# **Risk Management Approach And Risk Profile**

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### **APPROACH TO RISK MANAGEMENT**

Strong risk management capabilities are critical to the financial soundness of DBS. The key components of the Bank's risk management approach are: strong risk governance; sound capital assessment; robust and comprehensive processes to identify, measure, control, monitor and report risks; and a rigorous system of internal control reviews, involving internal and external auditors, as well as the relevant bank supervision authorities.

### **RISK GOVERNANCE**

The Group has implemented a framework to give greater clarity, focus and consistency across different risk areas in the governance of risks. Under the Risk Governance Framework, the Board of Directors, through the Board Risk Management Committee, oversees the establishment of a robust enterprise-wide risk management system and sets risk appetite limits to guide risk-taking within the Group. Management is accountable to the Board for ensuring effective risk management activities and adherence to the risk appetite limits. In this regard, various senior management risk committees provide oversight and forums for discussions on specific risk areas, including Credit Risk, Market Risk, Liquidity Risk and Operational Risk. The committees are the Business Support and Controls Committee, the Group Market Risk Committee, the Group Credit Risk Committee, the Group Asset and Liability Committee, the Group Operational Risk Committee and the Group Commitments and Conflicts Committee.

Business units have primary responsibility for managing specific risk exposures. Group Risk Management is the central resource for guantifying and managing the portfolio of risks taken by the Group as a whole. Group Risk Management performs the following roles:

- Develops and implements effective risk and economic capital frameworks, policies and methodologies
- Develops and implements an infrastructure that will support DBS' risk management activities
- Recommends risk appetite and control limits, in line with the risk governance framework
- Provides senior management and Board with independent and timely assessment of the aggregate risk profile concerning significant risk concentrations, portfolio composition and quality
- Identifies opportunities to optimise risk-based return on capital

DBS Group has implemented policies and procedures to identify, measure, analyse and control risk across the firm. A governance framework has been established to provide a disciplined, consistent and tiered approach in the approval of the various risk frameworks/ policies/procedures throughout the DBS organisation. The framework comprises four levels: Level 1 policies are Board-level approved firmwide risk frameworks; Level 2 policies are minimum corporate-level and subject-specific risk principles and standards; Level 3 policies are business or location-specific in nature; and Level 4 procedures underlie and support the policy implementation. These policies and procedures rely on constant communication, judgment, knowledge of products and markets, and controls by business and support units.

# **CREDIT RISK**

Credit risk is the potential earnings volatility caused by obligors' inability and/or unwillingness to fulfill their contractual debt obligations. Exposure to credit risks arises primarily from lending activities and also from sales and trading activities, derivatives activities and from participation in payment transactions and securities settlements. Credit exposure includes current as well as potential credit exposure. Current credit exposure is represented by the notional value or principal amount of on-balance sheet financial instruments and off-balance sheet direct credit substitutes, and by the positive market value of derivative instruments. DBS Group also estimates the potential credit exposure over the remaining term of transactions. At DBS Group, a disciplined credit risk management process integrates risk management into the business management processes, while preserving the independence and integrity of risk assessment.

An enterprise-wide Core Credit Risk Policy sets forth the principles by which the Bank and its subsidiaries conduct their credit risk management activities. It ensures credit risk underwriting consistency across the Group, and provides guidance to various credit management units in the formulation of supplementary credit policies specific to their businesses.

The Group Credit Risk Committee serves as an executive forum for discussion and decisions on all aspects of credit risk and its management including the assessment of credit risk taking and adherence to limits, policies, exceptions and other processes; the assessment of the risk-return tradeoffs across the Group; the identification, measurement and monitoring of DBS' credit risk portfolio, including special loan and asset review situations, specific credit concentrations and credit trends affecting the portfolio; as well as recommendation of credit limits and credit policy at the sector, business and country levels.

Individual corporate credit risks are analysed and approved by experienced credit officers who consider a number of factors in the identification and assessment of credit risk. Each borrower is assigned a rating under the Counterparty Risk Rating process. For large corporate borrowers, the rating is based on the assessment of all relevant factors including the borrower's financial condition and outlook, industry and economic conditions, market position, access to capital, and management strength. The Counterparty Risk Rating assigned to smaller business borrowers is primarily based on the borrower's financial position and strength, which are assessed via the use of a validated guantitative tool. All ratings are reviewed at least annually and more frequently when conditions warrant. The Counterparty Risk Rating process is further enhanced by the Facility Risk Rating System which takes into consideration facility specific considerations such as credit structuring, collateral, third party guarantees and transfer risks. These credit risk-rating tools are used to assess the credit quality of the portfolio, so that deteriorating exposures are quickly identified and appropriate remedial action can be taken.

Consumer credit risk is managed on a portfolio basis. Businessspecific credit risk policies and procedures including underwriting criteria, scoring models, approving authorities, regular asset The trading market risk framework comprises the following guality review and business strategy review as well as systems, processes and techniques to monitor portfolio performance against elements. benchmarks are in place.

The credit control functions ensure that credit risks are being taken and maintained in compliance with group-wide credit policies and guidelines. These functions ensure proper activation of approved limits, appropriate endorsement of excesses and policy exceptions, and also monitor compliance with credit standards and/or credit covenants established by management and/or regulators

An independent Risk Review team conducts regular reviews of credit exposures and processes. These reviews provide senior management with objective and timely assessments of the effectiveness of credit risk practices and ensure group-wide policies and guidelines are being adopted consistently across different business units including relevant subsidiaries.

Stress testing of credit risk has assumed increasing importance in DBS adopts a Value-at-Risk (VaR) methodology to estimate the the discipline of credit risk management. DBS uses credit risk stress Group's trading market risk with a 99% level of confidence. VaR is testing approaches to assess the vulnerability of the portfolio to computed using a combination of parametric (variance-covariance) "exceptional but plausible" adverse credit risk events. and historical simulation approaches. It takes into account all pertinent risk factors and covers all financial instruments which DBS uses various metrics, including Economic Capital-at-Risk, expose the Group to market risk across all geographies. On a to measure and manage credit concentration risk to individual daily basis, DBS computes VaR for each trading business unit and borrowers, borrower groups and industry sectors. Information on location, and at the Group level. The VaR figures are backtested credit exposures by geographical area, business line and industrial against profit and loss of the trading book, in line with the risk classification, and the breakdown of investment and dealing model validation policy.

securities are disclosed in Notes 16, 17, 18, 20, 21 and 46 to the Financial Statements and the Management Discussion and Analysis chapter.

# **COUNTRY RISK**

The principles and approach in the management of cross-border risk are spelt out in a Country Risk Management Framework, which was approved at the Board level. The Framework includes an internal country risk rating system where the country assessments are made independent of business decisions. Benchmark country limits are set to delineate when exposures approach levels that may imply concentration risk. Day-to-day operational country limits, called working limits, are also imposed to manage the shape and growth the cross-border exposures as they build up. A rigorous environmer scanning process is in place, with proactive action as warranted to expand or roll back country exposures. There are close consultation with the businesses and credit management in right sizing crossborder exposures to take account of risks and opportunities.

#### TRADING MARKET RISK

Trading market risk arises from changes in pricing parameters, including market rates such as interest rates, foreign exchange rates, equity prices and credit spreads, as well as their correlations and implied volatilities. DBS Group takes trading market risk in the course

48

of market making, structuring and packaging products for investors and issuers, as well as to benefit from market opportunities.

- Types of market risk to be covered, and the risk metrics and methodologies to be used to capture such risks
- Policies and processes for managing market risks, as well as the roles and responsibilities of relevant functions for the processes
- Limits to ensure that risk-takers do not exceed aggregate risk and concentration parameters set by senior management and the Board
- Independent validation of valuation and risk models and methodologies
- Independent mark-to-market valuation, reconciliation of • positions and tracking of stop-loss for trading positions on a timely basis
- New product/service process whereby risk issues are identified before new products and services are launched

# VALUE AT RISK AND TRADING INCOME

The Group uses a Value at Risk ("VaR") measure as one mechanism for controlling trading risk. The VaR is calculated using a one-day time horizon and a 99% confidence interval. The following table shows the period-end, average, high and low VaR for the trading risk exposure of the DBSH Group for the period from 1 January 2005 to 31 December 2005.

		As at	1 January 2005 to 31 December 2005		
In \$ millions	31 Decer	nber 2005	Average	High*	Low*
Interest Rate		22.4	25.9	33.2	20.7
Foreign Exchange		2.9	6.4	15.6	1.5
Equity		4.2	6.6	28.0	3.0
Diversification Effect		(8.4)	(14.6)	-	-
Total		21.1	24.3	35.5	19.6

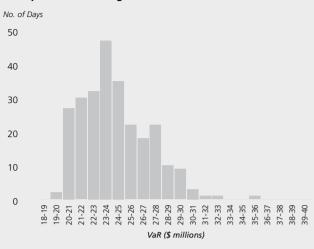
Note:

\* The high (& low) VaR figures reported for each risk class did not necessarily occur on the same day as the high (& low) reported for total. A corresponding diversification effect cannot be calculated and is therefore omitted from the table

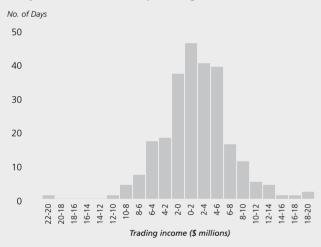
DBS Group Holdings Ltd Annual Report 2005

The charts below provide the range of VaR and the daily distribution of trading income in the trading portfolio for the year ended 31 December 2005.

#### Group VaR for Trading Book



Daily Distribution of Group Trading Income



Although VaR provides valuable insights, no single measure can capture all aspects of trading market risk. To complement the VaR framework, regular stress testing is carried out using historical and hypothetical scenarios to monitor the Group's vulnerability to simultaneous shocks on all market rates. Stress limits are also established accordingly.

The Group Market Risk Committee oversees DBS' market risk management infrastructure, including framework, policies, processes, information, methodologies and systems. The Committee also sets market risk control limits and provides comprehensive and enterprise-wide oversight of all market risks and their management. In this regard, the Committee meets regularly to review and give direction on the level of market risk taken within DBS Group; its breakdown by desk, geography risk type; trading profit and loss; stress testing results; and risk model backtesting performance.

Information on the Group's financial assets and liabilities in relation to exposures to interest rate and foreign exchange risks can be found in Notes 43.2(b) and 43.2(c) to the Financial Statements.

# STRUCTURAL MARKET RISK

The Group Asset and Liability Committee ("Group ALCO") oversees the structural interest rate risk, structural foreign exchange risk and funding liquidity risk in the Group. It allocates core limits to regional/local ALCOs in the different countries and ensures that the consolidated exposures of the Group are within prudent levels. Regional/local ALCOs are responsible to manage the risks in their areas including the setting of operational limits and guidelines to fine tune risk management, consistent with the Group's Asset and Liability Management ("ALM") Policy.

Structural interest rate risk arises from mismatches in the interest rate profile of customer loans and deposits. This interest rate risk has several aspects: basis risk arising from different interest rate benchmarks, interest rate repricing risk, yield curve risks and embedded optionality.

To monitor the structural interest rate risk, the tools used by the Bank include repricing gap reports, sensitivity analysis and income simulations under various scenarios. These measures take into account both economic value and earnings perspectives.

In structural foreign exchange exposures, the Group manages the effect of exchange rate movements on its earnings and capital accounts. Foreign currency loans and investments in fundable currencies are generally funded with the same foreign currencies. Non-fundable or illiquid currencies may be hedged with instruments such as non-deliverable forwards. For currencies with high hedging costs or lack of liquidity, alternative strategies may be used.

An Investment Framework governs the Group's investment of funds. These investments are separately subject to Board and senior management limits on the portfolio size, credit quality, product and sector concentrations and market risk sensitivities under the Framework. Investment market risk is monitored by risk type using sensitivities and by valuation action triggers. Valuation as well as validation of models used in valuation and risk management are carried out by independent support units.

# LIOUIDITY RISK

Liquidity risk is the potential earnings volatility arising from being unable to fund portfolio assets at reasonable rates over required maturities. Liquidity obligations arise from withdrawals of deposits, repayments of purchased funds at maturity, extensions of credit and working capital needs. DBS seeks to manage its liquidity to meet its obligations under normal as well as adverse circumstances, and to take advantage of arising lending and investment opportunities.

The primary tool for monitoring liquidity is the maturity mismatch analysis, which is monitored over successive time bands and across functional currencies. This analysis includes behavioral assumptions

# Risk Management Approach And Risk Profile

on, inter-alia, customer loans, customer deposits and reserve assets. Each new product or service introduced is subject to a rigorous risk This is tested under normal and adverse market scenario conditions. review and sign off process where all relevant risks are identified Limits are established by the Board and senior management for the and assessed by departments independent of the risk-taking unit maximum cumulative cash outflows over successive time bands. proposing the product. Variations of existing products, as well as Various liquidity ratios, concentration and stress limits are additional outsourcing and process centralisation initiatives, are also subject to tools employed by the Bank to manage funding liquidity risk. a similar process.

a number of components, including tapping available sources of liquidity, preserving necessary funding capacity and contingency planning.

As part of its liquidity risk management, DBS Group focuses on In Oct 2005, a Group Pandemic Task Force was set up to coordinate and implement risk mitigation and response plans across the Group. The Group Pandemic Task Force comprises members from various functions and countries within DBS. Proactive risk mitigation measures and action steps have been established to Information on the Group's financial assets and liabilities in relation correspond to the pandemic severity levels as defined by the World to exposures to interest rate risk, currency risk and liquidity risk Health Organisation (WHO) and the respective country health can be found in Notes 43.2(b), 43.2(c) and 45 to the Financial authorities. These measures are broadly categorised under six Statements. focus areas: Awareness & Communications, Healthcare/Workplace, Surveillance/Tracing, Travel Advisory/Tracking, Business Strategies **OPERATIONAL RISK** and Crisis Management. Business/Support units have developed Operational risk is the risk of loss resulting from inadequate or failed bird flu pandemic mitigating strategies and are in the process of internal processes, people or systems, or from external events. An documenting these plans. A tabletop exercise was conducted in Jan Operational Risk Management Framework has been developed to 2006 for the Crisis Management Committee at the Group level to ensure that operational risks within the DBS Group are properly familiarise senior management with the potential issues and crisis management of the likely scenarios of a bird flu pandemic.

identified, monitored, managed and reported in a structured, systematic and consistent manner. Key elements of the framework include control self-assessment (CSA), risk event management and key risk indicator monitoring. To reinforce accountability and ownership of risk and control by the business units and support units, Unit Operational Risk Managers are appointed to assist the unit heads in driving the overall risk and control agenda and programmes at the units. As part of Group Audit's review process. the quality of the operational risk management programmes of the business/ support units are taken into account, including the quality of CSA performed, so as to assign a "Management Control Awareness Rating" to the business/support units.

The Group Operational Risk Committee oversees DBS' operational is put in place. risk management infrastructure, including framework, policies, processes, information, methodologies and systems. The Committee A Group Basel II Steering Committee ("Steering Committee"), also performs regular review of the operational risk profiles of chaired by the Group CFO, has been set up to oversee the the Group, and endorses and recommends corporate operational implementation of all program work streams to ensure that DBS risk policies to be approved by the Business Support & Controls is on track for Basel II qualification. The Steering Committee is Committee. supported by sub-committees for each major work stream. Reporting to the Steering Committee, the Basel II Program Management Office The day-to-day management of operational risk exposures is through works with the respective work stream sponsors and dedicated project managers to drive the overall Basel II program.

the maintenance of a comprehensive system of internal controls, supported by an infrastructure of robust systems and procedures to monitor transaction positions and documentation. A set of Core Operational Risk Standards have been established to provide guidance to business units and support units on the baseline internal controls to be put in place to ensure the safety and soundness of their operating environment. Other major operational risk mitigation programmes include Business Continuity Management and the Global Insurance Programme that applies to all DBS entities and units in all locations.

50

#### **BASEL II PREPARATION**

DBS views Basel II as a firm-wide program that will ensure that our credit, market and operational risk management practices continue to meet international best practices. It is an initiative for us to further embed sound risk management practices and culture within our businesses, and ensure that DBS continues to expand our businesses across segments and markets with the right risk management discipline, practices and processes in place. To underscore the importance of this initiative and ensure a concerted effort towards the successful implementation of various aspects of the program, an integrated Basel II Governance and Program Management structure