

# Risk Management Report

## Introduction – Macquarie’s risk management framework

Macquarie Group’s (Macquarie) risk management principles have remained stable over 30 years and have served us well over the course of the global financial crisis.

The key aspects of Macquarie’s risk management approach are:

- **Ownership of risk at the business level -**  
Business heads are responsible for identifying risks within their businesses and ensuring that they are managed appropriately. Before taking decisions, clear analysis of the risks is sought to ensure risks taken are consistent with the risk appetite and strategy of Macquarie. Business ownership of risk is an essential element in understanding and controlling risk
- **Understanding worst case outcomes -**  
Macquarie’s risk management approach is based on examining the consequences of worst case outcomes and determining whether risks can be tolerated. This approach is adopted for all material risk types and is often achieved by stress testing. In particular, Macquarie’s market risk framework is based primarily on the application of stress tests, rather than statistical models. This approach was tested over the recent past and the shocks observed in the markets were generally within Macquarie’s stress scenarios, resulting in very few worst case loss scenarios being exceeded. Whilst Macquarie operates a number of sophisticated quantitative risk management processes, the foundation of its risk management approach is the informed consideration of both quantitative and qualitative inputs by highly experienced professionals
- **Requirement for an independent signoff by risk management -** Macquarie places significant importance on having a strong independent Risk Management Group (RMG) which is charged with signing off all material risk acceptance decisions. It is essential RMG has the capability to do this effectively and hence RMG has invested in recruiting skilled professionals, many with previous trading or investment banking experience. For all material proposals, RMG’s opinion is sought at an early stage in the decision making process and independent input from RMG on risk and return is included in the approval document submitted to senior management.

Macquarie’s overall appetite for risk is expressed by setting a Global Risk Limit designed to ensure that in a prolonged and severe downturn, losses will be covered by earnings and surplus capital. In line with this, during the recent global financial crisis, write-downs were more than covered by the earnings generated by Macquarie.

During the past year, Macquarie’s operating groups and divisions took advantage of global growth and transaction opportunities arising from generally improved market conditions. In response to the expansion, RMG increased its staff numbers in relevant offices globally to ensure appropriate resourcing and effective risk oversight. RMG has adapted its risk limits structure to effectively support the evolving business activities. In a year where there has been widespread discussion on regulatory frameworks for financial institutions, RMG has also been responsible for coordinating Macquarie’s evaluation of these developments and its response.

### Focus on clients and the long term

Macquarie recognises that an effective risk management framework involves more than just robust controls. Macquarie’s risk culture, which is less tangible, is equally as important and at Macquarie the risk culture remains strong and controls are respected by staff. Key aspects supporting this culture are Macquarie’s focus on clients and the long term.

Macquarie’s businesses are client based. Therefore, across Macquarie, greater emphasis is placed on fostering long-term relationships with our clients and building franchise businesses as opposed to short-term profits from proprietary trading.

Furthermore, Macquarie’s remuneration policy for senior management encourages a long-term view in decision making. It discourages excessive risk taking as incentives are aligned with the long-term profitability of the firm through retention of remuneration and equity participation.

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## Risk governance structure

Risk management is sponsored by the Macquarie Group Board (the Board), and is a top priority for senior managers, starting with the Managing Director and Chief Executive Officer. The Head of RMG, as Macquarie's Chief Risk Officer, is a member of Macquarie's Executive Committee and reports directly to the Managing Director and Chief Executive Officer. The Head of RMG has a secondary reporting line to the Board Risk Committee which approves the replacement, appointment, reassignment or dismissal of the Head of RMG.

The Board oversees the risk appetite and profile of Macquarie and ensures that business developments are consistent with the risk appetite and goals of Macquarie.

All Board members are members of the **Board Risk Committee**. The Board Risk Committee has responsibility for ensuring an appropriate risk management framework – including the establishment of policies for the control of risk – is in place. The Board Risk Committee receives information on the risk profile of Macquarie, breaches of the policy framework and external developments which may have some impact on the effectiveness of the risk management framework. It also approves significant changes to risk management policies and framework and approves Macquarie's risk appetite. The Board Risk Committee is assisted by the following Committees:

- The **Board Audit and Compliance Committee (BACC)** has responsibility for monitoring compliance with the risk management framework approved by the Board Risk Committee for internal control and compliance matters. In this role, the Board Audit and Compliance Committee monitors the effectiveness of the Internal Audit, Compliance and Credit Assurance functions
- The **Board Remuneration Committee** liaises with the Board Risk Committee and the Chief Risk Officer to ensure there is a properly integrated approach to remuneration that appropriately reflects risk
- The **Board Corporate Governance Committee (BCGC)** reviews Macquarie's corporate governance arrangements.

Committees exist at the executive management level to ensure the necessary elements of expertise are focused on specific risk areas. The Macquarie and Macquarie Bank Limited (Macquarie Bank) **Executive Committees** and the Macquarie **Operations Review Committee** focus on strategic issues, operational issues, material transactions and review the performance of Macquarie on a monthly basis. Beneath this level, other committees exist where senior specialists focus on specific risks as appropriate (e.g. Market Risk Committee and Asset and Liability Committee).

## Risk Management Group

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

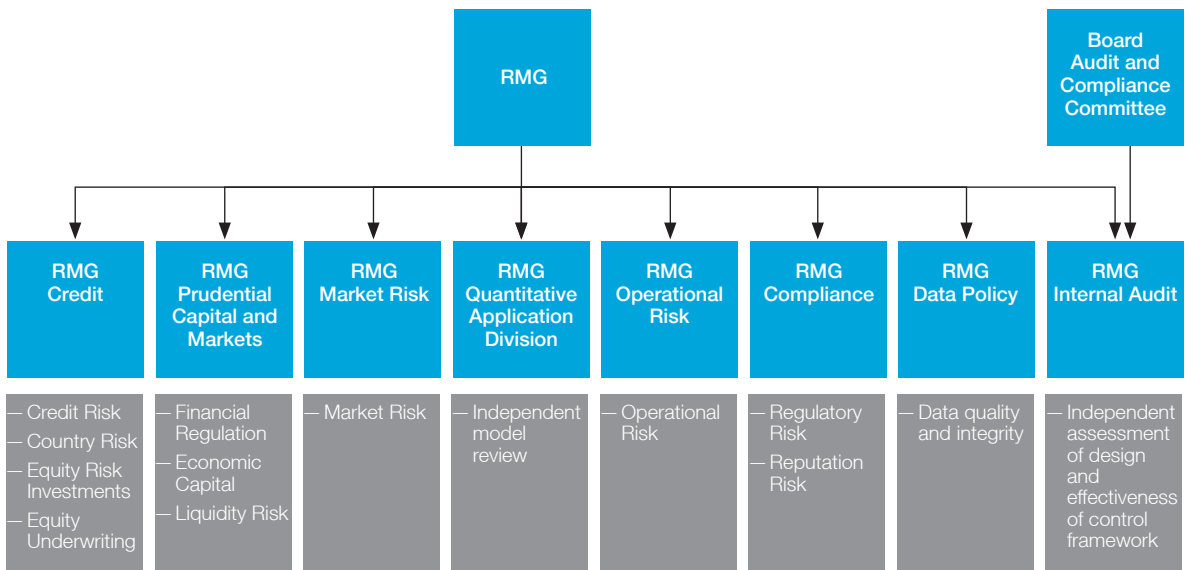
- 1 Independence** – RMG, which is responsible for assessing and monitoring risks across Macquarie, is independent of the operating areas of Macquarie and the Head of RMG, as Macquarie's Chief Risk Officer, reports directly to the Managing Director and Chief Executive Officer with a secondary reporting line to the Board Risk Committee. RMG approval is required for all material risk acceptance decisions
- 2 Centralised prudential management** – RMG's responsibility covers the whole of Macquarie. Therefore, it can assess risks from a Macquarie-wide perspective and provide a consistent approach across all operating areas
- 3 Approval of all new business activities** – Operating areas cannot undertake new businesses or activities, offer new products, or enter new markets without first consulting RMG. RMG reviews and assesses risk and sets prudential limits. Where appropriate, these limits are approved by the Executive Committee and the Board
- 4 Continuous assessment** – RMG continually reviews risks to account for changes in market circumstances and developments within Macquarie's operating areas
- 5 Frequent monitoring** – Centralised systems exist to allow RMG to monitor credit and market risks daily. RMG staff liaise closely with operating and support divisions.

# Risk Management Report

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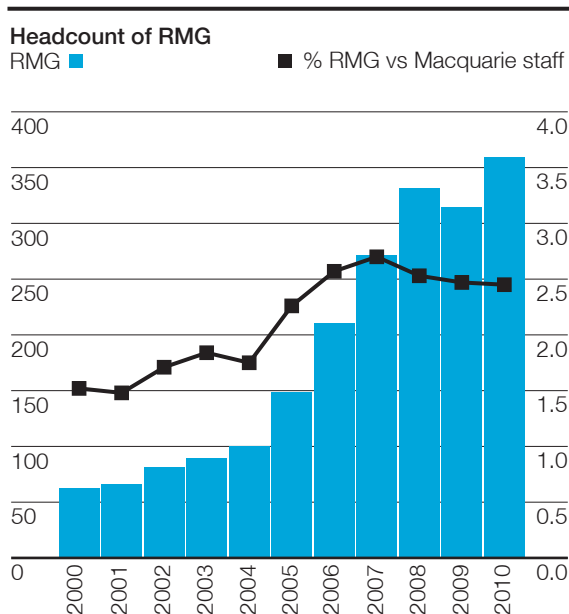
### RMG structure and resourcing

While RMG is structured into specialist teams as detailed below, we seek to employ an integrated approach to risk analysis and management across risk classes.



Effective risk management is not only a function of disciplined processes but also of imaginative analysis by talented individuals. RMG attracts high calibre candidates. RMG recruits experienced individuals both from within Macquarie and externally and is a source of talent for Macquarie’s business units when recruiting.

Growth in RMG has been consistent with overall Macquarie Group growth in previous years. Over the past year, RMG staff numbers increased by 14 per cent to 359 whilst headcount Macquarie-wide increased by 15 per cent.



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Forty one per cent of total RMG staff (as at 31 March 2010) were based outside of Australia to ensure that, on a global basis, risks are managed in a controlled manner. All offices are subject to the same risk management controls and standards. This is supported by regular staff communication and visits between offices.

Consistent with the concept of business units owning risk, specific day-to-day operations are more appropriately discharged and embedded within the business units. The majority of operational risk and compliance functions are discharged within the business units. Divisional compliance staff ensure that day-to-day legal and compliance obligations are discharged at the business level whilst Business Operational Risk Managers (BORMs) are appointed by the Group Heads to be their representative on operational risk management matters, and act as their delegate in ensuring that operational risk is addressed appropriately within their Division. As at 31 March 2010, there were more than 450 staff performing such functions within the business units. RMG provides a risk oversight role in relation to these staff members, ensuring appropriate standards are adhered to. These divisional staff members have functional reporting lines to the RMG divisional heads for Operational Risk and Compliance.

#### **New business and acquisitions**

The level of innovation across Macquarie is high. Therefore, it is important that all elements of new business initiatives are well understood before commencement.

All new business initiatives must be signed off by RMG prior to commencement. The new business approval process is a formal process whereby all relevant risks (e.g. market, credit, legal, compliance, taxation, accounting, operational and systems issues) are reviewed, to ensure that the transaction or operation can be managed properly and will not create unknown or unwanted risks for Macquarie in the future. The approval of RMG, Finance Division, Taxation Division and other stakeholders within Macquarie is obtained prior to commencement.

For all material transactions, independent input from RMG on the risk and return of the transaction is included in the approval document submitted to senior management.

The Operational Risk function within RMG oversees the new product and business approval process and ensures the necessary approvals are obtained.

Macquarie undertook a number of acquisitions over the course of the 2010 financial year and the process described above has been applied in each case. While these acquisitions were incremental rather than transformational, Macquarie has a history of being able to successfully integrate major businesses.

RMG Internal Audit (IAD) performs an audit of the operations of any significant new businesses based on an assessment of the associated risk faced by Macquarie. The audit typically takes place within six to twelve months following acquisition or launch and includes confirmation that operations are in line with the approved new product approval document.

#### **Risk management and monitoring**

The risk management framework incorporates active management and monitoring of market, credit, equity, liquidity, operational, compliance, legal and regulatory risks. It is designed to ensure policies and procedures are in place to manage the risks arising within each business unit. Application varies in detail from one part of Macquarie to another, however, the same risk management framework applies across all business activities without exception.

#### **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 Capital
- principal exposures taken by Macquarie Capital, including direct investments in entities external to Macquarie
- property equity, including property trusts and direct property investments
- lease residuals and
- other equity, including investments in resource companies.

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### Equity Risk Limit

All of the above positions are subject to an aggregate Equity Risk Limit (ERL). The ERL is set by the Board with reference to the Risk Appetite Test which is described further in the economic capital section. In setting the limit, consideration is also given to the level of earnings, capital and market conditions. The limit is reviewed on a semi-annual basis by RMG and the results of the review are reported to the Executive Committee and the Board.

Concentrations within the equity portfolio are managed by a number of additional limits approved by the Executive Committee and/or the Board. These include limits on:

- property equity investments
- investments in the resources sector
- lease residuals (by type of leased asset)
- co-investments and other assets of Macquarie Capital.

### Transaction review and approval process

The business unit executing the transaction is responsible for due diligence and risk analysis of each equity investment. For material deals, RMG undertakes a shadow due diligence and a comprehensive analysis of all risks and potential losses associated with the acquisition such as:

- market and credit risks
- regulatory, capital, liquidity and compliance requirements
- business, operational and reputation risks.

All material equity risk positions are subject to approval by RMG and by the Managing Director and Chief Executive Officer, Executive Committee and the Board, depending on the size and nature of the risk. RMG ensures that the transaction is correctly represented to the relevant approvers.

### Credit risk

Credit risk is the risk of financial loss as a result of failure by a client or counterparty to meet its contractual obligations. Credit risk arises from both lending and trading activities. In the case of trading activity, credit risk reflects the possibility that the trading counterparty will not be in a position to complete the contract once the settlement becomes due. In that situation, the credit exposure is a function of the movement of prices over the period of the contract.

The credit team within RMG maintains a comprehensive and robust framework for the identification, analysis and monitoring of credit risks arising within each business. Key aspects of this framework are discussed below.

### Analysis and approval of exposures

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

Business units are assigned modest levels of credit discretions. Credit exposures above those levels are assessed independently by RMG and approved by senior Macquarie and RMG staff, the Managing Director and Chief Executive Officer and the Boards 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 credit exposures are subject to annual review.

### Independent analysis

The RMG credit team provides independent analysis of credit risk exposures. The teams work closely with the business units to identify the risks inherent in Macquarie's businesses, and apply analysis appropriate to the level and nature of risks.

Credit risk analysis is focused on ensuring that risks have been fully identified and that the downside risk is properly understood so that a balanced assessment can be made of the worst case outcome against the expected rewards. Downside analysis includes stress testing and scenario analysis.

Macquarie does not rely on quantitative models to assess credit risk but uses fundamental credit analysis to make credit risk acceptance decisions.

### Macquarie Group ratings

Macquarie relies on its own independent assessment of credit risk. Third party credit assessments are considered as an input into the analysis but are not considered to be a sufficient basis for decision making.

Macquarie has established a proprietary internal credit rating framework to assess counterparty credit risk. Macquarie Group (MG) ratings are used to estimate the likelihood of the rated entity defaulting on financial obligations. The MG ratings system ensures a consistent assessment of borrower and transaction characteristics across Macquarie and provides the mechanism for meaningful differentiation of credit risk.

All customer limits and exposures are allocated an MG rating on a 1–13 scale which broadly correspond with Standard & Poors (S&P) and Moody's Investor Services (Moody's) credit ratings. Each MG rating is assigned a Probability of Default (PD) estimate. Credit limits and exposures are also allocated a Loss Given Default (LGD) ratio reflecting the estimated economic loss in the event of default occurring.

Macquarie has an independent Credit Assurance function within RMG to provide assurance over the effectiveness of credit risk management throughout Macquarie. The role of the Credit Assurance function is to liaise closely with all business units to ensure credit risks are understood and properly managed, ensure credit discretions are being utilised appropriately and credit ratings are correctly attributed.

#### Measuring and monitoring exposures

Credit exposures for loans are evaluated as the full face value.

Credit exposures for derivatives are a function of potential market movements and are assessed by assuming that low probability (i.e. worst case) stressed market movements occur and that Macquarie has to go to the market to replace a defaulting deal at the worst possible time during the term of the transaction. The level of stress that is applied to individual markets is reviewed and approved by RMG at least every two years or when volatility or market conditions dictate.

Where trading gives rise to settlement risk, this exposure is assessed as the full face value of the settlement amount.

All credit exposures are monitored regularly against limits. Credit exposures which fluctuate through time are monitored daily. These include off-balance sheet exposures such as swaps, forward contracts and options, which are assessed using sophisticated valuation techniques.

To mitigate credit risk, Macquarie makes use of margining and other forms of collateral or credit enhancement techniques (including guarantees and letters of credit, the purchase of credit default swaps and mortgage insurance) where appropriate.

On and off-balance sheet exposures are considered together and treated identically for approval, monitoring and reporting purposes.

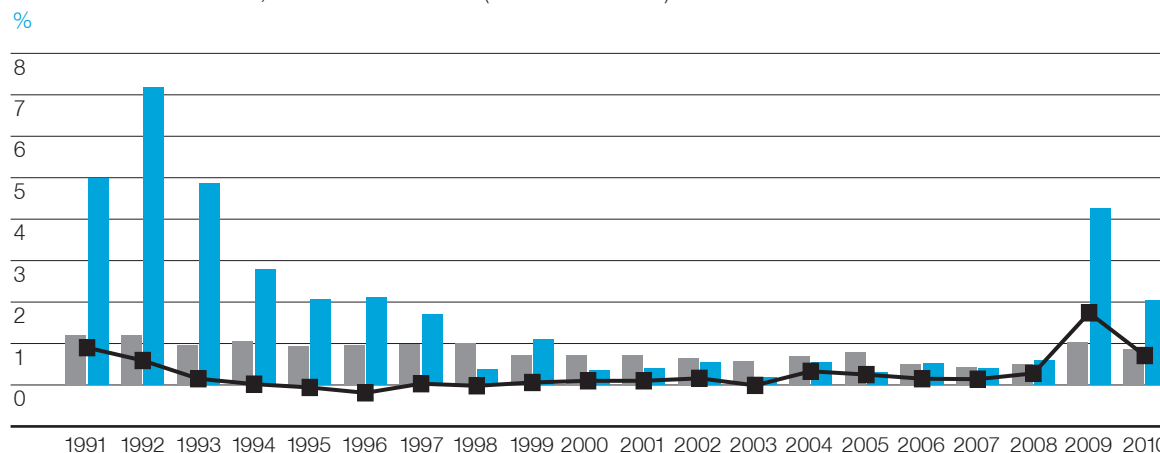
A review of the credit portfolio analysing credit concentrations by counterparty, country, risk type, industry and credit quality is carried out and reported to Macquarie's Executive Committee quarterly and Board semi-annually. Policies are in place to manage credit risk and avoid unacceptable concentrations either to any economic sector or to an individual counterparty.

#### Loan impairment review

All loan assets are subject to recurring review and assessment for possible impairment. Provisions for loan losses are based on an incurred loss model, which recognises a provision where there is objective evidence of impairment at each balance date, and is calculated based on the discounted values of expected future cash flows.

#### Ratio of Provisions and Impaired Assets to Loans, Advances and Leases

Collective provision to loans, advances and leases (Balance sheet) ■  
 Net impaired assets to loans, advances and leases (Balance sheet) ■  
 Net credit losses to loans, advances and leases (Income statement) ■



Note: Loan assets excludes securitisations, special purpose vehicles (including mortgage and lease securitisation vehicles) and segregated futures funds. Net impaired assets and net credit losses excludes investment securities. Please refer to note 11 of the Financial Report for further information on impaired assets

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Specific provisions are recognised where specific impairment is identified. The rest of the loans are placed into pools of assets with similar risk profiles and collectively assessed for losses that have been incurred but not yet identified.

There has been a marked reduction in impaired loans compared to last year's peak. However, this partly reflects the foreclosure of US real estate loans and the consequent strategy to hold and lease US-based residential properties. Improvements have also resulted from strategies which are in place to manage and reduce problem exposures with minimal losses.

Macquarie took advantage of a range of credit opportunities over the past year which has resulted in an increase of 21 per cent in total loan assets.<sup>1</sup>

### Country risk

The Country Risk Policy guides the management of Macquarie's country risk. Countries are grouped into categories based on the country's risk profile. Before any exposure is taken in a country which is considered to be higher risk, a full review of the economic, political and operating environment is undertaken to determine the level of exposure that is considered to be acceptable. Where appropriate the country risk is covered by political risk insurance.

### Operational risk

Macquarie defines operational risk as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Macquarie has established procedures and controls to manage market, credit, reputation and strategic risks. The potential for failure or inadequacy in these procedures and controls would be classified as an operational risk. Operational risk failures could lead to reputation damage, financial loss or regulatory consequences.

RMG is responsible for ensuring an appropriate framework exists to identify, assess and manage operational risk and that resources are available to support it. It is also responsible for Macquarie's operational risk capital measurement methodology.

In general, changes in Macquarie's operational risk profile are the net result of greater innovation and growth. This is offset by constant gradual adaptation and development of the control environment to accommodate new risks.

### Operational Risk Management Framework

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

- risk identification, analysis and acceptance
- execution and monitoring of risk management practices
- reporting and escalation of risk information on a routine and exception basis.

Businesses carry out elements of the ORMF in a manner that is tailored to their specific operational risk profile. However, to ensure consistency and minimum standards the framework includes 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 semi-annual operational risk self assessment (ORSA) process to identify operational risks at the business level, assess controls and develop action plans to address deficiencies
- recording of operational risk incidents into 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 which require a consistent approach and minimum standards on specific operational risk matters
- embedded operational risk representatives in business units who act as delegates of the business manager. These representatives ensure operational risks are addressed appropriately and that the ORMF is executed within their area.

<sup>1</sup> Excludes securitisations, special purpose vehicles and segregated futures funds.

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### Macquarie's operational risk capital framework

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

- an annual scenario approach for modelling operational risk losses and to determine operational risk capital
- a quarterly scorecard analysis which is used to update operational risk capital between scenario analyses and as a basis for updating the allocation of capital to businesses.

Operational risk scenarios identify key risks that, while very low in probability, may result in very high impact losses. In identifying the potential for such losses consideration is given to individual statistical distribution for each scenario, external loss data, internal loss data, risk and control factors determined by the operational risk self assessments, and the contribution of expert opinion from businesses. Results are then modelled to determine the operational risk component of regulatory capital required to be held by Macquarie at the 99.9th percentile level. Monte Carlo techniques are used to aggregate these individual distributions to determine a Macquarie-wide operational risk loss distribution. Over time operational risk capital changes to reflect:

- new business activity, businesses growth and significant change in activity which may require new or increased loss scenarios and/or an increased loss probability
- as business changes bed down and the control environment continues to mature, the probability of loss decreases, reducing the capital requirement
- changes in the external environment such as new regulations or movements in the economic cycle can also influence scenario estimates.

Macquarie allocates capital to individual businesses. The capital allocation effectively rewards positive risk behaviour, and penalises increased risks. This is done using scorecards which measure changes in a number of key factors such as the size and complexity of the business, risk and control assessments, incident and exception management and governance.

The quarterly change in the sum of divisional capital is also used as an estimate to update the Macquarie capital requirement between annual assessments.

### Market risk

Market risk is the exposure to adverse changes in the value of Macquarie's trading portfolios as a result of changes in market prices or volatility. Macquarie is exposed to the following risks in each of the major markets in which it trades:

- foreign exchange and bullion: changes in spot and forward exchange rates and bullion prices and the volatility of exchange rates and bullion prices
- interest rates and debt securities: changes in the level, shape and volatility of yield curves, the basis between different debt securities and derivatives and credit margins
- equities: changes in the price and volatility of individual equities, equity baskets and equity indices, including the risks arising from equity underwriting activity
- commodities and energy: changes in the price and volatility of base metals, agricultural commodities and energy products

and to the correlation of market prices and rates within and across markets.

It is recognised that 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 daily basis.

### Trading market risk

RMG monitors positions within Macquarie according to a limit structure which sets limits for all exposures in all markets. Limits are applied at a granular level to individual trading desks and also, through increasing levels of aggregation to Divisions and, ultimately, the Group. 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.

Despite historically high volatility of global markets over the course of the downturn, the shocks stipulated in market risk scenarios for price, volatility and business specific risks were typically greater than observed daily movements.



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Limits are approved by senior management with appropriate authority for the size and nature of the risk, and remain the ultimate responsibility of the business. Macquarie adheres to a 'no limit, no dealing' policy. If a product or position has not been authorised by RMG, then it cannot be traded. Material breaches of the approved limit structure are communicated monthly to the Macquarie Bank and Macquarie Group 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
- **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 that determines the potential loss in trading value at both a business and aggregate level.

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 specialist Quantitative Applications Division within RMG.

### Aggregate measures of market risk

Aggregate market risk is constrained by two risk measures, 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 utilises the contingent loss approach to capture simultaneous, worst case movements across all major markets. Whereas MEL focusses on extreme price movements, VaR focusses on unexceptional changes in price so that it does not account for losses that could occur beyond the 99 per cent level of confidence. For this reason, stress testing 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.

### Macro-Economic-Linkages

MEL calculates Macquarie's total market risk exposure to global market stress test scenarios extrapolated from historical crisis events and global market correlations. Each stress test scenario includes a primary shock to one of equity, foreign exchange, energy or interest rate markets as well as cross-market effects in corporate margins, metals and commodities. MEL is Macquarie's preferred internal measure of aggregate market risk because of the severity of the shocks applied and the ability for scenarios to develop with changing market dynamics. MEL is monitored and reported to senior management daily and regularly reviewed by RMG to ensure the measure remains appropriate for changing market conditions and the risks to which Macquarie is exposed.

The 'Market Contagion' scenario, typically the most conservative of the MEL stress test scenarios, accounts for all the significant markets to which Macquarie is exposed. The assumptions in this scenario are considerably more severe than the conditions that have prevailed throughout the Global Financial Crisis. The 'Market Contagion' scenario measures the impact of an instantaneous equity market crash of 15 to 30 per cent as well as additional shocks to foreign exchange, metals, interest rate, energy, agricultural commodity and credit markets. Macquarie's exposure to the 'Market Contagion' stress test scenario remained low throughout the financial year. The average exposure to the MEL stress test scenario represents less than two per cent of total equity.

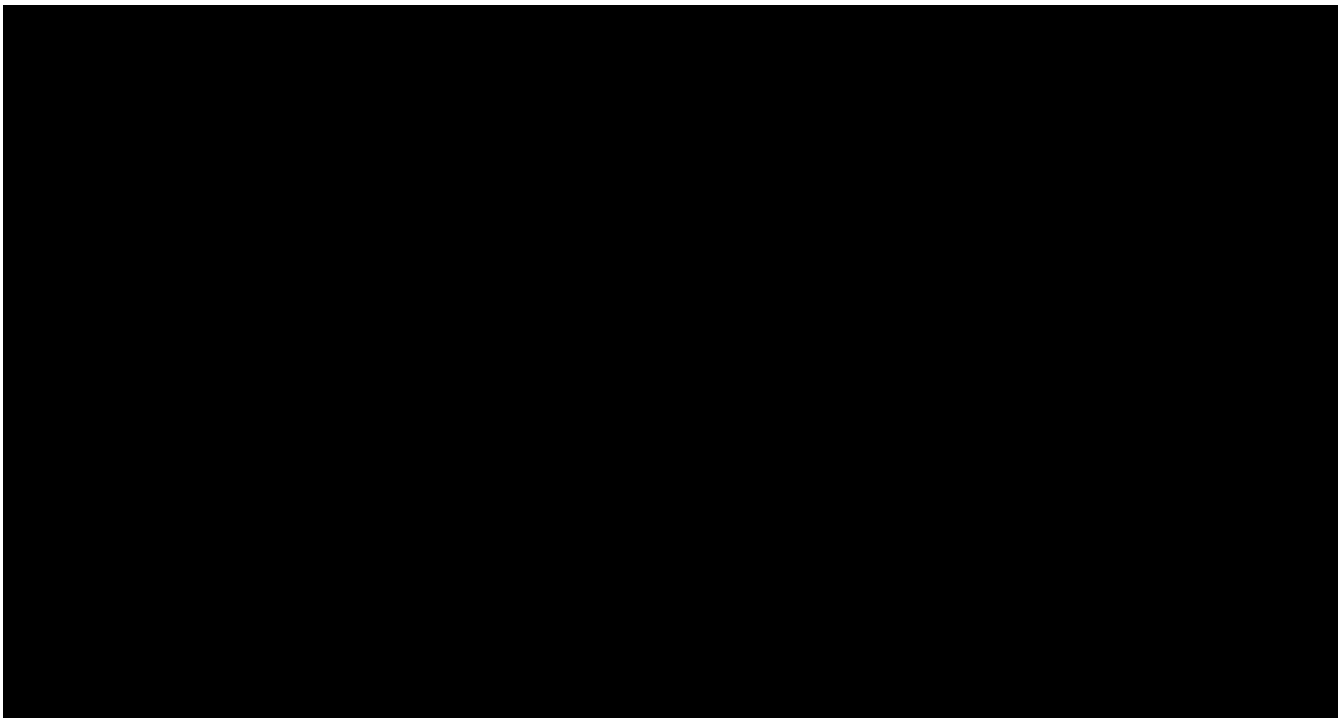
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### *VaR*

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

The VaR model uses a Monte Carlo simulation to generate normally distributed price and volatility paths for approximately 1,400 benchmarks, using volatilities and correlations based on three to ten 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 in different locations. Exposures to individual equities within a national market are captured by specific risk modelling incorporated directly into the VaR model.

As market conditions improved, overall trading activities have increased over the past 12 months. In line with historical trends, market risk, as measured by VaR, has been modest in comparison to capital and earnings and stable as a percentage of capital. The graph below shows the daily VaR and the six month average VaR as a percentage of total equity.



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### Trading revenue

The effectiveness of Macquarie's risk management methodology can be measured by Macquarie's daily trading results. Particularly during periods of high volatility the small quantity and magnitude of daily losses incurred by Macquarie is indicative both of an effective risk management framework and business operations focused on servicing client needs.

Macquarie's market risk trading activities are based on earning income from spreads, franchise businesses and client flows. Trading income is predominantly derived from client franchise activities rather than outright proprietary trading activity.

Macquarie's trading approach has shown consistent profits and low volatility in trading results whilst allowing growth in those markets where significant gains can be realised. This is evident in the histogram below which shows that Macquarie made a net trading profit on 217 out of the 260 trading days (2009 results: 200 out of 260 trading days).

### Non-trading market risk

Macquarie also has exposure to non-traded interest rate risk, generated by banking products such as loans and deposits. Interest rate exposures, where possible, are transferred into the trading books of Group Treasury and managed under market risk limits. However, some residual interest rate risks remain in the banking book due to factors outside the interest rate market or due to timing differences in accumulating exposures large enough to hedge. These residual risks in the banking book are not material but are nevertheless monitored and controlled by RMG and reported to senior management regularly.

### Economic capital

Macquarie has developed an economic capital model that is used to quantify Macquarie'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 the risk profile of Macquarie.

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

- capital adequacy assessment
- risk appetite setting
- risk-adjusted performance measurement.

### Capital adequacy assessment

Macquarie assesses capital adequacy for both Macquarie Group and Macquarie Bank. In each case, capital adequacy is assessed on a regulatory basis and on an economic basis, with capital requirements assessed as follows:

	Economic	Regulatory
Macquarie Bank	Internal model, covering just exposures of the Banking Group	Capital to cover risk-weighted assets and regulatory deductions, according to APRA's banking prudential standards
Macquarie Group	Internal model, covering all exposures of Macquarie Group	Bank regulatory capital requirement as above plus economic capital requirement of the Non-Banking entities

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 ECAM quantifies the following types of risk:

- equity risk
- credit risk
- operational risk
- traded market risk.

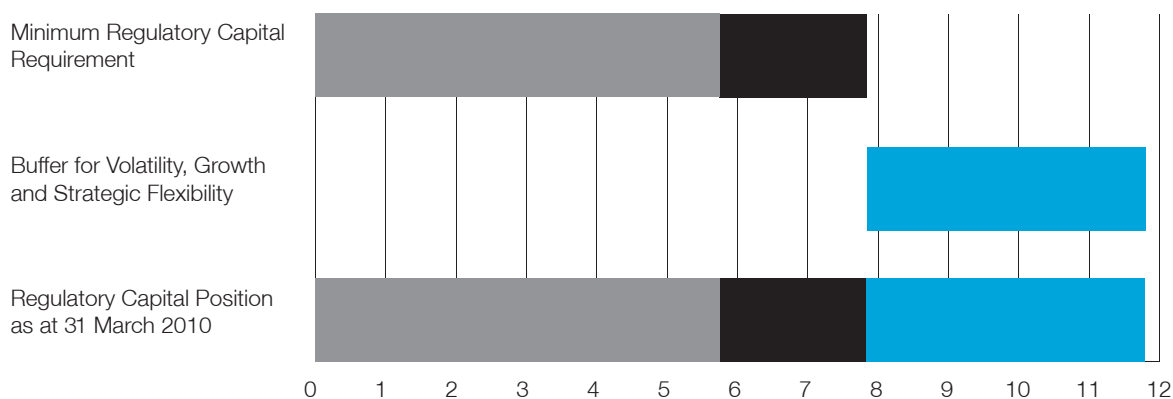
The ECAM also covers insurance underwriting risk, non-traded interest rate risk and the risk on assets held as part of business operations, e.g. fixed assets, goodwill, intangible assets, capitalised expenses and certain minority stakes in associated companies or stakes in joint ventures.

The overall regulatory capital requirement of the non-banking entities within Macquarie agreed with APRA is determined by the ECAM, as noted in the preceding table. The regulatory capital adequacy of Macquarie as at 31 March 2010 is set out below.

### Regulatory capital position

\$A billion

Banking Group ■ Non-Banking Group ■ Capital Surplus ■



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Macquarie is currently well capitalised – a substantial regulatory capital surplus exists. An element of this surplus is set aside as a buffer against volatility in the drivers of capital adequacy. The remaining capital surplus is available to support growth and provide strategic flexibility.

During the year, the foreign exchange hedging policy was revised to reduce the sensitivity of Macquarie's capital position to foreign currency movements. This is achieved by leaving specific investments in core foreign operations exposed to foreign currency translation movements. The resultant change in the Australian dollar value of the foreign investment is captured in the Foreign Currency Translation Reserve, a component of regulatory capital. This offsets the corresponding movement in the capital requirements of these investments.

The Tier 1 and total capital ratios for the Banking Group as at 31 March 2010 were 11.5 per cent and 13.3 per cent respectively.

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

### Risk appetite setting

Risk appetite is the nature and amount of risk that the Group is willing to accept. At Macquarie, this is expressed through the Board approved: (i) aggregate and specific risk limits; (ii) relevant policies; and (iii) requirement to consider risk adjusted returns.

The Board reviews Macquarie's risk appetite and approves the Global Risk Limit as part of the annual corporate strategy review process.

#### (i) Limits

These consist of specific risk limits given to various businesses and products or industry sectors and also a Global Risk Limit which constrains the aggregate level of risk. The Global Risk Limit is set to protect earnings and ensure we emerge from a downturn with sufficient capital to operate. The risk appetite test, which is discussed below, measures usage against this limit.

In accordance with Macquarie's 'no limits, no dealing' approach, individual credit and equity exposures must fit within approved counterparty limits. Market risk exposures are governed by a suite of individual and portfolio limits.

#### (ii) Relevant policies

There are numerous Macquarie-wide policies which set out the principles that govern the acceptance and management of risks. A key policy is the New Product and Business Approval policy which ensures that the proposed transaction or operation can be managed properly and will not create unknown or unwanted risks for Macquarie in the future.

#### (iii) Requirement to consider risk-adjusted returns

At Macquarie, proposals for all significant new deals, products and businesses must contain an analysis of risk-adjusted returns. These returns are considered together with other relevant factors by RMG, the Executive Committee and Board in assessing these proposals. Achieving an appropriate return for the additional risk that is proposed is a key focus in deciding whether to accept the risk.

### 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 in which a severe economic downturn scenario is considered. Potential losses are compared to the Global Risk Limit which comprises the underlying earnings Macquarie is likely to generate in the downturn plus surplus regulatory capital.

Downturn forward earnings capacity is estimated by the operating groups and divisions with reference to a three year downturn scenario provided to them by RMG.

Aggregate risk is broken down into two categories:

- Business risk, meaning decline in earnings through deterioration in volumes and margins due to market conditions
- 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 earnings estimates. Potential losses are quantified using a version of the economic capital model.

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, lease residuals and other equity investments. Any increases in the ERL are sized to ensure that even under full utilisation of this limit, and allowing for growth in other risk types, the requirements of the Risk Appetite Test will be met.

### Risk-adjusted performance measurement

As well as measuring risk-adjusted returns for deals as noted above, risk-adjusted performance metrics for each business unit are prepared on a regular basis and distributed to Operations Review Committee and the Board as well as to business units. Risk-adjusted performance metrics for each business unit are a significant input into performance based remuneration.

### Liquidity risk

#### Liquidity management

The two primary external funding vehicles for Macquarie are Macquarie Group Limited (MGL) and Macquarie Bank Limited (MBL). MGL provides funding principally to the Non-Banking Group and limited funding to some MBL subsidiaries. MBL provides funding to the Banking Group and provides an intra-group loan to MGL.

The high level funding relationships of Macquarie is shown in the diagram below.

Macquarie’s liquidity risk management framework ensures that both MGL and MBL are able to meet their funding requirements as they fall due under a range of market conditions.

Liquidity management is performed centrally by Group Treasury, with oversight from the Asset and Liability Committee and RMG. MGL and MBL liquidity policies are approved by the respective Boards after endorsement by the Asset and Liability Committee.

The Asset and Liability Committee includes the Managing Director and Chief Executive Officer, the Chief Financial Officer, Head of RMG, Treasurer and Operating Group Heads.

RMG provides independent prudential oversight of liquidity risk management, including the independent validation of liquidity scenario assumptions, liquidity policies, and the required funding maturity profile.

### Liquidity policy and principles

MGL provides funding predominantly to the Non-Banking Group. As such, the MGL liquidity policy outlines the liquidity requirements for the Non-Banking Group. The key requirement of the policy is that MGL is able to meet all of its liquidity obligations on a daily basis and during a period of liquidity stress: a 12 month period with no access to funding markets and with only a limited impact on franchise businesses.

Reflecting the longer term nature of the Non-Banking Group asset profile, MGL is funded predominantly with a mixture of capital and long-term wholesale funding. MGL has no short-term wholesale funding.

The MBL liquidity policy outlines the liquidity requirements for the Banking Group. The key requirement of the policy is that MBL is able to meet all of its liquidity obligations on a daily basis and during a period of liquidity stress: a 12 month period of constrained access to funding markets and with only a limited impact on franchise businesses.

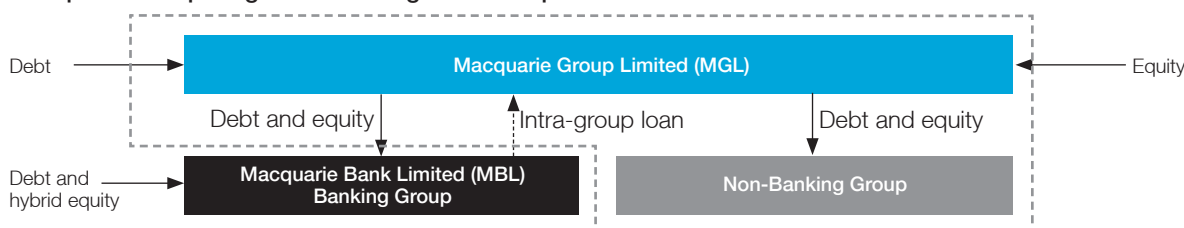
MBL is funded mainly by capital, long-term liabilities and deposits.

The liquidity management principles apply to both MGL and MBL and include the following:

#### Liquidity and funding management

- All liquidity requirements are managed centrally by Group Treasury
- Liquidity risk is managed through setting limits on the maturity profile of assets and liabilities
- A Liquidity Contingency Plan is approved by the Board and reviewed periodically
- A funding strategy is prepared annually
- Internal pricing incorporates liquidity costs, benefits and risks to align risk-taking activities with liquidity risk exposures
- Diversity and stability of funding sources is a key priority.

### Macquarie Group - high level funding relationships



# Risk Management Report

## continued

### *Liquidity limits*

- Term assets must be funded by term liabilities
- Cash and liquid assets are sufficient to cover a 12 month stress scenario
- Cash and liquid assets held to meet stress scenarios must be unencumbered, high quality liquid assets and cash
- Short-term assets exceed short-term wholesale liabilities.

### Scenario analysis

Scenario analysis is central to Macquarie's liquidity risk management framework. Group Treasury models a number of liquidity scenarios covering both market-wide crises and firm-specific crises. The objective of this modelling is to ensure MGL and MBL's ability to meet all repayment obligations under each scenario and determine the capacity for asset growth. The modelling includes 12 month liquidity scenarios significantly more severe than the conditions that have been experienced since August 2007.

Scenarios are run over a number of timeframes and a range of conservative assumptions are used with regard to access to capital markets, deposit outflows, contingent funding requirements and asset sales.

### Liquid asset holdings

Group Treasury maintains a portfolio of highly liquid unencumbered assets in both MGL and MBL to ensure adequate liquidity is available in all funding environments, including worst case conditions. The minimum liquid asset requirement is calculated from scenario projections and also complies with regulatory minimum requirements.

To determine the minimum level of liquid assets, reference is made to the expected minimum cash requirement during a combined market-wide and firm-specific crisis scenario over a 12 month timeframe. This scenario assumes no access to new funding sources, a significant loss of deposits and contingent funding outflows resulting from undrawn commitments, market moves on derivatives and other margined positions. The size of the liquid asset portfolio must always exceed the minimum cash requirement as calculated in this model.

The liquid asset portfolio contains only unencumbered assets that can be relied on to maintain their liquidity in a crisis scenario. At least 90 per cent of the liquid assets portfolio held to meet the minimum liquid asset requirement must be repo eligible with a central bank. The remaining 10 per cent must be approved by Group Treasury and RMG before inclusion in the liquid asset portfolio. As at 31 March 2010, 98 per cent of the liquid asset portfolio was eligible for repurchase with central banks.

The liquid asset portfolio typically includes unencumbered cash and central bank repo eligible Government, Semi-Government, Supranational, government guaranteed bank and unguaranteed bank securities and AAA rated Australian residential mortgage backed securities. In addition, the portfolio includes other very short dated, high quality liquid assets such as A-1+ rated Australian residential mortgage backed commercial paper.

The liquid asset portfolio is largely denominated and held in Australian dollars and to a lesser extent in US dollars or other currencies where appropriate.

### Liquidity contingency plan

Group Treasury maintains a liquidity contingency plan. The liquidity contingency plan applies to the entire Macquarie Group and defines roles and responsibilities and actions to be taken in a liquidity event. This includes identification of key information requirements and appropriate communication plans with both internal and external parties.

Specifically, the plan details factors that may constitute a crisis, the officer responsible for enacting the contingency management, a committee of senior executives who would be responsible for managing a crisis, the information required to effectively manage a crisis, a public relations strategy, a high level check list of actions to be taken, and contact lists to facilitate prompt communication with all key internal and external stakeholders. The liquidity contingency plan is subject to regular review (at least annually) by both Group Treasury and RMG and is submitted to the Board for approval.

### Funding transfer pricing

An internal funding transfer pricing system is in place which aims to align businesses with the overall funding strategy of Macquarie. Under this system the costs of long- and short-term funding are charged out, and credits are made to operating divisions that provide long-term stable funding.

### Legal and compliance risk

Macquarie actively manages legal and compliance risks to its businesses globally. Legal and compliance risks include the risk of breaches of applicable laws and regulatory requirements, actual or perceived breaches of obligations to clients and counterparties, unenforceability of counterparty obligations and the inappropriate documentation of contractual relationships.

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RMG assesses compliance risk from a Macquarie-wide perspective and works closely with legal, compliance and prudential teams throughout Macquarie to ensure compliance risks are identified and appropriate standards are applied consistently to manage these compliance risks. The development of new businesses and regulatory changes, domestically and internationally, are key areas of focus within this role.

Each of Macquarie's businesses is responsible for developing and implementing its own legal risk management and compliance procedures. RMG performs an oversight role to the divisional compliance staff to ensure appropriate standards are adhered to. During the course of the year, a Macquarie-wide General Counsel position was created. The appointed General Counsel is responsible for Macquarie's legal functions globally, including oversight of Macquarie's strategic initiatives and significant legal risk and reputation issues. The General Counsel reports directly to the Managing Director and Chief Executive Officer.

### **Reputation risk**

All activities have elements of reputation risk embedded. Managing reputation risk is an essential role of senior management as it has the potential to impact earnings and access to capital. Macquarie seeks to manage and minimise reputation risk through its corporate governance structure and risk management framework.

Macquarie operates under a strong corporate governance structure consistent with the regulatory requirements of various regulators including the Australian Securities and Investments Commission (ASIC) and APRA. Goals and Values incorporating a clear code of ethics are communicated to all staff and Integrity Officers are in place to deal with potential issues of integrity.

Business units take ownership of risk, including reputation risk. In addition, a robust, independent risk management framework incorporates active management and monitoring of risks arising within Macquarie. The implementation of this framework by RMG is a major mitigant to reputation risk.

The various policies, procedures and practices in place aim to minimise reputation risk and regular reporting to the Executive Committees and Boards includes detail on reputation risk issues as appropriate.

The direct financial losses arising from reputation risk (such as breach of mandates and regulatory fines) are taken into account in the operational risk capital model.

### **Internal Audit**

Internal Audit provides independent assurance to senior management and the Board on the adequacy and effectiveness of Macquarie's financial and risk management framework. Internal Audit forms an independent and objective assessment as to whether: risks have been adequately identified; adequate internal controls are in place to manage those risks; and those controls are working effectively. Internal Audit is independent of both business management and of the activities it reviews. The Head of Internal Audit is jointly accountable to the BACC and the Head of RMG, has free access at all times to the BACC and cannot be removed or replaced without the approval of the BACC.

### **Basel II**

Macquarie Bank 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 for market risk<sup>1</sup> and the internal model approach for 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.

### **Regulatory developments**

In response to the recent events of the global financial crisis, regulators worldwide are proposing to enhance their prudential standards. The proposed changes include more stringent qualitative and quantitative requirements to enhance the resilience of financial institutions under stressed market conditions.

The proposed regulatory changes are likely to result in higher capital and tighter liquidity requirements for the banking sector. Macquarie continues to monitor regulatory and other market developments, and remains well capitalised and well funded.

<sup>1</sup> Standard approach applied for specific risk on debt securities