8,507	84	38	(25)	-	-
Sovereign	50,102	-	-	-	-	-
Bank	10,347	-	-	-	-	-
Residential Mortgages	118,639	210	208	(6)	(2)	-
Other Retail	4,372	107	3	(44)	-	-
Retail SME	2,989	74	6	(18)	-	-
Total IRB approach	288,072	843	389	(244)	(19)	-
Subject to Standardised approach						
Corporate	41	-	-	-	-	-
Residential Mortgages	863	-	-	-	-	-
Other Retail	1,655	12	4	(10)	(1)	-
Total Standardised approach	2,559	12	4	(10)	(1)	-
Other Assets	7,498	-	-	-	-	-
Total	298,129	855	393	(254)	(20)	-

	As at 31 March 2022				For the 6 months to 31 March 2022	
	Gross Credit Exposure \$m	Impaired Facilities \$m	Past Due > 90 days \$m	Specific Provisions \$m	Charges for Specific Provisions \$m	Write-offs ¹ \$m
Subject to IRB approach						
Corporate ²	78,847	268	36	(192)	(21)	-
SME Corporate ²	8,218	107	33	(44)	(3)	-
Sovereign	51,350	-	-	-	-	-
Bank	8,691	-	-	-	-	-
Residential Mortgages	107,347	227	255	(12)	(2)	-
Other Retail	5,233	128	4	(31)	15	-
Retail SME	3,641	99	4	(23)	(17)	-
Total IRB approach	263,327	829	332	(302)	(28)	-
Subject to Standardised approach						
Corporate	52	-	-	-	-	-
Residential Mortgages	941	-	-	-	-	-
Other Retail	1,724	20	3	(24)	-	-
Total Standardised approach	2,717	20	3	(24)	-	-
Other Assets	5,728	-	-	-	-	-
Total	271,772	849	335	(326)	(28)	-

¹ Under AASB 9, there are no longer direct write offs to Income Statement. A financial asset is written off when there is no reasonable expectation of recovering it. At the time of writing off a financial asset it is adjusted against the Expected Credit Loss (ECL) provision created over the life of the asset and not directly written off to Income Statement.

² IRB Corporate and SME Corporate includes specialised lending.

5.4 Credit Risk by Geographic Distribution

The credit risk exposures below have been based on a geographical split by domicile of the counterparty.

APS 330 Table 7(c)

Portfolio Type	As at 30 September 2022				
	Asia Pacific \$m	Australia \$m	EMEA ¹ \$m	Americas \$m	Total \$m
Corporate	6,656	14,118	39,428	32,955	93,157
SME Corporate	11	8,496	-	-	8,507
Sovereign	184	43,828	5,040	1,050	50,102
Bank	1,640	1,327	4,758	2,622	10,347
Residential Mortgages	412	118,745	216	129	119,502
Other Retail	87	5,681	-	259	6,027
Retail SME	-	2,989	-	-	2,989
Other Assets	1,081	4,123	1,088	1,206	7,498
Total Gross Credit Exposure	10,071	199,307	50,530	38,221	298,129

Portfolio Type	As at 31 March 2022				
	Asia Pacific \$m	Australia \$m	EMEA ¹ \$m	Americas \$m	Total \$m
Corporate	6,028	11,195	34,164	27,512	78,899
SME Corporate	3	8,215	-	-	8,218
Sovereign	101	46,047	5,000	202	51,350
Bank	829	1,462	4,913	1,487	8,691
Residential Mortgages	389	107,597	185	117	108,288
Other Retail	89	6,688	-	180	6,957
Retail SME	-	3,641	-	-	3,641
Other Assets	522	3,168	1,075	963	5,728
Total Gross Credit Exposure	7,961	188,013	45,337	30,461	271,772

¹ EMEA represents Europe, United Kingdom, Middle East and Africa.

5.5 Credit Risk Distribution by Counterparty Type

The credit risk exposures by Basel III risk type (portfolio type) below have been classified based on counterparty split of the exposure.

APS 330 Table 7(d)

Portfolio Type	As at 30 September 2022				
	Financial	Government	Corporate	Retail	Total
	Institution \$m	\$m	\$m	\$m	\$m
Corporate	25,063	117	67,800	177	93,157
SME Corporate	667	0	6,824	1,016	8,507
Sovereign	46,629	3,454	19	0	50,102
Bank	10,347	0	0	0	10,347
Residential Mortgages	731	0	4,104	114,667	119,502
Other Retail	41	52	510	5,424	6,027
Retail SME	44	0	2,134	811	2,989
Other Assets	4,733	500	2,265	0	7,498
Total Gross Credit Exposure	88,255	4,123	83,656	122,095	298,129

Portfolio Type	As at 31 March 2022				
	Financial	Government	Corporate	Retail	Total
	Institution \$m	\$m	\$m	\$m	\$m
Corporate	20,929	119	57,731	120	78,899
SME Corporate	738	-	6,516	964	8,218
Sovereign	50,315	1,035	-	-	51,350
Bank	8,691	-	-	-	8,691
Residential Mortgages	801	-	3,610	103,877	108,288
Other Retail	157	49	459	6,292	6,957
Retail SME	59	-	2,579	1,003	3,641
Other Assets	3,353	330	2,045	-	5,728
Total Gross Credit Exposure	85,043	1,533	72,940	112,256	271,772

5.6 Credit Risk by Maturity Profile

The credit risk exposures below have been based on residual contractual maturity of the exposure.

APS 330 Table 7(e)

Portfolio Type	As at 30 September 2022			Total \$m
	≤1 year \$m	1 ≤ 5 years \$m	> 5 years \$m	
Corporate	56,784	32,508	3,865	93,157
SME Corporate	1,719	5,789	999	8,507
Sovereign	40,965	7,403	1,734	50,102
Bank	8,410	1,398	539	10,347
Residential Mortgages	94	564	118,844	119,502
Other Retail	1,044	4,594	389	6,027
Retail SME	323	2,643	23	2,989
Other Assets	4,694	767	2,037	7,498
Total Gross Credit Exposure	114,033	55,666	128,430	298,129

Portfolio Type	As at 31 March 2022			Total \$m
	≤1 year \$m	1 ≤ 5 years \$m	> 5 years \$m	
Corporate	50,017	25,008	3,874	78,899
SME Corporate	1,702	5,564	952	8,218
Sovereign	43,312	7,346	692	51,350
Bank	7,190	1,204	297	8,691
Residential Mortgages	81	502	107,705	108,288
Other Retail	1,172	5,286	499	6,957
Retail SME	329	3,293	19	3,641
Other Assets	3,435	844	1,449	5,728
Total Gross Credit Exposure	107,238	49,047	115,487	271,772

Macquarie is approved by APRA to use the Basel III Foundation Internal Ratings Based (FIRB) Approach for credit risk for its wholesale portfolios. Approval for the FIRB approach enables Macquarie to rely on its own internal estimates for some of the necessary credit risk components in determining the capital requirement for a given credit exposure. Internal estimates are used for PD and Maturity, while for wholesale exposures APRA provided estimates must be used for LGD and Exposure at Default (EAD).

A number of retail businesses have been accredited to use the Internal Ratings Based (IRB) Approach, whereby retail exposures are assigned to pools based on both borrower and transaction risk and where the PD and LGD estimates are derived from Macquarie's loss history for exposures in that pool.

Macquarie has a number of portfolios which do not have a statistically significant loss history and therefore do not qualify for the IRB approach to credit risk. Accordingly, the Standardised approach is applied to these portfolios and they are assessed periodically to determine if a change to the IRB approach can be substantiated.

Other portfolios will remain Standardised either because they are in run off or have been approved by APRA as such. The obligors in these portfolios are not rated by any of the recognised ECAI (S&P & Moody's) as they are primarily composed of individual borrowers or small businesses. Consequently, these exposures are risk weighted at 100%.

A summary of the applicable IRB or Standardised treatment to the Macquarie credit portfolios is set out in the table below.

Exposure Type	Approach	Treatment
Primarily all credit exposures to Corporate (including SME Corporate), Bank and Sovereign counterparties	IRB	MQ rating is mapped to the S&P ratings scale S&P historical default data is used to estimate a PD for each rating grade
All exposures subject to Supervisory Slotting Treatment	IRB	Exposure is slotted based on a combination of its MQ rating and LGD, with APRA determined supervisory risk weights assigned to each exposure
Macquarie originated auto and equipment lease exposures in Australia ¹	IRB	Through-the-cycle pool PDs and downturn LGDs
Macquarie originated and purchased Residential Mortgages in Australia	IRB	Through-the-cycle pool PDs and downturn LGDs The regulatory requirement of 20% applies to the LGD of the portfolio.
Other Residential Mortgages	Standardised	Risk Weighted per APS 112 Capital Adequacy: Standardised Approach to Credit Risk
Other auto and equipment lease exposures in Australia	Standardised	Risk Weighted per APS 112 Capital Adequacy: Standardised Approach to Credit Risk
Credit card exposures in Australia	Standardised	100% risk-weighted
Personal loan exposures in Australia	Standardised	100% risk-weighted
Margin loan exposures in Australia	IRB	A 20% risk-weight prescribed in APS 113 Capital Adequacy: Internal Ratings-based Approach to Credit Risk is applied
Related party exposures	IRB	Risk Weighted per APS 113 Capital Adequacy: Internal Ratings-based Approach to Credit Risk

¹Excludes loans to self managed superannuation funds secured by residential property and reverse mortgages, which are considered as other residential mortgages under standardised approach.

6. Calculation of Credit Risk Exposures

6.1 Credit Risk Exposures by Measurement Approach

The table below sets out the gross exposures by Basel III portfolio class as required by APRA under APS 330.

APS 330 Table 7(i)

Portfolio Type	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Subject to IRB approach		
Corporate ¹	93,116	78,847
SME Corporate ²	8,507	8,218
Sovereign	50,102	51,350
Bank	10,347	8,691
Residential Mortgages	118,639	107,347
Other Retail	4,372	5,233
Retail SME	2,989	3,641
Total IRB approach	288,072	263,327
Subject to Standardised approach		
Corporate	41	52
Residential Mortgages	863	941
Other Retail	1,655	1,724
Total Standardised approach	2,559	2,717
Other Assets³	7,498	5,728
Total Gross Credit Exposure	298,129	271,772

¹ Corporate includes specialised lending exposure of \$6,850 million as at 30 September 2022 (31 March 2022: \$6,383 million).

² SME Corporate includes specialised lending exposure of \$3,368 million as at 30 September 2022 (31 March 2022: \$3,015 million).

³ The major components of Other Assets are related party exposures, unsettled trades, and fixed assets.

6.2 Credit Risk Exposures by Risk Weight

The tables below detail total credit exposures by risk weight bandings for the standardised portfolio and risk weightings for specialised lending exposures.

The disclosure of Standardised exposures below shows gross credit exposures before and after the impact of risk mitigation by collateral and guarantees.

APS 330 Table 8(b) Standardised Approach Exposures

Risk Weight	As at 30 September 2022		As at 31 March 2022	
	Total Gross Credit Exposure \$m	Exposure after mitigation by eligible collateral & guarantees \$m	Total Gross Credit Exposure \$m	Exposure after mitigation by eligible collateral & guarantees \$m
0%	1	1	2	2
> 0% ≤ 20%	-	-	-	-
> 20% ≤ 35%	33	33	39	39
> 35% ≤ 50%	450	450	478	478
> 50% ≤ 75%	338	338	380	380
> 75% ≤ 100%	1,737	1,165	1,818	1,251
> 100% ≤ 150%	-	-	-	-
> 150%	-	-	-	-
Total	2,559	1,987	2,717	2,150

IRB Approach Exposures

Specialised lending exposures subject to supervisory slotting

Risk Weight	Gross Credit Exposure	
	As at 30 September 2022 \$m	As at 31 March 2022 \$m
70%	1,651	1,521
90%	4,442	3,679
115%	4,040	4,099
250%	26	32
Default	9	17
Total	10,168	9,348

6.3 Credit Risk Exposures by Risk Grade

This section sets out the gross credit exposures split by PD for Non-Retail portfolios and Expected Loss (EL) for Retail portfolios.

The tables below provide a breakdown of gross credit exposures into each PD band for the Non-Retail portfolios under the Basel III FIRB classes of Corporate, SME Corporate, Sovereign and Bank as shown in Section 6.1.

APS 330 Table 9(d)

	As at 30 September 2022 PD Grade							Total Gross Credit Exposure \$m
	0 ≤ 0.03% \$m	0.03% ≤ 0.15% \$m	0.15% ≤ 1% \$m	1% ≤ 5% \$m	5% ≤ 15% \$m	15% ≤ 100% \$m	Default \$m	
Non-Retail								
Corporate	6,009	19,816	48,576	13,372	4,240	381	722	93,116
SME Corporate	-	12	3,413	3,867	1,021	72	122	8,507
Sovereign	49,047	929	85	31	10	-	-	50,102
Bank	1,212	8,672	339	120	3	1	-	10,347
Total Gross Credit Exposure	56,268	29,429	52,413	17,390	5,274	454	844	162,072

	As at 31 March 2022 PD Grade							Total Gross Credit Exposure \$m
	0 ≤ 0.03% \$m	0.03% ≤ 0.15% \$m	0.15% ≤ 1% \$m	1% ≤ 5% \$m	5% ≤ 15% \$m	15% ≤ 100% \$m	Default \$m	
Non-Retail								
Corporate	2,862	13,638	42,678	13,728	5,057	392	492	78,847
SME Corporate	-	12	3,053	3,898	1,044	71	140	8,218
Sovereign	50,556	721	35	36	2	-	-	51,350
Bank	624	7,717	193	157	-	-	-	8,691
Total Gross Credit Exposure	54,042	22,088	45,959	17,819	6,103	463	632	147,106

Included within Total Gross Credit Exposures in the previous page are exposures for undrawn commitments. These undrawn commitment exposures are set out in the following tables.

APS 330 Table 9(d)

Undrawn Commitments	As at 30 September 2022 PD Grade							Total Gross Credit Exposure \$m
	0 <= 0.03%	0.03% <= 0.15%	0.15% <= 1%	1% <= 5%	5% <=15%	15% <= 100%	Default	
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	
Corporate	-	160	1,169	1,182	283	32	-	2,826
SME Corporate	-	9	530	530	82	1	9	1,161
Sovereign	26	-	-	31	-	-	-	57
Bank	-	-	-	-	-	-	-	-
Total Undrawn Commitments	26	169	1,699	1,743	365	33	9	4,044

Undrawn Commitments	As at 31 March 2022 PD Grade							Total Gross Credit Exposure \$m
	0 <= 0.03%	0.03% <= 0.15%	0.15% <= 1%	1% <= 5%	5% <=15%	15% <= 100%	Default	
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	
Corporate	-	173	1,321	847	247	46	-	2,634
SME Corporate	-	12	542	552	84	1	8	1,199
Sovereign	28	-	-	21	-	-	-	49
Bank	-	80	8	-	-	-	-	88
Total Undrawn Commitments	28	265	1,871	1,420	331	47	8	3,970

The tables below provide a breakdown of gross credit exposures into each EL category for the Retail portfolios under the Basel III classes of Residential Mortgages, Other Retail and Retail SME as shown in Section 6.1.

APS 330 Table 9(d)

Retail	As at 30 September 2022 Expected Loss Categories					Total Gross Credit Exposure \$m
	0 <= 0.1%	0.1% <= 0.3%	0.3% <= 3%	3% <= 10%	10% <= 100%	
	\$m	\$m	\$m	\$m	\$m	
Residential Mortgages	60,115	54,107	3,217	677	523	118,639
Other Retail	-	2,156	1,717	378	121	4,372
Retail SME	20	126	2,536	222	85	2,989
Total Gross Credit Exposure	60,135	56,389	7,470	1,277	729	126,000

Retail	As at 31 March 2022 Expected Loss Categories					Total Gross Credit Exposure \$m
	0 <= 0.1%	0.1% <= 0.3%	0.3% <= 3%	3% <= 10%	10% <= 100%	
	\$m	\$m	\$m	\$m	\$m	
Residential Mortgages	52,139	50,428	3,572	659	549	107,347
Other Retail	-	2,579	2,032	485	137	5,233
Retail SME	10	147	3,069	306	109	3,641
Total Gross Credit Exposure	52,149	53,154	8,673	1,450	795	116,221

Included within Total Gross Credit Exposures in the tables above are exposures for undrawn commitments. These undrawn commitment exposures are set out in the following tables.

APS 330 Table 9(d)

Undrawn Commitments	As at 30 September 2022 Expected Loss Categories					Total \$m
	0 <= 0.1%	0.1% <= 0.3%	0.3% <= 3%	3% <= 10%	10% <= 100%	
	\$m	\$m	\$m	\$m	\$m	
Residential Mortgages	10,548	4,059	160	42	-	14,809
Retail SME	10	-	-	1	-	11
Total Undrawn Commitments	10,558	4,059	160	43	-	14,820

Undrawn Commitments	As at 31 March 2022 Expected Loss Categories					Total \$m
	0 <= 0.1%	0.1% <= 0.3%	0.3% <= 3%	3% <= 10%	10% <= 100%	
	\$m	\$m	\$m	\$m	\$m	
Residential Mortgages	9,674	5,472	172	40	1	15,359
Retail SME	7	-	-	-	-	7
Total Undrawn Commitments	9,681	5,472	172	40	1	15,366

7. Provisioning

7.1 Impaired Facilities and Past Due¹

Facilities are classified as impaired when there is doubt regarding the collectability of some or all of the contractual payments due from a counterparty. The contractual payments include principal outstanding, interest and other related charges.

Exposures will be assessed for impairment where there is objective evidence of impairment. Objective evidence of impairment may include market, economic or legal factors impacting upon the ability of a counterparty to meet their repayment obligations. The assessment process consists of a comparison of the carrying value of the exposure and the present value of its estimated future cash flows (recoverable amount).

The estimation of expected future cash flows takes into consideration:

- External valuations of the asset (taking into account the value of any security held)
- Costs of recovery; and
- The timeframe for realisation of recovery and/or sale of security.

The estimated future cash flows are discounted at the effective interest rate to determine the recoverable amount of the financial asset.

Facilities that are more than 90 calendar days past contractual due date can be classified as either:

- Impaired facility if it meets the criteria for impairment as detailed above; or
- Past due where the facility is assessed as well secured.

For the purposes of this report, past dues represent the full amount outstanding, not just the amount that is past due.

7.2 Specific Provisions and General Reserve for Credit Losses

Specific Provisions

Facilities that are assessed as impaired are subject to a recoverability test. Specific provisions are calculated as per the APRA Prudential Standard APS 220: Credit Quality (revoked APS 220) and are generally measured as the difference between the contractual and expected cash flows from the individual exposure, discounted using the effective interest rate for that exposure.

General Reserve for Credit Losses¹

The General Reserve for Credit Losses (GRCL) is required under APS 220 to cover credit losses prudently estimated but not certain to arise over the full life of all individual facilities making up the credit risk portfolio.

Provisions representing 12 months expected credit loss (ECL) on performing loans (referred to as stage I provisions under AASB 9), are allocated to GRCL as they are held against future, presently unidentified losses. ECL provisions are determined based on the point in time probability of default (PD) over the next 12 months and the lifetime losses associated with such PD, adjusted for forward looking information.

Additional Regulatory Specific Provisions¹

Lifetime ECL provisions on underperforming and nonperforming loans (referred to as stage II provisions under AASB 9) deemed ineligible to be included in the GRCL, are considered regulatory specific provisions. Lifetime ECL provisions are determined with reference to the financial asset's lifetime PD and the lifetime losses associated with that PD, adjusted for forward looking information.

¹ FAQs published by APRA on 10 Mar 22 clarified that ADIs should continue to make disclosures based on the current APS 330, using the terms as defined in Prudential Standard APS 220 Credit Quality (revoked APS 220). References in this section to APS 220 are thus referring to the revoked APS 220.

7.3 Regulatory Expected Loss (REL)

REL represents the estimated future credit losses expected to be incurred in a portfolio. For non-defaulted exposures, REL is calculated as a function of the outstanding exposure, PD and LGD whereas REL for defaulted Corporate, Sovereign and Bank exposures under the FIRB approach is determined as the product of LGD and EAD. LGDs are defined by APRA for Corporate, Bank and Sovereign. Specialised lending exposures subject to supervisory slotting criteria are measured using APRA determined risk weightings. For defaulted retail exposures under the IRB approach, REL is based on the best estimate of loss. The excess of REL over eligible provisions is required by APRA to be deducted from Common Equity Tier 1 capital. Eligible provisions include credit related provisions, partial write offs, and discounts on defaulted assets. As at 30 September 2022, the total REL was \$1,110 million (31 March 2022: \$1,053 million), with the excess of REL over eligible provisions resulting in a Common Equity Tier 1 deduction of \$231million (31 March 2022: \$302 million).

7.4 Provisions by Counterparty Type

The table below details impaired facilities, past due and specific provisions.

APS 330 Table 7(f)

	As at 30 September 2022			As at 31 March 2022		
	Impaired Facilities \$m	Past Due >90 days \$m	Specific Provisions \$m	Impaired Facilities \$m	Past Due >90 days \$m	Specific Provisions \$m
Subject to IRB approach						
Corporate	368	134	(151)	268	36	(192)
SME Corporate	84	38	(25)	107	33	(44)
Residential Mortgages	210	208	(6)	227	255	(12)
Other Retail	107	3	(44)	128	4	(31)
Retail SME	74	6	(18)	99	4	(23)
Total IRB approach	843	389	(244)	829	332	(302)
Subject to Standardised approach						
Residential Mortgages	-	-	-	-	-	-
Other Retail	12	4	(10)	20	3	(24)
Total Standardised approach	12	4	(10)	20	3	(24)
Other Assets	-	-	-	-	-	-
Total	855	393	(254)	849	335	(326)
Additional regulatory specific provisions			(180)			(193)

APS 330 Table 9(e)

	For the 6 months to 30 September 2022		For the 6 months to 31 March 2022	
	Charges for Specific provisions \$m	Write-offs ¹ \$m	Charges for Specific provisions \$m	Write-offs ¹ \$m
Subject to IRB approach				
Corporate	(17)	-	(21)	-
SME Corporate	-	-	(3)	-
Residential Mortgages	(2)	-	(2)	-
Other Retail	-	-	15	-
Retail SME	-	-	(17)	-
Total IRB approach	(19)	0	(28)	-
Subject to Standardised approach				
Other Retail	(1)	-	-	-
Total Standardised approach	(1)	0	-	-
Total	(20)	0	(28)	-

7.5 Provisions by Geographic Region

The tables below split impaired facilities, past due and provisions by geographic region. Note that the geographic split has been based on the domicile of the counterparty.

APS 330 Table 7(g)

Geographic Region	As at 30 September 2022			
	Impaired Facilities \$m	Past due > 90 days \$m	Specific Provisions \$m	GRCL \$m
Australia	522	259	(111)	(333)
EMEA	245	134	(108)	(7)
Americas	21	-	(24)	(33)
Asia Pacific	67	-	(11)	(2)
Total	855	393	(254)	(375)
Additional regulatory specific provisions			(180)	

Geographic Region	As at 31 March 2022			
	Impaired Facilities \$m	Past due > 90 days \$m	Specific Provisions \$m	GRCL \$m
Australia	584	299	(135)	(271)
EMEA	210	36	(160)	(11)
Americas	41	-	(22)	(16)
Asia Pacific	14	-	(9)	-
Total	849	335	(326)	(298)
Additional regulatory specific provisions			(193)	

¹ Under AASB 9, there are no longer direct write offs to Income Statement. A financial asset is written off when there is no reasonable expectation of recovering it. At the time of writing off a financial asset it is adjusted against the Expected Credit Loss (ECL) provision created over the life of the asset and not directly written off to Income Statement.

7.6 General Reserve for Credit Losses

APS 330 Table 7(j)

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
General reserve for credit losses before tax	375	298
Tax effect	(89)	(72)
General reserve for credit losses	286	226

7.7 Movement in Provisions

The table below shows the movement of provisions over the 6 months to 30 September 2022.

APS 330 Table 7(h)

	GRCL \$m	Specific Provisions and Additional Specific provision \$m	Total \$m
Provisions as at 31 March 2022	300	528	828
Charges (net of reversals) during the period	55	(17)	38
Assets written off or sold, previously provided for	-	(70)	(70)
Net transfer (to)/from other provisions	18	(18)	-
Adjustments for foreign exchange fluctuations	2	22	24
Provisions as at 30 September 2022	375	445	820

7.8 Analysis of Expected Credit Model Performance versus Actual Results

The table below relates only to Macquarie's portfolios measured under the IRB approach and compares actual results of the current reporting period to the average estimate over the January 2008 to September 2022 period.

APS 330 Table 9(f)

Portfolio Type	PD		Exposure at default Estimate to Actual Ratio	LGD	
	Estimated %	Actual %		Estimated %	Actual %
Corporate	1.98%	0.89%	N/A ¹	N/A ¹	N/A ¹
SME Corporate	2.82%	3.02%	N/A ¹	N/A ¹	N/A ¹
Sovereign	0.21%	0.00%	N/A ¹	N/A ¹	N/A ¹
Bank	0.17%	0.00%	N/A ¹	N/A ¹	N/A ¹
Residential Mortgages ²	1.06%	0.90%	101%	20.09%	2.97%
Other Retail ²	2.09%	2.31%	114%	46.49%	20.93%

¹ Macquarie is accredited under the Foundation Internal Ratings Based Approach (FIRB). As the LGD and EAD assumptions under FIRB are set by APRA for these portfolio types, disclosure of actual against estimates does not facilitate meaningful assessment of the performance of internal rating processes for these portfolios.

² Includes exposures disclosed as Retail SME.

8. Credit Risk Mitigation

8.1 Netting

Netting arises where a single legal obligation is created covering all transactions included in a netting agreement. The most common form of netting which Macquarie applies for these purposes is close out netting.

Netting is applied to a counterparty balance only when appropriate documentation governing transactions between the Macquarie entity and the counterparty has been entered into, Legal Risk Management has confirmed that it is legally effective to net with that counterparty, and APRA Prudential Standard APS 112 Capital Adequacy: Standardised Approach to Credit Risk (APS 112), has been complied with.

8.1.1 Collateral Valuation and Management

RMG Credit limits are set, and the related exposures are calculated before taking any non-cash collateral into consideration other than for securities finance transactions where liquid financial instruments are an inherent part of the lending arrangement. Typically, collateral is required for all but short dated, vanilla trading activity.

A wide variety of collateral can be accepted depending on the counterparty and the nature of the exposure. Some of the most common forms are charges over:

- Cash or gold deposits
- Debt or equity securities
- Company assets; and
- Commercial or residential property.

Guarantees are frequently requested from banks, parent or associated companies. Relative ratings between the obligor and guarantor are monitored as part of the regulatory capital calculation process as mitigation will normally cease to be eligible if the rating of the guarantor falls below that of the underlying obligor. Collateral taken in the form of tradeable securities is revalued daily by the same application systems which are used to trade those particular products. Credit default swaps are not a common form of credit risk mitigation. Macquarie policies require that all security is taken in conjunction with a formal written agreement which gives Macquarie direct and unconditional rights over the collateral in the event of default by the obligor.

To mitigate credit risk Macquarie makes frequent use of margining arrangements. In these cases, counterparties post collateral daily in the form of cash or liquid securities to cover outstanding trading positions. Macquarie also engages in reciprocal margining agreements with counterparties under International Swaps and Derivatives Association (ISDA) or similar agreements where the Credit Support Annex can contain provisions whereby margining thresholds may vary in relation to the credit ratings of the respective parties. Macquarie is compliant with OTC Margin reforms in all legal jurisdictions with respect to thresholds, minimum transfer amounts and rounding for affected counterparties in those jurisdictions. Collateral and funding requirements due to credit ratings downgrade(s) are incorporated into Macquarie's liquidity stress scenarios, which consider liquidity obligations for a twelve-month period under both a systemic and combined name and systemic crisis scenario. These scenarios are embedded in the MGL and MBL Liquidity Policies, alongside Macquarie's liquidity risk appetite. The increase in collateral and funding requirements as a result of credit rating downgrade(s) is included as an outflow in these scenarios, explicitly ensuring that Macquarie has sufficient funding coverage in these events.

Specific policy and protocols govern the acceptance of real estate as collateral.

Prior to acceptance, all real estate collateral will undergo a valuation assessment in line with approved policy requirements and, in the case of independent valuations, must also undergo a formal review process by which it is assessed for quality, adherence to policy and standing instructions. The escalation of this review and acceptance process depends on:

- The type of property being valued
- The dollar value of the property being valued; and
- The proposed loan to value ratio (LVR).

The value of all real estate collateral is assessed regularly and is re-valued where appropriate, be it on an asset specific basis or a market assessment across a pool of assets, such as residential mortgages. The interval between revaluation is contingent on the type of property, dollar value of the property being valued, LVR, the market conditions that have prevailed since the valuation was conducted and counterparty performance. All prior claims on the property collateral are recorded and taken into consideration when calculating the available security value.

All details regarding security together with netting/margining rules are recorded in collateral management systems which support the operational control framework.

8.1.2 Wrong Way Risk

Specific wrong way risk occurs when exposure to the counterparty exhibits strong positive correlation with the counterparty's probability of default. RMG Credit runs a monthly monitoring process to ensure that all instances of specific wrong way risk are identified and appropriately escalated. General wrong way risk occurs when the probabilities of counterparty defaults are positively correlated with counterparty exposure which results from market risk factor movements. Macquarie considers these correlations as part of the credit assessment process and has daily reports which identify asset sensitivities across a range of dimensions including industry/peer group, counterparty and rating grade.

8.2 Exposures Mitigated by Eligible Collateral

Eligible financial collateral is defined in APS 112 as cash, certificates of deposit, bank bills, certain rated debt issues and listed equities. Other items that are eligible for recognition as collateral include mortgages over commercial or residential real estate (subject to the satisfaction of certain requirement listed in APS 113).

As noted, Macquarie takes a wide range of collateral of which only a portion is eligible under APS 112. All collateral is recorded in appropriate systems with clear definition by type and eligibility status. Ineligible collateral under APRA standards is excluded from the capital calculation process.

Some types of collateral which are eligible by definition may be determined to be ineligible or adjusted with an appropriate haircut at the time of calculation due to mismatches of maturity or currency between the collateral and the underlying exposures.

For capital adequacy purposes, eligible cash collateral is considered in calculating the capital requirement. For non-cash collateral, a regulatory haircut is applied to both the gross credit exposure and the value of the collateral, and these adjusted amounts are used as the basis of calculating the capital requirement.

The tables on the following page show gross credit exposures by Basel III portfolio and the amount of risk exposure which is mitigated by APRA defined eligible collateral, guarantees or credit derivatives.

APS 330 Table 10(b) & (c)

Measurement Approach	As at 30 September 2022			
	Total Gross Credit Exposure ¹ \$m	Eligible Financial Collateral \$m	Other Eligible Collateral \$m	Exposures Covered by Guarantees \$m
Subject to IRB approach				
Corporate	93,116	571	311	10,194
SME Corporate	8,507	185	1,482	-
Sovereign	50,102	-	-	-
Bank	10,347	-	-	-
Residential Mortgages	118,639	-	-	-
Other Retail	4,372	-	-	-
Retail SME	2,989	-	-	-
Total IRB approach	288,072	756	1,793	10,194
Subject to Standardised approach				
Corporate	41	0	0	0
Residential Mortgages	863	0	0	0
Other Retail	1,655	0	0	568
Total Standardised approach	2,559	0	0	568
Other Assets	7,498	807	0	0
Total	298,129	1,563	1,793	10,762

Measurement Approach	As at 31 March 2022			
	Total Gross Credit Exposure ¹ \$m	Eligible Financial Collateral \$m	Other Eligible Collateral \$m	Exposures Covered by Guarantees \$m
Subject to IRB approach				
Corporate	78,847	504	212	8,083
SME Corporate	8,218	131	1,435	-
Sovereign	51,350	-	-	-
Bank	8,691	-	-	-
Residential Mortgages	107,347	-	-	-
Other Retail	5,233	-	-	-
Retail SME	3,641	-	-	-
Total IRB approach	263,327	635	1,647	8,083
Subject to Standardised approach				
Corporate	52	-	-	-
Residential Mortgages	941	-	-	-
Other Retail	1,724	-	-	567
Total Standardised approach	2,717	-	-	567
Other Assets	5,728	896	-	-
Total	271,772	1,531	1,647	8,650

¹ Per APS 180, the impact of eligible collateral for market related contracts is embedded in the calculation of total gross credit exposure and is not separately reported as eligible financial collateral.

8.3 Counterparty Credit risk

Counterparty Credit Risk (CCR) is the risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows. An economic loss would occur if the transactions or portfolio of transactions with the counterparty has a positive economic value for any Group entity at the time of default. Unlike exposure to credit risk through a loan, where the exposure to credit risk is unilateral and only the lending bank faces the risk of loss, CCR creates a bilateral risk of loss whereby the market value for many different types of transactions can be positive or negative to either counterparty. The market value is uncertain and can vary over time with the movement of underlying market factors.

Regulatory capital is allocated to CCR exposures using the SA CCR calculation, which reflects expected exposure to the counterparty and its risk rating. Economic capital also reflects correlations and diversification impacts across risk types.

As at 30 September 2022, a unilateral one notch and two notch downgrade in the MBL's rating would have resulted in a further \$595 million and \$265 million (credit rating downgrade postings are cumulative) of collateral being posted to other counterparties respectively. Collateral stress tests are also conducted on the MBL's counterparties so that it can monitor for likely collateral stresses in the event of a counterparty downgrade.

APS 330 Table 11(b)

	As at 30 September 2022	As at 31 March 2022
	\$m	\$m
Exposure at default for counterparty exposures		
Replacement cost excluding collateral	64,389	41,364
Replacement cost with eligible collateral (A)	23,879	19,327
Potential future exposure (PFE) (B)	18,619	16,759
Exposure at default [(A+B) * 1.4]	59,497	50,520
Comprising of:		
Interest rate	1,611	1,224
Credit	124	143
Equity	1,521	1,964
Foreign exchange	6,813	5,718
Commodity	49,428	41,471
Exposure at default	59,497	50,520

APS 330 Table 11(c)

	As at 30 September 2022		As at 31 March 2022	
	Protection Bought \$m	Protection Sold \$m	Protection Bought \$m	Protection Sold \$m
Notional amount of credit derivatives				
Own credit portfolio	4,137	2,801	6,520	5,528
Client intermediation activities	-	-	-	-
Total	4,137	2,801	6,520	5,528
Credit default swaps (CDS)	4,137	2,801	6,520	5,528
Total return swaps	-	-	-	-
Total	4,137	2,801	6,520	5,528

9. Securitisation

9.1 Overview

A securitisation is defined as “a financing structure where the cash flow from a pool is used to make payments on obligations to at least two tranches or classes of creditors (typically holders of debt securities), with each tranche or class entitled to receive payments from the pool before or after another class of creditors, thereby reflecting different levels of credit risk.”

Macquarie engages in a range of activities in the securitisation market, including playing the following roles:

- Originator, Arranger, Manager and Servicer on Macquarie mortgage and auto and equipment finance securitisation programs
- Lead Manager on Macquarie originated and third-party securitisations
- Swap Counterparty to Macquarie originated and third-party securitisations
- Warehouse facility provider to several third-party originators
- Liquidity facility provider to several third-party originators and provider of redraw facilities to all Macquarie Mortgage SPVs; and
- Investor in third party securitisation transactions.

Macquarie has also established contingent liquidity securitisation SPVs that issue and hold Residential Mortgage-Backed Securities (RMBS) eligible for repurchase with the RBA.

Macquarie may, as sponsor, use the following types of special purpose vehicles to securitise third party exposures:

- Trusts, and
- Special purpose companies

issuing RMBS or asset backed securities (ABS).

Following are the affiliated entities which the MGL group manages or advises, and which can invest either in the securitisation exposures that Macquarie has securitised or in SPVs for whom Macquarie is a sponsor (i.e. manager, adviser, dealer or liquidity and/or credit enhancement provider):

- Macquarie Australian Diversified Income Fund
- Macquarie Core Australian Fixed Interest Fund
- Macquarie Corporate Bond Fund
- Macquarie Debt Market Opportunity Fund
- Macquarie Enhanced Australian Fixed Interest Fund
- Macquarie Managed Income Fund
- Macquarie True Index Cash Fund
- Macquarie True Index Global Bond Fund
- Macquarie True Index Sovereign Bond Fund
- Macquarie Wholesale Australian Fixed Interest Fund

Any investments by these entities (if any) in securitisation exposures that Macquarie has securitised or sponsored does not form a majority of their investment portfolios and their investment represents a small percentage of the relevant securitisation issue.

9.1.1 Securitisation Risk Management

RMG is responsible for overseeing the management of the risk arising from all securitisation exposures. RMG approves all securitisation transactions and exposures arising from securitisation activity.

RMG Regulatory Affairs and Aggregate Risk Division (RAAR) reviews transactions where Macquarie acts as originator, manager or sponsor to ensure compliance with APS 120 and other regulations. RMG Credit sets limits on securitisation exposures and reviews transactions to identify all risks involved. RMG Market Risk reviews market exposures associated with securitisations, such as swaps, and other exposures held in the trading book. Macquarie's primary risk mitigant is the limit framework and approval process governing exposures to securitisations.

In addition to credit risk, securitised assets can be subject to liquidity risk, interest rate risk, and in some instances FX risk. The nature and scale of these risks varies from transaction to transaction. All securitised assets are subject to a degree of operational risk associated with documentation and the collection of cashflows.

Securitisation exposures are measured daily and monitored by RMG. RMG completes an annual review of all securitisation exposures and limits. Regulatory capital is calculated on all securitisation exposures using the available approaches in APS 116 and APS 120.

Macquarie applies the following approaches to the calculation of regulatory capital for securitisation exposures under APS 120:

- The External Ratings Based approach (ERBA); or
- The Supervisory Formula Approach (SFA).

If one of the above approaches does not apply to an exposure, then the exposure will be deducted from Common Equity Tier 1 Capital (CET1).

S&P and Moody's Ratings have all been used to rate Macquarie securitisations.

Mitigation of credit risk on securitisation exposures is performed in accordance with Macquarie's overall credit risk mitigation policy. Details of the policy can be found in Section 8.0 of this disclosure.

9.1.2 Accounting for Securitisation

Securitisation transactions undertaken by Macquarie are accounted for in accordance with Australian Accounting Standards. As noted, securitised positions are managed in a number of SPVs.

Where these SPVs are deconsolidated for regulatory purposes under APS 120, they still need to be assessed under Australian Accounting Standards to determine whether these SPVs should be considered part of the accounting consolidated group.

Control exists when the parent is exposed, or has rights, to variable returns from its involvement with an entity and has the ability to affect those returns through its power over that entity. In Macquarie's case, it has been determined that under Australian Accounting Standards, Macquarie consolidates Macquarie mortgage SPVs and auto and equipment finance SPVs. The assets and liabilities in these SPVs detailed in the tables within this section are consolidated into the Macquarie accounting consolidated group on the basis Macquarie controls those SPVs.

Banking book securitised assets consolidated by Macquarie are held on the balance sheet at amortised cost. Securitised exposures in the trading book are held at fair value through profit or loss. There has been no material change to the methods of valuation from the prior period.

If there are circumstances where Macquarie is required to provide financial support for securitised assets, a relevant liability is recognised on the Bank's balance sheet. Where a liability does not currently exist but could arise in the future as a result of uncertain events not wholly within Macquarie's control, a contingent liability is disclosed unless the possibility of an outflow of resources is remote. A contingent liability is not recognised on the Bank's balance sheet as an actual liability.

Further information on accounting policies as they relate to securitisation exposures, including key assumptions and inputs to valuation processes and Macquarie's policies on accounting consolidation, can be found in the Macquarie Bank Limited financial report.

9.2 Securitisation Exposures

9.2.1 Originating ADI Securitisation Exposures

The table below sets out the assets originated or sponsored by Macquarie where the exposures have subsequently been securitised.

Macquarie has not undertaken any synthetic securitisation in the banking and trading book.

APS 330 Table 12(g) and (o)

Exposure Type	As at 30 September 2022		
	Total outstanding exposures securitised		
	ADI originated assets ¹ \$m	ADI as sponsor ² \$m	Other \$m
Banking Book			
Residential Mortgages	60,646	60	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	3,683	-	-
Total Banking Book	64,329	60	-
Trading Book			
Residential Mortgages	-	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	-	-	-
Other	-	-	-
Total Trading Book	-	-	-
Total	64,329	60	-

Exposure Type	As at 31 March 2022		
	Total outstanding exposures securitised		
	ADI originated assets ¹ \$m	ADI as sponsor ² \$m	Other \$m
Banking Book			
Residential Mortgages	60,651	66	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	1,126	-	-
Total Banking Book	61,777	66	-
Trading Book			
Residential Mortgages	-	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	-	-	-
Other	-	-	-
Total Trading Book	-	-	-
Total	61,777	66	-

¹ Included in the above are assets of \$64,329 million in securitisation entities where Macquarie continues to hold capital behind the underlying pool of securitised assets in the Level 2 regulatory group (31 March 2022: \$61,777 million).

² Included in the above are exposures held in third party warehouse funding facilities.

9.2.2 Performance of Assets Securitised

The assets below have been originated and securitised by Macquarie. The table below identifies the total exposures and impairment of these assets.

APS 330 Table 12(h)

Exposure Type	As at 30 September 2022			
	Total outstanding exposures securitised			ADI recognised loss from exposures securitised
	Total outstanding exposures ¹ \$m	Impaired ^{2,4} \$m	Past due ^{3,4} \$m	\$m
Residential Mortgages	60,646	126	131	-
Credit cards and other personal loans	-	-	-	-
Auto and equipment finance	3,683	29	2	-
Total	64,329	155	133	-

Exposure Type	As at 31 March 2022			
	Total outstanding exposures securitised			ADI recognised loss from exposures securitised
	Total outstanding exposures ¹ \$m	Impaired ^{2,4} \$m	Past due ^{3,4} \$m	\$m
Residential Mortgages	60,651	137	185	-
Credit cards and other personal loans	-	-	-	-
Auto and equipment finance	1,126	30	1	-
Total	61,777	167	186	-

¹ Included in the above are assets of 64,329million in securitisation entities where Macquarie continues to hold capital behind the underlying pool of securitised assets in the Level 2 regulatory group (31 March 2022: \$61,777 million).

² Included in the above are impaired facilities of \$155 million in securitisation entities where Macquarie continues to hold capital behind the underlying pool of securitised assets in the Level 2 regulatory group (31 March 2022: \$167 million).

³ Included in the above are past due >90 days facilities of \$133 million in securitisation entities where Macquarie continues to hold capital behind the underlying pool of securitised assets in the Level 2 regulatory group (31 March 2022: \$186 million).

⁴ FAQs published by APRA on 10 Mar 22 clarified that ADIs should continue to make disclosures based on the current APS 330, using the terms as defined in Prudential Standard APS 220 Credit Quality (revoked APS 220). References in this section to APS 220 are thus referring to the revoked APS 220.

9.2.3 Summary of Outstanding Exposures Intended to be Securitised

APS 330 Table 12(i) and (p)

Macquarie may securitise assets depending on a variety of factors, including market conditions and business requirements. The table below sets out identified assets as at the reporting date which are intended to be put into securitisation deals.

Exposure Type	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Banking Book		
Residential Mortgages ¹	2,000	600
Credit cards and other personal loans	-	-
Auto and equipment finance ¹	-	3,377
Total Banking Book	2,000	3,977
Trading Book		
Residential Mortgages	-	-
Credit cards and other personal loans	-	-
Auto and equipment finance	-	-
Total Trading Book	-	-

¹ This exposure is intended for funding only securitisation.

9.2.4 Securitisation Activity

Over the 6 months to 30 September 2022, Macquarie has undertaken the following securitisation activity. Macquarie may or may not retain an exposure to securitisation SPVs to which Macquarie has sold assets.

APS 330 Table 12(j) and (q)

Exposure Type	For the 6 months to 30 September 2022		Recognised gain or loss on sale \$m
	Value of loans sold or originated into securitisation		
	ADI originated \$m	ADI as sponsor \$m	
Banking Book			
Residential Mortgages ¹	9,873	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance ¹	3,378	-	-
Other	-	-	-
Total Banking Book	13,251	-	-
Trading Book			
Residential Mortgages	-	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	-	-	-
Total Trading Book	-	-	-

Exposure Type	For the 6 months to 31 March 2022		Recognised gain or loss on sale \$m
	Value of loans sold or originated into securitisation		
	ADI originated \$m	ADI as sponsor \$m	
Banking Book			
Residential Mortgages ¹	11,697	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance ¹	235	-	-
Other	-	-	-
Total Banking Book	11,932	-	-
Trading Book			
Residential Mortgages	-	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	-	-	-
Total Trading Book	-	-	-

¹ Exposures that have been transferred between different structures may also have been originated within the same period which would result in those exposures being included twice.

Originating ADI Securitisation Exposures

APS 330 Table 12(r) - Trading Book

Exposure Type	As at 30 September 2022			
	Total outstanding exposures securitised			
	Standard Approach		IMA Approach	
	Traditional \$m	Synthetic \$m	Traditional \$m	Synthetic \$m
Residential Mortgages	-	-	-	-
Credit cards and other personal loans	-	-	-	-
Auto and equipment finance	-	-	-	-
Other	-	-	-	-
Total	-	-	-	-

Exposure Type	As at 31 March 2022			
	Total outstanding exposures securitised			
	Standard Approach		IMA Approach	
	Traditional \$m	Synthetic \$m	Traditional \$m	Synthetic \$m
Residential Mortgages	-	-	-	-
Credit cards and other personal loans	-	-	-	-
Auto and equipment finance	-	-	-	-
Other	-	-	-	-
Total	-	-	-	-

9.2.5 Exposures Arising from Securitisation Activity by Asset Type

This table sets out the on and off-balance sheet securitisation exposures originated or purchased, broken down by asset type.

APS 330 Table 12(k) and (s)

Exposure Type	As at 30 September 2022		
	Total outstanding exposures ¹		
	On balance sheet \$m	Off balance sheet \$m	Total exposures \$m
Banking Book			
Residential Mortgages	62,380	68	62,448
Credit cards and other personal loans	114	58	172
Auto and equipment finance	4,400	88	4,488
Other	304	-	304
Total Banking Book	67,198	214	67,412
Trading Book			
Residential Mortgages	-	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	-	-	-
Other	-	-	-
Total Trading Book	-	-	-

Exposure Type	As at 31 March 2022		
	Total outstanding exposures ¹		
	On balance sheet \$m	Off balance sheet \$m	Total exposures \$m
Banking Book			
Residential Mortgages	62,649	5	62,654
Credit cards and other personal loans	59	50	109
Auto and equipment finance	1,703	80	1,783
Other	287	72	359
Total Banking Book	64,698	207	64,905
Trading Book			
Residential Mortgages	-	-	-
Credit cards and other personal loans	-	-	-
Auto and equipment finance	-	-	-
Other	-	-	-
Total Trading Book	-	-	-

¹ Included in the above are assets of \$64,329million in securitisation entities where Macquarie continues to hold capital behind the underlying pool of securitised assets in Level 2 regulatory group (31 March 2022: \$61,777 million).

9.2.6 Exposure by Risk Weight Band

Banking Book

APS 330 Table 12(l)

Risk weight band	As at 30 September 2022		As at 31 March 2022	
	Securitisation exposures subject to ERBA			
	Gross Credit Exposure \$m	Risk Weighted Assets \$m	Gross Credit Exposure \$m	Risk Weighted Assets \$m
=<20%	1,267	250	1,476	292
>20%-50%	12	5	5	2
>50%-100%	51	32	33	20
>100%-140%	-	-	-	-
Total	1,330	287	1,514	314

Risk weight band	As at 30 September 2022		As at 31 March 2022	
	Securitisation exposures subject to SFA			
	Gross Credit Exposure \$m	Risk Weighted Assets \$m	Gross Credit Exposure \$m	Risk Weighted Assets \$m
=<20%	1,294	196	400	62
>20%-50%	444	119	1,123	287
>50%-100%	-	-	-	-
>100%-150%	-	-	-	-
>150%-650%	-	-	-	-
>650%-<1250%	-	-	-	-
Total	1,738	315	1,523	349

Risk weight band	As at 30 September 2022		As at 31 March 2022	
	Securitisation exposures subject to risk weight cap			
	Gross Credit Exposure \$m	Risk Weighted Assets \$m	Gross Credit Exposure \$m	Risk Weighted Assets \$m
=<20%	-	-	-	-
>20%-50%	-	-	-	-
>50%-100%	-	-	72	53
>100%-150%	-	-	-	-
>150%-650%	-	-	-	-
>650%-<1250%	-	-	-	-
Total	-	-	72	53

Exposure Type	As at 30 September 2022		As at 31 March 2022	
	CET1 Deduction ¹			
	\$m		\$m	
Residential Mortgages	1		1	
Credit cards and other personal loans	-		-	
Auto and equipment finance	-		-	
Other	16		20	
Total	17		21	

¹ Includes Resecuritisation Exposures \$1 million as at 30 September 2022 (31 March 2022: \$1 million).

Trading Book

APS 330 Table 12(t) & (u)

Risk weight band	As at 30 September 2022		As at 31 March 2022	
	Securitisation exposure subject to Standard Approach			
	Gross Credit Exposure \$m	Risk Weighted Assets \$m	Gross Credit Exposure \$m	Risk Weighted Assets \$m
= < 20%	-	-	-	-
>20%-50%	-	-	-	-
>50%-100%	-	-	-	-
>100%-140%	-	-	-	-
Total	-	-	-	-

Risk weight band	As at 30 September 2022		As at 31 March 2022	
	Securitisation exposure subject to IMA Approach			
	Gross Credit Exposure \$m	Risk Weighted Assets \$m	Gross Credit Exposure \$m	Risk Weighted Assets \$m
= < 20%	-	-	-	-
>20%-50%	-	-	-	-
>50%-100%	-	-	-	-
>100%-150%	-	-	-	-
>150%-650%	-	-	-	-
>650%-<1250%	-	-	-	-
Total	-	-	-	-

Exposure Type	As at 30 September 2022		As at 31 March 2022	
	CET1 Deduction			
	\$m		\$m	
Residential Mortgages	-	-	-	-
Credit cards and other personal loans	-	-	-	-
Auto and equipment finance	-	-	-	-
Other	-	-	-	-
Total	-	-	-	-

9.2.7 Resecuritisation Exposure

APS 330 Table 12(n) and (w)

Exposure Type	As at	As at
	30 September 2022	31 March 2022
	Gross Credit Exposure ¹	
	\$m	\$m
Banking book		
Exposures with Credit Risk Mitigation	-	-
Exposures without Credit Risk Mitigation	1	1
Exposure to Guarantors by ratings:	-	-
Total banking book	1	1
Trading book		
Exposures with Credit Risk Mitigation	-	-
Exposures without Credit Risk Mitigation	-	-
Exposures to Guarantors by ratings:	-	-
Total trading book	-	-

¹ Exposures deducted from CET1 capital.

10. Credit Valuation Adjustment

Under Basel III, and in accordance with APS 180 Capital Adequacy: Counterparty Credit Risk ADI's are subject to a capital charge for potential mark to market losses on OTC derivatives (i.e. credit valuation adjustments) associated with a deterioration in the credit worthiness of a counterparty. APS 180 also allows an ADI to include eligible CVA hedges in the calculation of the CVA risk capital charge.

The CVA RWA is shown in the table below.

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
CVA capital		
Total CVA RWA	13,213	12,294

11. Exposure to Central Counterparties

Under Basel III, and in accordance with APS 180 Capital Adequacy: Counterparty Credit Risk ADI's are required to hold capital against exposures arising from trades cleared by central counterparties. This includes outstanding trade exposures (excluding bilateral trades), collateral placed with the clearing house (excluding collateral placed in bankruptcy remote manner), and default fund contributions.

The RWA on exposures arising from cleared trades as at 30 September 2022 is \$576 million (31 March 2022 is \$525 million). Details of the components of these exposures are shown in the tables below.

	As at 30 September 2022		
	Trade Exposure \$m	Prefunded Default Fund Contribution \$m	RWA \$m
Central counterparty trade exposure			
Exposures to qualifying central counterparty	17,417	1,216	576
Exposures to non-qualifying central counterparty	-	-	-
Total central counterparty exposures	17,417	1,216	576

	As at 31 March 2022		
	Trade Exposure \$m	Prefunded Default Fund Contribution \$m	RWA \$m
Central counterparty trade exposure			
Exposures to qualifying central counterparty	11,048	693	525
Exposures to non-qualifying central counterparty	-	-	-
Total central counterparty exposures	11,048	693	525

12. Market Risk

12.1 Market Risk

Market risk is the risk of adverse changes in the value of Macquarie's trading positions as a result of changes in market conditions. Macquarie is exposed to the following risks:

- **Price:** The risk of loss due to changes in price of a risk factor (interest rates, foreign exchange, commodities etc.)
- **Volatility:** The risk of loss due to changes in the volatility of a risk factor
- **Basis:** Risk of imperfect correlation between offsetting investments in a hedging strategy
- **Correlation:** Risk that the actual correlation between two assets or variables is different from the assumed correlation
- **Illiquid market:** Risk of inability to sell assets or close out positions in thinly traded markets at close to the last market prices
- **Concentration:** Risk of over concentration of trading exposures in certain markets and products
- **Valuation adjustments (XVA):** Risk of valuation adjustments to derivative positions; specifically, Credit Valuation Adjustment (CVA), Debit Valuation Adjustment (DVA) and Funding Valuation Adjustment (FVA).

Macquarie has long favoured transparent scenario analysis over complex statistical modelling as the cornerstone of risk measurement.

12.1.1 Aggregate Measures of Market Risk

Traded market risk

Aggregate traded market risk is constrained by two risk measures, Value at Risk (VaR) and the Macro Economic Linkages (MEL) stress scenarios. The VaR model predicts the maximum likely loss in Macquarie's trading portfolio due to adverse movements in global markets over holding periods of one and ten days. The MEL scenario uses the contingent loss approach to capture simultaneous, worst case movements across all major markets. Whereas MEL focuses on extreme price movements, VaR focuses on unexceptional changes in price so that it does not account for losses that could occur beyond the 99% level of confidence. Stress testing therefore remains the predominant focus of RMG as it is considered to be the most effective mechanism to reduce Macquarie's exposure to unexpected market events.

Interest rate risk in the banking book (IRRBB)

Aggregate IRRBB is constrained by two measures, Economic Value Sensitivity (EVS) and Earnings at Risk (EaR). The EVS metric measures the change in net present value of the banking book as a result of changes in interest rates. The EaR model constrains the impact on reported income for a change in interest rates, including the Net Interest Income for accrual portfolios.

12.1.2 Traded Market Risk

All trading activities contain calculated elements of risk taking. Macquarie is prepared to accept such risks provided they are within agreed limits, independently and correctly identified, calculated and monitored by RMG and reported to senior management on a regular basis.

RMG monitors positions within Macquarie according to a limit structure that sets limits for all exposures in all markets. Limits are applied at a granular level to individual trading desks, through increasing levels of aggregation to Divisions and Operating Groups, and ultimately, Macquarie. This approach removes the need for future correlations or scenarios to be precisely predicted as all risks are stressed to the extreme and accounted for within the risk profile agreed for each business and Macquarie in aggregate.

Limits are approved by senior management with appropriate authority for the size and nature of the risk and Macquarie adheres to a strict 'no limit, no dealing' policy. If a product or position has not been authorised and given a limit structure by RMG, then it cannot be traded. Material breaches of the approved limit structure are communicated monthly to the Macquarie and Macquarie Bank Boards.

RMG sets three complementary limit structures:

- **Contingent loss limits:** Worst case scenarios that shock prices and volatilities by more than has occurred historically. Multiple scenarios are set for each market to capture the non-linearity and complexity of exposures arising from derivatives. A wide range of assumptions about the correlations between markets is applied
- **Position limits:** Volume, maturity and open position limits are set on a large number of market instruments and securities in order to constrain concentration risk and to avoid the accumulation of risky, illiquid positions
- **Value at Risk (VaR) limits:** Statistical measure based on a 10-day holding period and a 99% confidence level, as stipulated by the APRA capital adequacy standard. The model is validated daily by back testing a one-day VaR against hypothetical and actual daily trading profit or loss.

The risk of loss from incorrect or inappropriate pricing and hedging models is mitigated by the requirement for all new pricing models to be independently tested by the specialists within the Model Risk Management team in RMG.

12.1.3 Value at Risk Model

VaR provides a statistically based summary of overall market risk in the Group. The VaR model uses a Monte Carlo simulation to generate normally distributed price and volatility paths for approximately 8,900 benchmarks, using volatilities and correlations based on three years of historical data. Emphasis is placed on more recent market movements to more accurately reflect current conditions. Each benchmark represents an asset at a specific maturity, for example, one year crude oil futures or spot gold. The benchmarks provide a high level of granularity in assessing risk, covering a range of points on yield curves and forward price curves, and distinguishing between similar but distinct assets; for example, crude oil as opposed to heating oil, or gas traded at different locations. Exposures to individual equities within a national market are captured by specific risk modelling incorporated directly into the VaR model.

The integrity of the VaR model is tested against daily hypothetical and actual trading outcomes (profit and loss) and reported to APRA quarterly.

12.1.4 Macro-Economic Linkage Model

MEL scenarios are large, simultaneous, 'worst case' movements in global markets. The MEL scenarios consider very large movements in a number of markets at once, based on Macquarie's understanding of the economic linkages between markets. The MEL scenarios reflect a market 'shock' or 'gap' as opposed to a sustained deterioration.

12.2 Market Risk Capital Requirement

APRA has approved the use of Macquarie's internal model to calculate regulatory capital for market risk under APS 116.

The internal model calculation is based upon:

- Value at Risk using a 10-day time horizon at a 99% confidence level
- Stressed Value at Risk using a 10-day time horizon at a 99% confidence level
- Regulatory capital for debt security specific risk is calculated using the APRA standard method (see Section 12.2.3).

The sum of the VaR and debt security specific risk amounts is scaled by 12.5 in accordance with APRA policy to arrive at the traded market risk RWA, which was \$10,773 million as at 30 September 2022 (31 March 2022: \$10,230 million).

There was one hypothetical and one actual trading loss that exceeded the 1 day 99% VaR calculated for the 6 months ended 30 September 2022. The observed number of back testing exceptions indicates continued acceptable operation of the VaR model.

12.2.1 Value at Risk Figures (10 day 99%)

APS 330 Table 14(f)

	For the 6 months to 30 September 2022				For the 6 months to 31 March 2022			
	VaR over the current reporting period				VaR over the previous reporting period			
	Mean value \$m	Max value \$m	Min value \$m	VaR (30-Sep) \$m	Mean value \$m	Max value \$m	Min value \$m	VaR (31-Mar) \$m
Commodities	121	185	76	152	92	136	64	72
Equities ¹	4	9	2	9	8	15	4	4
Foreign Exchange	8	22	1	15	4	9	1	5
Interest Rates	22	28	16	20	10	20	6	17
Aggregate	119	174	78	149	92	137	64	70

12.2.2 Stressed Value at Risk Figures (10 day 99%)

APS 330 Table 14(f)

	For the 6 months to 30 September 2022				For the 6 months to 31 March 2022			
	VaR over the current reporting period				VaR over the previous reporting period			
	Mean value \$m	Max value \$m	Min value \$m	VaR (30-Sep) \$m	Mean value \$m	Max value \$m	Min value \$m	VaR (31-Mar) \$m
Commodities	154	213	109	182	167	211	129	167
Equities ¹	10	26	3	11	16	37	6	10
Foreign Exchange	17	42	7	29	7	19	1	14
Interest Rates	39	56	20	24	37	56	27	55
Aggregate	137	200	95	159	153	198	121	159

12.2.3 Debt Security Specific Risk Figures

Regulatory capital for Macquarie's debt security specific risk (including securitisations held in the trading book) is calculated using the APRA standard method.

APS 330 Table 13(b)

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Debt specific risk	72	49

The specific risks referred to above arise from movements in credit curves in the Macquarie trading book.

¹ Equities figures incorporate the Equity specific risk amount.

12.2.4 Interest Rate Risk in the Banking Book (IRRBB)

Interest rate exposures, where possible, are transferred into the trading books of Commodities and Global Markets and Group Treasury and managed under traded market risk limits. The residual risks in the banking book are not material but are nevertheless monitored and constrained by RMG and reported to senior management monthly. Macquarie measures and monitors interest rate risk on both an economic value and earnings basis. IRRBB is measured on a monthly basis using an APRA approved repricing gap model with monthly bucketing of exposures.

The total IRRBB capital is calculated for each currency in accordance with APS 117 Capital Adequacy: Interest Rate Risk in the Banking Book (Advanced ADIs). Macquarie's internal model sums the change in economic value or earnings arising from the following risk categories:

- Repricing and yield curve (parallel and non-parallel moves)
- Basis (imperfect correlation between indices of the same tenor)
- Optionality (breakdowns in assumptions used for hedging); and
- Embedded gains and losses (difference between the fair value and book value arising from past interest rate movements).

A standardised calculation for credit spread risk in the banking book is also included in MBL's total IRRBB capital.

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
IRRBB RWA	1,579	1,588

APS 330 Table 17(b)

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Stress testing: interest rate shock applied	Change in economic value	
	\$m	\$m
AUD		
200 basis point parallel increase	(2.8)	9.1
200 basis point parallel decrease	3.2	(10.8)
CAD		
200 basis point parallel increase	0.2	(0.1)
200 basis point parallel decrease	(0.2)	0.1
EUR		
200 basis point parallel increase	(4.7)	(4.3)
200 basis point parallel decrease	5.0	9.4
GBP		
200 basis point parallel increase	0.5	(0.4)
200 basis point parallel decrease	(0.6)	0.5
USD		
200 basis point parallel increase	6.5	9.1
200 basis point parallel decrease	(6.5)	(4.4)

Note that the brackets in the above table indicate a loss in economic value due to movements in interest rates.

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
IRRBB regulatory capital requirement – AUD	126	127

13. Equity Risk

Equity risk is the risk of loss arising from banking book equity type exposures. These exposures include:

- Holdings in specialised funds managed by Macquarie
- Property equity, including property trusts and direct property equity investments; and
- Other equity investments.

All of the above equity risk positions are subject to an aggregate Equity Risk Limit (ERL). The ERL is set by the Board by reference to the Risk Appetite Test that is described further in the Capital Adequacy Section 4. When the Board sets the limit, it also considers the level of earnings, capital and market conditions. RMG reviews the limit periodically and reports the results of the review to the Group Risk and Compliance Committee (GRCC) and the Board.

13.1 Accounting for Equity Holdings in the Banking Book

Equity investment positions have varying accounting treatments depending on the nature of the exposure. These include:

- Equity accounting for investments in associates and Joint Ventures
- Investment fair valued through profit or loss. Macquarie has not elected to designate any equity positions as fair value through OCI.

In addition to equity investment positions in the Banking Book, Macquarie also has equity investments in trading portfolios at fair value through profit or loss, which are included in the Market Risk calculation.

13.1.1 Investments in Associates and Joint Ventures

Equity accounting is applied to investments in which Macquarie has significant influence or joint control (joint ventures). These equity investments are described as Investments in Associates and Joint Ventures within this document. Equity accounting is applied such that Macquarie's share of its investee's post acquisition profit or losses are recorded in Macquarie's Consolidated Income Statement, and the share of its post-acquisition movements in other comprehensive income in Macquarie's Consolidated Statement of Comprehensive Income. Dividends or distributions from associates or joint ventures reduce the carrying amount of the investment to the extent that they are returns of capital. Where there is an indicator of impairment, the carrying amount of the investment is tested for impairment by comparing its recoverable amount with its carrying value. Impairment losses are recognised in the Consolidated Income Statement as part of other impairment charges/reversals. A reversal of a previously recognised impairment loss is recognised only to the extent that the investment's carrying value does not exceed the carrying amount that would have been determined (including consideration of any equity accounted losses), if no impairment loss had been recognised.

13.1.2 Fair value Investments through profit or loss

Fair value reflects the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Quoted prices or rates are used to determine fair value where an active market exists. If the market for a financial instrument is not active, fair values are estimated using present value or other valuation techniques, using inputs based on market conditions prevailing at the measurement date.

Gains and losses arising from subsequent changes in fair value of equity investments are recognised in the Consolidated Income Statement as investment income within net other operating income.

13.2 Equity Investments

The table below details the carrying value of equity investments held by Macquarie, in comparison to the applicable fair value of these equities. The categorisation of listed and unlisted investments is required for APRA regulatory reporting purposes – these include the equity investments under each of the accounting classifications outlined above. Valuations have been based on the requirements of accounting standards.

APS 330 Table 16(b) and (c)

	As at 30 September 2022		As at 31 March 2022	
	Carrying value \$m	Fair value ² \$m	Carrying value \$m	Fair value ² \$m
Equity investments¹				
Value of listed (publicly traded) equities	69	69	96	96
Value of unlisted (privately held) equities	680	680	643	643
Total	749	749	739	739

13.3 Capital Requirements Arising from Equity Risks

Equity investments are deducted from Common Equity Tier 1 capital under APRA's version of the Basel III rules.

APS 330 Table 16(f)

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Deduction amount		
Equity investments ³	740	736

13.4 Gains and Losses on Equity Investments

APS 330 Table 16(d) and (e)

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Gains / (losses) on equity investments		
Cumulative realised gains/(losses) ⁴	26	4
Total unrealised gains/(losses)	(59)	50
Total unrealised gains/(losses) included in Tier 1	(59)	50

¹ At MBL and its subsidiaries, the Consolidated Entity.

² Includes investments in Associates which are equity accounted and not fair valued and undrawn commitments (off balance sheet) which are deemed in the nature of equity for Regulatory Capital purposes.

³ At Level 2 regulatory group.

⁴ Gains are defined as proceeds on sale less costs net of provisions.

14. Operational Risk

Operational risk is inherent in Macquarie's business. Macquarie defines operational risk as the risk of loss resulting from inadequate or failed internal processes, controls or systems or from external events. It also includes the failure or inadequate management of other risk types.

14.1 Macquarie's Operational Risk Management Framework

Operational Risk Objectives

Macquarie's *Operational Risk Management Framework (ORMF)* is designed to identify, assess and manage operational risks across the organisation. The key objectives of the framework are:

- Risk identification, analysis and acceptance
- Developing control frameworks to support the management of material risks
- Execution and monitoring of risk management practices
- Reporting and escalation of risk information on a routine and exception basis.

Operational Risk Management Process

Operating Groups and Central Service Groups implement the *ORMF* in a manner that is tailored to their specific operational risk profile. However, a group-wide risk and control management framework exists to ensure consistency and alignment to minimum standards, including the following mandatory elements:

- A robust change management process to ensure operational risks in new activities or products are identified, addressed, and managed prior to implementation
- A risk and control self-assessment process to identify material risks that arise through the delivery of business activities and assess how these risks are managed across both Operating Groups and Central Service Groups
- Recording operational risk incidents in a centralised reporting system. Incidents are analysed to identify trends and establish lessons learnt on the effectiveness of controls
- Allocation of operational risk capital to all Macquarie businesses as a tool to further encourage positive behaviour in Macquarie's day to day management of operational risk
- Macquarie wide policies that require a consistent approach and minimum standards on specific operational risk matters
- Embedded Business Operational Risk Managers (BORMs) in Operating Groups who act as delegates of the Operating Group Head. These representatives are required to assess whether operational risks are addressed appropriately and that the *ORMF* is executed within their area.

Structure and Organisation of the Operational Risk Function

Most Macquarie operational risk staff operate at the business level. The BORMs are responsible for embedding operational risk management practices within their business to support the identification and management of risks across their business group. They report directly to the relevant business and have a dotted reporting line to the Head of RMG Operational Risk and Governance.

RMG Operational Risk and Governance is a division of RMG and is managed separately from other risk disciplines within RMG. RMG Operational Risk and Governance is responsible for defining the *ORMF* and the group-wide minimum standards in relation to operational risk and control management. It is also responsible for Macquarie's operational risk capital measurement methodology.

RMG regularly reports on the operational risk profile and the effectiveness of the Framework to the Board Risk Committee (BRiC) and to senior management.

14.2 Operational Risk Capital Calculation

APRA approved Macquarie's use of the AMA for assessing operational risk capital in December 2007.

Macquarie holds operational risk capital to absorb potential losses arising from operational risk exposures.

Macquarie's operational risk capital framework has two main elements:

- A bi-annual scenario approach for modelling operational risk losses and to determine operational risk capital
- A process for allocating capital to businesses based on risk exposures.

Operational risk scenarios identify key risks that, while very low in probability may, if they occurred, result in large losses. When identifying the potential for such losses, consideration is given to the individual statistical distribution for each scenario, external loss data, internal loss data, risk and control factors and the contribution of expert opinion from Operating and Central Service Groups. Scenario estimates are then modelled to determine the operational risk component of regulatory capital required to be held by Macquarie at the 99.9th percentile.

Over time, changes in operational risk capital reflect:

- New or significantly changed business activity or growth
- Changes in the external environment such as new regulations or movements in the economic cycle.

Mitigation of Operational Risk through Insurance

Macquarie does not currently use insurance in its AMA model for the purpose of operational risk capital reduction.

Operational Risk - RWA

	As at 30 September 2022 \$m	As at 31 March 2022 \$m
Operational Risk RWA	10,495	10,335

15. Leverage Ratio Disclosures

The leverage ratio is a non-risk-based ratio that is intended to restrict the build-up of excessive leverage in the banking system and acts as a supplementary measure to create a back stop for the risk-based capital requirements.

The Basel Committee on Banking Supervision (BCBS), in December 2017, confirmed the leverage ratio minimum regulatory requirement of 3%, effective from 1 January 2018. APRA released the final 'Prudential Standard APS 110 Capital Adequacy' on 30 November 2021 which has a minimum requirement for the leverage ratio of 3.5% effective 1 January 2023.

At 30 September 2022, Macquarie's leverage ratio was 4.7%, a decrease of 0.4% vs. 30 June 2022. This reduction was primarily driven by an increase in leverage exposures relating to a) increased holdings of high-quality liquid assets (HQLA) b) market movements in commodity derivatives and c) growth in the home loan portfolio; partially offset by higher Tier 1 capital.

Capital and total exposures	30 September 2022	30 June 2022	31 March 2022	31 December 2021
	\$m	\$m	\$m	\$m
Tier 1 Capital	19,876	18,896	17,272	16,946
Total exposures	418,822	372,868	348,235	331,362
Macquarie Level 2 regulatory group Leverage ratio	4.7%	5.1%	5.0%	5.1%

15.1 Leverage Ratio Disclosure Template

APS 330 Table 18

Item	As at 30 September 2022 \$m
On-balance sheet exposures	
1 On-balance sheet items (excluding derivatives and securities financing transactions (SFTs), but including collateral)	252,101
2 (Asset amounts deducted in determining Tier 1 capital)	(2,620)
3 Total on-balance sheet exposures (excluding derivatives and SFTs) (sum of rows 1 and 2)	249,481
Derivative exposures	
4 Replacement cost associated with all derivatives transactions (i.e., net of eligible cash variation margin)	66,227
5 Add-on amounts for potential future credit exposure (PFCE) associated with all derivatives transactions	33,401
6 Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the Australian Accounting Standards	-
7 (Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(6,464)
8 (Exempted central counterparty (CCP) leg of client-cleared trade exposures)	(18,919)
9 Adjusted effective notional amount of written credit derivatives	2,801
10 (Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(2,305)
11 Total derivative exposures (sum of rows 4 to 10)	74,741
SFT exposures	
12 Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	67,496
13 (Netted amounts of cash payables and cash receivables of gross SFT assets)	(210)
14 CCR exposure for SFT assets	5,175
15 Agent transaction exposures	-
16 Total SFT exposures (sum of rows 12 to 15)	72,461
Other off-balance sheet exposures	
17 Off-balance sheet exposure at gross notional amount	24,764
18 (Adjustments for conversion to credit equivalent amounts)	(2,625)
19 Other off-balance sheet exposures (sum of rows 17 and 18)	22,139
Capital and total exposures	
20 Tier 1 Capital	19,876
21 Total exposures (sum of rows 3, 11, 16 and 19)	418,822
Leverage ratio	
22 Leverage ratio	4.7%

15.2 Summary Comparison of Accounting Assets versus Leverage Ratio Exposure Measure

Item	As at 30 September 2022 \$m
1 Total consolidated assets as per published financial report	433,061
2 Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	1,004
3 Adjustment for assets held on the balance sheet in a fiduciary capacity pursuant to the Australian Accounting Standards but excluded from the leverage ratio exposure measure	-
4 Adjustments for derivative financial instruments	(36,763)
5 Adjustment for SFTs (i.e., repos and similar secured lending)	1,238
6 Adjustment for off-balance sheet exposures (i.e., conversion to credit equivalent amounts of off-balance sheet exposures)	22,139
7 Other adjustments	(1,857)
8 Leverage ratio exposure	418,822

16. Liquidity Coverage Ratio Disclosure

Liquidity Coverage Ratio disclosure template

APS 330 Table 20

Liquidity Coverage Ratio disclosure template	For the 3 months to 30 September 2022		For the 3 months to 30 June 2022	
	Total unweighted value (average) \$m	Total weighted value (average) \$m	Total unweighted value (average) \$m	Total weighted value (average) \$m
Liquid assets, of which:				
1 High quality liquid assets (HQLA)		65,749		61,710
2 Alternative liquid assets (ALA)		4,054		5,566
3 Reserve Bank of New Zealand (RBNZ) securities		-		-
Cash outflows				
4 Retail deposits and deposits from small business customers, of which:	67,797	6,588	66,984	6,622
5 Stable deposits	22,254	1,113	20,810	1,040
6 Less stable deposits	45,543	5,475	46,174	5,582
7 Unsecured wholesale funding, of which:	43,920	22,905	39,192	19,046
8 Operational deposits (all counterparties) and deposits in networks for cooperative banks	19,009	3,717	18,315	3,568
9 Non-operational deposits (all counterparties)	19,381	13,658	16,070	10,671
10 Unsecured debt	5,530	5,530	4,807	4,807
11 Secured wholesale funding		2,769		2,062
12 Additional requirements, of which:	49,169	27,287	42,205	23,218
13 Outflows related to derivatives exposures and other collateral requirements	29,539	25,095	21,909	21,156
14 Outflows related to loss of funding on debt products	480	480	309	309
15 Credit and liquidity facilities	19,150	1,712	19,987	1,753
16 Other contractual funding obligations	15,206	15,187	13,879	13,846
17 Other contingent funding obligations	9,943	583	10,097	574
18 Total cash outflows		75,319		65,368
Cash Inflows				
19 Secured lending (e.g., reverse repos)	44,904	17,384	37,018	12,658
20 Inflows from fully performing exposures	3,522	2,862	4,335	3,740
21 Other cash inflows	24,544	24,544	24,080	24,080
22 Total cash inflows	72,970	44,790	65,433	40,478
23 Total liquid assets		69,803		67,276
24 Total net cash outflows¹		38,161		30,380
25 Liquidity Coverage Ratio (%)²		183%		221%

¹APRA imposed a 15% add-on to the Net Cash Outflow (NCO) component of the LCR calculation, effective from 1 April 2021. In response to a further liquidity reporting incident identified in January 2022 which had the impact of understating total NCOs, APRA re-calibrated the LCR NCO add-on to 25%, effective from 1 May 2022 onwards. This reporting incident was resolved for the LCR for both the 3 months to 30 September 2022 and 30 June 2022. For the 3 months to 30 September 2022 an average NCO overlay of \$7,632 million is included in the disclosed balance of \$38,161 million (3 months to 30 June 2022 overlay of \$5,487 million is included in the disclosed balance of \$30,380 million).

² The LCR for the 3 months to 30 September 2022 is calculated from 64 daily LCR observations (3 months to 30 June 2022 was calculated from 61 daily LCR observations).

The Liquidity Coverage Ratio (LCR)

The LCR requires unencumbered liquid assets be held to cover expected net cash outflows (NCOs) under a regulatory-defined stress scenario lasting 30 calendar days. Macquarie's 3 month average LCR to 30 September 2022 was 183% (based on 64 daily observations). This represents a decrease of 38% from the 3 month LCR to 30 June 2022, as a result of an increase in NCOs partially offset by an increase in liquid assets. As required by APRA, the 3 month average LCR to 30 September 2022 includes a 25% NCO add-on.

Liquidity management is performed centrally by Group Treasury, with oversight from the MGL and MBL Asset and Liability Committees (ALCO), the MGL and MBL Boards and the Risk Management Group (RMG). Furthermore, the Board approved Liquidity Policy and Risk Tolerance is designed to ensure Macquarie maintains sufficient liquidity to meet its obligations as they fall due.

Macquarie sets internal management and Board approved minimum limits for the LCR above the regulatory minimum level and monitors its aggregate LCR position against these limits on a daily basis. Macquarie also monitors the LCR position on a standalone basis for major currencies in which it operates, with the high-quality liquid assets (HQLA) portfolio being denominated and held in both Australian Dollars and a range of other currencies. This ensures that liquid assets are maintained consistent with the distribution of liquidity needs by currency, allowing for an acceptable level of currency mismatches.

Macquarie actively considers the impact of business decisions on the LCR, as well as internal liquidity metrics that form part of the broader liquidity risk management framework. Macquarie's LCR fluctuates on a daily basis as a result of normal business activities and, accordingly, ongoing fluctuations in the reported LCR are expected and are not necessarily indicative of a changing risk appetite. Some examples of factors that can influence the LCR include wholesale funding activities (such as upcoming maturities and prefunding expected future asset growth), the degree of activity in Macquarie's capital markets facing businesses, the composition and nature of liquid asset holdings, and a variety of other external market considerations that could impact day to day collateral requirements.

Liquid Assets

In addition to cash and central bank deposits, Macquarie's liquid assets portfolio includes Australian Dollar Commonwealth Government and semi-Government securities, foreign currency HQLA securities and Macquarie's allocation under the Committed Liquidity Facility (CLF).

APRA wrote to all LCR ADIs on 10 September 2021 advising that no ADI should rely on the CLF to meet their minimum 100% LCR requirements from the beginning of 2022 and that ADIs should reduce their usage of the CLF to zero by the end of 2022, subject to financial market conditions. Macquarie's CLF allocation, which reduced from \$4,850 million to \$2,425 million on 1 September 2022 in line with APRA's phase down timeline, is reflected in the disclosure template under 'Alternative Liquid Assets (ALA)'. MBL's CLF will reduce to zero by the end of 2022 in accordance with APRA's requirement.

Net Cash Outflows (NCOs)

NCOs in the LCR include contractual and assumed cash outflows, offset by certain allowable contractual cash inflows. Some of the key drivers of Macquarie's NCOs include:

Retail and SME deposits: assumed regulatory outflow relating to deposits from retail and SME customers that are at call or potentially callable within 30 days.

Unsecured wholesale funding: includes remaining deposits which are not received from retail or SME customers along with unsecured debt balances contractually maturing within 30 days.

Secured wholesale funding and lending: represent inflows and outflows from secured lending and borrowing activities contractually maturing within 30 days, such as repurchase, and reverse repurchase agreements.

Outflows relating to derivative exposures and other collateral requirements: includes gross contractual cash outflows relating to contractually maturing derivative contracts (with gross inflows on maturing derivative contracts profiled in 'other cash inflows'). Further, contingent liquidity outflows such as potential collateral requirements from market movements, a 3-notch credit ratings downgrade and withdrawal of excess collateral placed with Macquarie are also included in this category.

Inflows from fully performing exposures: In Macquarie's LCR, a large component of this balance relates to excess liquidity placed on an overnight or very short-term basis with third parties (internally considered part of the cash and liquid asset portfolio).

Other contractual funding obligations and other cash inflows: includes other gross flows not profiled elsewhere in the LCR. The volumes in these categories are large relative to Macquarie's total cash outflows and inflows, however they include the following balances in particular:

- **Segregated client funds placed with Macquarie:** Macquarie acts as a clearing agent for clients on various futures exchanges. Clients place margin with Macquarie and Macquarie places this margin either directly with the exchange, holds it in other segregated external asset accounts or retains a portion on deposit with Macquarie. Some of the balances are recorded on a gross basis on Macquarie's balance sheet and APRA require these to be profiled as gross inflows and outflows in the LCR.
- **Security and broker settlement balances:** these represent securities that have been purchased or sold by Macquarie that have not yet settled and broker balances where stock has been bought or sold on behalf of clients, but payment has not been made to / received from the client. APRA require these balances to be reflected on a gross basis in the LCR as 100% weighted inflows and outflows. The net effect of these balances on Macquarie's average LCR is minimal.

17. Net Stable Funding Ratio Disclosures

Net Stable Funding Ratio disclosure template

APS 330 Table 21

As at 30 September 2022						
Unweighted value by residual maturity						
	No maturity	<6 months	>=6 months to < 1yr	>= 1yr	Weighted value	
	\$m	\$m	\$m	\$m	\$m	
Net Stable Funding Ratio disclosure template						
Available Stable Funding (ASF) Item						
1	Capital	20,653	-	-	8,266	28,919
2	Regulatory Capital	20,653	-	-	8,266	28,919
3	Other capital instruments	-	-	-	-	-
4	Retail deposits and deposits from small business customers	69,213	12,093	-	-	74,442
5	Stable deposits	23,723	1,611	-	-	24,067
6	Less stable deposits	45,490	10,482	-	-	50,375
7	Wholesale funding	28,596	71,159	15,877	44,303	69,386
8	Operational deposits	14,529	3,687	-	-	9,108
9	Other wholesale funding	14,067	67,472	15,877	44,303	60,278
10	Liabilities with matching interdependent assets	-	-	-	-	-
11	Other Liabilities	6,017	37,431	19	525	(1,199)
12	NSFR derivative liabilities	-	27,325	-	-	-
13	All other liabilities and equity not included in the above categories ¹	6,017	10,106	19	525	(1,199)
14	Total ASF	124,479	120,683	15,896	53,094	171,548
Required Stable Funding (RSF) Item						
15(a)	Total NSFR (HQLA)	36,848	6,916	234	6,666	2,592
15(b)	ALA	-	1,178	576	11,927	1,368
15(c)	RBNZ securities	-	-	-	-	-
16	Deposits held at other financial institutions for operational purposes	2,082	-	-	-	1,041
17	Performing loans and securities	25,936	54,974	5,715	116,366	108,648
18	Performing loans to financial institutions secured by Level 1 HQLA	5,588	16,257	-	793	3,078
19	Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	15,442	27,511	1,346	10,163	17,343
20	Performing loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and public sector entities (PSEs), of which:	1,707	8,241	2,812	14,379	17,681

¹ APRA imposed a 1% decrease to the Available Stable Funding component of the NSFR calculation, effective from 1 April 2021. An overlay of \$1,733 million, equal to a 1% decrease to the ASF component, is included in the disclosed 'No maturity' balance of \$6,017 million.

		As at 30 September 2022				
		Unweighted value by residual maturity				
				>=6 months		
		No maturity	<6 months	to < 1yr	>= 1yr	Weighted
		\$m	\$m	\$m	\$m	value
						\$m
Net Stable Funding Ratio disclosure template						
21	With a risk weight of less than or equal to 35% under APS 112	-	137	137	1,809	1,313
22	Performing residential mortgages		1,452	1,410	90,560	66,725
23	With a risk weight equal to 35%		1,391	1,358	86,559	63,218
24	Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	3,199	1,513	147	471	3,821
25	Assets with matching interdependent liabilities	-	-	-	-	-
26	Other assets:	7,838	7,792	23	84,376	32,667
27	Physical traded commodities, including gold	6,117				5,199
28	Assets posted as initial margin for derivative contracts and contributions to default funds of central counterparties (CCPs)				11,127	9,343
29	NSFR derivative assets				28,012	687
30	NSFR derivative liabilities before deduction of variation margin				40,076	8,015
31	All other assets not included in the above categories	1,721	7,792	23	5,161	9,423
32	Off-balance sheet items				21,764	993
33	Total RSF	72,704	70,860	6,548	241,099	147,309
34	Net Stable Funding Ratio (%)					116%

Net Stable Funding Ratio disclosure template

APS 330 Table 21

Net Stable Funding Ratio disclosure template		As at 30 June 2022				Weighted value \$m
		Unweighted value by residual maturity				
		No maturity \$m	<6 months \$m	>=6 months to < 1yr \$m	>= 1yr \$m	
Available Stable Funding (ASF) Item						
1	Capital	19,588	-	-	7,914	27,501
2	Regulatory Capital	19,588	-	-	7,914	27,501
3	Other capital instruments	-	-	-	-	-
4	Retail deposits and deposits from small business customers	65,230	6,276	-	-	65,488
5	Stable deposits	21,610	1,030	-	-	21,508
6	Less stable deposits	43,620	5,246	-	-	43,980
7	Wholesale funding	28,387	58,878	13,606	45,610	69,179
8	Operational deposits	15,506	3,551	-	-	9,529
9	Other wholesale funding	12,881	55,327	13,606	45,610	59,650
10	Liabilities with matching interdependent assets	-	-	-	-	-
11	Other Liabilities	4,372	34,131	44	549	(1,056)
12	NSFR derivative liabilities	-	22,187	-	-	-
13	All other liabilities and equity not included in the above categories ¹	4,372	11,944	44	549	(1,056)
14	Total ASF	117,577	99,285	13,650	54,073	161,112
Required Stable Funding (RSF) Item						
15(a)	Total NSFR (HQLA)	30,492	3,825	639	5,971	1,661
15(b)	ALA	-	1,528	336	14,241	1,611
15(c)	RBNZ securities	-	-	-	-	-
16	Deposits held at other financial institutions for operational purposes	-	-	-	-	-
17	Performing loans and securities	19,251	48,254	6,169	111,099	105,946
18	Performing loans to financial institutions secured by Level 1 HQLA	903	16,765	-	1,807	3,644
19	Performing loans to financial institutions secured by non-Level 1 HQLA and unsecured performing loans to financial institutions	10,590	20,658	900	10,593	15,822
20	Performing loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns, central banks and public sector entities (PSEs), of which:	2,254	8,184	3,665	14,286	18,928
21	With a risk weight of less than or equal to 35% under APS 112	-	161	91	1,688	1,223
22	Performing residential mortgages	-	1,441	1,420	84,017	62,394
23	With a risk weight equal to 35%	-	1,377	1,360	79,943	58,810
24	Securities that are not in default and do not qualify as HQLA, including exchange-traded equities	5,504	1,206	184	396	5,158
25	Assets with matching interdependent	-	-	-	-	-

¹ APRA imposed a 1% decrease to the Available Stable Funding component of the NSFR calculation, effective from 1 April 2021. An overlay of \$1,627 million, equal to a 1% decrease to the ASF component, is included in the disclosed 'No maturity' balance of \$4,372 million.

As at 30 June 2022

		Unweighted value by residual maturity				Weighted value \$m
		No maturity \$m	<6 months \$m	>=6 months to < 1yr \$m	>= 1yr \$m	
Net Stable Funding Ratio disclosure template						
26	Other assets	9,105	8,667	-	67,886	29,218
27	Physical traded commodities	7,333				6,233
28	Assets posted as initial margin for derivative contracts and contributions to default funds of central counterparties (CCPs)				8,762	7,376
29	NSFR derivative assets				23,200	1,013
30	NSFR derivative liabilities before deduction of variation margin				31,544	6,309
31	All other assets not included in the above categories	1,772	8,667	-	4,380	8,287
32	Off-balance sheet items				20,899	959
33	Total RSF	58,848	62,274	7,144	220,096	139,395
34	Net Stable Funding Ratio (%)					116%

The Net Stable Funding Ratio (NSFR)

The NSFR is a twelve-month structural funding metric, requiring that “available stable funding” (ASF) be sufficient to cover “required stable funding” (RSF), where ‘stable’ funding has an actual or assumed maturity of greater than twelve months. Macquarie’s NSFR as at 30 September 2022 was 116% and 116% as at 30 June 2022. The NSFR remained flat over the quarter, with an increase in RSF being met by an increase in ASF.

The NSFR seeks to encourage ADIs to fund their activities with more stable sources of funding on an ongoing basis, and thereby promote greater balance sheet resilience. It also aims to reduce an ADI’s reliance on less stable sources of funding. These requirements are in line with Macquarie’s Board approved Liquidity Policy and Risk Tolerance.

Macquarie sets internal management and Board approved minimum limits for the NSFR above the regulatory minimum level and monitors its aggregate NSFR position against these limits on a daily basis.

Whilst the NSFR and LCR are regulatory minima, Macquarie also models a number of additional internal liquidity scenarios covering both market wide and Macquarie name specific crises. Macquarie actively considers the impact of business decisions on the NSFR and LCR, as well as other internal liquidity metrics that form part of its broader liquidity risk management framework.

Macquarie’s NSFR fluctuates as a result of normal business activities and, accordingly, ongoing fluctuations in the reported NSFR are expected and are not necessarily indicative of a changing risk appetite. Some examples of factors that can influence the NSFR include wholesale funding activities (such as prefunding expected future asset growth), growth in home loans and customer deposits, equity and hybrids issuance, the degree of activity in Macquarie’s capital markets facing businesses, and a variety of other external market considerations.

Calculation of the Net Stable Funding Ratio

Under the regulatory rules, Available Stable Funding factors are applied to Macquarie’s capital and liabilities; while Required Stable Funding factors are applied to assets and off-balance sheet exposures. This calculation is shown in table 21 on pages 66 to 69 and is based on spot balances.

Appendix 1 Regulatory Capital Reconciliation

Common Disclosures Template

The capital disclosures detailed in the template below represents Basel III common disclosure requirements. These tables should be read in conjunction with Section 1.2 Regulatory Balance sheet and Section 1.3 Reconciliation between common disclosures template and the Regulatory Balance Sheet.

	As at 30 September 2022 \$m	Table Reference
Common Equity Tier 1 capital: instruments and reserves		
1	10,140	Table f
2	9,198	
3	1,315	
4		
5		
6	20,653	
Common Equity Tier 1 capital: regulatory adjustments		
7	-	
8	41	Table b
9	62	Table b
10	45	Table a
11	156	
12	162	
13	-	
14	101	
15	-	
16	-	
17	-	
18	-	Table c
19	-	Table c
20	-	
21	-	Table a
22	-	
23	-	Table c
24	-	
25	-	Table a
	68	

	Common Equity Tier 1 Capital (Harmonised)¹	20,018	
	APRA Specific Regulatory Adjustments		
26	National specific regulatory adjustments (sum of rows 26a, 26b, 26c, 26d, 26e, 26f, 26g, 26h, 26i and 26j)	2,610	
26a	of which: treasury shares	-	
26b	of which: offset to dividends declared under a dividend reinvestment plan (DRP), to the extent that the dividends are used to purchase new ordinary shares issued by the ADI	-	
26c	of which: deferred fee income	-	
26d	of which: equity investments in financial institutions not reported in rows 18, 19 and 23	422	Table c
26e	of which: deferred tax assets not reported in rows 10, 21 and 25	867	Table a
26f	of which: capitalised expenses	699	
26g	of which: investments in commercial (non-financial) entities that are deducted under APRA prudential requirements	553	Table c
26h	of which: covered bonds in excess of asset cover in pools	-	
26i	of which: undercapitalisation of a non-consolidated subsidiary	-	
26j	of which: other national specific regulatory adjustments not reported in rows 26a to 26i	69	
27	Regulatory adjustments applied to Common Equity Tier 1 due to insufficient Additional Tier 1 and Tier 2 to cover deductions	-	
28	Total regulatory adjustments to Common Equity Tier 1	3,245	
29	Common Equity Tier 1 Capital (APRA)	17,408	
	Additional Tier 1 Capital: instruments		
30	Directly issued qualifying Additional Tier 1 instruments	2,468	
31	of which: classified as equity under applicable accounting standards		
32	of which: classified as liabilities under applicable accounting standards	2,468	
33	Directly issued capital instruments subject to phase out from Additional Tier 1	-	
34	Additional Tier 1 instruments (and CET1 instruments not included in row 5) issued by subsidiaries and held by third parties (amount allowed in group ATI)	-	
35	of which: instruments issued by subsidiaries subject to phase out	-	
36	Additional Tier 1 Capital before regulatory adjustments	2,468	Table d
	Additional Tier 1 Capital: Regulatory adjustments		
37	Investments in own Additional Tier 1 instruments	-	
38	Reciprocal cross-holdings in Additional Tier 1 instruments	-	
39	Investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions, where the ADI does not own more than 10% of the issued share capital (amount above 10% threshold)	-	
40	Significant investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation (net of eligible short positions)	-	
41	National specific regulatory adjustments (sum of rows 41a, 41b and 41c)	-	
41a	of which: holdings of capital instruments in group members by other group members on behalf of third parties	-	
41b	of which: investments in the capital of financial institutions that are outside the scope of regulatory consolidations not reported in rows 39 and 40	-	
41c	of which: other national specific regulatory adjustments not reported in rows 41a and 41b	-	

¹ 'Harmonised' Basel III estimates are calculated in accordance with the BCBS Basel III framework, noting that MB is not regulated by the BCBS and so impacts shown are indicative only.

42	Regulatory adjustments applied to Additional Tier 1 due to insufficient Tier 2 to cover deductions	-	
43	Total regulatory adjustments to Additional Tier 1 capital	-	
44	Additional Tier 1 capital (AT1)	2,468	
45	Tier 1 Capital (T1=CET1+AT1)	19,876	
	Tier 2 Capital: instruments and provisions		
46	Directly issued qualifying Tier 2 instruments	5,790	Table e
47	Directly issued capital instruments subject to phase out from Tier 2	-	Table e
48	Tier 2 instruments (and CET1 and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties (amount allowed in group T2)	-	
49	of which: instruments issued by subsidiaries subject to phase out	-	
50	Provisions	8	
51	Tier 2 Capital before regulatory adjustments	5,798	
	Tier 2 Capital: regulatory adjustments		
52	Investments in own Tier 2 instruments	-	
53	Reciprocal cross-holdings in Tier 2 instruments	-	
54	Investments in the Tier 2 capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions, where the ADI does not own more than 10% of the issued share capital (amount above 10% threshold)	-	
55	Significant investments in the Tier 2 capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, net of eligible short positions	-	
56	National specific regulatory adjustments (sum of rows 56a, 56b and 56c)	-	
56a	of which: holdings of capital instruments in group members by other group members on behalf of third parties	-	
56b	of which: investments in the capital of financial institutions that are outside the scope of regulatory consolidation not reported in rows 54 and 55	-	
56c	of which: other national specific regulatory adjustments not reported in rows 56a and 56b	-	
57	Total regulatory adjustments to Tier 2 capital	-	
58	Tier 2 capital (T2)	5,798	
59	Total capital (TC=T1+T2)	25,674	
60	Total risk-weighted assets based on APRA standards	136,364	
	Capital ratios and buffers		
61	Common Equity Tier 1 (as a percentage of risk-weighted assets)	12.8%	
62	Tier 1 (as a percentage of risk-weighted assets)	14.6%	
63	Total capital (as a percentage of risk-weighted assets)	18.8%	
64	Buffer requirement (minimum CET1 requirement of 4.5% plus capital conservation buffer of 2.5% plus any countercyclical buffer requirements expressed as a percentage of risk-weighted assets)	7%	
65	of which: capital conservation buffer requirement	2.5%	
66	of which: ADI-specific countercyclical buffer requirements	-	Table h
67	of which: G-SIB buffer requirement (not applicable)	-	
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk-weighted assets)¹	12.8%	
	National minima (if different from Basel III)		
69	National Common Equity Tier 1 minimum ratio (if different from Basel III minimum)	-	
70	National Tier 1 minimum ratio (if different from Basel III minimum)	-	

¹ This represents CET1 ratio of the ADI, less any common equity used to meet the ADI's Tier 1 and Total Capital requirements.

71	National total capital minimum ratio (if different from Basel III minimum)	-	
Amount below thresholds for deductions (not risk-weighted)			
72	Non-significant investments in the capital of other financial entities	105	Table c
73	Significant investments in the ordinary shares of financial entities	317	Table c
74	Mortgage servicing rights (net of related tax liability)	-	
75	Deferred tax assets arising from temporary differences (net of related tax liability)	867	Table a
Applicable caps on the inclusion of provisions in Tier 2			
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to standardised approach (prior to application of cap)	8	
77	Cap on inclusion of provisions in Tier 2 under standardised approach	193	
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)	-	
79	Cap for inclusion of provisions in Tier 2 under internal ratings-based approach	585	
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2018 and 1 Jan 2022)			
80	Current cap on CET1 instruments subject to phase out arrangements	-	
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	-	
82	Current cap on AT1 instruments subject to phase out arrangements	-	
83	Amount excluded from AT1 instruments due to cap (excess over cap after redemptions and maturities)	-	
84	Current cap on T2 instruments subject to phase out arrangements	-	
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	

Regulatory Balance Sheet as at 30 September 2022

	Macquarie Bank Group Consolidated ¹ \$m	Adjustment ² \$m	Level 2 Regulatory Balance Sheet \$m	Template/ Reconciliation Table Reference
Assets				
Cash and bank balances	49,803	(65)	49,738	
Cash collateralised lending and reverse repurchase agreements	65,628	-	65,628	
Trading assets	12,392	(9)	12,383	
Margin money and settlement assets	25,009	(1)	25,008	
Derivative assets	111,509	(5)	111,504	
Financial Investments	18,297	(1)	18,296	
Held for sale and other assets ³	6,089	36	6,125	Table b
Loan assets	134,059	139	134,198	
Due from related body corporate entities	5,759	737	6,496	
Property, plant and equipment and right-of-use assets	3,580	(23)	3,557	
Investment in regulatory non-consolidated subsidiaries ²	-	220	220	Table c
Deferred tax assets	936	(24)	912	Table a
Total Assets	433,061	1,004	434,065	
Liabilities				
Cash collateral borrowing and repurchase agreements	22,410	(1)	22,409	
Trading liabilities	6,378	(1)	6,377	
Margin money and settlement liabilities	36,033	3	36,036	
Derivative liabilities	111,260	(2,684)	108,576	
Deposits	122,136	(1)	122,135	
Other liabilities	6,249	(251)	5,998	
Borrowings	6,305	1	6,306	
Due to related body corporate entities	15,178	3,963	19,141	
Issued debt securities	78,289	(1)	78,288	
Deferred tax liabilities	23	29	52	
Total Liabilities excluding loan capital	404,261	1,057	405,318	
Loan capital	8,094	-	8,094	Table d
Total liabilities	412,355	1,057	413,412	
Net Assets	20,706	(53)	20,653	
Equity				
Contributed equity	10,141	(1)	10,140	Table f
Reserves	1,315	-	1,315	Row 3
Retained earnings	9,250	(52)	9,198	Row 2
Total capital and reserves attributable to the ordinary equity holder of Macquarie Bank Limited	20,706	(53)	20,653	
Non-controlling Interests	-	-	-	Table g
Total equity	20,706	(53)	20,653	

¹ As per Macquarie Bank Limited financial report as at 30 September 2022.

² Reflects the deconsolidation of certain subsidiaries for APRA reporting purposes. The subsidiaries which are deconsolidated for regulatory purposes include entities conducting insurance, funds management and non-financial operations. Assets and Liabilities of mortgage and leasing special purpose vehicles (SPV) where Macquarie has satisfied APS 120 Attachment A operational requirements for regulatory capital relief are not included in the Level 2 regulatory group.

³ The intangible component of investments in non-consolidated subsidiaries is included in held for sale and other assets

Reconciliation between Common Disclosures Template and Level 2 Regulatory Balance Sheet

Table a	30 September		Template Reference
	2022	\$m	
Deferred Tax Assets			
Total Deferred Tax Assets per Level 2 Regulatory Balance Sheet	912		
Less: Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(45)		Row 10
Less: Deferred tax assets (temporary differences) – Amounts below prescribed threshold	(867)		Row 26e, 75
Total per Common Disclosure Template – Deferred Tax Asset – amount exceed 10%/15% threshold	–		Row 21 / 25

Table b	30 September		Template Reference
	2022	\$m	
Intangible Assets			
Total Intangible Assets reported in Held for sale and other assets per Level 2 Regulatory Balance Sheet	103		
Less: capitalised software and other intangibles	(24)		Row 9
Less: intangible component of deconsolidated subsidiaries	(38)		Row 9
Total per Common Disclosure Template – Goodwill	41		Row 8

Table c	30 September		Template Reference
	2022	\$m	
Equity Investments			
Significant investment in financial entities ^{1,2}	317		Row 73
Non-significant investment in financial entities ¹	105		Row 72
Total Investments in financial institutions	422		Row 26d
Investment in commercial entities ^{1,2}	553		Row 26g
Total Equity Investments before applying prescribed threshold	975		
Less: amounts risk weighted under Harmonised Basel III guidelines	(975)		
Total per Common Disclosure Template – Equity Investments	–		Row 18, 19, 23

¹ Equity Investments are classified in the Level 2 Regulatory Balance Sheet across Financial Investments, Investment in regulatory non-consolidated subsidiaries and Held for sale and other assets. In addition, the Level 2 regulatory group has undrawn commitments (off balance sheet) which are deemed in the nature of equity for Regulatory Capital purposes.

² Included in significant investment in financial entities is \$176 million of equity investments in regulatory non-consolidated subsidiaries. Included in investment in commercial entities is \$44 million of equity investments in regulatory non-consolidated subsidiaries.

	30 September 2022 \$m	Template Reference
Table d		
Additional Tier 1 Capital		
Total Loan Capital per Level 2 Regulatory Balance Sheet	8,094	
Less: Accrued interest	(8)	
Add: Capitalised expenses deducted in Common Equity Tier 1 Capital ¹	18	Included in Row 26f
Less: Fair value hedge adjustments ²	76	
Less: Tier 2 capital instruments reported in Table e	(5,712)	Table e
Additional Tier 1 Capital (MACS, BCN2 and BCN3)	2,468	
Less: Basel III transitional amortisation	-	
Total per Common Disclosure Template - Additional Tier 1 Capital	2,468	Row 36

Additional Tier 1 Capital Instruments		
Macquarie Additional Capital Securities	1,172	
Macquarie Bank Capital Notes 2	641	
Macquarie Bank Capital Notes 3	655	
Total per Common Disclosure Template - Additional Tier 1 Capital	2,468	Row 36

	30 September 2022 \$m	Template Reference
Table e		
Total Tier 2 Capital per Balance Sheet		
Total Tier 2 Capital per Balance Sheet	5,712	Table d
Less: Accrued Interest	(50)	
Add: Capitalised expenses deducted in Common Equity Tier 1 Capital	19	Included in Row 26f
Less: Fair value hedge adjustments ²	578	
Less: Amortisation as per APS 111 (per Para 2 of Attachment H)	(469)	
Total per Common Disclosure Template - Tier 2 Capital	5,790	Row 46+47

Tier 2 Capital Instruments		
Subordinated Debt - USD1.0bn - fully qualified Tier 2 instrument	1,564	
2 Subordinated Debts - USD750m each - fully qualified Tier 2 instrument	1,876	
2 Subordinated Debts - AUD750m each - fully qualified Tier 2 instrument	1,500	
Subordinated Debt - AUD850m - fully qualified Tier 2 instrument	850	
Total per Common Disclosure Template - Tier 2 Capital	5,790	Row 46+47

	30 September 2022 \$m	Template Reference
Table f		
Contributed Equity		
Total Contributed Equity as per Level 2 Regulatory Balance Sheet	10,140	
Add: Capitalised expenses deducted in Common Equity Tier 1 Capital	-	Included in Row 26f
Total per Common Disclosure Template - Contributed Equity	10,140	Row 1

¹ Unamortised issue cost relating to capital instruments are netted against each instrument on the Level 2 Regulatory Balance Sheet. For regulatory capital purposes, the unamortised costs are deducted at CET1 as part of capitalised expenses in row 26f of the Common Disclosures Template.

² For regulatory capital purposes, APRA requires these instruments to be included as if they were unhedged.

	30 September 2022 \$m	Template Reference
Table g		
Non-Controlling Interests		
Total Non-Controlling Interests as per Level 2 Regulatory Balance Sheet	-	
Less: other non-controlling interests not included in capital	-	
Total per Common Disclosure Template - Non-Controlling Interests	-	Row 5

Countercyclical Capital Buffer

The Countercyclical Capital Buffer (CCyB) is an extension of the capital conservation buffer which must be held in the form of CET1 capital, ranging from 0 to 2.5%. The CCyB is designed to ensure that ADIs build up capital buffers when excess aggregate credit growth is judged to be associated with a build-up of system wide risk. The CCyB is calculated as the weighted average of the jurisdictional buffers set by the relevant national authority where an ADI has private sector credit exposures, excluding exposures to Banks and Sovereigns.

Table h	RWA \$m	Jurisdictional buffer	Countercyclical buffer requirement ¹	Template Reference
Luxembourg	514	0.500%	0.0024%	
Hong Kong	229	1.000%	0.0021%	
Denmark	192	1.000%	0.0018%	
Czech Republic	116	1.000%	0.0011%	
Sweden	70	1.000%	0.0006%	
Norway	67	1.500%	0.0009%	
Slovakia	49	1.000%	0.0005%	
Iceland	16	2.000%	0.0003%	
Bulgaria	5	0.500%	0.0000%	
Others	106,277	0.000%	0.0000%	
Total	107,535		0.0097%	Row 66

¹ Calculated as each country's share of total private sector credit exposures multiplied by the CCyB applicable to each country.

Appendix 2 List of Entities Deconsolidated from the Level 2 Regulatory Group for APRA Reporting Purposes

30 September 2022	Total Assets ^{1,2,3,4}	Total Liabilities ^{1,2,3,4}
Funds Management		
Bond Street Custodians Limited	20	-
Macquarie Australia Securities Pty Limited	1	-
Macquarie Fonds GmbH	-	-
Macquarie Fondsmanagement GmbH	1	(1)
Macquarie Investment Management Ltd	193	(8)
Macquarie Investment Services Limited	18	-
Macquarie Management GmbH	-	-
Macquarie Prism Pty Limited	3	-
Macquarie Securities Management Pty Limited	1	-
Macquarie Treuermögen GmbH	-	-
Non-Financial Operations		
Avenal Power Center, LLC	14	(12)
Capital Meters Limited	21	(4)
Comercializadora Energia de la Reforma S. de R.L. de C.V.	15	(6)
Corona Energy Limited	34	-
Corona Energy Retail 1 Limited	58	(39)
Corona Energy Retail 2 Limited	34	(11)
Corona Energy Retail 3 Limited	6	-
Corona Energy Retail 4 Limited	223	(189)
Corona Gas Management Limited	66	(17)
Digital Asset Lease Co, LLC	5	(1)
Ion Energy Pte. Limited	-	-
Liberty Green Renewables Indiana, LLC	3	(1)
Macquarie Business Solutions Pty Limited	-	-
Macquarie Corona Energy Holdings Limited	21	(4)
Macquarie Electronics USA Inc	9	(3)

¹ These balances, along with any Australian GAAP adjustment where required, are included in Macquarie Bank Group's audited Australian GAAP financial report for the period ended 30 September 2022. The financial report under local GAAP of certain entities may be subjected to separate audits from the Macquarie Bank Group audit and these audits may not be complete as at the date of this report.

² The total assets and liabilities should not be aggregated as certain entities are holding companies for other entities in the table shown above.

³ Numbers are rounded to the nearest \$A million. Asset balances are shown as positive and liability balances are shown as negative.

⁴ The assets and liabilities for deconsolidated subsidiaries includes receivables from and payables to related entities.

Macquarie Energy Services Pty Limited	6	-
Macquarie Equipment Finance Services Limited	1	-
Nu Mobile Pty Limited	2	(1)
PropertyIQ Pty Limited	6	-
PropertyIQ Strata Pty Limited	-	-
Pt Macquarie Commodities Indonesia	-	-
Resource Marine Pte. Limited	6	-
Sustainable Feedstocks Group Guangdong Limited	13	(13)
Sustainable Feedstocks Group Limited	22	(14)
Insurance		
Macquarie (Bermuda) Limited	47	(42)
Macquarie Life Limited	30	(9)

Appendix 3 List of APRA Quantitative Tables

APS 330 Table	Title	Section No
Attachment A	Common Disclosures Template	Appendix 1
Attachment D		
6 (b) to (f)	Risk Weighted Assets (RWA)	4.3
6 (g)	Capital Ratios	Introduction
7 (b)	Macquarie's Credit Risk Exposures	5.3
7 (c)	Credit Risk by Geographic Distribution	5.4
7 (d)	Credit Risk Distribution by Counterparty Type	5.5
7 (e)	Credit Risk by Maturity Profile	5.6
7 (f)	Provisions by Counterparty Type	5.3 & 7.4
7 (g)	Provisions by Geographic Region	7.5
7 (h)	Movement in Provisions	7.7
7 (i)	Credit Risk Exposures by Measurement Approach	5.3 & 6.1
7 (j)	General Reserve for Credit Losses	7.6
8 (b)	Credit Risk Exposures by Risk Weight	6.2
9 (d)	Credit Risk Exposures by Risk Grade	6.3
9 (e)	Provisions by Counterparty Type	7.4
9 (f)	Analysis of Expected Credit Model Performance versus Actual Results	7.8
10 (b) & (c)	Exposures Mitigated by Eligible Collateral	8.2
11 (b)	Credit Equivalent Amounts for Counterparty Exposures	8.3
11 (c)	Notional Amount of Credit Derivatives	8.3
12 (g) & (o)	Originating ADI Securitisation Exposures	9.2.1
12 (h)	Performance of Assets Securitised	9.2.2
12 (i) & (p)	Summary of Outstanding Exposures Intended to be Securitised	9.2.3
12 (j), (q) & (r)	Securitisation Activity	9.2.4
12 (k) & (s)	Exposure by Type of Asset	9.2.5
12 (l)	Exposure by Risk Weight Band - Banking Book	9.2.6
12 (t)	Exposure by Risk Weight Band - Trading Book	9.2.6
12 (u)	RWA by Risk Weight Band - Trading Book	9.2.6
12 (n) & (w)	Re-securitisation Exposure	9.2.7
13 (b)	Debt Security Specific Risk Figures	12.2.3
14 (f)	Value at Risk Figures	12.2.1
14 (f)	Stressed Value at Risk Figures	12.2.2
16 (b) & (c)	Equity Investments	13.2
16 (d) & (e)	Gains and Losses on Equity Investments	13.4
16 (f)	Capital Requirements Arising from Equity Risks	13.3
17 (b)	Interest Rate Risk in the Banking Book	12.2.4
Attachment E		
18	Leverage Ratio Disclosure Template	15.1
19	Summary Comparison of Accounting Assets versus Leverage Ratio Exposure Measure	15.2
Attachment F		
20	Liquidity Coverage Ratio Disclosure Template	16.0
21	Net Stable Funding Ratio Disclosure Template	17.0

Appendix 4 Glossary of Terms

ADI	Authorised Deposit-taking Institution.
Additional Tier 1 Capital	A capital measure defined by APRA comprising high quality components of capital that satisfy the following essential characteristics: <ul style="list-style-type: none">• Provide a permanent and unrestricted commitment of funds• Are freely available to absorb losses• Rank behind the claims of depositors and other more senior creditors in the event of winding up of the issuer; and• Provide for fully discretionary capital distributions.
Additional Tier 1 Capital deductions	An amount deducted in determining Additional Tier 1 Capital, as defined in Prudential Standard APS 111 Capital Adequacy: Measurement of Capital.
ALA	Alternative Liquid Assets
AMA	Advanced Measurement Approach (for determining operational risk).
APRA	Australian Prudential Regulation Authority.
ADI Prudential Standards (APS)	APRA's ADI Prudential Standards. For more information refer to APRA website.
Associates	Associates are entities over which Macquarie has significant influence, but not control. Investments in associates may be further classified as Held for Sale ('HFS') associates. HFS associates are those that have a high probability of being sold within 12 months to external parties. Associates that are not held for sale are carried at cost and equity-accounted. Macquarie's share of the investment's post-acquisition profits and losses is recognised in the income statement and its share of post-acquisition movements in reserves is recognised within equity.
ASF	Available Stable Funding
Bank Group	MBL and its subsidiaries.
Basel III IRB Formula	A formula to calculate RWA, as defined in Prudential Standard APS 113 - Capital Adequacy: Internal Ratings-based Approach to Credit risk.
BAC	Board Audit Committee.
BCBS	Basel Committee on Banking Supervision.
BCN 2	BCN2 were issued by MBL in June 2020 and are quoted on the Australian Securities Exchange. The BCN2 pay discretionary, quarterly floating rate cash distributions equal to three-month BBSW plus 4.70% per annum margin, adjusted for franking credits. These instruments are non-cumulative and unsecured and may be redeemed at face value on 21 December 2025, 21 June 2026 or 21 December 2026 (subject to certain conditions being satisfied) or earlier in specified circumstances. The BCN2 can be converted into a variable number of MGL ordinary shares (subject to certain conditions being satisfied) on these redemption dates; mandatorily exchanged on 21 December 2028; exchanged earlier upon an acquisition event (with the acquirer gaining control of MGL or MBL); or where APRA determines MBL would be non-viable without an exchange or a public sector injection of capital (or equivalent support).
BCN 3	BCN3 were issued by MBL in August 2021 and are quoted on the Australian Securities Exchange. The BCN3 pay discretionary, quarterly floating rate cash distributions equal to three-month BBSW plus 2.90% per annum margin, adjusted for franking credits. These instruments are non-cumulative and unsecured and may be redeemed at face value on 7 September 2028, 7 March 2029, or 7 September 2029 (subject to certain conditions being satisfied) or earlier in specified circumstances. The BCN3 can be converted into a variable number of MGL ordinary shares (subject to certain conditions being satisfied) on these redemption dates; mandatorily exchanged on 8 September 2031; exchanged earlier upon an acquisition event (with the acquirer gaining control of MGL or MBL); or where APRA determines MBL would be non-viable without an exchange or a public sector injection of capital (or equivalent support)
BFS	Banking and Financial Services Group

The Board, Macquarie Bank Board	The Board of Voting Directors of Macquarie Bank Limited
BRC	Board Remuneration Committee
BRiC	Board Risk Committee
CA	Credit Assurance
CAF	Corporate and Asset Finance Group
CAGR	Compound Annual Growth Rate
CEO	Managing Director and Chief Executive Officer
CGM	Commodities and Global Markets Group
CFO	Chief Financial Officer
Contingent liabilities	Defined in AASB 137 Provisions, Contingent Liabilities and Contingent Assets as a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity; or a present obligation that arises from past events but is not recognised because it is not probable to occur, or the amount cannot be reliably measured.
CCE	Current Credit Exposure. The sum of the positive mark-to-market value (or replacement cost) of market-related contracts entered into by the ADI.
CCR	Counterparty Credit Risk
CEA	Credit Equivalent Amount. The on-balance sheet equivalent value of an off balance sheet transaction.
Central counterparty	A clearing house or exchange that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer, and therefore ensuring the future performance or open contracts.
CLF	Committed Liquidity Facility
Common Equity Tier 1 capital (CET1)	A capital measure defined by APRA comprising the highest quality components of capital that fully satisfy all the following essential characteristics: <ul style="list-style-type: none"> • Provide a permanent and unrestricted commitment of funds • Are freely available to absorb losses • Do not impose any unavoidable servicing charge against earnings; and • Rank behind the claims of depositors and other creditors in the event of winding up. • Common equity tier 1 capital comprises Paid Up Capital, Retained Earnings, and certain reserves.
Common Equity Tier 1 Capital deductions	An amount deducted in determining Common Equity Tier 1 Capital, as defined in Prudential Standard APS 111 Capital Adequacy: Measurement of Capital.
Common Equity Tier 1 Capital Ratio	Common Equity Tier 1 Capital net of Common Equity Tier 1 deductions expressed as a percentage of RWA.
CRO	Chief Risk Officer
CVA	Credit Valuation Adjustment. The risk of mark-to-market losses on the expected counterparty risk to OTC derivatives.
Deconsolidated entities	Entities involved in conducting insurance, funds management and non-financial operations including special purpose vehicles (SPV) for which Macquarie has satisfied APS 120 Attachment A operational requirements for regulatory capital relief.
Directors' Profit Share (DPS)	The DPS plan comprises exposure to a notional portfolio of Macquarie-managed funds. Retained amounts for Executive Directors are notionally invested over the retention period. This investment is described as 'notional' because Executive Directors do not directly hold securities in relation to this investment. However, the value of the retained amounts will vary as if these amounts were directly invested in actual securities, giving the Executive Directors an effective economic exposure to the performance of the securities. If the notional investment results in a notional loss, this loss will be offset against any future notional income until the loss is completely offset.
DSR	Debt Specific Risk
DSU	Deferred Share Unit issued under the MEREP
DVP	Delivery versus Payment

EAD	Exposure at Default - the gross exposure under a facility (the amount that is legally owed to the ADI) upon default of an obligor.
ECAI	External Credit Assessment Institution.
ECAM	Economic Capital Adequacy Model.
EL	Expected Loss, which is a function of EAD, Probability of Default and Loss given Default.
ELE	Extended Licensed Entity is an entity that is treated as part of the ADI ('Level 1') for the purpose of measuring the ADI's capital adequacy and exposures to related entities. The criterion for qualification as an ELE is detailed in the APRA Prudential Standards.
EMEA	Europe, Middle East & Africa.
ERL	Equity Risk Limit - Board imposed limit by which equity risk positions are managed.
ERBA	External Rating Based Approach
Executive Key Management Personnel (Executive KMP)	Members of Executive Committee of MBL
Executive Voting Director	An Executive Board Member
FIRB	Foundation Internal Ratings Based Approach (for determining credit risk)
GAAP	Generally Accepted Accounting Principles
GRCC	Group Risk and Compliance Committee
HQLA	High Quality Liquid Assets
ICAAP	Internal Capital Adequacy Assessment Process.
IRRBB	Interest Rate Risk in the Banking Book.
Impaired assets	An asset for which the ultimate collectability of principal and interest is compromised.
ISDA	International Swaps and Derivatives Association
LCR	Liquidity Coverage Ratio
Level 1 Regulatory Group	MBL and certain subsidiaries which meet the APRA definition of Extended Licensed Entities
Level 2 Regulatory Group	MBL, its parent Macquarie B.H. Pty Ltd and MBL's subsidiaries but excluding deconsolidated entities for APRA reporting purposes.
Level 3 Regulatory Group	MGL and its subsidiaries but excluding entities required to be deconsolidated for regulatory reporting purposes.
LGD	Loss given default is defined as the economic loss which arises upon default of the obligor.
LVR	Loan to Value Ratio
Macquarie	Level 2 regulatory group
Macquarie Group	MGL and its subsidiaries
Malus	The discretion of the Board (from 2012) to reduce or eliminate unvested profit share amounts where it determines that an employee's action or inaction has caused the Macquarie Group significant reputational harm, caused a significant or unexpected financial loss or caused the Macquarie Group to make a material financial restatement.
MACS	On 8 March 2017, MBL, acting through its London Branch, issued \$US750 million of Macquarie Additional Capital Securities (MACS). MACS are subordinated, unsecured notes that pay discretionary, non-cumulative, semi-annual fixed rate cash distributions. Subject to certain conditions the MACS may be redeemed on 8 March 2027, or each fifth anniversary thereafter. MACS can be exchanged for a variable number of fully paid MGL ordinary shares on an acquisition event (with the acquirer gaining control of MGL or MBL), where MBL's common equity Tier 1 capital ratio falls below 5.125%, or where APRA determines MBL would be non-viable without an exchange or a public sector injection of capital (or equivalent support).
MAM	Macquarie Asset Management Group
MBL	Macquarie Bank Limited ABN 46 008 583 542
MBL Consolidated Group	MBL and its subsidiaries
MEREP	Macquarie Group Employee Retained Equity Plan
MFHPL	Macquarie Financial Holdings Pty Limited
MGL	Macquarie Group Limited ABN 94 122 169 279

NCO	Net Cash Outflows
Non-Bank Group	MGL, MFHPL and its subsidiaries
NPAT	Net Profit after Tax
NSFR	Net Stable Funding Ratio
Operating Group	The Operating Groups consist of MAM, CAF, CGM, BFS and Macquarie Capital
ORMF	Operational Risk Management Framework
PCE, PFCE	Potential Credit Exposure (PCE) / Potential Future Credit Exposure (PFCE). The potential exposures arising on a transaction calculated as the notional principal amount multiplied by a credit conversion factor specified by APRA.
PD	Probability of Default. The likelihood of an obligor not satisfying its financial obligations.
Post-2009 DPS	Retained directors' profit share which is deferred to future periods and held as a notional investment in Macquarie managed-fund equity.
PSU	Performance Share Unit issued under the MEREP
Reserve Bank of Australia (RBA)	Central bank of Australia with responsibility over monetary policy.
Risk-weighted assets (RWA)	A risk-based measure of an entity's exposures, which is used in assessing its overall capital adequacy.
RAS	Risk Appetite Statement
RMG	Risk Management Group
ROE	Return on Ordinary Equity
RSF	Required Stable Funding
RSU	Restricted Share Unit issued under the MEREP
RMBS	Residential Mortgage-Backed Securities
Senior Executive	Macquarie Group's combined Division Director and Executive Director population.
Senior Management	Members of Macquarie Group's Executive Committee and Executive Directors who have significant management or risk responsibility in the organisation.
SFA	Supervisory Formula Approach
SFT	Securities Financing Transactions (SFT). SFTs are transactions such as repurchase agreements, reverse repurchase agreements and security lending and borrowing, where the value of the transactions depends on market valuations and the transactions are often subject to margin agreements.
SME	Small - Medium Enterprises
SPV's	Special purpose vehicles or securitisation vehicles.
Subordinated debt	Debt issued by Macquarie for which agreements between Macquarie and the lenders provide, in the event of liquidation, that the entitlement of such lenders to repayment of the principal sum and interest thereon is and shall at all times be and remain subordinated to the rights of all other present and future creditors of Macquarie. Subordinated debt is classified as liabilities in the Macquarie financial report and may be included in Tier 2 Capital.
Tier 1 Capital	Tier 1 capital comprises of (i) Common Equity Tier 1 Capital; and (ii) Additional Tier 1 Capital
Tier 1 Capital Deductions	Tier 1 capital deductions comprises of (i) Common Equity Tier 1 Capital deductions; and (ii) Additional Tier 1 Capital deductions.
Tier 1 Capital Ratio	Tier 1 Capital net of Tier 1 Capital Deductions expressed as a percentage of RWA.
Tier 2 Capital	A capital measure defined by APRA, comprising other components of capital which contribute to the strength of the entity.
Tier 2 Capital Deductions	An amount deducted in Tier 2 Capital, as defined in Prudential Standard APS 111 Capital Adequacy: Measurement of Capital.
Total Capital	Tier 1 Capital plus Tier 2 Capital less Total Capital Deductions.
Total Capital Ratio	Total Capital expressed as a percentage of RWA.
TSR	Total Shareholder Return
VaR	Value-at-Risk

Disclaimer

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Unless otherwise specified all information is at 30 September 2022.

Although Pillar 3 disclosures are intended to provide transparent disclosures on a common basis the information contained in this document may not be directly comparable with other banks. This may be due to a number of factors such as:

- The mix of business exposures between banks.
- Pillar 2 capital requirements are excluded from this disclosure but play a major role in determining both the total capital requirements of the bank and any surplus capital available.
- Difference in implementation of Basel III framework i.e. APRA has introduced stricter requirements (APRA superequivalence).