

CREDIT OPINION

31 July 2023

Update



Send Your Feedback

RATINGS

Macquarie Group Limited

Domicile	Sydney, New South Wales, Australia
Long Term CRR	Not Assigned
Long Term Debt	A2
Type	Senior Unsecured - Fgn Curr
Outlook	Stable
Long Term Deposit	Not Assigned

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Francesco Mirenyi +61.2.9270.8176
VP-Sr Credit Officer
frank.mirenyi@moodyys.com

Tom Ogden +61.2.9270.1713
Associate Analyst
tom.ogden@moodyys.com

Patrick Winsbury +61.2.9270.8183
Associate Managing Director
patrick.winsbury@moodyys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

Macquarie Group Limited

Update following rating action

Summary

The long-term rating of [Macquarie Group Limited](#) (MGL, A2 stable) reflects its strong overall credit profile, characterised by very strong profitability resulting from its highly diversified business mix, very strong capital adequacy and a conservative liquidity profile. The strength of the group's capital and liquidity provides a counterbalance to the group's trading and investment banking activities which can raise non-lending asset risks. The rating also includes two notches of uplift to reflect our view that depositors and senior bondholders would benefit from systemic support, if needed.

Moody's also maintains ratings for the group's banking subsidiary, [Macquarie Bank Limited](#) (MBL, A1/A1 stable, a3), and MBL's non-extended licenced entities, [Macquarie International Finance Limited](#) (MIFL, A2 stable) and the group's non-banking businesses [Macquarie Financial Holdings Pty Limited](#) (A2 stable).

In particular we note:

- » MGL maintains a solid balance sheet position, with high levels of capital and very strong liquidity metrics. As at 31 March 2023, its banking subsidiary reported an APRA Basel III Common Equity Tier 1 (CET 1) ratio of 13.7%, and a quarterly daily average Liquidity Coverage Ratio of 214%. Management's focus on maintaining a resilient balance sheet is key to maintaining the firm's strong credit profile.
- » MGL's risk management is very strong with tight risk controls, cognizant of market, regulatory and reputational pressures both on an individual unit and on a portfolio basis. The well-embedded risk culture reflected in the firm's earnings performance are positive. Maintaining its disciplined risk culture remains a challenge as the group grows larger, or pursues further growth opportunities through acquisitions.
- » A high probability that MGL would receive systemic support in case of need, as a consequence of its significant presence in Australia's financial markets. We continue to view the regulatory and political framework in Australia to be favorable to the interests of senior bank creditors, in contrast to many developed markets. As a result, we incorporate two notches of systemic support uplift into the ratings of MBL, and, by extension, MGL.

Credit strengths

- » A diversified business profile, constrained by exposure to non-lending risks.
- » Conservative risk management is key to MGL's credit profile.
- » Capital levels remain supportive; future positioning is a key credit consideration.
- » Strong liquidity profile.

Credit challenges

- » Exposure to volatile capital markets businesses.
- » Complex and diverse nature of MGL's operations, requiring disciplined and proactive risk management.

Rating outlook

The outlook is stable for all the ratings of MGL and its subsidiaries.

Factors that could lead to an upgrade

Further positive rating pressure is unlikely in the near-term. An upgrade would depend on Macquarie's ability to sustain a strong and stable performance with capital levels and profitability consistently above peer averages while also maintaining its conservative liquidity profile.

Factors that could lead to a downgrade

Macquarie's ratings could be downgraded if (1) the funding intensity of the group's balance sheet continues to rise, (2) if earnings volatility leads to lower profitability with net income to tangible assets falling below 1.25% on a group consolidated basis, or (3) if residential mortgage lending problem loans rise materially.

As the ratings of MGL, MBL, MIFL and MFHPL incorporate the potential for systemic support, any signal from the regulator or government that suggests a less creditor-friendly stance on bank resolution could create downward pressure on the supported ratings. In particular any signs of a reduction in the degree of a support available to, or expectation of greater loss absorbency by, holding companies could lead to downward pressure on the ratings of MGL.

We view the Macquarie legal entities as closely intertwined, with a high degree of operational and financial linkages. However, should in the medium-to-long run there be a sharpening of the boundaries between the group's bank and non-bank entities, it could lead to greater divergence of their credit profiles and rating outcomes.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

Key indicators

Exhibit 1

Macquarie Group Limited (Consolidated Financials) [1]

	03-23 ²	03-22 ²	03-21 ²	03-20 ²	03-19 ²	CAGR/Avg. ³
Total Assets (AUD Million)	354,807.0	320,959.0	227,270.0	211,982.0	185,595.0	17.6 ⁴
Total Assets (USD Million)	237,632.7	241,023.5	173,100.1	129,743.9	131,837.1	15.9 ⁴
Tangible Common Equity (AUD Million)	28,042.7	23,874.8	18,684.8	17,122.7	14,846.3	17.2 ⁴
Tangible Common Equity (USD Million)	18,781.7	17,928.7	14,231.3	10,480.0	10,546.0	15.5 ⁴
Problem Loans / Gross Loans (%)	1.3	1.2	1.9	2.1	2.5	1.8 ⁵
Tangible Common Equity / Risk Weighted Assets (%)	25.8	20.0	21.8	19.3	20.5	21.5 ⁶
Problem Loans / (Tangible Common Equity + Loan Loss Reserve) (%)	6.9	6.7	10.2	11.0	12.6	9.5 ⁵
Net Interest Margin (%)	1.0	1.2	1.2	1.2	1.2	1.2 ⁵
PPI / Average RWA (%)	4.7	3.7	3.8	3.4	3.0	3.7 ⁶
Net Income / Tangible Assets (%)	1.5	1.6	1.3	1.3	1.6	1.5 ⁵
Cost / Income Ratio (%)	67.5	72.4	72.1	76.4	78.2	73.3 ⁵
Market Funds / Tangible Banking Assets (%)	37.9	44.8	36.0	40.5	39.9	39.8 ⁵
Liquid Banking Assets / Tangible Banking Assets (%)	37.7	38.0	37.2	31.1	33.5	35.5 ⁵
Gross Loans / Due to Customers (%)	118.7	133.5	126.1	141.1	139.4	131.8 ⁵

[1] All figures and ratios are adjusted using Moody's standard adjustments. [2] Basel III - fully loaded or transitional phase-in; IFRS. [3] May include rounding differences because of the scale of reported amounts. [4] Compound annual growth rate (%) based on the periods for the latest accounting regime. [5] Simple average of periods for the latest accounting regime. [6] Simple average of Basel III periods.

Sources: Moody's Investors Service and company filings

Profile

Macquarie Group Limited (MGL) is the non-operating holding company of the Macquarie Group. The group offers asset management; finance, banking, advisory services and risk and capital solutions globally. Its activities are carried out through four primary business lines: Macquarie Asset Management (MAM), Banking and Financial Services (BFS), Commodities and Global Markets (CGM) as well as Macquarie Capital (MacCap). As at 31 March 2023, the group reported consolidated assets of AUD 387.9 billion.

MGL was formed in 2007 when Macquarie Bank Limited (MBL, established as Hill Samuel Australia Limited in 1969, renamed MBL in 1985, and listed in 1996) was reorganized under a holding company structure. Since 2007, MGL's shares have been listed on the Australian Securities Exchange (Ticker: MQG).

Detailed credit considerations

A diversified business profile enables the bank to maintain strong profitability

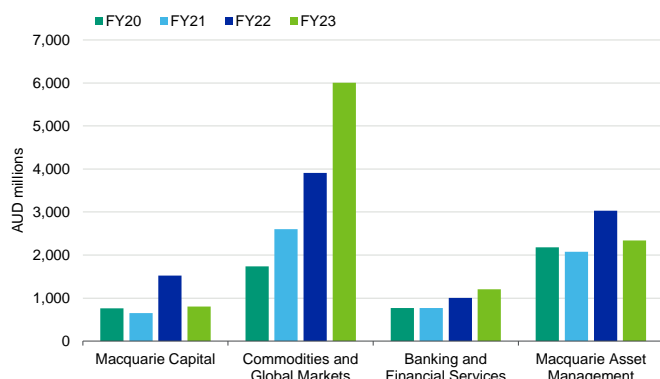
MGL benefits from a highly diverse business profile, by both product and geography, with a history of strong earnings contribution from its more stable lines of business, including asset management, asset finance and banking. This provides the group with a base of stable earnings, enabling it to better absorb earnings shocks that may arise from market volatility that would affect its markets facing businesses.

This has been demonstrated through its consistently strong profitability, with net income to tangible assets averaging 1.46% over the last five financial years. For the financial year ending 31 March 2023, the group reported statutory earnings of AUD5,182 million, representing a net income to tangible assets ratio of 1.47%.

Exhibit 2

Record level contributions from CGM underpins the strong result

Net profit contribution by operating group (ex Corporate Centre charges)

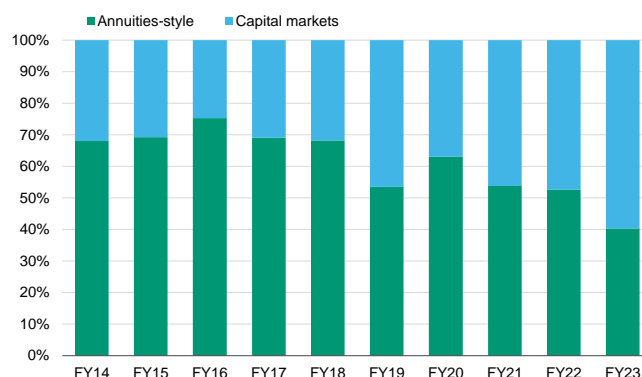


Source: Company disclosures, Moody's Investors Service

Exhibit 3

Annuity style businesses provides earnings stability

Net profit contribution (ex Corporate Centre charges)



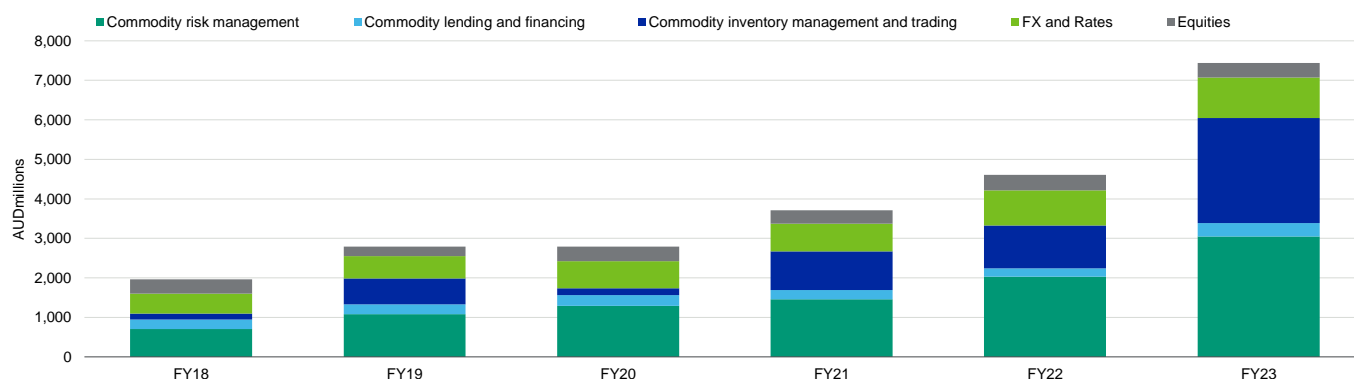
Source: Company disclosures, Moody's Investors Service

Significant volatility in commodity markets has driven record earnings in the group's commodity and global markets business in the last two years, which contributed 57% of the Group's net profit contribution in fiscal 2023. This increase in commodities related trading income is primarily driven by client hedging activity, reflected in its risk management products income, as well as demand and supply imbalances in within energy markets which is reflected in its inventory management and trading income. While the commodities business has benefited from market volatility, we expect the group's risk management products to be a more stable source of revenue given it's a client driven flow activity. Conversely, inventory management income will likely fluctuate in line with future dislocations in energy markets. As such, we expect the share of CGM earnings contribution to moderate in future periods.

Exhibit 4

Strong growth in commodities related products boosts CGM earnings

CGM revenue by product

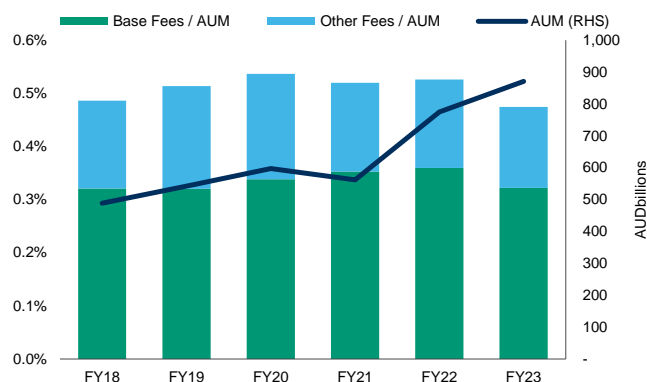


Source: Company disclosures, Moody's Investors Service

This earnings volatility in CGM balanced by the stability of the group's asset management business (MAM), which provides a strong source of stable, recurring revenues, generating high levels of base fee income. MAM's growing portfolio, fueled by both organic and inorganic growth, benefits from a mix of both public and private investments, with strong geographical diversification. Additionally, the group's large and growing Australian retail and commercial banking business supplements the group's stable revenue sources. Despite its smaller contribution the broader group, BFS has generated very strong franchise growth within Australia, and is now the clear 5th largest residential mortgage lender with a market share of 5% as of March 2023. We believe the growth in the asset management and retail and commercial banking operations will continue to provide a solid base stable revenue generation, counterbalancing the group's market driven revenue streams, which will enable the group to maintain a very strong profitability profile.

Exhibit 5

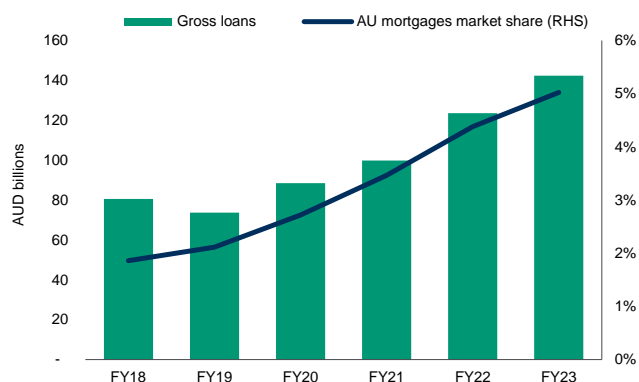
Focus on base fees underpins stable asset management earnings MAM's operating margin and assets under management (AUM)



Source: Company disclosures, Moody's Investors Service

Exhibit 6

Strong loan growth sees Macquarie grow to the 5th largest AU mortgage lender MBL's gross loans and domestic market share



Source: Company disclosures, Moody's Investors Service

Conservative risk management is key to MGL's credit profile

The benefits of MGL's global scope and diversification also raises the level of operational complexities and risk management challenges. In addition it exposes the firm to and risks associated with the evolution of the group's business model. As a result, we adjusted MBL's financial profile negatively by one notch.

We consider MGL's ability to maintain a conservative risk culture as being one of the firm's most difficult tasks. The diversity of MGL's business requires tight risk controls, cognizant of market, regulatory and reputational pressures both on an individual unit and on a portfolio basis. To date, management has been focused on containing its markets exposure through a combination of tight risk management oversight and an emphasis on less volatile streams of trading revenue, though this remains a key challenge as the share of earnings contribution from more volatile capital markets facing activities grows.

MGL has a well-embedded risk culture and the firm's track record and ability to limit earnings volatility are positive. Maintaining its disciplined risk culture remains a challenge as the group grows larger, or pursues further growth opportunities through acquisitions.

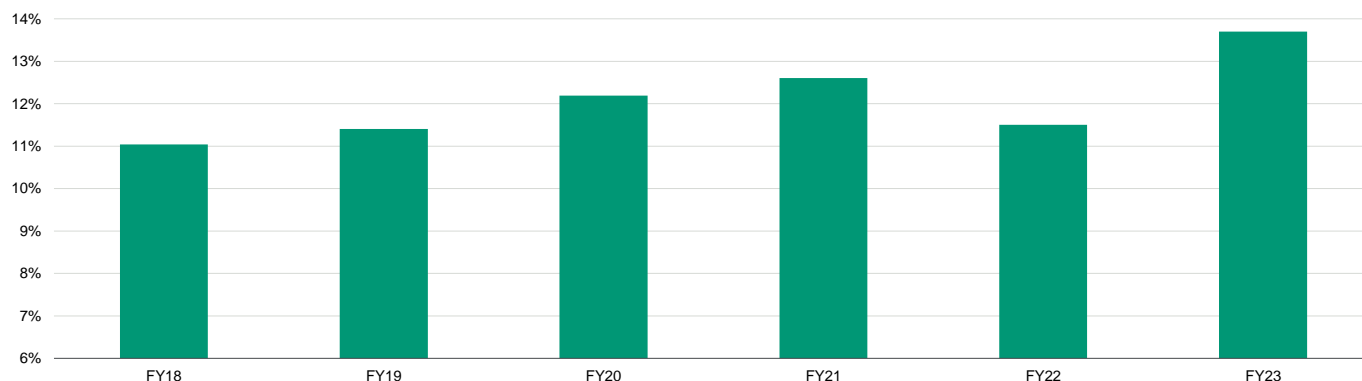
Capital levels remain strong, with the bank's capital management a relative strength

The firm's capital requirements are a combination of Basel III capital requirements for its banking operations contained within MBL and additional capital requirements in respect of its non-banking operations calculated on the basis of an economic capital adequacy model. The economic capital model is based on similar principles and models as the Basel III regulatory capital framework for banks, calculating capital requirements at a one year, 99.9% confidence level.

As at 31 March 2023, MBL, MGL's banking subsidiary, reported a Common Equity Tier 1 (CET1) ratio of 13.7%, calculated with APRA's capital methodology and a self-reported internationally "Harmonized" Basel III ratio of 18.4%, which reflect the more conservative risk-weighting of credit exposures under APRA's prudential framework.

For its non-bank operations, Macquarie holds additional capital calculated on the basis of an economic capital adequacy model. On a consolidated basis, MGL maintains surplus total capital above minimum requirements of AUD12.6 billion, including hybrids, as of March 2023. This surplus capital buffer is leveraged to support business growth, both organic and inorganic through the cycle, but also reflects Macquarie's conservative capital management planning.

Exhibit 7

Bank capitalization remains strong**Common Equity Tier 1 ratio of Macquarie Bank Limited**

Source: Company disclosures, Moody's Investors Service

Substantial liquidity buffers support the bank's wholesale funding reliant profile

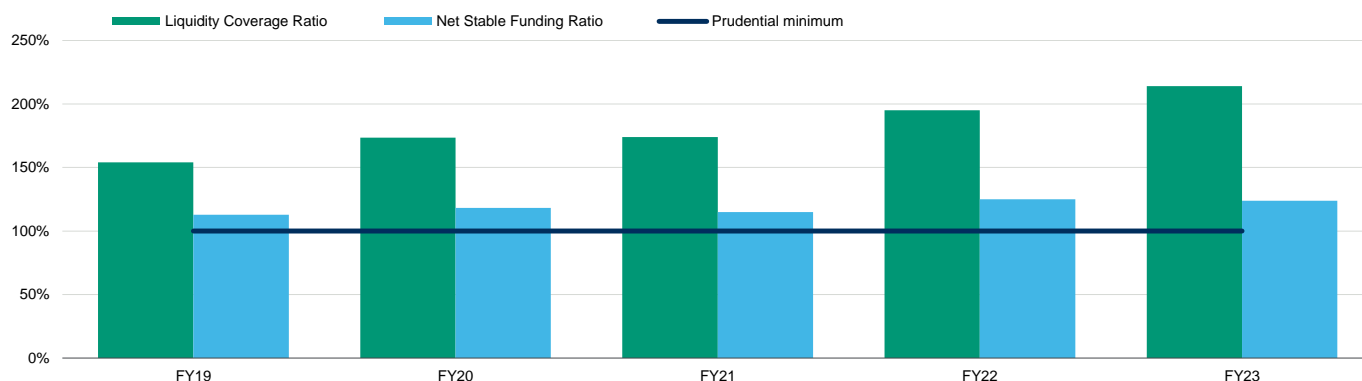
The group maintains a conservative liquidity policy, reflected through substantial liquidity buffers. This is balanced against the high funding needs of the group, underpinned by a relatively high, albeit with good term structure, market funds ratio.

As part of its liquidity management, Macquarie ensures that it is able to meet all of its liquidity obligations during a period of liquidity stress, defined as a twelve-month period with constrained access to funding markets for MBL, no access to funding markets for Macquarie Group Limited and with only a limited reduction in Macquarie's franchise businesses. The group's conservative liquidity management is underlined by MBL's very high average Liquidity Coverage Ratio of 214% for the three months to 31 March 2023. These considerations are reflected in MBL's very high 'a1' Liquid Resources score.

The group's external wholesale funding is chiefly raised by MBL, which has a high reliance on market funding, reflected by its market fund ratio of 38% as at 31 March 2023. However, its reliance on market funding has reduced recent years, with the bank focused on growing its deposit franchise to reduce reliance on wholesale funding markets. Its concerted push in retail banking, in addition to significant fiscal and monetary stimulus over as part of pandemic packages, has contributed to an average of 32% p.a. in the four years to March 2023. Resulting in the bank growing its market share from 3% at March 2019, to 5% at March 2023.

Furthermore, the group's funding profile is supported by the longer term structure in its non-bank funding profile reflected in majority of the non-bank funding maturing in greater than 5 years.

Exhibit 8

Macquarie maintains strong liquidity and funding metrics**Prudential liquidity ratios**

Source: Company disclosures, Moody's Investors Service

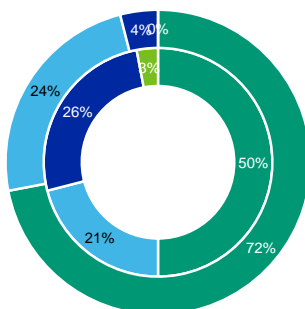
Macquarie's asset risk profile is improving as its share of lower-risk residential mortgages grows

The group's risk profile has continued to improve with its strategy of growing its retail bank by focussing on lower-risk residential mortgage lending. This has seen the bank's share of the Australian mortgage market has risen substantially, from 1.8% at the end of 2017 to 5% as of March 2023, representing almost three quarters of its total loan book. In turn, this has contributed an improvement in the bank's share of problem loans ratio, falling from 1.8% at March 2019, to 0.8% at March 2023.

Exhibit 9

Residential mortgages have grown significantly MBL's loan book composition

■ Home loans ■ Corporate, commercial and other lending ■ Asset financing ■ Other

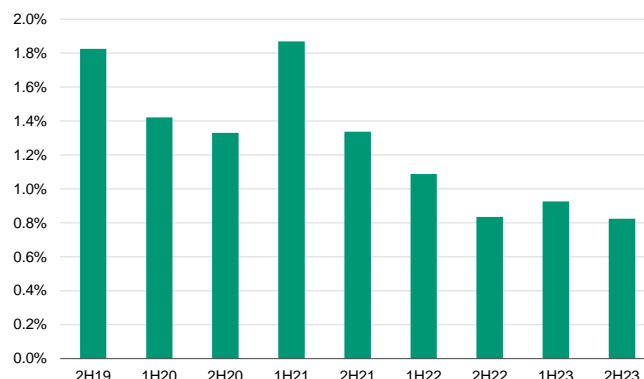


Inner ring is 2017, outer ring is March 2023

Source: Company disclosures, Moody's Investors Service

Exhibit 10

Asset quality has improved despite a challenging outlook Problem loans ratio



Source: Company disclosures, Moody's Investors Service

Non-lending risks are well-managed through the group's adherence to strict market limits, which constrains Macquarie's aggregate level of risk arising from its managed fund holdings and equity positions. These limits are informed by strong firm-wide stress testing.

An increase in group-wide net credit impairment charges from AUD250 billion for fiscal 2022 to AUD388 billion for fiscal 2023 are largely reflective of the deterioration in economic outlook, as a result of surging inflation and rising rates, which we expect to lead to a small increase in non-performing loans over the next 12 months. That said we believe the bank's strong capital position and substantial loan loss provisions will provide a buffer against an increase in expected credit losses, with the bank reporting expected credit loss allowance for loan assets of AUD624 million for full-year 2023.

MGL's rating is supported by Australia's strong operating environment

Australia's [Strong+](#) macro profile reflects the country's robust economic strength, institutions and governance strength, and low susceptibility to event risk. Our baseline scenario projects real GDP growth will slow to 1.9% in 2023 as higher interest rates constrain growth, before improving to 2.3% in 2024.

The Australian economy has continued to perform strongly after a period of fiscal and monetary stimulus provided to combat the dampening economic effects of the pandemic-related health measures. Very tight labor markets and strong economic growth, boosted by strong household consumption and high levels of public and private investment, have resulted in the unemployment rate falling to a very low 3.5% as of December 2022. Rising interest rates, in response to high inflation, are likely to temper growth in 2023. High levels of household debt, combined with an increase in debt burden as interest rates rise, are key economic vulnerabilities. Household debt relative to income remained high at 187.8% as of December 2022, and rising interest rates led to national average house prices falling 9.1% from April 2022 to February 2023, although they have since stabilized and increased modestly from the February trough. Further improvement in banks' asset quality is unlikely as rising interest rates could reduce buffers built by borrowers or put some borrowers under financial pressure. However, low unemployment, and low LVRs on home loans and small business loans, which are typically secured by residential properties, should provide buffers against asset-quality risk.

Australian banks' very strong pricing power has historically been supported by the high level of concentration in the banking sector. Net interest margins are expanding as interest rates rise; however, funding costs will rise as banks begin to repay cheap funding provided by the central bank from 2023 onward. This could constrain further net interest margin gains in 2023.

Australia's structural reliance on external financing remains a key vulnerability. However, Australian banks have been extending the term structure of their wholesale market funding for several years and pre-funding upcoming maturities well in advance.

Macquarie Bank's gross credit exposures are domiciled 72% in Australia, 14% in EMEA, 12% in Americas and 3% in Asia Pacific. These exposures lead to a weighted average Macro Profile of Strong+.

Support and structural considerations

Government Support

We believe the probability that MGL would benefit from systemic support in case of need to be high. In contrast to many crisis-hit economies, we view the regulatory and political framework in Australia to continue to be favorable to bank creditor interests. We also note that, to date, the regulatory focus in Australia has been heavily on the preservation of systemic stability and that the Macquarie group as a whole has a significant presence in Australia's financial markets.

Within the group, we believe that the chief beneficiary of support would likely be MBL, and accordingly we incorporate two notches of systemic support in its A1 rating. We note that during the global financial crisis in 2008-10, only MBL was eligible under the government's guarantee programme for debt and large deposits.

Nevertheless, considering the high degree of operational and financial integration between MGL and its operating subsidiaries, we view their credit profiles to be closely linked. In particular, although there is a global regulatory trend towards "pre-positioning", such as requiring separate, or easily separable, IT systems for different legal entities; we view the probability that, in a crisis, the Macquarie group could swiftly be unbundled to be relatively low and, consequently, we believe it increases the probability that the group would be supported as a whole.

MGL'S relationship to the ratings of its operating subsidiaries

MGL's A2 rating is positioned one notch below the A1 rating of MBL. MBL dominates the group both in terms of assets and earnings. MGL's rating is positioned in line with Moody's usual notching practice for holding companies, which recognizes the structural subordination of MGL's creditors to those of its principal operating subsidiary.

We assign the following ratings to MGL's principal operating subsidiaries:

- » Macquarie Bank Limited has a baseline credit assessment of a3. The bank's A1 / P-1 for deposit and debt ratings incorporate two notches of uplift for potential systemic support.
- » Macquarie International Finance Limited is a subsidiary of the bank, operating both bank and non-bank businesses, including offshore entities of the CGM group and the group's domestic wealth management business. MIFL's issuer rating incorporates uplift for systemic support as a result of its close integration with the bank.
- » Macquarie Financial Holdings Pty Limited is an intermediate holding company for some of the group's non-bank's entities. MFHPL's operations are closely interlinked: one of the group's four business lines cross over the boundaries between MBL and MFHPL. MFHPL's issuer rating incorporates uplift for systemic support as a result of its close integration with the bank.

We continue to view the Macquarie businesses as closely intertwined, with a high degree of operational and financial linkages. However, should in the medium-to-long run the transfer serve to sharpen the boundaries between the group's bank and non-bank entities, it could lead to greater divergence of their credit profiles and rating outcomes.

Ratings

Exhibit 11

Category	Moody's Rating
MACQUARIE GROUP LIMITED	
Outlook	Stable
Issuer Rating	A2
Senior Unsecured	A2
ST Issuer Rating	P-1
Other Short Term	(P)P-1
MACQUARIE FINANCIAL HOLDINGS PTY LIMITED	
Outlook	Stable
Issuer Rating	A2
ST Issuer Rating	P-1
MACQUARIE BANK LIMITED	
Outlook	Stable
Counterparty Risk Rating	Aa3/P-1
Bank Deposits	A1/P-1
Baseline Credit Assessment	a3
Adjusted Baseline Credit Assessment	a3
Counterparty Risk Assessment	Aa3(cr)/P-1(cr)
Issuer Rating	A1
Senior Unsecured	A1
Subordinate	Baa2 (hyb)
Commercial Paper	P-1
Other Short Term	(P)P-1
MACQUARIE BANK LIMITED, LONDON BRANCH	
Outlook	Stable
Counterparty Risk Rating	Aa3/P-1
Deposit Note/CD Program	--/P-1
Counterparty Risk Assessment	Aa3(cr)/P-1(cr)
Senior Unsecured	A1
Pref. Stock Non-cumulative	Baa3 (hyb)
Commercial Paper	P-1
MACQUARIE BANK LIMITED, SINGAPORE BRANCH	
Counterparty Risk Rating	Aa3/P-1
Counterparty Risk Assessment	Aa3(cr)/P-1(cr)
Senior Unsecured MTN	(P)A1
MACQUARIE INTERNATIONAL FINANCE LIMITED	
Outlook	Stable
Issuer Rating	A2
Commercial Paper	P-1

Source: Moody's Investors Service

© 2023 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved. CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$5,000,000. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY100,000 to approximately JPY550,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

REPORT NUMBER

1336406

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454