The Bank believes that a strong and integrated risk management system is one of the critical success factors that form an essential element in sustaining the Bank's profitability while undertaking its developmental role.

Bank Pembangunan Malaysia Berhad (BPMB) has been guided by its risk management principles in managing its business risk, which outline a basis for an integrated risk management effort and good corporate governance. Internal controls, specific policies, guidelines and procedures have been established to govern the activities of operational and support functions of BPMB. Risks arising from these activities are managed by dedicated risk management functions under Group Risk Management, that play a vital role in the execution of risk management activities and strategies through the process of identifying, measuring, monitoring and controlling all material risks faced by BPMB.

Combined with a structured risk governance consisting of a strong Board and Management oversight, a good check & balance systems and a sound risk management practices, BPMB has built a strong foundation towards ensuring a holistic and integrated approach of risk management that will safeguard the quality of the BPMB's assets, thus minimizing reliance on collateral lending in its endeavor to achieve the mandate set by the Government.

Key risk achievements and measure undertaken during the year include:

- The adoption of credit rating model consisting of PD model, Parental/Group Support model, LGD model and EAD model.
- Upgrading of risk infrastructure for credit risk and market risk.
- BPMB formalized the Risk Management Framework that covers Risk Governance, Credit Risk, Liquidity Risk and Market Risk.
- Integrated Stress testing was conducted to capture the potential credit, market and liquidity risk exposures from an unexpected market movement.

BPMB's major risks are credit risk, market risk, liquidity risk and operational risk. These risks are managed within the risk governance, infrastructure and tools.

RISK GOVERNANCE

The Board of Directors has the ultimate responsibility for the sound and prudent management of BPMB. The Board of Directors' empowered the Risk Management Committee (RMC) to oversee the senior management's activities in managing the key risk areas of the DFI and to ensure that the risk management process is in place and functioning effectively. RMC ensures that appropriate infrastructure, resources and system are in place for risk management.

The Executive Risk Management Committee is the Management level committee and is responsible for the management of all material risks within BPMB.

The BPMB have been adopting the three lines of defence concept in managing its risk.

Approach	Responsibility	Functions
1st Line of Defence	Risk Taking Functions	Business and Support Function
2nd Line of Defence	Risk Control	Group Risk Management
3rd Line of Defence	Risk Assurance	Group Audit & Examination

Group Risk Management key functions are to support the dedicated risk management committees, develop the appropriate risk frameworks, policies, tools, methodologies and risk reports to identify, measure, monitor and control risks undertaken by the risk takers. Group Risk Management monitors and reports on the compliance to the risk limits approved by the Board.

MANAGEMENT OF CREDIT RISK

Credit Risk is the potential loss of revenue, either the principal or interest or both, arising from the failure or unwillingness of counterparties or borrowers to honour their financial and contractual obligations as and when due. These obligations are from lending, investment and other activities undertaken by BPMB.

BPMB is exposed to credit risk in its lending activities. Being ultimately responsible for the management of credit risk of BPMB, Credit Risk function is primarily involved in setting the risk management framework and developing tools and methodologies for identification, measurement, monitoring and control of credit risks. Credit Risk function also sets and reviews credit policies, set-up the concentration limits according to various categories such as single customer group, Large Loan Limit and industry sector limits.

Management of credit risk encompasses establishing internal controls within the credit process to minimize poor credit quality arising from imprudent lending, risk concentration in credit portfolio and other judgmental errors that could potentially impact the overall financial soundness of BPMB. Management of credit risk is not only vital at credit origination, but continues with the preservation of quality loan assets throughout the credit process.

BPMB adopts a two-prong approach:

i) Managing the Credit Risk

ii) Managing the Credit Portfolio

The management of credit risk and credit portfolio is captured in the following credit risk management processes:

Process	Methods
Risk Identification	• Independent credit risk assessment on credit proposals and credit reviews by Credit Risk function. • Identification of risk issues surrounding new financing products • Independent checking by Compliance function on non-compliance to credit disbursement conditions.
Risk Measurement	• Implementation of credit rating system to perform rating on all credit proposals and credit reviews.
Risk Control	• Clear segregation between credit sourcing and credit monitoring. • Establishment of hierarchy of credit approval which links the authority limits to credit amount. • Establishment of Credit Operations Policy and Guideline. • Monitoring of limits pertaining to financing portfolio. • Spreading credit portfolio across different economic sub-sector. • Proper selection and training of Credit staff.
Risk Monitoring	• In-depth post-mortem review on impaired credits and potential impaired credits. • Conduct post credit review on approved credits. • Annual credit reviews and updates of credit ratings. • Management of vulnerable credit and tracking of delinquent credits. • Stress testing of credit portfolio for possible downgrading of credits. • Independent assessment of credit compliance to policy and procedures.

CREDIT RISK MANAGEMENT FRAMEWORK

i. Framework for Managing Credit Risk

The identification, measurement, monitoring and controlling of credit risk are governed by two sets of framework that have been established by the Bank.

FRAMEWORK FOR MANAGING CREDIT RISK

For Management of Credit & Asset Quality	For Credit Preservation
Selection of Credit Personnel	Credit Review Process
Credit Training	Early Detection and Management of Vulnerable Credits
Credit Policies and Standards	Targets on Delinquent Credits
Credit Risk Identification and Assessment on Credit Proposals	Credit Control and Recovery
Credit Risk Measurement	Post Mortem Review
Credit Approval Process	
Post Credit Review	
Credit Compliance for Credit Disbursement Product Sign-off	

Management of Credit & Asset Quality

Credit risk management is further elaborated in the following processes that are managed according to the established framework:

- Business Banking processes credit applications. The selection of credit personnel is based on the required qualifications and criteria set by BPMB. To ensure the highest standard of credit assessment, Business Banking staff must undergo relevant training programmes to ensure understanding of credit evaluation. BPMB acknowledges that training must be continuous to enhance professionalism and staff competencies. To continuously promote professionalism and expertise in their work, BPMB encourages all staff in credit-related functions to secure the Certified Credit Professional (CCP).

- BPMB has instituted clear internal controls to govern lending activities and assessment of credit proposals for prudent lending activities through the establishment of Credit Operations Policy and Guideline. Being a development bank with specific mandate, BPMB cannot avoid from assuming higher risk in giving out credits. However in doing so, risk must be managed and governed by BPMB's policies and risk appetite. In addition, Operational manuals and guidelines as prescribed under the Development Financial Institutions Act 2002 (DFIA) are adhered to, which have assisted BPMB in achieving its corporate objectives within an acceptable risk profile and risk appetite.

- Credit is originated and processed by various credit functions under Business Banking whom are accountable for prudent credit business. To enforce prudent credit assessment, Credit Risk function provides independent credit risk assessment for mitigation by the risk owners before the approving authorities consider any credit proposals. Credit Risk function also reviews credit proposals for compliance with credit policies. Only viable credit proposals with well-mitigated risk should be considered for financing, thus minimizing impaired credits.

- All credit proposals are rated using internal credit rating system to assess and measure borrowers' risk of default. BPMB utilizes the rating model that is based on two dimensional rating system that incorporates both borrower's default as well as the facility risk, which focuses on the three components of Risk Weighted Assets (RWA) calculation, namely Probability of Default (PD), Exposure at Default (EAD) and Loss Given Default (LGD) to generate the Expected Loss (EL) that would provide a high-level overview of a borrower's business credit quality in terms of potential loss amount, given a certain level of probability of default. As a prudent practice, borrowers or projects assigned with a 'high risk' grade will not be considered for credit facilities unless adequate risk mitigations are in place.

- Different levels of approving authorities govern credit approval process according to credit limits. The approval hierarchies that link the authority limits to the amount of credit ensure that credit sanctioning remains a critical part of risk evaluation system.

- As part of the internal control, a team within the Group Audit & Examination (GAE) is tasked to conduct post credit review on approved credits to determine the compliance of the processes involved in credit evaluation and approval. The post credit review (audit) function reports to a committee with audit responsibilities. The establishment of independent post credit review would help to evaluate the overall credit approval and appraisal process, and judge whether the account officer is properly monitoring individual credits.

- Credit disbursement requisition is independently assessed by Compliance function, as a "final gatekeeper" with the objective of ensuring adherence to credit disbursement conditions prior to credit disbursement. Credit Compliance also verifies terms and conditions imposed in the Letter of Offer as approved by the approving authorities. Compliance function also identifies relevant internal and external regulatory and compliance frameworks and translates them into meaningful compliance practice for the business sectors with the objective to minimize exposure to operational risks.

- Risk issues surrounding new financing products are identified from the perspectives of credit risk, market risk and operational risk before being implemented to ensure that all inherent risks could be managed and proper risk management and operational procedures are in place. All product development proposals need endorsement by Risk Management Committee before obtaining approval from the Board.

Credit Preservation

- Credit review is conducted at least once a year and more frequent reviews are performed on high-risk credit under "watch – list" accounts. All credits are to be reviewed on regular basis as per the requirement (annual, half yearly or quarterly basis) depending on classification of credits with the determination on stay, grow or exit strategies. Credit reviews are rated by Credit Risk function to monitor credit risk migration for effective monitoring.

- Early detection and management of vulnerable credit is important to preserve the quality of the loan assets. Regular site visits are carried out as part of the means to detect any early signs of borrowers' operational aspects. Watch-list accounts are reviewed quarterly and half yearly depending on the degree of vulnerability based on the scores established under the internal guidelines. A systematic mechanism for prompt identification / classification of loan / financing is formulated whereby the classification is based on the total scoring assigned to individual borrower.

- The movement of delinquent credits is monitored to gauge the deterioration in credit quality of portfolio that could potentially turn the accounts into impaired status. Poor credit monitoring and lack of follow-ups with the borrower could also result in loan impairment. Close monitoring of repayment is important to ensure that repayment due is collected promptly, without any arrears. Limit on delinquent credits has been established to track delinquent credits on monthly basis. BPMB is advised of the movement of Loan Delinquent Ratio on monthly basis.

- Group Recovery focuses efforts in recovery process to address impaired credits and takes direct control of the impaired credits to expedite and optimize recovery as well as to undertake rehabilitation works. BPMB retains a panel of outside legal firms to provide specialized expertise in the management and recovery of impaired credits.

- Post mortem reviews are conducted on impaired credits to better understand how problem credits developed and to identify lapses in credit and monitoring process, system and people. Observations and findings are communicated as feedback to assist in upgrading credit skills with the objective that past mistakes will not be repeated. Lessons are learned from root-cause analysis and actions are taken to improve credit risk management process. Post mortem review is performed by a team within the Group Audit and Examination (GAE) on significant cases. Analysis would include the issues that contributed to the impaired status of credits as well as non-compliance to any policies, guidelines and procedures.

ii. Credit Portfolio Framework for Managing Credit Portfolio

The identification, measurement, monitoring and controlling of the risk profile of BPMB's credit portfolio are governed by the framework for the management of credit portfolio that have been established by BPMB.

FRAMEWORK FOR MANAGING CREDIT RISK

FRAMEWORK FOR MANAGING CREDIT PORTFOLIO
Concentration Policies
Single Customer Limit
Large Loan Limit
Commercial Lending Sector Limit
Stress Testing
Tolerance Limit of Impaired Credits
Portfolio Reporting

Credit Portfolio Management

- BPMB's guiding principle in its lending activity is to diversify its credit portfolio mix and avoid any undue concentration of credit risk in its credit portfolio. In this regard, BPMB has formalized a set of concentration policies in respect of Single Customer Limit, Large Loan Limit and Commercial Lending Sectoral Limit. Limits pertaining to financing portfolio are established to manage concentration risk. Limits are continuously monitored and any breaches or critical level of exposure will be reported to the relevant committees. Credit Risk function analyses credit portfolio composition and advise Management on BPMB's risk exposure by industry/sector, and monitor the exposure against its established limits.

- BPMB has conducted quarterly integrated stress testing exercise to assess BPMB's ability to withstand the effects of changes in economic conditions that have unfavorable effects on BPMB's credit exposures. As part of monitoring the overall credit risk profiles of credit portfolio, Credit Risk function also performs monthly simulation for potential impaired credits on credit portfolio based on selected scenarios, which include possible downgrading of the accounts to assess the impact on BPMB's earnings and capital. The results of stress tests, risk exposure and risk profile of credit portfolio are deliberated monthly at the relevant committees of BPMB.

- Simulation for impaired credits tolerance level is also carried out to gauge the level of impaired credits that corresponds to the amount of capital losses which would reduce the Risk Weighted Capital Ratio (RWCR) below the Management Action Trigger (MAT). This level of impaired credits would be the tolerance limit to be capped, as breaching it would result in the RWCR falling below MAT. The results of this simulation exercise are captured in the monthly Credit portfolio Report.

- BPMB conducts monthly assessment review of credits on an aggregate basis for each portfolio segment (e.g. by loan/financing types, industry, risk grades).

- Credit Risk function advises on BPMB's risk exposure by providing reports to the risk committees of BPMB on credit growth and sector exposure, risk profile distribution of credit portfolio, quality of loan assets which include impaired credits and delinquent credit movement, stress testing results and effect on BPMB's earnings and capital, tolerance limit of impaired credit and Economic Capital Allocation (ECA) for lending. Reporting of credit risk activities is made to the Executive Risk Management Committee (ERMC) before deliberations at the Risk Management Committee (RMC).

MARKET RISK MANAGEMENT & ASSET LIABILITY MANAGEMENT

Market Risk is defined as the potential loss arising from changes in interest rate, foreign exchange rates, credit spreads, equity prices and commodity prices which could affect the value of financial instruments.

Asset Liability Management (ALM) refers to the coordinated management of BPMB's balance sheet, which includes assets, liabilities and capital. The main focus of ALM is on BPMB's overall performance that can be measured in terms of net income. In turn, the primary determinant of net income will be the overall risk-return position of BPMB.

BPMB's market risk management and ALM objectives are to:

- Ensure an appropriate balance between the level of risk and the level of return desired in order to maximize the return to shareholder's funds.

- Proactively manage BPMB's balance sheet, which includes assets, liabilities and capital in order to maximize earnings and attain its strategic goal within the overall risk/return preferences.

- Ensure prudent management of BPMB's resources to support the growth of BPMB's economic value.

In order to achieve the objectives, BPMB has developed the market risk management framework, which is benchmarked against industry best practices and regulatory requirements. The process of managing market risk and ALM per the framework comprises of four major components which can be summarized as follows:

Process	Methods
• Risk Identification	• Identification of Key Risks
• Risk Measurement	• Earning at Risk (EAR) • Economic Value of Equity (EVE) • Net Open Position • Concentration of Bond Portfolio • Simulation • Stress Testing • Duration/ Modified Duration
• Risk Control	• EAR Limits • EVE Limits • Net Open Position Limits • Mark-to-Market (MTM) • Independent Price Verification
• Risk Reporting	• Key Risk Indicator • Exception Reports

Market Risk Management function develop, implement and maintain a comprehensive framework, policies, procedure and limits related to market risk comprising of both qualitative and quantitative methodologies/ tools to identify, measure, aggregate, manage, monitor, control and report. Limits are set within BPMB's risk appetite and continuously monitored with strict escalation and approval procedures in case at any breach.

BPMB adopts a consistent way of quantifying interest rate risk through analysing the repricing mismatch between rate sensitive assets and rate sensitive liabilities. BPMB also performs simulation analysis to assess the variation in earnings under various rates scenarios (including the increase by 100 basis points shock) from BPMB's pro-forma balance sheet. Taking a more comprehensive view of potential long-term effects of BPMB overall exposure, the impact on economic value is also measured under the increase in interest rate by 200 basis points shock.

Middle Office function within Group Risk Management undertakes the monitoring and oversight process at Group Treasury, which includes reviewing and analysing treasury position and activities, monitoring limit usage and assessing limits adequacy. The main activities in 2011 in managing market risk and ALM are as follows:

- Preparing market risk and ALM reports for submission to the Board and Management Committee.

- Daily risk monitoring of treasury transactions.

- Enhancement on Integrated Stress Testing Methodology.

- Establishment of Market Risk Management Framework and Integrated Stress Testing Framework.

- Review and update all procedures and guidelines related to Market Risk.

LIQUIDITY RISK MANAGEMENT

Liquidity risk arises when a bank is unable to make a timely payment on any of its financial obligations to customers or counterparties in any currency. This may be due to BPMB's inability to liquidate assets or to obtain funding to meet its liquidity needs in a timely manner. The primary categories of liquidity risk are:

• **Funding Liquidity Risk**	Funding liquidity risk is when a bank is unable to meet its financial obligations that arise from withdrawals of deposits, repayments of purchased funds at maturity, extension of credit and working capital needs.
• **Market Liquidity Risk**	Market liquidity risk refers to the inability of a bank to liquidate the outstanding positions in the market at or near the market price due to market disruption. The adverse movement in market conditions could be caused by the change in market psychology or due to a specific event.

The overall Bank's liquidity risk management objectives are to:

- Ensure that BPMB has adequate liquidity resources.
- Avoiding raising funds at premiums.
- Ability to sell its asset without incurring any losses.
- Satisfying statutory liquidity requirements.

In order to ensure that liquidity requirements are identified and adequately managed on an ongoing basis, BPMB has established Liquidity Risk Management Framework. The process of managing liquidity risk per the framework comprises of four major components which can be summarized as follows:

Process	Methods
• Risk Identification	• Liquidity Crisis Early Warning Signal
• Risk Measurement	• New Liquidity Framework • Concentration of Funding Sources • Stress Testing
• Risk Control	• New Liquidity Framework Compliance Requirement • Single Depositors Limit
• Risk Reporting	• Key Risk Indicator • Exception Reports

BPMB uses a range of tools to monitor and limit liquidity risk exposure such as New Liquidity Framework , early warning signals, liquidity indicators and stress testing. The liquidity positions of BPMB is monitored regularly against the establish framework, procedures and limits.

The liquidity management process is based on the contractual and behavioral cash flow assumptions derived from BPMB's assets, liabilities and off balance sheet commitments projected up to one year. This process acts as a monitoring mechanism to ensure that BPMB is not too dependent on a particular source of funding.

BPMB has also developed and maintains a contingency funding plan to provide a systemic approach in handling any unexpected liquidity disruptions. The plan encompasses strategies, decision making authorities, internal and external communication and courses of action to be taken under different liquidity crisis scenarios. BPMB also reviews initiates and implements strategic fund raising programs as well as institutes standby lines with external parties.

OPERATIONAL RISK MANAGEMENT

Operational Risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk.

For effective management of operational risks inherent in its operation, BPMB is guided by the Operational Risk Management (ORM) Framework which was developed in line with Basel publications to provide clear, consistent and systematic ORM approach.

BPMB recognizes that continuous review and monitoring of risks and control effectiveness is vital for effective management of operational risk. To facilitate this, tools such as the Risk & Control Self-Assessment (RCSA), Loss Event Data Management (LEDM) and Key Risk Indicators are implemented Group-wide.

The RCSA enables a structured and consistent approach towards identification and assessment of operational risks and controls at the functional, process and product level, conducted by the risk owners i.e. the Business/Support functions.

The LEDM enables reporting and tracking of loss incidents for analytical risk profiling purposes, as well as to facilitate mitigation actions and control enhancements.

For close monitoring of BPMB's key operational risks, a set of risk parameters and trigger limits were developed to provide early warning signal of potential operational risks to allow timely risk avoidance or mitigation actions.

Enhancement of operational risk awareness forms part of the ORM Framework objective towards cultivating a culture that places high priority on effective management of risk, adherence to sound operating controls, ethics and values. BPMB's operational risk management infrastructure, tools and procedures are continuously being improved in line with best practices, for better management of operational risks throughout the Group.

Business Continuity Management (BCM) is an important component of BPMB Group's risk management framework to increase the organization's resilience to business disruption arising from internal and external events and reduce the impact on its business operations, reputation or profitability. BPMB's Business Continuity Management Framework includes the Business Continuity Management policy, the Business Continuity Plan and the Disaster Recovery Plan, which are continuously being updated and tested to ensure BPMB's readiness to respond to disaster/business disruption situations.