

Forecast, opportunity and risk report

Opportunity and risk report

Basic principles

KUKA Group is a global enterprise with international operations. Any entrepreneurial activity provides new business opportunities, but also involves many potential risks. The Executive Board of KUKA Aktiengesellschaft aims to systematically and sustainably improve the value of the company for all stakeholders and shareholders by seizing potential opportunities and minimizing said risks.

To achieve this objective, the Executive Board has implemented a comprehensive corporate risk management system to systematically and consistently identify, evaluate, manage, monitor and report the internal and external risks to which its divisions and subsidiaries are exposed.

Group management regularly assesses the likelihood that identified risks will occur and their potential impact on expected earnings (EBIT). Worst, medium and best case scenarios are considered and serve as the basis for determining a weighted expected risk value. Accruals and write-downs associated with these risks are recognized in the annual financial statements in accordance with applicable accounting principles. The unsecured residual risks, i.e. risks according to risk mitigation measures (net assessment), are therefore depicted as risks.

The risk management system is subject to a monthly reporting process (risk inventory) which involves identifying new risks and carrying out a follow-up assessment of existing risks. The information collected in this way is summarized in a risk report that is also prepared each month and addressed to the Executive Board of KUKA Group. This report contains a top 10 risk assessment and a risk exposure assessment (overall risk situation) for the business segments, KUKA Aktiengesellschaft as the holding company and KUKA Group. The top 10 risks are also a fixed part of internal monthly management reporting and are discussed at monthly results discussions between the Executive Board of KUKA Group and the management of the business segments and KUKA AG. The identified risks are additionally presented and explained in more detail to the Executive Board each quarter by the Risk Management Committee. The committee also determines whether any measures already implemented to minimize risk are adequate or whether further steps need to be initiated. It assesses the plausibility of the reported risks and determines how to avoid similar risks in the future. The risk report is also reviewed during Executive Board and Supervisory Board meetings, especially by the Audit Committee.

The management of the business segments and the individual subsidiaries is directly responsible for the early identification, control and communication of the respective risks. Risk managers in the central and decentralized business units ensure that the reporting process is uniform with clearly defined reporting channels and reporting thresholds that are adapted to the business segments and KUKA AG. Internal ad hoc announcements are mandatory whenever risks exceed the Group's defined reporting thresholds. Standard procedures applied throughout the Group ensure that risk management is efficient and effective. Corporate Risk Management coordinates the risk management system. Here, the individual risks identified are compiled into the aforementioned top 10 risk overviews or risk

exposure overviews, communicated and monitored. This role is based within KUKA Aktiengesellschaft's Corporate Controlling department, which reports directly to the CFO of KUKA Aktiengesellschaft. This ensures that risk management is an integral component of KUKA Group's overall planning, control and reporting process.

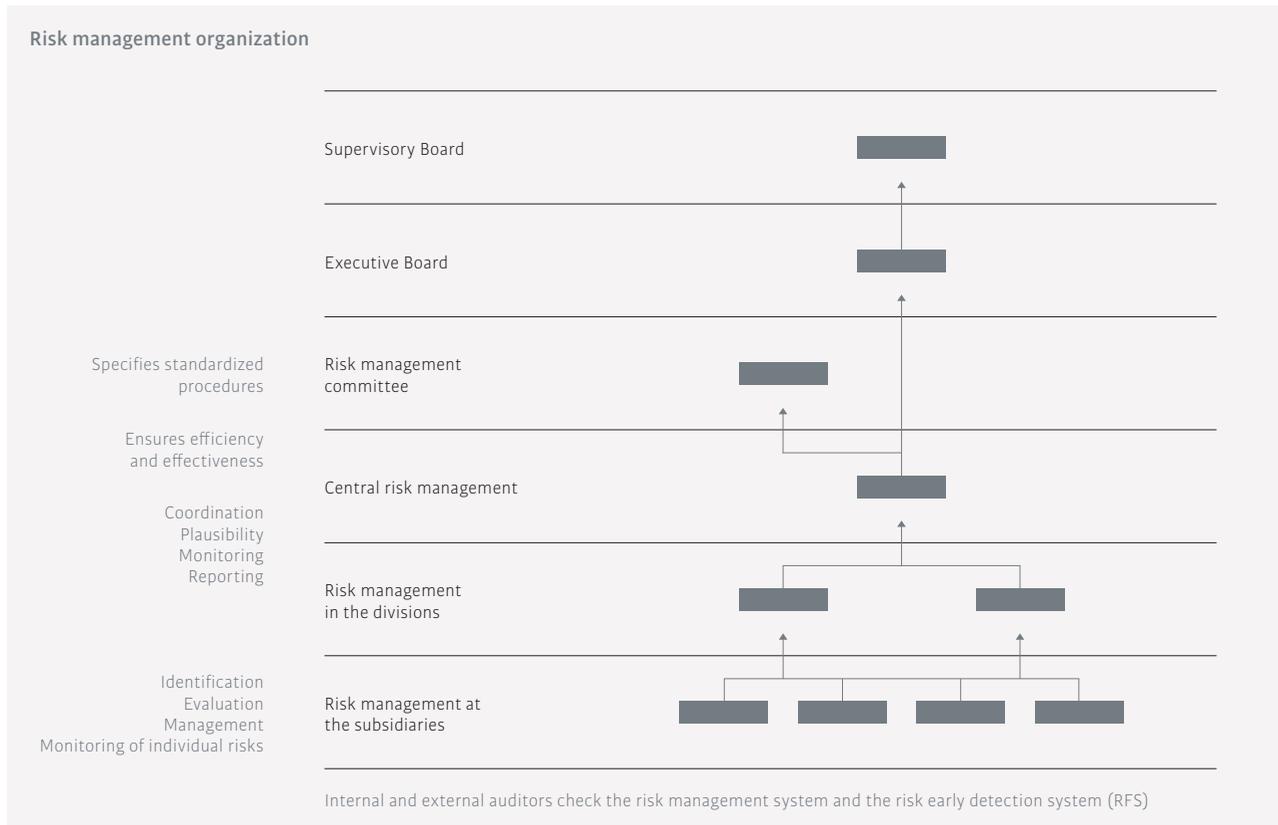
In principle, the Group's risk management system enables the Executive Board to identify material risks at an early stage, initiate appropriate steps to counter these risks and monitor implementation of the steps. The internal audit department regularly monitors compliance with the risk management guideline of KUKA Group and therefore whether existing procedures and tools are effective. It also audits those responsible for the risks if this is relevant. The internal audit department also regularly audits the risk management process to ensure efficiency and continuous improvement. Furthermore, external auditors check that the early risk identification system is suitable for early identification of risks that could threaten the existence of the company as a going concern.

In addition to the risk management system, KUKA Group has an internal control system (see management report, "Internal control and risk management system" section, page 57) above and beyond the risk management system, which it uses to continuously monitor the appropriateness of the corporation's business and accounting processes and identify potential improvements.

Risks and opportunities in KUKA Group

KUKA Group's opportunity and risk-related controlling process ensures that the company's managers take both opportunities and risks into consideration. The Group's risk exposure, based upon evaluating operating risks according to the procedure outlined in the "Basic principles" section, is described below. The report includes the aggregated expected risk value, which is calculated on the basis of the various weighted scenarios and their respective likelihood of occurrence. The aggregated expected risk values of all risks managed and quantified in the Group are reported. The following section quantifies the risks managed at Group level as well as the operating risks of the divisions.

No aggregation is carried out for the opportunities at Group level. For this reason, the opportunities are dealt with in greater detail in the following sections on the divisions.



Group risk exposure

in € millions	2018	2019
Legal risks	10.7	7.7
Economic risks	-0.7	2.7
Financial risks	13.0	21.8
Total for the Group	23.0	32.2

In the previous year, intensified risk mitigation measures resulted in a theoretically negative expected risk value in individual cases.

Detailed explanations of the risk categories listed can be found in the following sections.

Operating risks and opportunities of the business segments and KUKA AG

KUKA is exposed to the cyclic investment behavior of its customers in the various market subsectors. A major portion of the divisions' business volume is in the automotive sector where oligopolistic structures and constant price pressure are ongoing concerns. Fluctuations in the industry's capital spending plans are also considered in the respective strategic and operational plans by analyzing public announcements and disclosures. The company continuously strives to be as flexible as possible with its own capacities and cost structure to address the cyclic nature of the business.

During the course of 2019, KUKA felt the effects of further weakened investment activities in both the automotive industry and the general machinery and systems engineering sector. The cooling of the global economy had a negative impact on the company's business

development, particularly in its focus markets of automotive and electronics. The Europe and China regions have been hit particularly hard. In addition, there are further costs resulting from existing orders and the need for restructuring in the Robotics business segment. The ongoing trend towards automation invariably also offers opportunities in non-industrial sectors, such as the long-term prospects associated with assisting an aging society. The digitalization strategy has been implemented continuously through various projects.

KUKA works with suppliers that focus on quality, innovative strength, continuous improvement and reliability so that it can supply its own customers with products of the highest possible quality and ensure timely delivery. Generally, KUKA sources product components from several suppliers in order to minimize the risk of sharp price increases for key raw materials, but in a few cases, due to a lack of alternative sources, is dependent on single suppliers that dominate their markets. Continuous monitoring of supplier risks is conducted as part of the risk management process.

KUKA Group introduced the KBO structure at the beginning of 2019. From now on, Group reporting will be based on five business segments – Systems, Robotics, Swisslog, Swisslog Healthcare and China.

The Swisslog segment was restructured in this context. The Swisslog and Swisslog Healthcare divisions are now shown separately in this report. The figures reported for the previous year were reconciled from the existing data.

The new China segment contains risks previously reported in the Systems, Robotics and Swisslog divisions.

KUKA Systems

This division's revenues and profits are subject to general business risks due to the length in time it takes to process project orders, the revisions to the specifications that are often necessary while already processing the orders, the infrequency of the orders received, and the price and competitive pressures. Other risks associated with these projects include inaccurate prediction of the actual costs as well as penalties for late deliveries. The division therefore uses appropriate risk checklists for individual orders in order to assess the associated legal, economic and technological risks prior to preparing a quotation or accepting a contract. One of the components of project execution, for example, is to monitor and track solvency risks and mitigate them using a strict project and receivables management process. Other risks are continuously monitored and if necessary accounted for by way of accruals or write-downs. Opportunities associated with the project business arise mainly when parts can be purchased at a lower cost than originally estimated and by invoicing the customer for any change orders received over the course of the project. In 2019, several projects in Europe were subject to significant additional costs due to the high complexity of these projects and the associated delays. These effects have been taken into account in the amended project calculation and are already included in earnings for 2019 through provisions for impending losses.

Automation requirements in the expansion of global production capacities of the major automobile manufacturers, particularly in the field of electromobility, are currently highly dynamic. KUKA is increasingly working together with internal partners, with several of the division's regional subsidiaries collaborating on a customer project. In these situations, there are risks involved in information exchange, the value-added process and project management across various IT systems. There are also organizational risks associated with extraordinarily rapid and strong growth in business volume, particularly in emerging markets. KUKA mitigates these risks by deploying experienced internal and contract employees when establishing and expanding the local organizations.

The increasing variety of models offered by the automotive industry has a positive impact on the potential market volume, since this generates increasing demand for flexible manufacturing systems, which in turn spurs demand for new or revamped assembly lines. This creates new business opportunities for system providers and subsuppliers. Scarce resources are driving demand for smaller and more fuel-efficient vehicles that will use alternative energy sources. This means automakers, especially American manufacturers, will soon have to invest in new production lines or upgrade their existing assembly lines.

Pay-on-production contracts such as KTPO's (KUKA Toledo Production Operations) offer additional opportunities, but also risks. The Jeep brand continues to promise above-average growth prospects compared to other American car models. KUKA will continue to participate in this growth.

Thorough market analyses have shown that KUKA Systems also has long-term business opportunities outside the automotive industry; namely, in general industry. The main risks here when tapping into new market potential relate to technical requirements, since customers in these sectors often have no experience with automated systems. The aforementioned checklists to review the technical risks associated with applying new automation techniques are therefore an especially important tool for identifying and mitigating risks.

Systems risk exposure

in € millions	2018	2019
Legal risks	0.3	0.0
Economic risks	-0.2	0.4
Financial risks	0.0	0.0
Total for Systems	-0.1	0.4

In the previous year, intensified risk mitigation measures resulted in a theoretically negative expected risk value in individual cases.

KUKA Robotics

Demands for continuous product innovation from international customers and unrelenting cost awareness are the key challenges for this division's product portfolio; especially when it comes to the automotive industry and its subsuppliers. The result is permanent price pressure and potentially longer life cycles for the robotic applications combined with demands for ever-improving quality and longer warranties.

KUKA Robotics responds to such trends by continually developing new products and applications that offer customers in existing markets quantifiable financial benefits driven by quick paybacks. Launching new products goes hand in hand with product performance risks and quality guarantees, which could generate additional costs if rework is required. KUKA employs a comprehensive quality management system that includes extensive validation and test processes to detect, avoid and manage such risks.

KUKA sees an opportunity to continuously expand its customer base in general industry with a focus on Handling, Machining & Processing (HMP). One of the company's key strategic thrusts is to penetrate new, non-automotive markets. The company's profitability will become less and less dependent on exchange-rate fluctuations as it increasingly spreads its value added across different local currencies.

The cell business has come under pressure in recent years due to high project risks and falling market prices. It is necessary to adapt the structure to the changed conditions. The business model has been restructured to focus on standardized cells. A provision was set up in fiscal 2019 for the resulting one-off costs. In addition to projects based on customer-specific solution requests, this includes the expansion of project business towards modules and standardized cells.

Robotics risk exposure

in € millions	2018	2019
Legal risks	0.3	0.0
Economic risks	0.0	0.5
Financial risks	0.0	0.1
Total for Robotics	0.3	0.6

Swisslog

The Swisslog segment broadens KUKA's range of products and services and makes a decisive contribution to independence from the automotive industry.

In some cases, projects for the automation of warehouse and distribution centers are subject to long lead times which can give rise to financial risks resulting from miscalculations, failure to meet acceptance specifications or late deliveries. To counter this, regular project risk assessments are carried out at different stages of the projects by those responsible for project implementation in the relevant countries. Potential risks are regularly reviewed, new ones are added or existing ones eliminated, and measures for risk reduction are introduced and their progress documented. Projects requiring particular management attention are classified as "top attention projects" and their status is communicated monthly to the higher management levels. In 2019, the increase in the order book has also created a considerably higher risk position for possible project delays and potential financial risks.

The segment has been reported separately for the first time in this annual report.

Swisslog risk exposure

in € millions	2018	2019
Legal risks	0.0	0.0
Economic risks	-0.5	1.8
Financial risks	1.0	13.6
Total for Swisslog	0.5	15.3

Intensified risk mitigation measures result in a theoretically negative expected risk value in individual cases.

Swisslog Healthcare

The Swisslog Healthcare segment likewise broadens KUKA's range of products and services and contributes to independence from the automotive industry. Market data indicate that the increasing pressure on costs and the strict safety requirements for hospital logistics offer high growth potential for automation. Furthermore, consolidated service centers, in which hospitals standardize their logistics processes and achieve cost advantages, generate greater demand for automation solutions. Risks arise from complex technical and regulatory requirements.

The segment has been reported separately for the first time in this annual report.

Swisslog Healthcare risk exposure

in € millions	2018	2019
Legal risks	0.0	0.2
Economic risks	0.0	0.1
Financial risks	2.4	3.0
Total for Swisslog Healthcare	2.4	3.3

China

The China segment comprises all business activities of the Chinese companies in the Systems, Robotics, Swisslog and Swisslog Healthcare divisions. For this reason, the risks arise from the above-mentioned segment and product-specific risks.

In general, risks and impacts are identifiable on account of the current geopolitical situation. Beyond this, there are risks attributable to the coronavirus crisis, which in many regions of China is leading to major constraints on public and business life as a result of official restrictions. Negative effects on global economic development are therefore to be expected. KUKA can only take limited risk-reducing measures to mitigate these risks of global magnitude. For this reason, KUKA is focusing on trust-based cooperation with local customers and a suitable product portfolio. The reluctance to invest is leading to increased competition, which entails the risk of significantly lower order volumes and margins. Here, also, KUKA is taking measures to improve efficiency in production and project management in order to further reduce costs.

As part of restructuring, local expertise and capacity to act have been strengthened and geared towards the requirements of the Chinese market. This makes it possible to take greater advantage of business opportunities.

The segment has been reported separately for the first time in this annual report.

China risk exposure

in € millions	2018 ¹	2019
Legal risks	0.0	0.0
Economic risks	0.0	-0.2
Financial risks	0.0	0.9
Total for China	0.0	0.7

¹ 2018: Risks for China were included in the divisions.

Intensified risk mitigation measures result in a theoretically negative expected risk value in individual cases.

Risks and opportunities managed at holding level (KUKA AG)

Cross-division opportunities and risks are analyzed and managed at Group level for central functions such as legal, taxes, financing, human resources and IT, rather than by the individual divisions, which is why said risks are only addressed from the Group perspective in the opportunity and risk report. Information about this can be found in the specified sections.

Risk exposure KUKA AG

in € millions	2018	2019
Legal risks	10.1	7.6
Economic risks	0.0	0.0
Financial risks	9.6	4.3
Total for the Group	19.7	11.9

Strategic risks and opportunities

KUKA's business segments aim to be among the technology and market leaders in their target markets. The key to achieving this is to consistently enhance their core technologies on the basis of coordinated innovation programs. One important task is to identify opportunities and risks associated with technical innovations early and to evaluate the innovations' manufacturability. The company mitigates the impact of faulty market assessments by conducting regular market and competitor analyses, some of which are decentralized. Application-related developments, system partnerships and cooperative ventures reduce the risk of development work not conforming to market requirements. Strategic risks and opportunities are not quantified.

Legal risks and insurance

Since KUKA conducts business around the world, it is obliged to comply with many international and country-specific laws and regulations issued by, for example, tax authorities. The company employs specialists familiar with the respective countries' laws on a case-by-case basis. Opportunities and risks arise as a result of changes to legal frameworks. For example, tax audits discovering non-compliance issues could negatively impact the Group in the form of payment of interest charges, penalties and back taxes. These changes and the resultant risks are continuously monitored; at the present time, however, there are no foreseeable tax or legal issues that could have a significant negative impact on KUKA Group. Appropriate provisions have been recognized for tax risks based on experience.

Standard general contracts are used whenever possible to cap risks from contractual relationships. The Group's legal department supports the operating companies to help limit risks associated with in-house contracts, warranty obligations and guarantees as well as country-specific risks such as the lack of patent and brand protection in Asia. KUKA has developed an independent strategy to safeguard its intellectual property, which is primarily secured by patents and trademark rights.

In the context of insurance/risk management, sufficient property insurance, loss-of-profits insurance, public, product and environmental liability insurance, transportation insurance and cyber insurance are maintained centrally for the Group. D&O insurance (directors and officers liability insurance) is also in place. Existing insurance policies are reviewed annually in order to ensure sufficient cover and to weigh the relationship between the insurance protection and deductibles against the risk premium.

Financial risks

KUKA Group is under the financial control of KUKA AG. The primary objectives of financial management are to secure the liquidity and creditworthiness of the Group, thus ensuring financial independence. Effective management of foreign exchange, interest rate and default risk also serves to reduce earnings volatility.

KUKA AG identifies, coordinates and manages the financial requirements of the Group companies and optimizes the financing of the Group. For this it employs a Group-wide standard treasury management and reporting system. KUKA AG normally procures finance centrally and distributes the funds among the Group companies. In addition, liquidity risk is reduced for KUKA Group by closely monitoring the Group's companies and their management of payment flows.

KUKA pursues a conservative financing policy with a balanced funding portfolio. This is essentially based on the promissory note loans issued in 2015 and 2018 with staggered maturities up to 2023, on a syndicated loan refinanced in 2018 with a term until 2025 and providing cash credit facilities and guarantee lines, and on an inter-company loan concluded with Midea in December 2019, also with a term until 2025. Two standard financial covenants (leverage and interest coverage ratio) have been agreed for the syndicated loan. KUKA monitors adherence to these covenants based both on the current figures and on planning. The covenants were complied with throughout fiscal 2019. As at December 31, 2019, both covenants were well within the contractually defined limits. Beyond these financing agreements, additional financing options are available to KUKA within the terms of factoring framework agreements. Comprehensive details of the financing instruments and the extent to which the agreed credit lines have been utilized can be found in the notes to the annual financial statements, in the section "Financial liabilities/Financing" (from page 102 onwards).

KUKA hedges the interest rate and exchange rate risks from operations and financial transactions with financial derivatives. Transactions in financial derivatives are exclusively entered into for hedging purposes, i.e. always with reference to and for hedging underlying transactions. Whenever possible, KUKA AG is the central hedging partner of the Group companies, and it in turn hedges the Group's risks by concluding appropriate hedging transactions with banks. Internal guidelines govern the use of derivatives, which are subject to continuous internal risk monitoring. For a more precise description of our risk management objectives and the methods employed please refer to the notes on financial risk management and financial derivatives, starting on page 104.

Currency translation risks, i.e. measurement risks associated with balance sheet and income statement items in foreign currencies, are not hedged, but are continuously monitored. The risk associated with the volatility of leading currencies and the resulting economic exchange risk (competitive risk) is mitigated by having production facilities in several countries (natural hedging).

Personnel risks and opportunities

The success of KUKA Group, a high-tech enterprise, depends to a great degree on having qualified technical and management staff. Personnel risks arise mainly from employee turnover in key positions within the Group. Due to the current general conditions, there is a risk of higher fluctuation, which could lead to shifts in competencies. KUKA is countering this risk, not least by means of in-house continuing education programs such as those offered by KUKA Academy or employee suggestion programs in order to boost the satisfaction, motivation and qualification of the workforce. This also opens up opportunities for the recruiting of new employees.

IT risks and opportunities

IT risks have risen over the past number of years, not least because of the importance of IT to business processes. These risks relate to both the frequency of viruses or hacking and the damage they could potentially cause. The existing IT security and business continuity management systems as well as guidelines and organizational structures are regularly optimized and reviewed in an effort to predict and minimize possible IT-related risks such as failure of computer centers or other IT systems. One way this is addressed is by continuously upgrading hardware and software. Furthermore, KUKA has launched several transformation projects which are currently running with the objective of harmonizing processes and the supporting IT application system architecture throughout the Group. This will generate long-term cost reduction potential and lead to continuous quality improvements. By systematically monitoring the processes concerned, the company reduces the risks associated with an increasing number of external threats as well as dependence on the ever-expanding digitalization of business processes.

Risks in the area of information security and data protection are continuously monitored and analyzed, as they can result in considerable risks for the Group due to changes in the legal framework.

Compliance risks

Compliance violations can have far-reaching consequences, resulting in long-term damage to the company and restricting its economic success. In addition to high fines and compensation payments, exclusion from tenders, disgorgement of profits and criminal law repercussions are possible. KUKA's image as a business partner of integrity could also be tarnished. This can have a negative effect not only on customer relationships, but also on business relationships of all kinds. Consequently, strategic projects, transactions and capital market measures could suffer as a result.

In order to counter these risks in a transparent and appropriate manner, the Group-wide Corporate Compliance Program was set up in 2008. Details can be found in the Corporate Compliance Report.

The Compliance Committee established through this program holds regular ordinary meetings as well as extraordinary meetings as required. The members have a wide-ranging and in-depth wealth of experience in both the company and the industry. This enables them to assess risks carefully and adequately.

The committee is chaired by the Chief Compliance Officer, who reports to KUKA Aktiengesellschaft's CEO, who in turn reports to the Supervisory Board's Audit Committee.

The CEO is ultimately responsible for the Corporate Compliance Program, which is updated as required and subject to strict internal controls. The Corporate Compliance Program is integrated into daily work by means of the comprehensive processes and measures of the Compliance Management System.

No substantial compliance risks were identified in 2019 due to the active countermeasures taken by KUKA to mitigate risk at an early stage and to eliminate risk sources, e.g. by realigning processes and adapting training to specific target groups.

Other risks

KUKA Group continuously monitors other risks and mitigates these to the greatest extent possible. There is no evidence of environmental risks from operational activities, since the company largely abstains from the use of hazardous materials and the locations are regularly certified to ISO 14001. The Group owns some of the buildings and properties that it uses for its business operations. As a result, the company is exposed to risks associated with any residual pollution, soil contamination or other damaging substances that may be discovered on its properties. There is currently no evidence of any situations that would have a negative impact on the measurement of balance sheet items. However, it cannot be ruled out that any such situations, which could, for example, require costly clean-up operations to be undertaken, will occur in the future. At the locations, risks relating to fire protection, water and media supply, static and construction defects are regularly investigated. These are assessed by experts and measures are taken to improve the risk.

Summary

In the overall assessment of risks, KUKA Group is primarily exposed to performance-related risks from the divisions and to legal and financial risks controlled at Group level. Despite increasing risk potential that has been identified and evaluated in the risk management system, the Executive Board is not aware of any individual or aggregated risks that could threaten the company's existence. Strategically and financially, the company is positioned to be able to take advantage of business opportunities.