# Risk Management Structure

## Credit risk management

### Basic approach

We define credit risk as the Mizuho group's exposure to the risk of losses that may be incurred due to a decline in, or total loss of, the value of assets (including off-balance-sheet instruments), as a result of deterioration in obligors' financial position.

### Credit risk management structure

Our Board of Directors determines the Mizuho group's basic matters pertaining to credit risk management. In addition, the Risk Management Committee broadly discusses and coordinates matters relating to basic policies and operations in connection with credit risk management and matters relating to credit risk monitoring for the Mizuho group. Under the control of the Group Chief Risk Officer of Mizuho Financial Group, the Credit Risk Management Department and the Risk Management Department jointly monitor, analyze, and submit suggestions concerning credit risk and formulate and execute plans in connection with basic matters pertaining to credit risk management.

Our principal banking subsidiaries and other core group companies manage their credit risk according to the scale and nature of their exposures in line with basic policies set forth by Mizuho Financial Group. The Board of Directors of each company determines key matters pertaining to credit risk management.

Mizuho Financial Group manages credit risk for the group as a whole. Specifically, Mizuho Financial Group establishes the group's fundamental credit risk policy to manage major group companies, and monitors and manages the credit risks of the group as a whole.

The Balance Sheet & Risk Management Committee and the Credit Committee, each of which is a business policy committee of our principal banking subsidiaries, are responsible for discussing and coordinating overall management of their individual credit portfolios and transaction policies towards obligors. The respective Chief Risk Officers of our principal banking subsidiaries are responsible for matters relating to planning and implementing credit risk management. The credit risk management departments of our principal banking subsidiaries are in charge of planning and administering credit risk management and conducting credit risk measuring and monitoring. The departments regularly present reports regarding their risk management situation to Mizuho Financial Group. The credit departments of our principal banking subsidiaries determine policies and approve/disapprove individual transactions in terms of credit review, credit management and collection from obligors in accordance with the lines of authority set forth respectively by our principal banking subsidiaries. In addition, our principal banking subsidiaries have established internal audit groups that are independent of the business departments in order to ensure appropriate credit risk management.

### Method of credit risk management

We have adopted two different but mutually complementary approaches to credit risk management. The first approach is "individual credit management," in which we manage the process for each individual transaction and individual obligor from execution until collection, based on our assessment of the credit quality of the obligor. Through this process, we curb losses in the case of a credit event. The second is "credit portfolio management," in which we utilize statistical methods to assess the potential for losses related to credit risk. Through this process, we identify credit risks and respond appropriately.

#### Individual credit management

1. Credit code

The basic code of conduct for all of our executive officers and employees engaged in the credit business is set forth in our credit code. Seeking to fulfill our mission and social responsibilities, our basic policy for credit business is determined in light of fundamental principles focusing on public welfare, safety, growth, and profitability.

2. Internal rating system

One of the most important elements of the risk management infrastructure of our principal banking subsidiaries is the use of an internal rating system that consists of credit ratings and pool allocations. Credit ratings consist of obligor ratings which represent the level of credit risk of the obligor, and transaction ratings which represent the possibility of ultimately incurring losses related to each individual claim by taking into consideration the nature of any collateral or guarantee and the seniority of the claim.

In principle, obligor ratings apply to all obligors and are subject to regular reviews at least once a year to reflect promptly the fiscal period end financial results of the obligors, as well as special reviews as required whenever an obligor's credit standing changes. This enables our principal banking subsidiaries to monitor both individual

obligors and the status of the overall portfolio in a timely fashion. Because we consider obligor ratings to be an initial phase of the self-assessment process regarding the quality of our loans and off-balance-sheet instruments, such obligor ratings are closely linked to the obligor classifications and are an integral part of the process for determining the provision for loan losses and charge-offs in our self-assessment of loans and off-balance-sheet instruments. (Please refer to the chart below regarding the connection between obligor ratings, definition of obligor classifications of self-assessments, claims disclosed under the FRA and non-accrual, and past due & restructured loans).

To assign obligor ratings, we have a quantitative evaluation system (rating model) in place to enable proper assessment of an obligor's credit standing. The system gives a quantitative rating to an obligor based on obliger-specific characteristics such as type of business (corporation or individual) and geography (in Japan or outside Japan). We categorize our rating models for companies in Japan into those for large companies and those for small and medium-sized companies. The former consist of 13 models according to industry-specific factors, while the latter consist of three models. For companies outside Japan, we utilize nine models.

These were developed by the Credit Risk Management Department based on a statistical methodology and approved by the Chief Risk Officer.

Pool allocations are applied to small claims that are less than a specified amount by pooling obligors and claims with similar risk characteristics and assessing and managing the risk for each such

**Connection between obligor ratings, definition of obligor classifications of self-assessments, claims disclosed under the FRA and non-accrual, past due & restructured loans**

<table>
<tr><th>Definition of obligor classifications of self-assessment</th><th>Obligor ratings (major category)</th><th>Definition of ratings</th><th>Category I (non-categorized)</th><th>Category II</th><th>Category III</th><th>Category IV (non-collateralized)</th><th>Claims disclosed under the FRA</th><th>Non-accrual, past due & restructured loans</th></tr>
<tr><td rowspan="4">Normal obligors</td><td>A1—A3</td><td>Obligors whose certainty of debt fulfillment is very high, hence their level of credit risk is excellent.</td><td rowspan="4">All credit given to normal obligors.</td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="6">Normal claims</td><td rowspan="5"></td></tr>
<tr><td>B1—B2</td><td>Obligors whose certainty of debt fulfillment poses no problems for the foreseeable future, hence their level of credit risk is sufficient.</td></tr>
<tr><td>C1—C3</td><td>Obligors whose certainty of debt fulfillment and their level of credit risk pose no problems for the foreseeable future.</td></tr>
<tr><td>D1—D3</td><td>Obligors whose current certainty of debt fulfillment poses no problems, however, their resistance to future environmental changes is low.</td></tr>
<tr><td rowspan="2">Watch obligors</td><td>E1</td><td rowspan="2">Obligors who require close watching going forward because there are problems with their borrowings, such as reduced or suspended interest payments, problems with fulfillment such as de facto postponements of principal or interest payments, or problems with their financial positions as a result of their poor or unstable business conditions.</td><td rowspan="4">Credit to obligors which has pledged collateral or is covered by guarantees, considered of high quality, such as deposit collateral.</td><td rowspan="2">Credit given to watch obligors other than those included in category I.</td></tr>
<tr><td>E2 R</td><td>Claims for special attention</td><td>Restructured loans<br>Loans past due for 3 months or more</td></tr>
<tr><td>Intensive control obligors</td><td>F1</td><td>Obligors who are not yet bankrupt but are in financial difficulties and are deemed to be very likely to go bankrupt in the future because they are finding it difficult to make progress in implementing their management improvement plans (including obligors who are receiving ongoing support from financial institutions).</td><td rowspan="3">Credit to obligors which is covered by general collateral, such as real estate and guarantees.</td><td>Credit given to intensive control obligors other than those included in category I and category II.</td><td>Claims with collection risk</td><td rowspan="3">Non-accrual delinquent loans</td></tr>
<tr><td>Substantially bankrupt obligors</td><td>G1</td><td>Obligors who have not yet gone legally or formally bankrupt but who are substantially bankrupt because they are in serious financial difficulties and are not deemed to be capable of restructuring.</td><td rowspan="2">The difference between the assessed value and market value of collateral on credit to bankrupt and substantially bankrupt obligors (i.e., the portion of loans for which final collection problems or losses are anticipated).</td><td rowspan="2">Credit to bankrupt and substantially bankrupt obligors, other than those in category I, category II and category III (credit that is judged to be unrecoverable or without value).</td><td rowspan="2">Claims against bankrupt and substantially bankrupt obligors, and equivalent</td></tr>
<tr><td>Bankrupt obligors</td><td>H1</td><td>Obligors who have already gone bankrupt, from both a legal and/or formal perspective.</td><td>Loans to bankrupt obligors</td></tr>
</table>

pool. Our principal banking subsidiaries efficiently manage credit risk and credit screening by dispersing a sufficient number of small claims within each pool.

Our principal banking subsidiaries generally review the appropriateness and effectiveness of our approach to obligor ratings and pool allocations once a year in accordance with predetermined procedures, which is audited by the Internal Audit Group.

Mizuho Financial Group defines a Restructured Loan as a loan extended to watch obligors when the following conditions are met: we are aiming for business reconstruction or financial support; and lending conditions were amended favorably to the obligor such as allowing interest rate reduction, postponement of principal repayment/interest payment, debt forgiveness, etc.

An overdue loan is defined as a loan for watch obligors of which the loan principal or interest is overdue for three months or more following the contractual payment date.

### Methods for reserves and write-offs

| | |
|---|---|
| **Normal obligors** | Calculate the value of estimated loss based on the probability of failure over the coming year for loans by obligor rating and appropriate it for the General reserve for possible losses on loans. |
| **Watch obligors** | Calculate the estimated loss on loans based on the probability of failure over the next three years and appropriate it for the general reserve for possible losses on loans. Further, in regard to special attention obligors, for obligors with large claims more than a certain amount, if the cash flow from the return of principal and interest payments can reasonably be estimated, set up a reserve under the DCF method. |
| **Intensive control obligors** | Provide an amount for specific reserve for possible losses on loans as calculated by one of the following methods after deducting amounts anticipated to be recoverable from the sale of collateral held against the claims and from guarantors of the claims: a) an amount calculated based on the overall ability of the obligor to pay, or b) the estimated loss calculated on the basis of the balance and the probability of failure over the next three years.<br><br>Further, for obligors with large claims more than a certain amount, if the cash flow from the return of principal and interest payments can reasonably be estimated, set up a reserve under the DCF method. |
| **Substantially bankrupt obligors** | Provide the entire balance after deducting amounts anticipated to be recoverable from the sale of collateral held against the claims and from guarantors of the claims for specific reserve for possible losses on loans, or write-off the entire balance. |
| **Bankrupt obligors** | |

3. Self-assessment, provision for loan losses and off-balance-sheet instruments, and write-offs

We conduct self-assessment of assets to ascertain the status of assets both as an integral part of credit risk management and in preparation for appropriate accounting treatment, including provision for loan losses and off-balance-sheet instruments and write-offs. During the process of self-assessment, obligors are categorized into certain groups taking into consideration their financial condition and their ability to make payments, and credit ratings are assigned to all obligors, in principle, to reflect the extent of their credit risks. The related assets are then categorized into certain classes based on the risk of impairment. This process allows us to identify and control the actual quality of assets and determine the appropriate accounting treatment, including provision for loan losses and off-balance-sheet instruments and write-offs. Specifically, the credit risk management department of each of our principal subsidiaries is responsible for the overall control of the self-assessment of assets of the respective banking subsidiaries, cooperating with the administrative departments specified for each type of asset, including loan portfolios and securities, in executing and managing self-assessments.

In our assessment of the probability of obligor bankruptcy, we deem an obligor that is rated as being insolvent or lower as being bankrupt.

4. Credit review

Prevention of new impaired loans through routine credit management is important in maintaining the quality of our overall loan assets.

Credit review involves analysis and screening of each potential transaction within the relevant business department. In case the screening exceeds the authority of the department, the credit department in charge at Head Office carries out the review. The credit group has specialist departments for different industries, business sizes, and regions, carries out timely and specialized examinations based on the characteristics of the client and its market, and provides appropriate advice to the business department.

In addition, in the case of obligors with low credit ratings and high downside risks, the business department and credit department jointly clarify their credit policy and in appropriate cases assist the obligors at an early stage in working towards credit soundness.

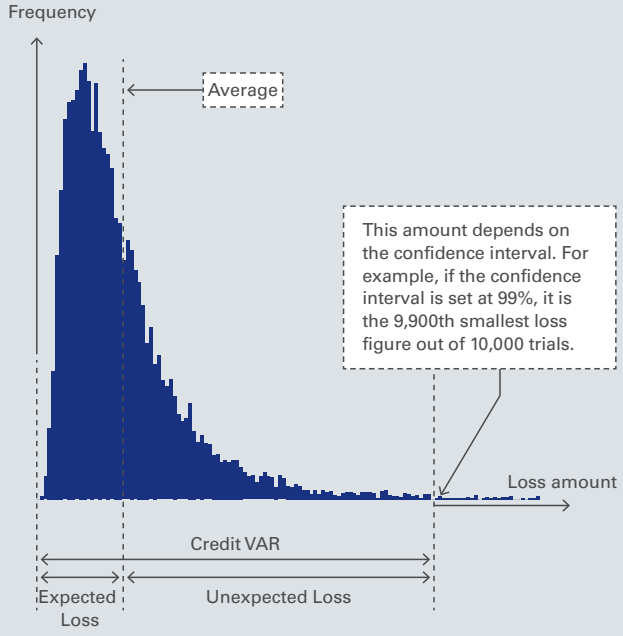
## Credit portfolio management

1. Risk measurement

We use statistical methodologies that involve a risk measurement system (enterprise value corporate valuation model, holding period of one year) to manage the possibility of losses by measuring the expected average loss for a one-year risk horizon ("Expected Loss") and the maximum loss within a certain confidence interval ("Credit VAR"). The difference between Expected Loss and Credit VAR is measured as the credit risk amount ("Unexpected Loss").

The risk measurement system covers the following account items reported by each Mizuho Financial Group company: credit transactions including loans and discounts; securities; clients' liabilities for acceptances and guarantees; deposits and foreign exchange; derivatives including swaps and options; off-balance sheet items including commitments; and other assets involving credit risk.

**Loss distribution**




In establishing transaction spread guidelines for credit transactions, we aim to ensure an appropriate return from the transaction in light of the level of risk by utilizing credit cost data as a reference.

Also, we monitor our credit portfolio from various perspectives and set guidelines noted below so that losses incurred through a hypothetical realization of the full Credit VAR would be within the amount of risk capital and loan loss reserves.

2. Risk control methods

Our principal banking subsidiaries have established guidelines to manage "credit concentration risk," which stems from granting excessive credit to certain corporate groups. Our principal banking subsidiaries also set the credit limit based on a verification of the status of capital adequacy. In cases where the limit is exceeded, our principal banking subsidiaries will formulate a handling policy and/or action plan.

In addition to the above, our principal banking subsidiaries monitor total credit exposure, credit exposure per rating, credit concentration per corporate group, geographic area, and business sector to make a periodical report to the Balance Sheet & Risk Management Committee and the Credit Committee.

## Market risk management

### Basic approach

We define market risk as the risk of losses incurred by the group due to fluctuations in interest rates, stock prices, and foreign exchange rates. Our definition includes the risk of losses incurred when it becomes impossible to execute transactions in the market because of market confusion or losses arising from transactions at prices that are significantly less favorable than usual.

Mizuho Financial Group manages market risk for the Mizuho group as a whole. Specifically, Mizuho Financial Group establishes the fundamental risk management policy for the entire group, manages the market risk of our principal banking subsidiaries and other core group companies, and monitors how the group's market risk is being managed as a whole.

### Market risk management structure

Our Board of Directors determines basic matters pertaining to market risk management policies. The Risk Management Committee of Mizuho Financial Group broadly discusses and coordinates matters relating to basic policies in connection with market risk management, market risk operations, and market risk monitoring. The Group CRO of Mizuho Financial Group is responsible for matters relating to market risk management planning and operations.

The Risk Management Department of Mizuho Financial Group is responsible for monitoring market risk, reporting and analysing, making proposals, setting limits and guidelines, and formulating and implementing plans relating to market risk management.

As for the situation of market risk, the Risk Management Department submits reports to the President and Group CEO on a daily basis and to the Board of Directors on a regular basis. For the purpose of managing the market risk of our principal banking subsidiaries and other core group companies, the Department regularly receives reports from each of them to properly identify and manage their market risk. These subsidiaries and core group companies, which account for most of the Mizuho group's exposure to market risk, establish their basic policies based on ours, and their Boards of Directors determine important matters relating to market risk management.

### Market risk management method

To manage market risk, we set limits that correspond to risk capital allocations according to the risk profile of each of our principal banking subsidiaries and other core group companies and thereby prevent the overall market risk we hold from exceeding our financial strength represented by capital and other indicators. The amount of risk capital allocated to market risk corresponds to value-at-risk (the "VAR") and additional costs that may arise in order to close relevant positions.

#### Setting limits

When the above mentioned limits are set, various factors are taken into account, including business strategies, historical limit usage ratios, risk-bearing capacity (profits, equity capital, and risk management framework), profit targets and the market liquidity of the products involved. The limits are discussed and coordinated by the Risk Management Committee, discussed further by the Executive Management Committee and then determined by the President & Group CEO. For trading and banking activities, we set limits for VAR and for losses. For banking activities, we set position limits based on interest rate sensitivity (10 BPV) as needed. An excess over any of these limits is immediately reported and addressed according to a pre-determined procedure.

#### Monitoring

To provide a system of mutual checks and balances in market operations, we have established middle offices specializing in risk management that are independent of front offices which engage in market transactions and of back offices which are responsible for book entries and settlements. When VAR is not adequate to control risk, the middle offices manage risk using additional risk indices, carry out stress testing, and set stop loss limits as needed. We monitor market liquidity risk for individual financial products in the market while taking turnover and other factors into consideration.

## Status of Mizuho Financial Group's market risk

### Value-at-risk

We use the VAR method, supplemented with stress testing, as our principal tool to measure market risk. The VAR method measures the maximum possible loss that could be incurred due to market movements within a certain time period (or holding period) and degree of probability (or confidence interval).

### Trading activities

VAR related to our trading activities is based on the following:

- historical simulation method;
- confidence interval: one-tailed 99.0%;
- holding period of one day; and
- historical observation period of three years.

The following tables show the VAR related to our trading activities by risk category for the fiscal years ended March 31, 2018, 2019 and 2020 and as of March 31, 2018, 2019 and 2020:

**VAR by risk category (trading activities)** (¥ billion)

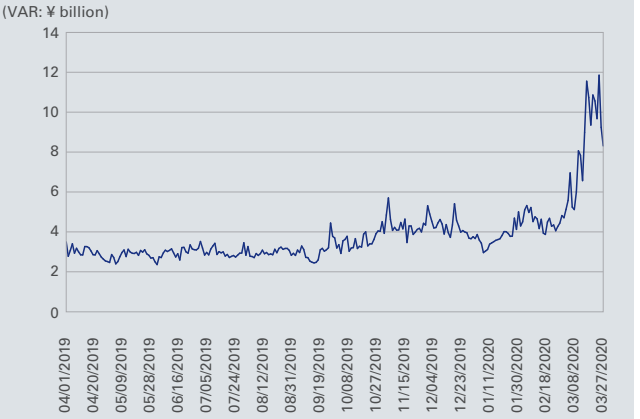
| | Fiscal 2017 | | | |
|---|---|---|---|---|
| | Daily average | Maximum | Minimum | At March 31 |
| Interest rate | 1.7 | 2.5 | 1.0 | 2.2 |
| Foreign exchange | 0.4 | 1.2 | 0.1 | 0.1 |
| Equities | 0.6 | 2.4 | 0.3 | 0.5 |
| Commodities | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | 3.0 | 6.2 | 2.2 | 3.0 |

| | Fiscal 2018 | | | |
|---|---|---|---|---|
| | Daily average | Maximum | Minimum | At March 31 |
| Interest rate | 2.0 | 2.9 | 1.3 | 2.0 |
| Foreign exchange | 0.8 | 2.8 | 0.1 | 0.3 |
| Equities | 0.6 | 7.7 | 0.2 | 0.5 |
| Commodities | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | 3.4 | 9.2 | 2.4 | 2.6 |

| | Fiscal 2019 | | | |
|---|---|---|---|---|
| | Daily average | Maximum | Minimum | At March 31 |
| Interest rate | 2.7 | 7.2 | 1.3 | 6.7 |
| Foreign exchange | 0.4 | 1.1 | 0.1 | 0.8 |
| Equities | 0.6 | 4.5 | 0.2 | 1.7 |
| Commodities | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | 3.8 | 11.8 | 2.3 | 8.3 |

The following graph shows VAR figures of our trading activities for the fiscal year ended March 31, 2020:

**Fiscal 2019 VAR (trading activities)**




The following table shows VAR figures of our trading activities for the fiscal years indicated:

**VAR (trading activities)** (¥ billion)

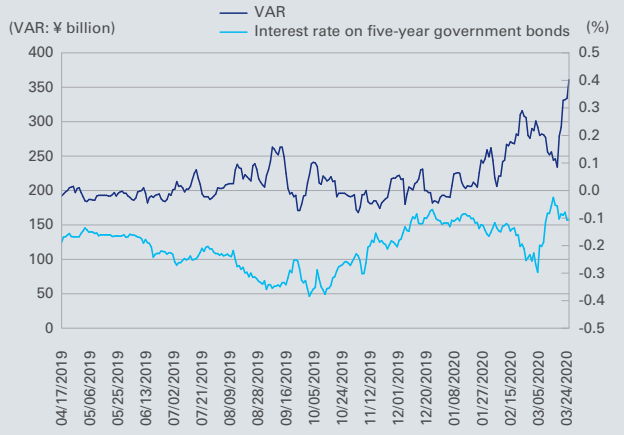
| | Fiscal 2017 | Fiscal 2018 | Fiscal 2019 | Change |
|---|---|---|---|---|
| As of fiscal year end | 3.0 | 2.6 | 8.3 | 5.6 |
| Maximum | 6.2 | 9.2 | 11.8 | 2.5 |
| Minimum | 2.2 | 2.4 | 2.3 | (0.1) |
| Average | 3.0 | 3.4 | 3.8 | 0.4 |

### Non-trading activities

The VAR related to our banking activities is based on the same conditions as those of trading activities, but the holding period is one month. In addition, as for risk management of banking activities, it is important to properly measure interest rate risk so that we calculate interest risk using appropriate methods such as recognizing demand deposits as "core deposits."

The following graph shows the VAR related to our banking activities excluding our cross-shareholdings portfolio for the year ended March 31, 2020:

**Fiscal 2019 VAR (banking activities)**




The following table shows the VAR figures relating to our banking activities for the fiscal years indicated:

**VAR (banking activities)** (¥ billion)

| | Fiscal 2017 | Fiscal 2018 | Fiscal 2019 | Change |
|---|---|---|---|---|
| As of fiscal year end | 268.4 | 194.4 | 361.4 | 166.9 |
| Maximum | 307.2 | 298.5 | 361.4 | 62.8 |
| Minimum | 210.8 | 194.4 | 167.9 | (26.4) |
| Average | 267.8 | 255.5 | 215.7 | (39.8) |

### Characteristics of VAR model

VAR is a commonly used market risk management technique. However, VAR models have the following shortcomings:

- By its nature as a statistical approach, VAR estimates possible losses over a certain period at a particular confidence level using past market movement data. Past market movement, however, is not necessarily a good indicator of future events, particularly potential future events that are extreme in nature.
- VAR may underestimate the probability of extreme market movements.
- The use of a 99.0% confidence level does not take account of, nor makes any statement about, any losses that might occur beyond this confidence level.
- VAR does not capture all complex effects of various risk factors on the value of positions and portfolios and could underestimate potential losses.

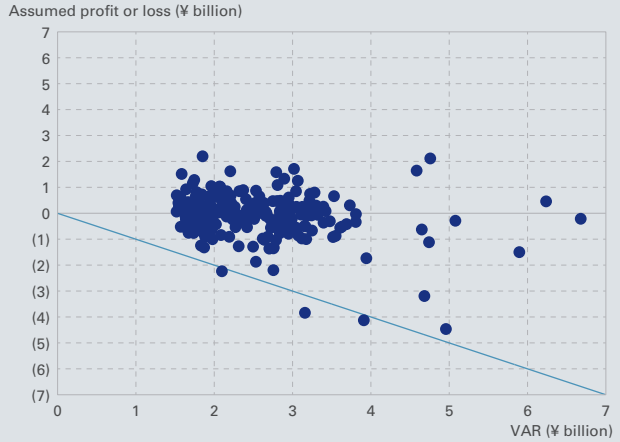
**Cross-shareholdings portfolio management activities**

We take the market risk management approach with use of VAR and risk indices for cross-shareholdings portfolio management activities to properly manage stock price risk. Specifically, we monitor VAR measurements and the state of risk capital on a daily basis. Moreover, in order to control stock price risk, we are working on the reduction in cross-shareholdings through careful negotiations with counterparties.

**Back testing**

In order to evaluate the effectiveness of market risk measurements calculated using the VAR method, we carry out regular back tests to compare VAR with assumptive profits and losses. Assumptive profits and losses accounts for general market risk. The graph below shows daily VAR of trading activities for the fiscal year ended March 31, 2020 and the corresponding paired distribution of profits and losses. We had three cases where losses exceeded VAR during the period. In addition, we conduct evaluations of the assumptions related to the VAR models. Based on the number of times losses exceeded VAR through back testing and the results of the evaluation of the model assumptions, we will make adjustments to the models as appropriate. Changes to fundamental portions of the VAR models are subject to the approval of our Group Chief Risk Officer.

**Fiscal 2019 back testing**




Note: We conduct our back testing and assess the number of cases where losses exceed VAR based on a 250 business day year. The expected average number of instances where one-day trading losses exceeded VAR at the 99% confidence level is 2.5.

## Stress testing

Because the VAR method is based on statistical assumptions, we conduct stress testing to simulate the levels of losses that could be incurred in cases where the market moves suddenly to levels that exceed these assumptions. The stress testing methods we use include the calculation of losses under scenarios in which stresses are applied to interest rate risk and stock price risk based on current and projected economic conditions, historical market events, etc.

## Liquidity risk management

### Basic approach

We define liquidity risk as the risk of losses arising from funding difficulties due to a deterioration in our financial position that makes it difficult for us to raise necessary funds or that forces us to raise funds at significantly higher interest rates than usual. Mizuho Financial Group manages liquidity risk for the Mizuho group as a whole. Specifically, Mizuho Financial Group establishes the fundamental liquidity risk management policy for the entire group, manages the liquidity risk of our principal banking subsidiaries and other core group companies, and monitors how the group's liquidity risk is being managed as a whole.

### Liquidity risk management structure

Our Board of Directors determines basic matters pertaining to liquidity risk management policies. The Risk Management Committee of Mizuho Financial Group broadly discusses and coordinates matters relating to basic policies in connection with liquidity risk management, operations, and monitoring, and proposes responses to emergencies such as sudden market changes. The Group Chief Risk Officer of Mizuho Financial Group is responsible for matters relating to liquidity risk management planning and operations. The Risk Management Department of Mizuho Financial Group is responsible for monitoring liquidity risk, reporting and analysing, making proposals, and formulating and implementing plans relating to liquidity risk management. In addition, the Group Chief Financial Officer of Mizuho Financial Group is additionally responsible for matters relating to planning and running cash flow management operations, and the Financial Planning Department is responsible for monitoring and adjusting the cash flow management situation and for planning and implementing cash flow management to maintain appropriate funding liquidity. Reports on liquidity risk management are submitted to the Risk Management Committee and the Balance Sheet Management Committee (each of which is a business policy committee), the Executive Management Committee and the President & Group CEO on a regular basis.

Our principal banking subsidiaries and other core group companies also establish their basic policies on liquidity risk management to properly identify and manage liquidity risk.

### Liquidity risk management method

We manage liquidity risk with the use of "liquidity risk management indicators" and "liquidity categorization." The former is determined for the purpose of managing limits on funds raised in the market considering our fund raising capabilities, and the latter is determined based on our funding conditions. We also carry out liquidity stress testing to verify the sufficiency of liquidity reserve assets and the effectiveness of countermeasures against a possible outflow of funds during a stress event. The results of stress testing are used for cash flow management operations.

#### Liquidity risk management indicators

Limits on funds raised in the market are set based on a number of time horizons taking into account characteristics and strategies of each of our principal banking subsidiaries and other core group companies. Such limits are discussed and coordinated by the Risk Management Committee, discussed further by the Executive Management Committee, and determined by the President & Group CEO. An excess over any of these limits is immediately reported and addressed according to a pre-determined procedure.

#### Liquidity categorization

We have established a group-wide framework of liquidity risk stages such as "normal," "anxious" and "crisis," which reflects funding conditions. In addition, we set early warning indicators ("EWIs") and monitor on a daily basis to manage funding conditions. The EWIs we use include stock prices, credit ratings, amount of liquidity reserve assets such as Japanese government bonds, and our funding situation.

#### Liquidity stress testing

We carry out stress testing regularly based on market-wide factors, idiosyncratic factors of the group, and a combination of both types of factors to verify the sufficiency of liquidity reserve assets and the effectiveness of our liquidity contingency funding plans. Furthermore, we utilize stress testing for evaluating the appropriateness of our annual funding plan.

## Operational risk management

### Basic approach

We define operational risk as the risk of losses that may be incurred resulting from inadequate or failed internal processes or systems, human error, or external events. We control operational risk management for the Mizuho group as a whole. Considering that operational risk includes information technology risk, operations risk, legal risk, human capital risk, tangible asset risk, regulatory risk, and reputational risk, we have separately determined the fundamental risk management policies for these different types of risk. We manage the operational risk associated with our principal banking subsidiaries and other core group companies while monitoring the state of group-wide operational risk.

| | Definition | Principal risk management methods |
|---|---|---|
| Information technology risk | Information technology risk ("IT risk") shall refer to the risk that problems (e.g. malfunctions, disruptions, etc.) with the computer systems or improper use of the computers in these systems, which cause disruptions of the services provided to customers, or have significant impact on settlement systems, etc., will result in losses for customers, and the incurrence of losses (tangible or intangible) by our group companies. | • Identify and evaluate the risk by setting specific standards that need to be complied with and implementing measures tailored based on evaluation results to reduce the risk.<br>• Ensure ongoing project management in systems development and quality control.<br>• Strengthen security to prevent information leaks.<br>• Strengthen capabilities for rapidly and effectively dealing with cyberattacks.<br>• Improve effectiveness of emergency responses by improving backup systems and holding drills. |
| Operations risk | The risk of customers incurring a loss or the risk of the group incurring tangible and/or intangible losses due to the disruption of services to customers or major incidents affecting settlement systems, etc., as a result of inadequate operations caused by fraudulent acts, errors or negligence, etc., of senior executives or employees, or inadequacies in the operational structure itself. | • Establish clearly defined procedures for handling operations.<br>• Periodically check the status of operational processes.<br>• Conduct training and development programs led by Head Office.<br>• Introduce information technology, office automation, and centralization for operations.<br>• Improve the effectiveness of emergency responses by holding drills. |
| Legal risk | Risk that the group may incur losses due to violation of laws and regulations, breach of contract, entering into improper contracts or, other legal factors. | • Review and confirm legal issues, including the legality of material decisions, agreements and external documents, etc.<br>• Collect and distribute legal information and conduct internal training programs.<br>• Analyze and manage issues related to lawsuits. |
| Human capital risk | Risk that the group may incur losses due to turnover or loss of personnel, deterioration of morale, inadequate development of personnel, inappropriate working schedules, inappropriate working and safety environment, inequality or inequity in human resource management, or discriminatory conduct. | • Conduct employee satisfaction surveys.<br>• Understand the status of working hours.<br>• Understand the status of vacation days taken by personnel.<br>• Understand the status of voluntary resignations.<br>• Understand the status of the stress check system. |
| Tangible asset risk | Risk that the group may incur losses from damage to tangible assets or a decline in the quality of the working environment as a result of disasters, criminal actions, or defects in asset maintenance. | • Manage the planning and implementation of construction projects related to the repair and replacement of facilities.<br>• Identify and evaluate the status of damage to tangible assets caused by natural disasters or other causes, and respond appropriately to such damage. |
| Regulatory risk | Risk that the group may incur losses due to changes in various regulations or systems, such as those related to law, taxation, and accounting. | • Understand important changes in regulations or systems that have significant influence on our business operations or financial condition in a timely and accurate manner.<br>• Analyze degree of influence of regulatory changes and establish countermeasures.<br>• Continuously monitor our regulatory risk management mentioned above. |
| Reputational risk | Risk that the group may incur losses due to damage to our credibility or the value of the "Mizuho" brand when market participants or others learn about, or the media reports on, various adverse events, including actual materialization of risks or false rumors. | • Establish framework to identify and manage, on an integrated basis, information that may have a serious impact on group management and respond to such risk in a manner appropriate to its scale and nature.<br>• Swiftly identify rumors and devise appropriate responses depending on the urgency and possible impact of the situation to minimize possible losses. |

We also recognize and manage information security risk and compliance risk, which constitute a combination of more than one of the above components, as operational risk.

## Operational risk management structure

Our Board of Directors determines basic matters pertaining to operational risk management policies. The Risk Management Committee of Mizuho Financial Group broadly discusses and coordinates matters relating to basic policies in connection with operational risk management, operational risk operations, and operational risk monitoring. The Group Chief Risk Officer of Mizuho Financial Group is responsible for matters relating to operational risk management planning and operations. The Risk Management Department of Mizuho Financial Group is responsible for monitoring market risk, reporting and analysing, making proposals, setting limits and guidelines, and formulating and implementing plans relating to operational risk management.

Our principal banking subsidiaries and core group companies establish their basic policies on operational risk management, and their Boards of Directors determine important matters relating to operational risk management.

## Operational risk management method

To manage operational risk, we set common rules for data gathering to develop various databases shared by the group and measure operational risk as operational VAR on a regular basis, taking into account possible future loss events and changes in the business environment and internal management.

We have established and are strengthening management methods and systems to appropriately identify, assess, measure, monitor, and control the operational risks that arise from the growing sophistication and diversification of financial operations and developments relating to information technology by utilizing control self-assessments and improving measurement methods.

### Control self-assessments

An autonomous method of risk management in which risk inherent in operations is identified and, after evaluating and monitoring risks that remain despite implementing risk control, the necessary measures are implemented to reduce risk.

## Definition of risks and risk management methods

As shown in the table on the previous page, we have defined each component of operational risk, and we apply appropriate risk management methods in accordance with the scale and nature of each risk.

## Measurement of operational risk equivalent

### 1. Implementation of the Advanced Measurement Approach (AMA)

We have adopted the AMA for the calculation of operational risk equivalent in association with capital adequacy ratios based on the Basel Accords. However, we use the Basic Indicator Approach for entities that are deemed to be less important in the measurement of operational risk equivalent.

The measurement results under the AMA are used not only as the operational risk equivalent in the calculation of capital adequacy ratios but also as Operational VAR for internal risk management purposes for implementing action plans to reduce operational risk, and other countermeasures.

### 2. Outline of the AMA

**Outline of the measurement system**

We have established our model by taking account of four elements: internal loss data; external loss data; scenario analysis and business environment; and internal control factors (BEICFs). We calculate the operational risk amount by estimating the maximum loss, using a 99.9th percentile one-tailed confidence interval and a one-year holding period as operational risk equivalent, employing both internal loss data (i.e., actually experienced operational loss events), and scenario data to reflect unexperienced potential future loss events in the measurement.

In the measurement of operational risk equivalent as of March 31, 2020, we did not exclude expected losses and also did not recognize the risk mitigating impact of insurance. In addition, we did not take into account the events related to credit risk in measuring operational risk equivalent.

**Outline of measurement model**

Operational risk equivalent is calculated as a simple sum of those risk amounts related to the seven loss event types defined in the Capital Adequacy Notice from Japan's Financial Services Agency, large-scale natural disasters, and litigation. In the measurement of operational risk equivalent as of March 31, 2020, we did not reflect the correlation effects among operational risk related to each of the seven loss event types.

**Operational risk by loss event type**

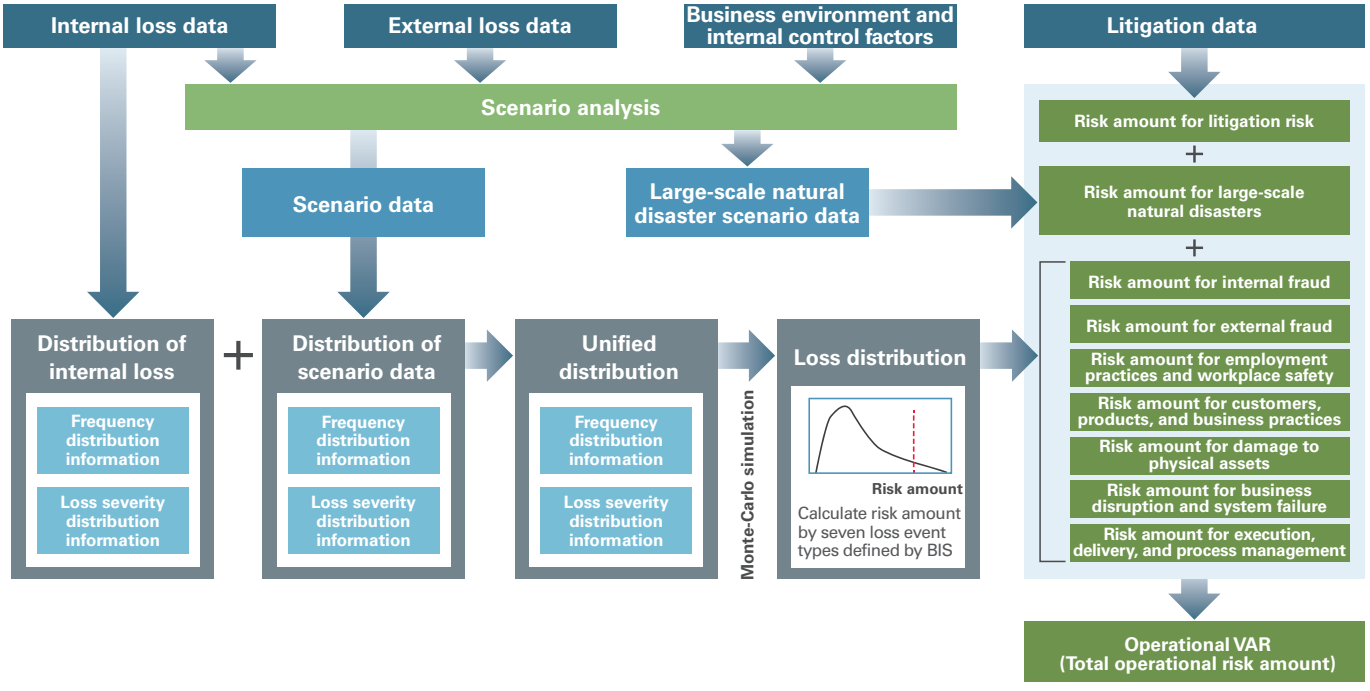
Loss Distribution (Compound Poisson Distribution) Approach (LDA) is adopted for the calculation of operational risk. LDA is based on the assumption that Poisson Distribution applies to the occurrence frequency of operational risk events, and loss severity is expressed through a separate distribution. Operational risk is calculated for each of the seven loss event types employing both internal loss data, based on our actual experience as operational loss events, and scenario data. Scenario data, expressed as numerical values of occurrence frequency and loss severity, reflects external loss data and BEICFs, in order to estimate unexperienced potential future loss events (of low frequency and high severity).

Frequency Distribution and Severity Distribution are estimated employing the above mentioned internal loss data and scenario data, and Monte-Carlo simulations are then applied to these distributions to measure operational risk. The detailed steps of creation of scenario data are explained later in the Scenario Analysis.

**Estimation of Frequency Distribution and Loss Severity Distribution**

Frequency Distribution is estimated by applying information on occurrence frequency of both internal loss data and scenario data to Poisson Distribution. Loss Severity Distribution is generated as the result of combining, through a statistical approach (Extreme Value Theory), of the actual distribution for the low severity distribution portion created by internal loss data and another loss distribution (Log-normal Distribution or Generalized Pareto Distribution) for the high severity distribution portion created by scenario data.

**Outline of measurement model**



**Operational risk of large-scale natural disasters**
Monte-Carlo simulation is applied to the datasets expressed as a combination of the probability of occurrence of large-scale natural disasters and the probable loss amount in case of such occurrence, as opposed to estimating Frequency Distribution and Loss Severity Distribution.

**Operational risk of litigation**
Each litigation is converted into data according to the profile of the individual litigation to which Monte-Carlo simulation is applied, as opposed to estimating Frequency Distribution and Loss Severity Distribution.

**Verification**
We confirm the appropriateness of the measurement model by verifying it, in principle, semi-annually.

### 3. Scenario analysis

**Outline of scenario analysis**
In the process of scenario analysis, scenario data is created as numerical values of occurrence frequency and loss severity reflecting external loss data and BEICFs, in order to estimate unexperienced potential future operational risk events (of low frequency and high severity).

As for external loss data, we refer to data publicly reported by domestic and overseas media, and such data are reflected in the estimation of occurrence frequency and Loss Severity Distribution in the process of scenario analysis. In addition, BEICFs are utilized as indices to adjust occurrence frequency and Loss Severity Distribution in the process of scenario analysis.

We categorize scenario analysis into four approaches in accordance with the characteristics of each loss event type and risk management structures.

| Approach | Loss event type(s) to be applied |
|---|---|
| A | Internal fraud / external fraud / clients, products, and business practices / execution, delivery, and process management |
| B | Employment practices and workplace safety |
| C | Damage to physical assets |
| D | Business disruption and system failure |

At Mizuho Financial Group, loss event types to which Approach A is applied account for a considerable amount of operational risk. The detailed process of Approach A is explained here as a typical example of scenario analysis.

**Setting units for scenario analysis**
In order to ensure completeness and sufficiency, we set units that are commonly applied across group entities that adopt AMA (the "Group Entities") by referencing and categorizing risk scenarios recognized through control self-assessment, internal loss data of the Group Entities, external loss data, etc. Then each of the Group Entities selects the unit on which scenario analysis is conducted from the units established on a group-wide basis in accordance with its business activities and operational risk profile.

**Estimation of occurrence frequency**
Basic occurrence frequency (once a year) is calculated for each scenario analysis unit. If a certain scenario analysis unit has relevant internal loss data of a pre-determined threshold amount or above, its basic occurrence frequency is calculated based on such data, and if not, the basic occurrence frequency (the occurrence frequency per year of losses at or above a pre-determined threshold) is calculated with reference to the situation of occurrence of internal loss data of less than the threshold amount and/or external loss data. The basic occurrence frequency is then adjusted within a pre-determined range for the purpose of reflecting the most recent BEICFs to determine the final occurrence frequency.

**Estimation of Loss Severity Distribution**
In order to estimate Loss Severity Distribution, we use a pre-determined series of severity ranges. Basic Loss Severity Distribution is calculated for each scenario analysis unit as an occurrence ratio (in percentile figures) of loss at each severity range when losses at or above a pre-determined threshold occurred, with reference to transaction amount data, external loss data, etc. Then the basic severity distribution is adjusted, if necessary, from the viewpoint of statistical data processing to determine the final Loss Severity Distribution.

**Creation of scenario data**
For each scenario analysis unit, scenario data is generated as a series of combinations of occurrence frequency per year at each severity range, based on the final occurrence frequency and the final Loss Severity Distribution.

**Example of scenario data**

Final loss severity distribution

| | Severity range (¥ billion) | | | | | Total |
|---|---|---|---|---|---|---|
| | 0.1 | 0.5 | 1 | 5 | 10 | |
| Occurrence ratio (%) | 40 | 30 | 15 | 10 | 5 | 100 |
| Occurrence frequency (times) | 0.4 | 0.3 | 0.15 | 0.1 | 0.05 | 1 |

Final occurrence frequency