The risk management principle of Bank Mandiri is conducted proactively to achieve a healthy and sustainable financial and operational growth as well as to take care of the optimal risk-adjusted return level in accordance with the desired risk appetite. As a manifestation of Bank Mandiri’s commitment in conducting a good company management practice, particularly in risk management, Bank Mandiri has established policy, process, competency, accountability, reporting and supporting technology in order to make the risk management in Bank Mandiri to be effective and efficient.

**Risk Management Framework**

The company risk management framework is written in the risk governance structure of Bank Mandiri encompassing three main parts, which are Risk Oversight, Risk policy and Risk management, as well as Risk identification, Measurement Mitigation, and control. These three main parts are supported by the Audit Working Unit and Independent Assurer to guarantee the effectiveness of its performance.

Sketchily, the work and risk governance framework of Bank Mandiri as mentioned above is described as follows:

The Risk Governance Structure Of Bank Mandiri Is Developed Based On Four Risk Management Pillars As Follow:
Active Supervision By The Board of Commissioner and Director


The Duties, Responsibilities, And Authorities Of Board Of Commissioner Are Related To Active Monitoring In Risk Management Activities Including:

1. Understanding The Risk Attached To Company Functional Activity, Particularly The One That Can Influence Company’s Financial Condition.
2. Evaluating And Approving The Risk Management Policy Conducted At Least Once In A Year Or More In A Higher Frequency In The Event That There Are Significant Changes In Factors Affecting Company’s Business.
3. Performing Evaluation Toward The Board Of Director Regarding Risk Management Implementation In Order To Fit With The Established Policy, Strategy And Procedure Of The Company.
4. Providing Consultation To The Board Of Director Regarding Transaction Or Business Activity With Large Amount Of Fund.
5. Approving The Provision Of Fund To The Concerned Parties On Loan Proposed By The Loan Committee In Accordance With Their Authority.
7. Improving Anti-Fraud Awareness And Culture To All Levels Of The Company’s Organization.

In Order To Implement The Integrated Risk Management, The Board Of Commissioner Is Responsible For:

2. Evaluating The Implementation Of Integrated Risk Management Policy By The Main Entity Board Of Directors.

The Duty, Responsibility, And Authority Of Board Of Directors Related To Risk Management Activity Include:

1. Preparing Written And Comprehensive Risk Management’s Policy, Strategy And Procedure Including The Establishment And Approval Of The Company’s Risk Limit, Re-Evaluating Once In A Year Or More In The Event Of Significant Changes In Factors Affecting Company’s Business Activities.

3. Evaluating And Determining The Transactions That Exceed The Authority Of The Company’s Officials One Level Under The Board Of Directors Or Transaction That Requires The Approval Of The Board Of Director In Accordance With The Applicable Internal Policies And Procedures.

4. Developing Risk Management Awareness And Culture, Including Anti-Fraud Culture To All Organization, Among Others Through Adequate Communication Concerning The Importance Of Effective Internal Control;

5. Improving Human Capital Competence Related To Risk Management Implementation, Among Others Through Continuous Education And Training Programs, Particularly Related To Risk Management System And Process.


In order to implement the Integrated Risk Management, the Board of Directors is responsible for:

1. Preparing and carrying out the policy which regulates Integrated Risk Management;

2. Developing risk culture as a part of Integrated Risk Management Implementation;

3. Ensuring the effectiveness of Human Capital management to perform the Integrated Risk Management function;

4. Ensuring that the Integrated Risk Management has been conducted independently;

5. Evaluating the review result of the Integrated Risk Management Work Unit periodically concerning the Integrated Risk Management process.

Bank Mandiri has also stipulated risk management committees which discuss and recommend to the Board of Director, among others concerning:

1. Policy and Procedure as well as monitor the risk faced by the company.

2. Management of Company’s asset and liabilities including interest rate and liquidity

3. Management of subsidiary (equity capital, divestment, remuneration, stipulation of the subsidiary management).

4. Implementation of Integrated Risk Management

5. Business development.
In addition, Bank Mandiri also has a Work Unit related to risk management consisting of at least:

1. Director in charge of the Risk Management function;
2. Risk Management Work Unit (SKMR);
3. Operational Work Unit (risk-taking unit);
4. Internal Audit Work Unit (SKAI);
5. Compliance Work Unit.

The Risk Management Work Unit (SKMR), the Internal Audit Work Unit (SKAI) and the Compliance Work Unit concurrently as the Integrated Work Unit.

**Adequacy of Policies, Procedures, and Determination of Limits**

Bank Mandiri has a Risk Management policy used as the main guidance in carrying out risk management. For more specific business area, Bank Mandiri owns more special policies and procedures, for example in credit, treasury, and operational. Among other things regulated in the policies and procedures is the limit establishment for each activity, both in portfolio and transactional levels.

All policies and procedures in Bank Mandiri are the form of risk management attached in each Company’s operational activity that is evaluated and updated at least once a year.


Bank Mandiri conducts Processes of Identification, Measurement, Risk Monitoring and Control, as well as Risk Management Information System through Enterprise Risk Management (ERM) frameworks. The ERM implementation in Bank Mandiri uses two-prong approach, to ensure that the risk is not only mitigated properly through daily business, but also in unexpected situation (downturn) through capital reserve.
The four main components functioning as the supporting pillar in the implementation of two-prong approach are:

1. **Organization and Human Capital**
   The Risk Management Work Unit of Bank Mandiri is responsible for managing all risk encountered by Bank Mandiri, including the development of supporting tools required in business process and risk management.
   In addition, there is a work unit in each unit business acting as the risk counterpart in the four-eye process of loan allocation. As the risk management is the responsibility of all work unit in Bank Mandiri, the success of risk management is determined by the existence of risk awareness in all working unit with adequate technical capability. Therefore, Bank Mandiri always improves the employee’s capability and knowledge, most importantly in risk management, by conducting internal training on a regular basis through Risk Management Academy.
   Furthermore, Bank Mandiri also conducts socialization, discussion forum, apprentice, or program on risk management which is in line with company’s culture internalization regularly at least once in a year. The Risk Management Unit of Bank Mandiri consists of Risk Management Directorate in charge of the Risk Management Independent unit and two Loan Approval Risk units known as Retail Risk directed by SEVP Retail Risk and Wholesale Risk directed by SEVP Wholesale Risk.

2. **Policies and Procedures**
   The Risk Management Policies (KMR) employed as the main guidance in performing operational risk management and capital management in Bank Mandiri consist of:
   - The prudential principle, such as Capital Adequacy Preparation, Early Warning System, Limit Establishment and Risk Diversification.
   - Risk Management, such as Risk Profile, Risk Appetite, Stress Testing and Integrated Risk Management.
   - Risk Management for each risk type, including identification process, measurement, risk monitoring and control.
   - Risk Monitoring, including monitoring of activity implementation/risk management methodology in Bank Mandiri, and Internal Control System.
   These Risk Management Policies become the basis for the preparation of procedures and technical guidelines related to risk management in Bank Mandiri.

3. **System and Data**
   The risk management system is developed to support more efficient business processes so that decision making can be faster but still refers to the principle of prudence. In order to maintain data integrity and quality, Bank Mandiri has implemented a system including:

<table>
<thead>
<tr>
<th>System</th>
<th>Tujuan</th>
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<tbody>
<tr>
<td>Integrated Processing System</td>
<td>To improve the efficiency of the loan process and maintain data quality in all business segments.</td>
</tr>
<tr>
<td>Loan Origination System</td>
<td>To monitor the quality of the credit (watchlist) individually or portfolio in the framework of an early warning mechanism.</td>
</tr>
<tr>
<td>Loan Monitoring System</td>
<td>To enhance the integration and quality of limit data and the exposure of all customer facilities, in the context of implementing limit management.</td>
</tr>
<tr>
<td>Integrated Central Liabilities System (ICLS)</td>
<td>To measure CKPN according to the application of PSAK 71 and related dashboards and analytics.</td>
</tr>
<tr>
<td>Impairment &amp; Provisioning</td>
<td>To manage market risk for treasury activities and monitoring credit risk arising from treasury activities.</td>
</tr>
<tr>
<td>Summit System</td>
<td>To manage and measure the size of the banking book risk for treasury and asset &amp; liability management activities.</td>
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<tr>
<td>ALM System</td>
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</tbody>
</table>
4. Methodology/Model and Analytics

Bank Mandiri has continuously implemented a risk measurement that refers to international best practices by using both quantitative and qualitative methods through the development of risk models such as rating, score, Value at Risk (VaR), portfolio management, stress testing and other models as supports in judgmental decision making. Periodically, these risk models are calibrated and validated by an independent Model Risk Validator unit to maintain the reliability and validity of the models and meet regulatory requirements.

In order to harmonize the implementation of Basel II and ERM with Basel II/III regulations and the application of best practices, Bank Mandiri adopted and implemented the Basel II/III and ERM frameworks. Basel II/III and ERM implementation at Bank Mandiri covers areas in Credit Risk, Market Risk, Liquidity Risk, Operational Risk, Capital Management and Internal Capital Adequacy Assessment Process (ICAAP).

### Implementing Basel II/III and ERM

<table>
<thead>
<tr>
<th>IMPLEMENTATION ASPECT</th>
<th>SCOPE OF IMPLEMENTATION</th>
</tr>
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<tbody>
<tr>
<td>Loan Risk</td>
<td>Development and Improvement of Basel II Risk Parameters for the implementation of Internal Rating Based Approach (PD, LGD, and EAD).</td>
</tr>
<tr>
<td>Liquidity and Interest Rate Risk</td>
<td>Improvement of liquidity limit, core deposit analysis, Risk Appetite Statement (RAS), stress testing liquidiy, reprising gap method, and implementation of Assets and Liabilities Management System.</td>
</tr>
<tr>
<td>Operational Risk</td>
<td>Development of Framework and Governance Operational Risk Management (ORM).</td>
</tr>
<tr>
<td>Modal Management</td>
<td>Improvement of Economic Capital model, development of Framework Portfolio Optimization and Capital Optimization.</td>
</tr>
</tbody>
</table>

### Internal Control System (Internal Audit)

Bank Mandiri practices effective risk managements in all work units by implementing the three line of defence models with the following conditions:

1. Work unit as the risk owner is the first line of defence responsible for risk management in its unit.
2. Risk Management Unit is as the second line of defence performing oversight function.
3. Internal Audit Unit is as the third line of defence performing independent assurance function.
Risk Management System

Basis For The Implementation Of Risk Management

In implementing risk management, Bank Mandiri always adheres and obeys the applicable laws and regulations in Indonesia by referring to:


5. Financial Services Authority Regulation No. 11/POJK.03/2016 dated February 2, 2016 on the Minimum Capital Requirement for Commercial Banks, which was amended by the Financial Services Authority Regulation No. 34/POJK.03/2016 on Amendments to POJK No. 11/POJK.03/2016 on the Minimum Capital Requirements for Commercial Banks.


19. Financial Services Authority Regulation No. 50/POJK.03/2017 dated July 17, 2017 on the Obligation to Fulfil the Net Stable Funding Ratio for Commercial Banks.


22. Financial Services Authority Regulation No. 11/POJK.03 / 2019 concerning Prudential Principles in Asset Securitization Activities for Commercial Banks.


**Principles of Risk Management**

The Risk Management Principles of Bank Mandiri are as follows:

1. **Capital**
   Bank Mandiri provides capital in accordance with the risks borne and maintains the capital level in accordance with applicable regulations.

2. **Transparency**
   Bank Mandiri openly communicates relevant information in the risk-taking process and the risk-taking process itself.

3. **Independency**
   Bank Mandiri’s management acts professionally and is free from the pressure and influence of other parties.

4. **Integrated**
   Bank Mandiri implements Integrated Risk Management in Financial Services Institutions that are members of the Bank Mandiri financial conglomerate in accordance with regulatory provisions.

5. **Sustainable**
   Risk control is constantly being developed to better suit business conditions and existing best practices.
6. Accountability
Bank Mandiri applies policies and procedures to ensure management accountability to stakeholders.

7. Responsibility
Bank Mandiri acts on the principle of prudence and compliance with applicable laws and regulations.

8. Fairness
Bank Mandiri considers the interests of stakeholders based on the principle of equality and fairness (equal treatment).

**Principles of Prudence**

Bank Mandiri applies the prudence principle through the provision of sufficient capital, compliance with applicable regulations and laws, and an early warning system. The Company manages capital adequacy that describes the managed risks and defines its capital components by taking into account the capital’s ability to incorporate losses.

The Company prepares policies, standard procedures and product manuals as directions in operational activities and is implemented by all levels of the Company’s organization to minimize the risks faced in the Company’s operational activities. In carrying out business activities, the Company understands the characteristics of the business being carried out, including the risks and legal regulations related to the business. Every action which is an exceptional condition, insofar as it does not conflict with the applicable laws and regulations, is carried out according to the rules and stipulated authority, based on reasons that can be accounted for, and documented.

The Company prepares procedures to be able to find out the possibility of increasing the Bank’s risk exposure earlier so that the Bank can determine the steps that need to be taken so that potential losses do not occur or can be minimized.

**Process of Risk Management**

The Company’s Risk Management process regulated in the Risk Management Policy is as follows:

1. Risk Management is carried out at all levels of the organization both transactional and portfolio.

2. Risk Management is carried out in an integrated manner with Subsidiaries while taking into account the regulations and business characteristics of Subsidiaries.

3. The Risk Management process is a dynamic process, hence, review is required periodically to keep it in line with current conditions and applicable regulations.

4. Implementation of Risk Management is carried out in a series consisting of

   a. **Risk identification**
      Risk identification aims to determine the types of risks inherent in each functional activity that have the potential to harm the Company.

   b. **Risk measurement**
      Risk measurement aims to determine the amount of risk inherent in the Company’s activities to be compared with the Company’s risk appetite so that the Company can take risk mitigation actions and determine capital to cover residual risks.

   c. **Risk monitoring**
      Risk monitoring aims to compare the risk limits that have been set with the amount of risk being managed.
d. Risk control

Risk control is carried out on the potential for the occurrence of liability on the limits of risk that have been determined and can be tolerated by the Company.

Application of Basel II And III

In order to provide added value to stakeholders and as a form of Bank Mandiri compliance in fulfilling the capital requirements set by regulators, Bank Mandiri always guarantees and ensures that the capital structure is strong enough to support the current business development strategy and maintain business sustainability in future.

Risk management in the capital aspect at Bank Mandiri includes policies on diversifying capital sources in accordance with long-term strategic plans and capital allocation policies efficiently in business segments that have an optimal risk-return profile (including placements with Subsidiaries). This aims to meet the expectations of stakeholders including investors and regulators.

Bank Mandiri ensures that it has sufficient capital to cover loan risk, market risk and operational risk, both based on regulatory requirements (regulatory capital) and internal capital requirements (economic capital). Bank Mandiri refers to Bank Indonesia and Financial Service Authority regulations (Basel II and Basel III), especially Pillar 1, in calculating capital adequacy for loan risk, market risk and operational risk.

In addition to the above calculation, Bank Mandiri is also developing a capital adequacy calculation with reference to Basel II Pillar 2 or better known as the Internal Capital Adequacy Assessment Process (ICAAP) approach. ICAAP includes the determination of risk appetite, overall risk assessment, capital planning, and bank-wide stress testing.

For the calculation of capital adequacy, Bank Mandiri uses the Basel II Standardized Approach for credit risk and has included the External Rating component. The Internal Ratings-Based Approach is used internally for risk management and credit provision. For market risk, Bank Mandiri uses the Basel II Standardized Measurement Method, and internally uses Value at Risk. For operational risk, Bank Mandiri refers to the Basel II Basic Indicator Approach.

Bank Mandiri has implemented the implementation of Basel III referring to the Basel documentation as well as regulations and initiatives issued by the Financial Service Authority. As part of implementing Basel III in Indonesia, Bank Mandiri has reported the fulfilment of monthly Liquidity Coverage Ratio (LCR) and the fulfilment of quarterly Net Stable Funding Ratio (NSFR), as well as conducting quarterly Leverage Ratio (LR) calculations in accordance with Financial Service Authority regulations.

As the implementation of the latest Basel III framework (Basel III reform), specifically related to Counterparty Loan Risk, Bank Mandiri has implemented a Loan Valuation Adjustment (CVA) calculation and simulated changes to the Standardized Approach for Measuring Counterparty Loan Risk Exposures (SA -CCR) which is a refinement of the existing CCR framework.

Basel III Reforms

In implementing the latest Basel III framework (Basel III reform), the Company will revise operational risk standards for some elements of the previous framework to improve reliability and sensitivity. Following up on this, a Qualitative Impact Study (QIS) based on the OJK Consultative Paper (CP) was carried out in calculating the minimum capital for Operational risk using a standardized approach.

On the other hand, in order to improve risk management due to interest rate movements that affect income and capital (Interest Rate Risk in Banking Book/IRRBB), Bank Mandiri has implemented Basel
IV in accordance with OJK regulations in SEOJK No. 12/SEOJK.03/2018 concerning Application of Risk Management and Risk Measurement Standard Approach for Interest Rate Risk in the Banking Book (Interest Rate Risk in The Banking Book) for Commercial Banks. The process of implementing the IRRBB provisions includes improvements to the system owned, adjusting internal policies, reviewing methodologies and their limits, reviewing assumptions and models, and making consolidation tools for Subsidiaries. IRRBB measurement results in accordance with the provisions have been reported quarterly to OJK starting June 2019.

**Application of Integrated Risk Management**

Konsolidasi/Integrasi manajemen risiko Bank Mandiri The consolidation/integration of Bank Mandiri’s risk management has begun gradually since 2008, in line with the issuance of Bank Indonesia Regulation No.8/6/PBI/2006 concerning the Implementation of Consolidated Risk Management for Banks Conducting Control on Subsidiary Companies, which in the development of these regulations replaced by Financial Services Authority Regulation Number 38/POJK.03/2017 Regarding the Implementation of Consolidated Risk Management for Banks Conducting Control on Subsidiary Companies. In addition, Bank Mandiri has also implemented integrated risk management in accordance with Financial Services Authority Regulation No.17/POJK.03/2014 concerning the Implementation of Integrated Risk Management for Financial Conglomerates. Integrated risk management is important to implement because Bank Mandiri as the Main Entity realizes that business continuity is also affected by risk exposures arising, both directly and indirectly, from the Subsidiary’s business activities. In this regard, Bank Mandiri has implemented a system of consolidating/integrating risk management with its Subsidiaries, including Subsidiaries that operate outside the territory of Indonesia, while still fulfilling the principles of risk management, considering the business characteristics of each Subsidiary Company and adjusting to the jurisdiction of the authorities/local supervisor. The Bank Mandiri subsidiaries are Bank Syariah Mandiri, Bank Mandiri Europe Ltd., Bank Mandiri Taspen, Mandiri Securities, Mandiri Investment Management, AXA Mandiri Financial Services, Mandiri AXA General Insurance, Mandiri InHealth, Mandiri Tunas Finance, Mandiri Utama Finance, Mandiri International Remittance, and Mandiri Capital Indonesia.

The concept of consolidation/integration of risk management implemented by Bank Mandiri was prepared by taking into account compliance with Financial Services Authority Regulation No.38/POJK.03/2017 concerning Application of Consolidated Risk Management for Banks Conducting Control on Subsidiary Companies, Financial Services Authority Regulation Number 17/POJK.03/2014 concerning the Implementation of Integrated Risk Management for Financial Conglomerates, and Regulation of the Financial Services Authority Number 04/POJK.03/2016 concerning Assessment of Soundness Levels of Commercial Banks which are subsequently implemented through a tool integration, risk awareness framework, corporate governance (governance), and risk management information systems. In addition, in implementing Bank Mandiri has internal guidelines, namely the Mandiri Group Principles Guidelines (MGPG), the Mandiri Subsidiary Management Principles Guidelines (MSMPG) and the Integrated Governance Guidelines which contain guidelines on the implementation of Mandiri risk management Group. This is one form of Bank Mandiri’s compliance with regulations in force in Indonesia.

In order to implement comprehensive integrated risk management, Bank Mandiri established an Integrated Risk Management Committee, which is an Integrated Risk Committee consisting of Directors/Executive Officers who oversee the Risk Management function of Bank Mandiri as the Main Entity in the Financial Conglomerate and Subsidiary Companies, which plays a role in providing recommendations for the preparation, improvement and refinement of the Integrated Risk Management policy. In addition, Bank Mandiri has also formed an Integrated Risk Management
Work Unit (SKMRT) that reports directly to the Director of Risk Management with a reporting mechanism and duties and responsibilities as illustrated in the diagram.

*) IRC = Integrated Risk Committee  
RMPC = Risk Management & Credit Policy Committee

In order to improve understanding of the implementation of risk management at Bank Mandiri and Subsidiaries, several activities have been carried out in 2019:

1. The Integrated Risk Management Forum (IRMF) is conducted quarterly to discuss the latest issues related to risk management.
2. Assistance and socialization regarding risk management tools.
3. Loan Risk Workshop for investment activities.
4. Attachment of employees to Subsidiaries.
5. Review of risk management application to certain Subsidiaries.