

RISK MANAGEMENT

Addressing the Year 2000 Computer Problem

Approach to the Problem

As the Year 2000 Computer Problem (Y2K Problem) will have an impact not only on computers but also on a broad range of areas, DKB has specified the problem as one requiring a high management priority. Accordingly, a Director in charge of the Y2K Problem has been named to be responsible for the implementation of overall plans, which have been prepared in line with guidelines of the Basel Committee on Banking Supervision, the Japanese government, the Bank of Japan, and the Japanese Financial Supervisory Agency. DKB's management reviews progress on a monthly basis, and a bankwide system has been structured to allow for quick decision making and to assure that all aspects of the Y2K Problem are properly addressed. DKB is dealing with problems on a groupwide basis, making sure that subsidiaries and other associated companies also deal properly with the problem. The total cost of countermeasures, including personnel costs associated with remedial steps and the preparation of contingency plans, is approximately ¥37 billion.

System Remediation Operations

Almost all systems requiring Y2K Problem related remediation were modified and underwent internal

Y2K compliance confirmation tests by the end of March 1999. The remaining systems were remediated by the end of June 1999. To ensure that Y2K Problem related remediation was completed successfully, DKB conducted internal start-up tests using year 2000 data dates during a holiday break in spring 1999 (April 29–May 5) with actual in-use equipment, and it was confirmed that they are Y2K compliant. With respect to electronic banking services, which involve data exchange between customer and DKB computers, and data exchange operations using floppy disks or magnetic tapes, in April 1999 DKB began to contact subject customers and is carrying out Y2K compliance confirmation tests. All of DKB's customers who are utilizing the above services are encouraged to participate in Y2K-related confirmation tests.

Preparation of Contingency Plans

Although DKB is conducting thorough systems tests to prepare for the Year 2000, we also prepared contingency plans in December 1998 and have since then made improvements to the plans as necessary. Specifically, contingency plans include, but are not limited to, advance distribution to branches of lists containing balance and other items to prepare for potential disruptions of on-line services and information exchange with clearinghouses and other interbank systems to ensure consistency in

DKB's Y2K Project Schedule (Covering Both Domestic and Overseas Y2K Efforts)

	1996-97	1998	1999	2000
Master Schedule	<ul style="list-style-type: none"> Instituted Bankwide Y2K Master Project Plan Appointed Y2K Problem Director and established Y2K Administrative Unit 	Monthly Reviews of Y2K Project Efforts by Senior Management		Y2K Changeover Team
Assessment	Internal Assessment 10/96-3/98		Assessment of the Y2K Readiness of Customers and Financial Institutions	
Y2K System Remediation	Remediation of Mission Critical Systems 10/96-12/98		Remediation of Non-Mission Critical Systems 10/96-6/99	Freeze on System Installation/Modification
External Interface Testing			Interface Testing with Other Financial Institutions 12/98-7/99	
Y2K Contingency Plans		Framework First Draft	Information Exchange/ Fine Tuning	Rehearsal

contingency plans for disruptions in interbank foreign exchange settlement operations. To improve the effectiveness of plans, DKB is making every effort to fine tune the contingency plans and has scheduled a rehearsal of the plans for autumn 1999.

Asset/Liability Management

ALM Process

One of the most important requirements for ALM is the full understanding and active participation of top management in the ALM process. DKB's ALM & Market Risk Management Committee, which includes members of top management, meets every three months to discuss ALM policy, risk limits, and related matters in depth. Policies regarding these issues are decided by the Management Committee.

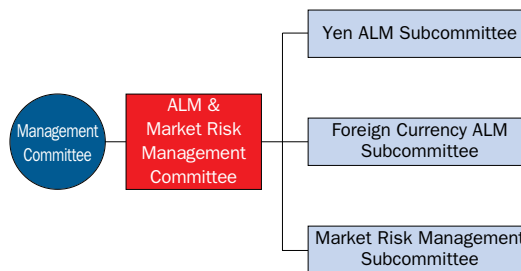
The ALM & Market Risk Management Committee is responsible for oversight of interest rate, foreign exchange currency, liquidity, and market risks in DKB's banking, trading, and other operations. This system allows DKB to avoid the assumption of excessive levels of risk.

Management of interest rate and other risks arising from day-to-day banking operations is concentrated at specialized ALM units that are continuously monitoring market conditions. Subcommittees under the ALM & Market Risk Management Committee are made up of ALM specialists from divisions responsible for the funding, allocation and usage of funds, risk management, and planning. These subcommittees meet on a weekly or monthly basis to provide timely advice.

ALM Operations

The interest rate gaps between on-balance-sheet assets and liabilities of Japan's city banks mainly arise from yen deposits and loans. Deposits and loans are largely based on customer relationships and have substantial recurring and seasonal components.

DKB uses Interest Rate Sensitivity Tables together with basis point value (BPV), value at risk (VAR), and other methods to carry out the diverse and multilayered management of interest rate gaps in its banking operations. Within the limitations set



by DKB's risk management policies and risk-taking limits, DKB makes use of derivative instruments, especially swaps, to control overall risk and stabilize and maximize earnings in the medium-to-long term.

Underlying requirements for effective ALM operations include accurate forecasts of interest rates and interest rate gaps. Forecasts of interest rate trends are prepared by ALM units that are constantly monitoring market conditions and engaged in making precise analyses based on various scenarios. Forecasts of interest rate gaps are based on analyses of historical data on the recurring and cyclical features of the interest rate gaps of on-balance-sheet assets and liabilities, as well as analysis of fluctuations in deposits, loans, and other items caused by changes in market interest rates, according to the term remaining to maturity for such items.

VAR in DKB's banking operations at the end of fiscal 1998, excluding strategic equity investment for relationship management, was ¥167.2 billion. Taking into account the nature of banking operations, this estimate assumes a holding period of one month and uses two standard deviations with a one-tail confidence interval of 97.7%. Other things being equal, a holding period of one day entails about one-fifth the risk of a holding period of one month.

Management of Liquidity Risk

Liquidity risk is managed primarily by closely monitoring the volumes of deposits, loans, and other funds flows, and estimating the amount of funds that must be raised in the market as well as the amount of funds that it is possible to raise from the market. For foreign currencies, overseas offices monitor these aspects of their liquidity positions and the Head Office supervises liquidity centrally on a daily basis. Moreover, to prepare for worst-case

Interest Rate Sensitivity Table

As of March 31, 1999	One year or less	One to five years	Over five years	(¥ billion) Total
Yen Assets				
Loans and bills discounted	¥23,816	¥3,782	¥ 893	¥28,490
Securities	3,178	690	1,436	5,304
Call loans, bills bought, due from banks	115			115
Other (net)	1,057			1,057
Subtotal	28,166	4,471	2,329	34,966
Yen Liabilities				
Deposits and negotiable certificates of deposit	28,045	2,171	13	30,228
Call money, bills sold, borrowed money	4,110	325	303	4,738
Subtotal	32,155	2,496	315	34,966
On-balance-sheet gap	(3,989)	1,975	2,014	—
Off-balance-sheet (derivatives)	265	(143)	(122)	—
Interest-rate sensitivity gap	(3,725)	1,833	1,892	—
Cumulative interest-rate sensitivity gap	(3,725)	(1,892)	0	—
Unrealized gains	55	134	45	234

Notes: 1. This table shows the maturity ladder for yen assets and liabilities in banking operations.

2. Assets and liabilities not sensitive to interest rate fluctuations and one-year swaps dated after the base date of this table are included in the category of maturities of one year or less.

3. The item "Unrealized gains" shows unrealized gains related to interest rates by period to maturity. These figures do not include unrealized gains on stocks and securities investment trusts. (For Market Value Information of Securities, please refer to page 82.)

scenarios, DKB holds assets that can be easily converted to cash, establishes various kinds of risk management limits, and carefully carries out risk management operations with close attention to detail.

Market Risk

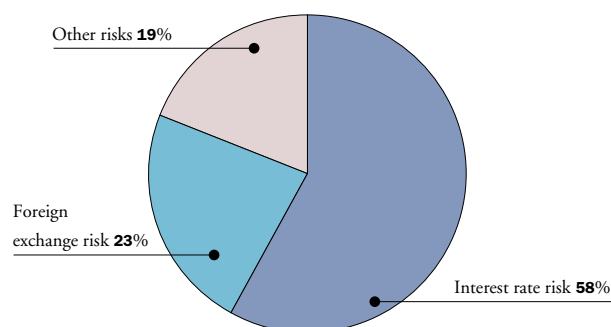
The Market Risk Management Office is the center of bankwide activities to manage market risk arising from DKB's operations. There are two key requirements for market risk management that must be met. The first is to quantitatively measure and prepare timely and accurate reports on risk, and the second is to qualitatively make use of this information in the management of day-to-day operations.

To quantify risk, DKB uses the VAR method on a daily basis for monitoring risk for all of its offices that are engaged in trading activities in Japan and overseas, including overseas subsidiaries. DKB's VAR model applies the variance-covariance approach to linear risks and the Monte Carlo Simulation, in most cases, to nonlinear risks. At present, the model takes into account approximately 900 risk factors and about 242,000 correlation coefficients.

Next, from a qualitative perspective, the Market Risk Management Office is an independent unit

that specializes in the management of market risk on a bankwide basis. In addition to the Market Risk Management Office, DKB's offices that are engaged in trading activities, both in Japan and overseas, have middle offices separate from the front offices that are responsible for risk management. DKB's backbone systems for market risk management are set forth in the Fundamental Policies for the Market Risk Management Structure.

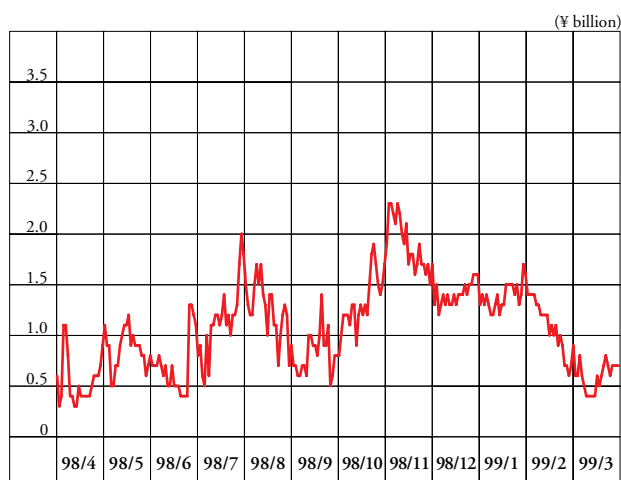
Breakdown of VAR by Type of Risk



This pie chart shows average VAR during fiscal 1998, broken down by the type of market risk in DKB's trading activities. Interest rate risk accounted for 58% of the total. "Other risks" include equity and options risks.

To enable top management to be fully committed to the risk management process, the office reports on market risk, not only on a daily basis

VAR during Fiscal 1998



This graph shows the VAR movements in DKB's trading activities. The holding period is one business day and the confidence level is 97.7% (two standard deviations). Average VAR for the period was ¥1.1 billion, with a minimum of ¥300.0 million and a maximum of ¥2.3 billion.

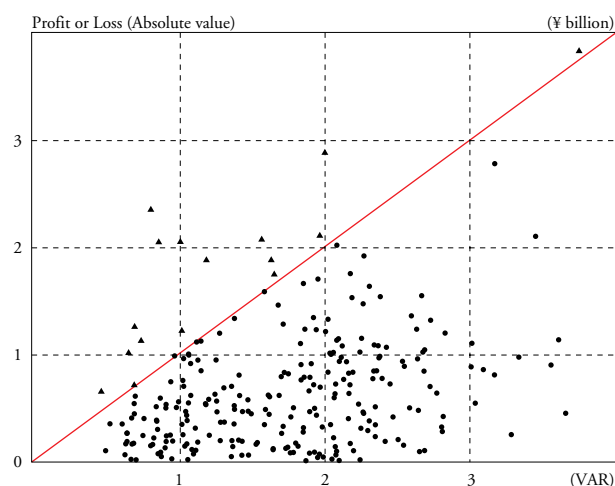
but also on a weekly and monthly basis, while providing reports on the results of stress testing. VAR limits for trading operations are set to incorporate the results of risk measures into day-to-day risk management. The VAR limit for DKB as a whole is determined by the Management Committee. Limits are also set at the divisional and office levels, and, thus, risk management activities are conducted at each level of the organization.

The validity of the VAR model in measuring market risk is checked through back testing. The results of the test are shown in the graph above, which suggests that the model is sufficiently accurate. In addition, stress testing is conducted to supplement limitations of the VAR method that may arise from the method's statistical assumptions.

Credit Risk

Among the various risks to which banks are exposed, credit risk has the largest potential impact on performance. To monitor and manage credit risk—which has grown more and more complex along with the increasing sophistication and globalization of finance—in a uniform manner, as well as maintain and enhance the quality of its asset portfolio, DKB continues to upgrade the accuracy and sophistication of its credit risk management through the implementation of the following measures.

Distribution of Profit/Loss and VAR



This graph compares daily VAR during fiscal 1998 with the absolute value of profits or losses. Points above the 45-degree line (upper left portion) indicate a day when the absolute value of profits or losses was higher than VAR. As the graph shows, the absolute value of profit or loss was higher than VAR for 16 days, or about 6% of the days during the period. As the estimates of VAR were made using a confidence level of two standard deviations (97.7% for one tail and 95.4% for two tails), the probability of actual values exceeding VAR is estimated to be distributed around 4.6% (100% minus 95.4%). Accordingly, the results suggest that the incidence of values exceeding VAR is not significantly different from the incidence of such values in the model and that the level of precision is satisfactory.

Improvements in the Credit Risk Management System

To enhance DKB's infrastructure for credit risk management, a thorough review of the Credit Risk Management System was conducted in July 1997. In principle, all credit customers were assigned revised credit risk ratings to provide a uniform measurement of the credit risk of all DKB's assets.

DKB views the assignment of credit risk ratings as the initial step in its Self-Assessment of asset quality and matched its credit risk ratings to the Obligor Classifications, according to the principles of the Prompt Corrective Action System. To promptly reflect any changes in the financial performance or other circumstances surrounding credit customers, these ratings are reviewed at least once each year.

To improve the management of DKB's asset portfolio as well as enhance and strengthen the related accounting systems, in February 1998 DKB began to calculate expected loss and unexpected loss by region, credit rating, and industry. In addition, as a result of an upgrading of DKB's system

Assets Classified in the Credit Rating Process	Obligors Classified	Credit Risk Ratings (Creditworthiness of Obligors)	Obligor Classifications for Self-Assessment	Classifications	
Loans	Non-financial corporations	1-10	Normal	I	
Acceptances and guarantees	Public corporations				
Foreign exchange	National and municipal government entities	11	Obligors under Close Observation	II	
Securities lent out	Sole proprietorships	12	Obligors with Possible Bankruptcy		
Derivative transactions	Financial institutions	13	Obligors Substantially in Bankruptcy		III
Accrued interest	Special-purpose corporations	14	Obligors under Legal Bankruptcy Proceedings		IV
Suspense payment	Others				
Others					

for quantifying credit risk in March 1999, the status of individual credits and other matters can be measured in detail. For each credit transaction, profitability and risk distribution have been assessed, taking into account the potential default cost. The results are utilized in specific measures aimed at improving return in proportion to risk and strengthening the management of DKB's asset portfolio.

Moreover, following the introduction of the Customer Segment-Based Business Management System in April 1999, DKB plans to use the results of the quantification of credit risk for the measurement of the return on risk capital (ROC) and other performance indicators, as well as for allocating the proper amount of capital to each of the Companies.

Enhancement of Organizational Systems and Credit Evaluation Functions

At the time of the introduction of the Customer Segment-Based Business Management System in April 1999, the Credit Risk Management Committee, which is chaired by the Director in charge of risk management and comprising the presidents of the Companies, was established in order to discuss the basic strategies for DKB's overall credit operations and its risk management activities and to take action as necessary.

To bolster the credit analysis capabilities of the Companies, a Credit Supervision Division has been assigned to each Company that is exposed to credit risk, and a Director in charge of credit supervision has been appointed to each Credit Supervision Division. In addition, credit above a specified limit

must be approved by the Management Committee, which has cross-Company managerial authority.

Moreover, a Credit Planning Office with bankwide credit risk management responsibilities was established within the Corporate Section, which is now working to strengthen asset portfolio management and develop uniform rules and procedures related to credit operations. In March 1998, DKB issued the Code of Ethics & Basic Guidelines in Lending, which contains basic policies and approaches for lending operations. Steps have been taken to ensure the use of this manual in the processing of loan applications at the branch level and in credit analysis activities within the Credit Supervision Divisions with the aims of maintaining and improving the soundness and profitability of DKB's loan assets.

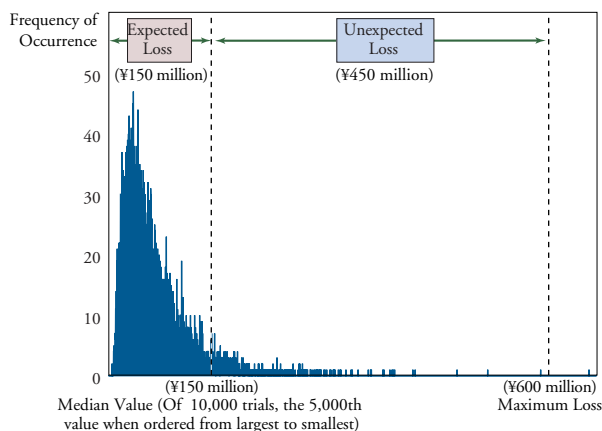
Quantification of Credit Risk

The quantification of credit risk involves forecasting the probability of future losses that may arise due to such uncertain events as the insolvency of the borrower or the deterioration of the borrower's business activities. In other words, volatilities of creditworthiness are measured as variations of the probability of default. The impact on DKB's future income and shareholders' equity is measured through the estimation of average expected loss and unexpected loss, which is the difference between the largest loss and the median loss.

When quantifying credit risk, DKB uses the Monte Carlo Simulation (which generates a range of default rates through 10,000 trials). The median credit loss (obtained by listing the simulated default losses from smallest to largest and taking

the central value) is designated as the expected loss, and the difference between the maximum credit loss at a specified confidence level and the expected loss is designated as the unexpected loss.

Measurement of Expected and Unexpected Loss Amounts due to Loan Default (The Monte Carlo Simulation)



The amount of loss due to loan default varies greatly with the default ratio, as well as with which specific obligors actually default on their loans. The Monte Carlo Simulation generates 10,000 different loss distribution scenarios. By ordering the simulated loss amounts from largest to smallest, the expected loss amount (the median loss value in the simulation; ¥150 million in the example above) and the unexpected loss amount (the difference between the maximum loss and the expected loss; ¥450 million in the example above) can be determined.

Operational Risk

To minimize operational risk, DKB has established operating procedures, including clear steps for processing, authority limits, and supervisory methods, as well as work flow stipulations to prevent operational errors. In addition, to provide support for the accurate and speedy conduct of processing operations, DKB has upgraded its processing equipment and is working to make full use of the checking functions that computers can perform.

With the aim of enhancing knowledge of processing and supervisory skills among its personnel, DKB has training and guidance programs, including study groups and classroom instruction for various levels and operating sections, instruction systems for teaching high-level knowledge regarding operational matters, and on-the-job training for operations supervisors conducted by the section specializing in processing operations. Moreover, DKB is working to further improve its operational

systems and reduce operational risks by concentrating standardized, high-volume processing operations and foreign exchange operations that require a high level of expertise into specialized units.

Based on the understanding that accurate and speedy processing are fundamental for gaining and maintaining customer trust, DKB is working in all related areas to reduce operational risk.

Information Technology (IT) Risk Management

In view of the growing importance of IT in the activities of financial institutions and the possible repercussions of failures in such systems, DKB is adopting a range of measures to minimize related risks.

Backup Systems

If DKB's main computer centers, which provide on-line services, become inoperative because of major natural disasters, operations are switched to backup computer centers instantly and services at DKB's offices continue without interruption. Moreover, if the telecommunications network linking the computer center and DKB's offices fails, backup lines are available to allow services to continue.

Ensuring the Safety of IT Equipment

The buildings containing DKB's computer systems are structurally about 1.5 times stronger than conventional buildings, and floors have been designed to dampen the vibration caused by earthquakes. Because of these preventative measures, DKB's computer centers can withstand earthquakes of the same magnitude as the Great Hanshin-Awaji Earthquake of 1995. In addition, the computer centers have their own electric power generating equipment, water storage tanks, and other systems that allow continued operation during and following emergencies.

Data Security

DKB has taken strict measures to prevent unauthorized access to its systems by installing a computer that is dedicated to monitoring and controlling data interchange with outside systems.