KUKA

Annual Report 2018

beyond automation

Key figures

in € millions	2017	2018	Change in %
Orders received			
Robotics	1,223.3	1,202.9	–1.7
Systems	1,530.2	1,313.7	–14.1
Swisslog	926.2	835.5	–9.8
Group	3,614.3	3,305.3	–8.5
Sales revenues			
Robotics	1,200.6	1,182.4	–1.5
Systems	1,579.2	1,301.5	–17.6
Swisslog	763.7	819.3	7.3
Group	3,479.1	3,242.1	–6.8
Order backlog (Dec. 31)	**2,157.9**	**2,055.7**	**–4.7**
EBIT			
Robotics	133.1	134.4	1.0
Systems	17.8	–32.8	> –100
Swisslog	10.4	–16.3	> –100
Group	102.7	34.3	–66.6
EBIT in % of sales			
Robotics	11.1	11.4	2.7
Systems	1.1	–2.5	> –100
Swisslog	1.4	–2.0	> –100
Group	3.0	1.1	–63.3
Earnings after taxes	**88.2**	**16.6**	**–81.2**
Financial situation			
Free cash flow	–135.7	–213.7	57.5
Capital employed (annual average)	950.4	1,185.0	24.7
ROCE	10.9	2.9	–73.4
Capital expenditure	138.8	295.4	>100
Employees (Dec. 31)	14,256	14,235	–0.1
Net worth			
Balance sheet total	2,640.1	3,218.5	21.9
Equity	866.6	1,339.6	54.6
in % of balance sheet total	32.8	41.6	26.8
Share			
Weighted average number of shares outstanding (in millions of shares)	39.8	39.8	0.0
Earnings per share (in €)	2.22	0.32	–85.6
Dividend per share (in €)	0.50	0.40[1]	–20.0
Market capitalization (Dec. 31)	4,819	2,021	–58.1

[1] Subject to approval by shareholders at the Annual General Meeting on May 29, 2019

KUKA at a glance

KUKA is a global automation company with sales revenues of around 3.2 billion euro and a workforce of about 14,200. As one of the world's leading suppliers of intelligent automation solutions, the company offers its customers everything they need from a single source: from the core component – the robot – to cells and fully automated systems. Industrie 4.0 is bringing the digital networking of production, flexible manufacturing concepts and new business models to the fore. The aim is to support customers by providing comprehensive automation and digitization know-how in order to optimize their value creation.

Key figures 2019

Sales revenue	Orders received	Employees
€3.2 billion	€3.3 billion	14,235

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Foreword

Dear Shareholders,

The past year posed many challenges for us and put us to the test in many respects.

In the year under review, the adjusted target value released in January 2019 was met. The Group achieved sales revenues of €3,242.1 million.

The EBIT margin before purchase price allocations, growth investments and reorganization expenditure was 3.0 percent.

How does one interpret such a result, coming as it does on the heels of the most successful years in KUKA's history? How does one draw the right conclusions and what course do we set for the future?

KUKA's business environment continues to be shaped by topical issues. Our customers need ever more flexible production solutions in order to meet market requirements. The products of our customers are as varied as the people who demand them. Cars, clothing, cell phones and much more besides are designed and manufactured as requested by the consumer. For this reason, our customers need factories that can achieve this.

We are working on new business and production models. In the KUKA SmartProduction Center, for example, we show our customers how they can deal with increasing type variety, frequent changes of model and quantity fluctuations.

We provide answers to the question of how artificial intelligence can support such concepts. Furthermore, the range we offer is unique: from the core component – the robot – and systems through to comprehensive software and IT integration.

A new software package that controls operations on a forward-looking basis and can, for example, provide an overview of the motions of AGVs, their battery charge and the current status of the production cell, forms the heart of our SmartProduction Center.

The decoupling of intralogistics from production is a key advantage of smart matrix production.

New partners are also opening up new possibilities for us. Together with MunichRe and MHP, we opened the SmartFactory as a Service in Munich last year. This is an entirely new concept. The idea behind it: manufacturing companies focus on their customers and do not have to bear the investment costs and risks for themselves.

The aging population, on the other hand, is presenting further avenues for automation, for example in the supply of medication in hospitals or in medical robotics.

Despite all these trends, we must not close our eyes to the prevailing economic conditions.

Peter Mohnen
CEO

Andreas Pabst
CFO

The International Monetary Fund (IMF) expects slower overall growth of the global economy and lowered its forecast for 2018. Among other factors, this is due to the trade dispute between the USA on one side and China and other countries on the other.

Our portfolio is thus in line with current trends, but the environment has become more challenging. We need to gird ourselves for this in the future.

We have a clear focus on both technology and our customers.

By focus, we mean carefully considering what to do, how we organize our team and how we maximize customer proximity.

That is what we are committed to – together with the global KUKA team.

Peter Mohnen

Sincerely, Peter Mohnen

Supervisory Board report

Dear Shareholders,

In the past year, we supported the company in a phase characterized by increased activities in China with the start of a new era on the one hand and a sharply deteriorating business outlook towards the end of the year on the other. Through this intensive support, especially by way of its committees, the Supervisory Board fulfilled its control and advisory function. Particular attention was paid to the budget, while consultation also focused strongly on matters of strategy. Cooperation between the Supervisory Board and the Executive Board was constructive.

The Supervisory Board performed its duties in plenary sessions, committee meetings, conference calls and through circular resolutions. Above all, the Chairman of the Supervisory Board and the chairs of its committees held regular talks with the Executive Board and were thus available as particularly trusted partners. The key performance indicators of the Group (e. g. orders received, sales revenues, EBIT, staff levels) were discussed in detail at every Supervisory Board meeting in connection with the management report of the Executive Board. Deviations of business performance from the plans and targets or from the budgets were discussed in detail in the Supervisory Board and examined on the basis of the documents submitted. The Supervisory Board was thus continuously aware of the company's economic situation.

Questions regarding Executive Board remuneration were prepared in the Personnel Committee, with subsequent decisions being made at the plenary meetings of the Supervisory Board.

Changes to the Executive Board and Supervisory Board

There were changes to the Executive Board. Dr. Till Reuter's appointment as member of the Executive Board and Chief Executive Officer of the company was terminated by mutual agreement as of December 5, 2018, 24:00 hours. Mr. Peter Mohnen was appointed Chief Executive Officer as of December 6, 2018, 00:00 hours. His appointment as member of the Executive Board runs until March 31, 2022. The vacant position as CFO was then filled by Mr. Andreas Pabst as of December 6, 2018, 00:00 hours. Both measures are of an interim nature for the time being; Mr. Pabst's appointment will run until December 5, 2021 if confirmed on a permanent basis. There was no cause to alter the quota for female Executive Board members which is currently set at 0 percent.

The Supervisory Board was reconstituted at the Annual General Meeting on June 6, 2018. It now comprises Dr. Yanmin (Andy) Gu, Mr. Hongbo (Paul) Fang, Prof. Dr. Henning Kagermann, Ms. Min (Francoise) Liu, Dr. Myriam Meyer and Mr. Alexander Tan elected by the shareholders and Mr. Michael Leppek, Mr. Wilfried Eberhardt, Mr. Manfred Hüttenhofer, Mr. Armin Kolb, Ms. Carola Leitmeir and Ms. Tanja Smolenski as employee representatives. All these mandates are valid until the end of the 2023 General Meeting. Prof. Dr. Michèle Morner and Mr. Siegfried Greulich retired from the board; we extend our sincere thanks to them for their work as board members.

Dr. Yanmin (Andy) Gu was re-elected as Chairman of the Supervisory Board, while Mr. Michael Leppek was again appointed as his deputy.

The committees were then reconstituted, namely the Mediation Committee pursuant to section 27 of the German Act on Company Co-Determination (MitbestG): Dr. Yanmin (Andy) Gu and Mr. Michael Leppek as ex officio members and Ms. Min (Francoise) Liu and Ms. Carola Leitmeir as elected members; the Personnel Committee: Dr. Yanmin (Andy) Gu as ex officio member as per section 7 para. 4 of the rules of procedure of the Supervisory Board as well as Ms. Min (Francoise) Liu, Mr. Michael Leppek and Mr. Armin Kolb as elected members; the Audit Committee: Dr. Yanmin (Andy) Gu as ex officio member and Ms. Carola Leitmeir, Dr. Myriam Meyer, Ms. Tanja Smolenski, Mr. Michael Leppek and Mr. Alexander Tan as elected members; the Nomination Committee: election of Dr. Yanmin (Andy) Gu, Mr. Paul Fang and Ms. Francoise Liu; the Strategy and Technology Committee: ex officio member Dr. Yanmin (Andy) Gu, elected members Ms. Carola Leitmeir, Ms. Min (Francoise) Liu, Dr. Myriam Meyer, Mr. Manfred Hüttenhofer, Prof. Dr. Henning Kagermann, Mr. Armin Kolb and Mr. Michael Leppek. The Mediation Committee and the Personnel Committee are chaired by Dr. Yanmin (Andy) Gu, while the Audit Committee is headed by Mr. Alexander Tan and the Strategy and Technology Committee by Prof. Dr. Henning Kagermann.

With four females out of a total of twelve acting members, the proportion of women on the Supervisory Board amounted to 30 percent at the end of the year under review.

Meetings of the Supervisory Board and its committees

The Supervisory Board held six plenary sessions. It organized two telephone conferences and reached two resolutions passed by written circulatory procedure.

The first meeting of the Supervisory Board took place on March 21, 2018. This meeting addressed the 2017 annual financial statements prepared for KUKA AG and the Group. In its role as auditor, KPMG presented a report and the Chairman of the Audit Committee made a statement. Both sets of annual accounts were approved by the Supervisory Board, which meant that the annual financial statements of KUKA Aktiengesellschaft were thereby adopted. The Supervisory Board also had to reach a decision on the proposal regarding appropriation of the 2017 balance sheet profit for a dividend payment of €0.50 per share. The Supervisory Board approved both the Corporate Governance report and the Supervisory Board report for 2017. A new topic that had to be dealt with by the Supervisory Board was the sustainability report pursuant to sections 315b, 315c, 289c of the German Commercial Code (HGB). The Supervisory Board reviewed this report – as the Audit Committee had done in advance – and raised no objections to it. The board then decided on proposed resolutions for the Annual General Meeting planned for June 6, 2018. It also addressed the company's Operational Excellence program for 2017 – 2020 aimed at achieving cost savings. Lastly, issues relating

Dr. Yanmin (Andy) Gu
Chairman of the Supervisory Board

to Executive Board compensation, such as the extent to which the targets stipulated for the Executive Board members for 2017 had been achieved and the 2017 success factor for the variable bonus relating to the company's financial targets, were also on the agenda. Moreover, the success factor for settlement of the 2015 – 2017 phantom share program was defined. The Supervisory Board also decided on the 2018 calculation basis for the variable company targets bonus for the Executive Board. Much attention was given to the joint ventures with Midea and the Shunde Technology Park. The board approved the creation of two Robotics China joint ventures with 50 percent stakes equally held by KUKA and Midea (through capital increases by Midea in existing KUKA companies) and of a Swisslog WDS China joint venture and a Swisslog HCS China joint venture (also through a capital increase by Midea in Swisslog companies in both cases). Approval was additionally given to the establishment of a technology park in Shunde, where local robot production is also planned, with considerable investments by one of the Robotics joint ventures. Finally, a settlement with KBee AG was discussed and the procedure proposed by the Executive Board was approved.

The Supervisory Board held a telephone conference on April 16, 2018 to address the nomination proposals to the Annual General Meeting regarding candidates for election to the Supervisory Board as shareholder representatives. Furthermore, the personal targets for 2018 and the long-term incentive plan for 2018 – 2020 were agreed upon for the Executive Board members.

The Supervisory Board met before and after the Annual General Meeting held on June 6, 2018. Beforehand, the Supervisory Board prepared for the Annual General Meeting.

The first items on the agenda after the Annual General Meeting were the election of the Chairman and Deputy Chairman of the Supervisory Board and appointments to the committees. The 2017 ICS report was then submitted, followed by a report on the Robotics supply chain. As part of regular professional training, the attorney Dr. Vogel gave a lecture on the subject of "Information rights of Supervisory Board members".

The traditional strategy meeting took place on September 24, 2018. On this occasion, Prof. Dr. Henning Kagermann presented a report from the meetings of the Strategy and Technology Committee held in the current year. This committee had discussed the Executive Board's strategy presentation on the same morning. The company's strategy for 2019 to 2023, as presented by the Executive Board, was noted with approval. Further topics at this meeting were the M&A follow-up of the Reis acquisition, the CCO implementation, a report from the Audit Committee by Mr. Alexander Tan, the recently initiated cost-cutting program and an update on the joint ventures with Midea.

An extraordinary meeting of the Supervisory Board was convened on November 25/26, 2018. The termination of Dr. Till Reuter's position on the Executive Board had to be decided in agreement with him at short notice. This then also led to the appointment of Mr. Peter Mohnen as CEO and Mr. Andreas Pabst as the new CFO. Decisions subsequently had to be made on the terms of the premature termination of Dr. Reuter's employment contract. Owing to the shortage of time, it was not yet possible to discuss the amendment of the employment contract with Mr. Peter Mohnen and a new Executive Board contract with Mr. Andreas Pabst.

The last ordinary Supervisory Board meeting was convened in Shunde on December 7, 2018. The budget for 2019 and the medium-term planning for 2021 were discussed and approved. In addition, an update on the cost-cutting program was given and an M&A follow-up report was presented with regard to the Talyst, Device Insight, Visual Components, PipelineRx and MorTech acquisitions. This was followed by the annual report of the Personnel Committee and a current report of the Audit Committee. Moreover, the investor agreement between the company and Midea was discussed and a self-reflection on the efficiency of the Supervisory Board was carried out. The meeting was concluded with another professional training session, comprising a lecture by the General Counsel on "Monitoring of the Compliance Management System by the Supervisory Board".

On December 22, 2018, the Supervisory Board conducted a telephone vote on personnel issues relating to the Executive Board.

The written resolutions date from February 15 and November 21, 2018, both of them concerning the Declaration of Compliance pursuant to section 161 of the German Stock Corporation Act (AktG).

All members of the Supervisory Board, except Mr. Hongbo (Paul) Fang, participated in more than half of the plenary and committee meetings in the year under review (German Corporate Governance Code, section 5.4.7). Unless indicated otherwise, the Supervisory Board met in the presence of the Executive Board except when matters concerning the latter's remuneration were on the agenda (German Corporate Governance Code, section 3.6, para. 2).

Further aspects of corporate governance can be found in the report of the same name which forms part of the annual report.

The Supervisory Board has the following committees: Personnel Committee (chaired by Dr. Yanmin (Andy) Gu), Audit Committee (chaired by Mr. Alexander Tan), Strategy and Technology Committee (chaired by Prof. Dr. Henning Kagermann), Mediation Committee pursuant to section 27 para. 3 of the German Co-Determination Act (chaired by Dr. Yanmin (Andy) Gu). The Nomination Committee has also been established in accordance with section 5.3.3 of the German Corporate Governance Code.

The Personnel Committee met five times. A frequent topic was the Executive Board's compensation. At one meeting, the committee also discussed and approved the committee's recommendation regarding Dr. Till Reuter's departure and the associated termination of his employment contract. Discussions and resolutions were also conducted on proposals relating to the appointment of Mr. Peter Mohnen as CEO and the appointment of Mr. Andreas Pabst as the new CFO.

The Audit Committee had six meetings. The financial statements of KUKA Group and KUKA AG were discussed regularly. Furthermore, the audit plan for 2018, the current risk report and a regular report on the progress of the internal audits were addressed. The company's Chief Compliance Officer also reported to the Audit Committee on a regular basis.

The Strategy and Technology Committee was convened five times. In addition to consultations on Group strategy, the topics discussed included competition analyses, IoT potential, the status of LBR iisy development, consumer robotics and item picking logistics.

The Nomination Committee met on March 21 and April 16, 2018 in order to select and nominate candidates of the shareholders for proposal by the Supervisory Board to the Annual General Meeting.

There was no occasion to convene the Mediation Committee.

Independence and conflicts of interest, Declaration of Compliance

The Supervisory Board members Dr. Yanmin (Andy) Gu, Mr. Hongbo (Paul) Fang and Ms. Min (Francoise) Liu have employment contracts with Midea Group, which holds a 94.5 percent stake in KUKA. Dr. Yanmin (Andy) Gu and Mr. Hongbo (Paul) Fang also hold positions on boards within this group. Initially also employed by Midea, Mr. Alexander Tan left the company during the year and is now independent. With regard to conflicts of interest in the year under review, it is to be reported that the Midea representatives abstained from the resolution on the Midea joint ventures and the technology park in Shunde at the meeting on March 21, 2018. Dr. Yanmin (Andy) Gu, Ms. Francoise Liu, Mr. Paul Fang and Mr. Alexander Tan participated in the discussion for the purpose of providing information but not in the voting on account of a conflict of interests. Moreover, Mr. Michael Leppek presided over this part of the meeting.

The Supervisory Board and the Executive Board submitted identically worded declarations in accordance with section 161 of the German Stock Corporation Act (AktG). The annual declarations were made first by the Executive Board on February 5, 2018 and then by the Supervisory Board on February 15, 2018. An amended Declaration of Compliance was issued by the Executive Board on November 7, 2018 and by the Supervisory Board on November 21, 2018. The Declarations of Compliance were made permanently available to shareholders on the company's website.

Work with the auditors

The annual financial statements of KUKA Aktiengesellschaft as at December 31, 2018 and the consolidated financial statements of KUKA Group as at December 31, 2018, as well as the consolidated management report of KUKA AG and KUKA Group, including the bookkeeping, were audited by auditors KPMG Aktiengesellschaft, Wirtschaftsprüfungsgesellschaft, Berlin, which issued an unqualified audit opinion in each case on March 5, 2019. The auditors also reviewed the monitoring system as per section 91 para. 2 of the German Stock Corporation Act (AktG), the purpose of which is the early detection of developments that could threaten the company's existence. KUKA Group's mid-year financial report dated June 30, 2018 was also reviewed by the auditors. KUKA Aktiengesellschaft's consolidated statements were prepared in accordance with section 315e para. 1 of the German Commercial Code (HGB) based on the International Accounting Standards (IFRS) as adopted by the European Union.

The Supervisory Board's Audit Committee appointed the external auditors, KPMG, as per the resolution at the Annual General Meeting of June 6, 2018. During the course of appointing the auditors of the financial statements of the company and the Group, the chair of the Audit Committee and the Chairman of the Supervisory Board conducted a review with the auditors regarding key audit issues, scope and fees. The auditors agreed to immediately inform the chair of the Audit Committee about any disqualification or bias issues encountered during the audit, provided such disqualification or bias issues could not immediately be resolved. The auditors also agreed to report on an ongoing basis during the audit all material findings and developments arising during the audit that were within the scope of the Supervisory Board's responsibilities. Furthermore, the auditors were instructed to inform the Supervisory Board, or note in the audit report, if information was encountered during the audit that was contrary to the declarations released by the Executive Board and Supervisory Board as per section 161 para. 1 sentence 1 of the German Stock Corporation Act (AktG).

Finally, the Audit Committee obtained the arm's length declaration of the auditors in accordance with section 7.2.1 para. 1 of the GCGC and monitored the auditors' independence.

As was the case in previous years – always in respect of different matters – focal points were defined for the audit in the 2018 fiscal year: namely the capitalization of internally generated intangible assets (especially software); recognition, measurement and disclosure of finance leases in which KUKA is the lessor; conversion to IFRS 9; segment reporting and assignment of goodwill to the new cash generating units, recognition and measurement of restructuring provisions; Group tax rate; scope of consolidation; valuation of investments; dependency report.

Because they had been contracted to review the June 30, 2018 mid-year financial report, the auditors attended the Audit Committee meeting on August 3, 2018.

In a joint meeting with the auditors on March 14, 2019, the Audit Committee reviewed the two sets of financial statements for fiscal 2018, taking into consideration the auditors' reports. The Executive Board and the auditors presented the highlights of the financial reports to the panel. The Audit Committee members reviewed, discussed and checked in detail the documentation relating to the financial statements and discussed the audit report in depth with the auditors. The auditors answered the questions posed by the Audit Committee members. The Audit Committee reported to the Supervisory Board on the results of its discussions during the board's meeting on March 27, 2019 and recommended that the board approve KUKA Aktiengesellschaft's annual financial statements and KUKA Group's consolidated annual financial statements for fiscal 2018.

The full Supervisory Board reviewed the draft annual financial statements and the Executive Board's recommendation on appropriation of net income on March 27, 2019. The auditors, KPMG, attended the Supervisory Board meeting in order to report on material findings in the audit and to provide additional information. All members of the Supervisory Board were in possession of the audit reports provided by the auditors. KPMG explained in detail the financial position and performance of the company and the Group. The auditors also reported that there are no material weaknesses in the internal controlling of the accounting system or the risk early detection system. The board and the auditors jointly reviewed and discussed the financial statements and KPMG answered all questions posed by the Audit Committee. The audits of the KUKA Aktiengesellschaft and KUKA Group annual financial statements for 2018 were thus fully comprehensible.

Furthermore, in the meeting on March 27, 2019, a sustainability report for 2018 prepared for KUKA Group pursuant to sections 315b, 315c, 289c of the German Commercial Code (HGB) was reviewed for the second time by the plenum following discussion by the Audit Committee. There were no objections.

Finally, in view of Midea's shareholder status (94.55 percent), the Supervisory Board had to address the dependency report for 2018 prepared by the Executive Board pursuant to section 312 of the German Stock Corporation Act (AktG). This report was also reviewed by KPMG in its role as auditor. Following preparatory discussion by the Audit Committee, the Supervisory Board conducted a further review. All reviews confirmed the Executive Board's final declaration that, with regard to the business relationships of KUKA Group with Midea companies in the 2018 fiscal year, appropriate compensation was received and KUKA companies did not suffer any disadvantages therefrom.

Adoption of 2018 financial statements

After completing its own review of the 2018 financial statements for KUKA Aktiengesellschaft and KUKA Group, and with full knowledge and consideration of the Audit Committee report, the auditors' reports and the explanations provided, the Supervisory Board raised no objections to the results and concurred with the auditors' findings at its meeting on March 27, 2019. In the opinion of the Supervisory Board, the auditors' reports comply with the legal requirements stipulated in sections 317 and 321 of the German Commercial Code (HGB).

The Supervisory Board is satisfied that the consolidated management report compiled for KUKA Aktiengesellschaft and KUKA Group is complete. The assessments made by the Executive Board in the management report are in agreement with its reports to the Supervisory Board, and the statements made in the consolidated management report are also in agreement with the Supervisory Board's own evaluations. At the conclusion of its review, the Supervisory Board found no cause to raise objections to the consolidated management report. The Supervisory Board also reviewed the Group's sustainability report at its plenary meeting and raised no objections.

In its financial statements meeting on March 27, 2019, the Supervisory Board therefore approved KUKA Aktiengesellschaft's financial statements for fiscal 2018 as prepared by the Executive Board. The annual financial statements are thereby adopted.

The Supervisory Board also approved KUKA Aktiengesellschaft's consolidated financial statements and the Corporate Governance report for the 2018 fiscal year as prepared by the Executive Board.

Initially, the Executive Board recommended a dividend of €0.40 per common share entitled to dividends be paid from the balance sheet profit. In its meeting on March 27, 2019, the Supervisory Board decided on a proposal for a dividend of €0.30 and the remaining profit to be carried forward to new account. The Executive Board adopted this proposal of the Supervisory Board on the same day.

Thanks to the staff

For KUKA, 2018 was a year marked by the founding of joint ventures with Midea in China. Most recently, the company had to contend with the economic slowdown in the automotive and electronics industries and suffered from weaker business activity in China. A dividend can nevertheless be paid again this year. This is attributable not just to the Executive Board, but to all KUKA Group employees.

The Supervisory Board is therefore especially grateful to all staff of KUKA companies for their commitment. The employees worked hard for KUKA again in 2018, preparing the company for the future. However, the Supervisory Board also extends its thanks to the members of the Executive Board, the CEOs of the Group companies and the employee representatives. All have contributed impressively to the company through their efforts and to the welfare of its customers and shareholders.

Augsburg, March 27, 2019
The Supervisory Board

Dr. Yanmin (Andy) Gu
Chairman

Corporate Governance report

The Executive Board and Supervisory Board report below on corporate governance at KUKA in accordance with section 3.10 of the German Corporate Governance Code (GCGC).

Corporate governance refers to the entire system of managing and monitoring a company and group of companies. This includes in particular a company's organization, business policy and guidelines as well as internal and external control and monitoring mechanisms. Good, responsible corporate governance is one of KUKA's core principles. It creates transparency and confidence in KUKA among shareholders, customers and suppliers, the staff, the financial markets and the public.

Again for this reporting year, the Executive Board and Supervisory Board of KUKA Aktiengesellschaft have examined the requirements of the GCGC in detail in its current version as of February 7, 2017 and issue the following declaration of compliance:

Declarations of compliance

The declarations of compliance of the Executive Board and Supervisory Board that have been issued for every financial year since 2002 are available to the public on the company's website at www.kuka.com.

The identical declarations of the Executive Board (dated January 28, 2019) and the Supervisory Board (dated February 15, 2019) in accordance with section 161 para. 1 sentence 1 of the German Stock Corporation Act (AktG) and the GCGC read as follows:

"Since issuing the latest declarations of compliance of the Executive Board (November 7, 2018) and of the Supervisory Board (November 21, 2018), KUKA Aktiengesellschaft has complied with the recommendations of the Government Commission on the German Corporate Governance Code as of February 7, 2017, which were published in the Bundesanzeiger (German Federal Gazette) dated April 24, 2017, with the exception of the divergences mentioned in these declarations of compliance; it will continue to comply with these recommendations in the future subject to the following divergences:

> KUKA Aktiengesellschaft does not follow the recommendation for the Supervisory Board outlined in section 3.8 para. 3 of the GCGC. The Group D&O insurance policy does not provide for a deductible for members of the Supervisory Board. In KUKA Aktiengesellschaft's view, Supervisory Board members do not require a deductible to ensure that they properly fulfill their monitoring role.

KUKA Aktiengesellschaft adheres to almost all the other suggestions contained in the Code."

The identical declarations of the Executive Board and Supervisory Board have been available on the company's website at www.kuka.com since February 19, 2019.

Corporate and management structure

Since January 6, 2017, Midea Group Co., Ltd. (through wholly-owned subsidiaries) has held 94.55 percent of the shares in KUKA Aktiengesellschaft. KUKA Aktiengesellschaft and its subsidiaries and affiliates form a "subgroup" (hereinafter "KUKA Group") within the Midea Group.

KUKA Group is managed by KUKA Aktiengesellschaft as the Group's managing holding company. The customer centric organization of the operating divisions introduced in the 2018 financial year has been developed further to become the so-called "KUKA Business Organization". The core goal of the KUKA Business Organization is to focus on KUKA Group's customers through an appropriate breakdown of the operating divisions into the following segments: (i) Systems, (ii) Robotics, (iii) Logistics Automation, (iv) Healthcare and (v) China (all activities in China are bundled in this segment).

Similarities between the divisions in terms of product portfolios, markets, customers and geographic focus are identified, and intense efforts are made to further develop these similarities. This is an expression of the "One KUKA" approach. However, the divisions remain responsible for their business and thus also for their results. Moreover, as in the past, project and risk managers monitor implementation of the established targets by focusing intensively on key indicators, as well as developing executive staff and maintaining brand strategy.

Executive Board and Supervisory Board

As a German stock corporation, the statutory rules impose on KUKA Aktiengesellschaft a dual management system comprising the Executive Board and Supervisory Board. The Executive Board is responsible for managing the company. The members of the Executive Board share this responsibility for company management. The Chairman of the Executive Board and Chief Executive Officer coordinates the work of the entire Board; he is responsible for representing and leading the Board in its cooperation with the Supervisory Board and its members. The Supervisory Board appoints, monitors and advises the Executive Board. The Chairman of the Supervisory Board coordinates the work of the Supervisory Board.

Responsible cooperation between the Executive Board and the Supervisory Board

The common goal of the Executive Board and Supervisory Board is to sustainably increase shareholder value. To this end, the Executive Board and Supervisory Board work closely together in the interest of the company. No former members of the Executive Board sit on the Supervisory Board. The Executive Board reports to the Supervisory Board regularly, in a timely manner, and comprehensively regarding all matters relevant to the company with respect to planning, business development, risk exposure, risk management and any corresponding action taken. The Executive Board also addresses any deviations in the business results from the established plans and targets and explains the causes of such deviations. The Executive Board and/or Chief Compliance Officer also reports to the Supervisory Board regarding corporate compliance. The Articles of Association and the Supervisory Board's rules of procedure contain provisions ensuring the right of the Supervisory Board to withhold its consent on significant transactions. Further information on cooperation between the Executive Board and the Supervisory Board can be found in the Supervisory Board report on pages 6 to 9.

In fiscal 2018, no consulting or other contracts for work or services existed between Supervisory Board members and the company.

We refer you to the report of the Supervisory Board (page 6 of the annual report) with regard to resolutions passed concerning business events during fiscal 2018 where conflicts of interest could have arisen for members of the Executive and Supervisory Boards.

Executive Board

The Executive Board of KUKA Aktiengesellschaft consists of two persons: the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO). KUKA Aktiengesellschaft's Articles of Association expressly state that the Executive Board may consist of two or more persons (section 6 para. 1 of the Articles of Association).

In fiscal 2018, the responsibilities of the members of the Executive Board were assigned as follows:

Dr. Till Reuter was Chief Executive Officer (CEO) up to the end of December 5, 2018, and was responsible for (i) investor relations, (ii) strategic corporate development, (iii) public relations, (iv) senior Group executives, (v) internal audit, (vi) personnel and (vii) legal affairs/compliance. Up until his departure, Dr. Reuter was also director of industrial relations at KUKA Aktiengesellschaft.

Up until the end of December 5, 2018, Mr. Peter Mohnen, Chief Financial Officer (CFO), was responsible for (i) finances and controlling, which includes the financial accounting, controlling, treasury and tax departments, (ii) risk management, (iii) IT and (iv) facility management. With effect from December 6, 2018, Peter Mohnen was appointed Chief Executive Officer (CEO), and has since been responsible for (i) investor relations, (ii) strategic corporate development, (iii) public relations, (iv) senior Group executives, (v) internal audit, (vi) personnel and (vii) legal affairs/compliance. Since that date, Peter Mohnen has also been director of industrial relations at KUKA Aktiengesellschaft.

With effect from December 6, 2018, Mr. Andreas Pabst was appointed Chief Financial Officer (CFO), and has since been responsible for (i) finances and controlling, which includes the financial accounting, controlling, treasury and tax departments, (ii) risk management, (iii) IT and (iv) facility management.

The Executive Board members normally convene at least every 14 days, and otherwise keep in constant close contact.

In accordance with the recommendations of the GCGC (section 4.1.5), the Executive Board takes diversity into consideration when filling managerial positions in the company and, in particular, aims for an appropriate consideration of women. The Executive Board sets targets for the proportion of women at the two management levels below the Board itself (see Sustainability Report).

Executive Board compensation

Executive Board compensation is outlined in the compensation report.

Supervisory Board

KUKA Aktiengesellschaft's Supervisory Board consists of twelve members as per the Articles of Association, of which six represent the shareholders and six the employees.

The election of employee representatives to the Supervisory Board was held on April 10, 2018, in accordance with the provisions of the German Co-Determination Act (MitbestG). The results of the vote were published in the Federal Gazette (Bundesanzeiger) on April 17, 2018. A new election of Supervisory Board shareholder representatives was held at the Annual General Meeting on June 6, 2018.

The term of office of the Supervisory Board members representing the employees and the members representing the shareholders ends upon adjournment of the Annual General Meeting in 2023. This also applies to substitute members and other successors in office of employees and shareholders who subsequently join the Supervisory Board. This is because section 10 para. 4 sentence 1 of the Articles of Association stipulates that where a Supervisory Board member leaves office early, the term of office of the new Supervisory Board member runs only for the remaining term of office of the retiring member.

The Supervisory Board established the following targets for its future makeup to address the requirement regarding diversity in section 5.4.1 of the GCGC, which are also to be taken into account when recommending candidates to the shareholders at the Annual General Meeting:

(i) At least two Supervisory Board members shall have sector-specific experience.

(ii) At least one Supervisory Board member shall have considerable professional experience abroad.

(iii) At least two Supervisory Board members to be elected at the Annual General Meeting shall be independent in terms of section 5.4.2 of the GCGC and shall not be affected by conflicts of interest in terms of section 5.5.2 of the GCGC.

(iv) Normally, Supervisory Board members shall be no younger than 35 and no older than 73 years of age at the time of their election.

(v) A member of the Supervisory Board may carry out his or her mandate for up to a maximum of three consecutive periods in office, although this limit may be ignored in exceptional cases when it is in the company's interests to do so.

(vi) In addition, the requirements of the German act to promote equal participation of women and men in management positions in the private and public sector (FührposGleichberG) of April 24, 2015 and the targets set by the full Supervisory Board concerning the number of women are to be observed.

In view of the criteria for independence as specified in section 5.4.2 of the GCGC, it should be noted that on account of their management roles within the Midea Group the Supervisory Board members in office for fiscal 2018 (i) Dr. Yanmin (Andy) Gu, (ii) Hongbo (Paul) Fang, (iii) Min (Francoise) Liu and, temporarily, (iv) Alexander Liong Hauw Tan (employed by Midea up to the end of June 2018) cannot be regarded as independent according to the definition in section 5.4.2 of the GCGC. In contrast, the members (i) Professor Dr. Michèle Morner (member of the Supervisory Board until June 6, 2018), (ii) Professor Dr. Henning Kagermann and Dr. Myriam Meyer (member of the Supervisory Board since June 6, 2018) and, temporarily, Mr. Alexander Liong Hauw Tan are/were independent as defined in section 5.4.2 of the GCGC, thus meeting the requirement for at least two independent Supervisory Board members who have been elected by the Annual General Meeting.

To the extent that members of the Supervisory Board held or hold key positions with important business partners, transactions with them were subject to the standard terms and conditions for arm's length transactions.

The Supervisory Board has formed six committees consisting of Supervisory Board members. These are:

(i) the Mediation Committee as per section 27 para. 3 of the German Act on Company Co-Determination (MitbestG),

(ii) the Personnel Committee,

(iii) the Audit Committee (section 5.3.2 GCGC),

(iv) the Nomination Committee (section 5.3.3 GCGC), and

(v) the Strategy and Technology Committee.

In accordance with the provisions of the Corporate Governance Code, the Supervisory Board or the Audit Committee dealt with compliance issues, and the Executive Board reported to this committee accordingly.

It has been agreed with the independent auditor that the Supervisory Board should immediately be notified of any material findings or occurrences related to its work that arise in the course of auditing the financial statements. Finally, it was also agreed with the independent auditor that the independent auditor will inform the Supervisory Board and/or note in its audit report any finding of facts during the performance of the audit indicating that the declarations issued by the Executive Board and the Supervisory Board with respect to the Code are in any way incorrect (section 7.2.3 GCGC). As stipulated in the audit contract, the auditor reviewed the interim report as of June 30, 2018.

The Supervisory Board regularly reviews the efficiency of its activities (section 5.6 GCGC). It recently had so-called best practice scenarios presented to it.

Supervisory Board compensation

The remuneration of the Supervisory Board is also outlined in the compensation report.

Shareholdings

Members of the Executive and Supervisory Boards or related parties are obliged according to section 19 of the Market Abuse Regulation (MAR) to disclose the purchase or sale of shares in KUKA Aktiengesellschaft, or financial instruments relating thereto, if the value of these transactions within one calendar year reaches or exceeds the sum of €5,000. The transactions by persons with management roles or their related parties reported to KUKA Aktiengesellschaft in fiscal 2018 were duly published and can be examined on the company website at www.kuka.com.

Corporate Compliance

KUKA has always applied a high standard of ethical principles. Essential components are strict obedience to the law and value-oriented conduct. These form the basis of the Corporate Compliance Program adopted by the Executive Board in November 2007 and approved by the Supervisory Board in December 2007, which took effect throughout the Group on February 1, 2008. The key contents of the Corporate Compliance Program are contained in the Corporate Compliance Handbook, which comprises several compliance-related guidelines. The Corporate Compliance Handbook was revised and updated in fiscal 2010. It was again reviewed and updated in fiscal 2013 and the version now applicable is dated April 1, 2013. Various guidelines were adapted as of April 1, 2016 so as to adjust to the altered conditions. The handbook was also made more attractive and usable. This new version of the Compliance Handbook was issued to all employees worldwide. A benchmark analysis was performed in fiscal 2018, during which the codes of conduct of companies comparable to KUKA were analyzed. A worldwide in-house employee survey was also conducted in order to identify further potential for optimization.

Pursuant to a resolution of the Executive Board, the CEO is ultimately responsible for the Corporate Compliance Program. A Compliance Committee consisting of persons employed by the Group was established to steer, implement, monitor and develop the Corporate Compliance Program. In addition, compliance officers were established at the Group companies for the individual divisions and regions under the Compliance Committee. The compliance officers are intended to be the employees' direct and (first) point of contact for compliance-related issues. The position of external ombudsman has also been established.

KUKA endeavors to implement compliance together with all employees and external partners. To achieve this goal, various processes and measures are employed which jointly represent the KUKA Compliance Management System (CMS). According to the GCGC recommendations, the KUKA CMS has been recorded in writing and is available for examination by the public on the website at www.kuka.com. As a result of the regular changes occurring in the field of compliance, the CMS is a dynamic system and is therefore continuously being adapted to suit any relevant changes.

For KUKA, regular training of its employees is key to anchoring our value-based standards in the company and avoiding any violations of law. For example, since 2011, all KUKA employees have regularly participated in online compliance training based on an in-house e-learning program designed especially for this purpose. The e-learning program was progressively expanded to include all Group companies.

In fiscal 2016, the "Corporate Compliance" e-learning program was revised. Participation in this revised version of the e-learning program is obligatory for all employees throughout the world. The e-learning must be repeated at two-year intervals in order to refresh compliance-related knowledge. In fiscal 2018, the e-learning was integrated on the internal KUKA learning platform and the training process was optimized by means of an automated invitation to new employees throughout the Group to participate in the e-learning. Further e-learning modules based on the Compliance Risk Map were developed in 2018 and will be rolled out worldwide in the following year.

An offline version has also been produced for issue to all employees worldwide who do not have their own e-mail address and are therefore unable to participate in digital forms of training. In this manner, all employees are now being consistently reached at their place of work, and awareness of corporate compliance is consequently being fostered throughout the Group.

In addition to the online training courses, the company also held a series of seminars on selected topics. The content of the face-to-face training is based on the Compliance Risk Map. One example is worldwide face-to-face training in competition law.

Annual General Meeting

The 2019 Annual General Meeting will take place in Augsburg on May 29, 2019.

Each share is entitled to one vote. No-par-value shares have been issued and global certificates created. The shares are bearer shares. The Executive Board makes it easier for shareholders to exercise their voting rights at the Annual General Meeting by offering them the right to issue powers of attorney to proxies who are appointed by the company and bound by the instructions of the shareholder. The proxies appointed by the company are also available at the Annual General Meeting to the shareholders who are present. In addition, powers of attorney may be issued to financial institutions, shareholder associations or other third parties.

Accounting and annual audit

Since 2004, the annual financial statements of KUKA Group have been prepared in accordance with the International Accounting Standards (IAS) and the International Financial Reporting Standards (IFRS) as adopted by the European Union. An independent auditor elected at the Annual General Meeting audits the annual financial statements and the consolidated financial statements. At the recommendation of the Supervisory Board, shareholders at the 2018 Annual General Meeting chose KPMG AG Wirtschaftsprüfungsgesellschaft, Berlin, as auditor for the annual financial statements and Group auditor for fiscal 2018 as well as for a potential review of the mid-year report for fiscal 2018. The mid-year report for fiscal 2018 was reviewed by the auditor based on the aforementioned resolution.

In accordance with the provisions of the Corporate Governance Code, the Supervisory Board's Audit Committee reviewed the independence of the auditor, commissioned the auditor to carry out the audit, determined the key audit points and agreed on the fee.

Opportunity and risk management, controlling

Opportunity and risk management at KUKA Group is described in the risk report included in the annual report on pages 46 to 51. In accordance with legal requirements, the aim of risk management is early identification of any risk that could jeopardize the existence of KUKA Group and its operating companies as going concerns to enable measures to minimize, transfer or avoid risk to be taken. The risk strategy and risk policy is guided in particular by business risks, financial risks (including currency risks), and the specific risks of the divisions – in each case from a short, intermediate and long-term perspective. Controlling in particular is an essential tool for efficient risk management at KUKA Group.

KUKA further optimized opportunity and risk management in 2018. The Executive Board is tasked with adapting opportunity and risk management to changes in the business environment on an ongoing basis.

Financial publications

The company informs its shareholders, participants in the capital markets, and the media of its position and of significant business events, in particular by publishing quarterly financial reports, a mid-year financial report, and a business report, holding a financial statements press conference on the annual financial statements and conducting the Annual General Meeting each year. In addition, it issues ad-hoc releases under article 17 of the Market Abuse Regulation (MAR), notifications under article 19 of the MAR (Managers' transactions) and under section 26 of the WpHG (disclosure of notifications by shareholders and holders of certain financial instruments), holds conferences with analysts, meets with analysts and investors in Germany and abroad, and issues other press releases.

All information is published in both German and English and is also available on the company's website from the time of publication. All regular financial reporting dates are published in the company's financial calendar, which can be found on the back cover page of the annual report and on the website at www.kuka.com.

Declaration regarding corporate governance

The corporate governance declaration as per sections 289f and 315d of the German Commercial Code (HGB) is posted on the company's website at www.kuka.com.

Compensation report

The compensation report summarizes the basic principles used to determine the compensation of the Executive and Supervisory Boards of KUKA Aktiengesellschaft and describes the structure and compensation of the members of the Executive and Supervisory Boards. The compensation report is an integral part of the combined management report.

Executive Board compensation

1. Compensation structure

KUKA Aktiengesellschaft's Executive Board compensation contains fixed and variable components. The latter consist of several variable compensation elements. The Executive Board compensation system thus conforms to section 87 of the German Stock Corporation Act (AktG) and the requirements of the GCGC regarding sustainable corporate performance. The variable components take into consideration both positive and negative business developments.

The fixed compensation consists of a base salary and payments in kind. The base salary is paid in twelve equal monthly installments. The payments in kind made to Executive Board members consist mainly of the non-cash benefits for the provision and use of a company vehicle. Executive Board members also receive fixed compensation for their activities as members of the administrative board of Swisslog Holding AG as of April 1, 2017. This is paid out by Swisslog Holding AG pro rata at the end of each quarter.

The variable compensation structure for Executive Board members was altered with effect from December 6, 2018. For the Executive Board members in office up to and including December 5, 2018, namely Dr. Till Reuter and Peter Mohnen, one half of the variable compensation was based on the achievement of personal targets and the other half was dependent on the performance of KUKA Group's key indicators, EBIT and free cash flow (financial targets). Since December 6, 2018, the variable compensation has been subject to a new weighting structure. For Peter Mohnen, 70% of the variable compensation is now based on financial targets and 30% on personal targets. For Andreas Pabst, who has been a member of the Executive Board since December 6, 2018, 66.67% of the variable compensation is based on financial targets and 33.33% on personal targets.

The details of the variable compensation structure (in particular the achievement of targets) are agreed separately each year. The variable compensation component is capped (maximum target achievement of 200%) and achievement of the financial targets is generally linked to business performance over several years.

In addition, annual allocation volumes for participation in phantom share programs (hereinafter also referred to as the "programs") were stipulated for members of the Executive Board as a further variable compensation component designed to provide a long-term incentive for the period up to and including 2016. Phantom shares are virtual shares that grant the holder the right to a cash payment in the amount of the company's applicable share price. In contrast to stock options, the proceeds from phantom shares reflect not only the increase in share value, but also the full value of the stock. Moreover, a dividend equivalent mirroring the actual dividend distributed on real KUKA shares was paid annually during the life of the plan for each virtual share held. There are no voting rights associated with phantom shares.

The programs each ran for three financial years. The allocation volume was either already contractually agreed or set by the Supervisory Board before the respective three-year period commenced. The allocation volume divided by a reference price for the KUKA share then resulted in a provisional number of phantom shares. The Supervisory Board had calculated the provisional number of phantom shares for the 2016 – 2018 program based on the average price of the KUKA share (opening price in Xetra trading on the Frankfurt Stock Exchange) between January 4, 2016 and March 7, 2016 (the last trading day prior to the Supervisory Board's financial review meeting). The relevant price thus determined for the KUKA share was €77.53.

The Supervisory Board also established an EVA (economic value added) for continuing operations (before taxes) at the beginning of the three-year performance period. The EVA was based on the operational planning for the three years of the program, which was geared towards the budget for the first financial year of the three-year period and the projections for the two subsequent financial years.

The cumulative EVA (actual EVA) for the three-year performance period was divided by the EVA for continuing operations in accordance with the operational planning for the three program years in order to determine a success factor. The success factor could fluctuate between 0 and 2.0. The final number of phantom shares depends on the success factor achieved, which is multiplied by the provisional number of phantom shares. The upper limit for the final number of phantom shares is capped at twice the number of provisional shares, which would constitute a success factor of 2.0. Payment is based on the final number of phantom shares at the final price of the KUKA share (average price of the KUKA share between January 2 of the year subsequent to the three reference years ("subsequent year") and the day prior to the financial review meeting of the Supervisory Board in the subsequent year).

In the event that an Executive Board member's contract is terminated – regardless of which party initiates the termination – all phantom shares allocated to that member expire. However, this does not apply if an Executive Board member uses their right to step down from their place on the Board owing to a change of control at the company. In this case, a proportionate payment is made in accordance with the terms and conditions of the phantom share program.

The relevant Executive Board member is obliged to purchase a certain number of KUKA shares from the gross proceeds paid out on the basis of the programs, in order to build up a holding volume of 50% of the annual base remuneration (fixed annual remuneration) in the year of allocation. Until the holding volume has been built up, 25% of the gross amount paid out for the relevant year must be spent on purchasing KUKA shares. The purchase amount is retained from the net proceeds. The obligation ends with the participant's departure from KUKA Group.

The payment amounts (to be paid out in 2019) for the 2016 – 2018 phantom share program are limited to an amount equal to three times the allocation volume.

In place of the phantom share programs, the members of the Executive Board have been entitled to participate in long-term incentive plans (hereinafter “LTIPs”) with annual allocation volumes since 2017. The LTIPs are variable compensation components with long-term incentives. Mr. Pabst is not currently entitled to participate in a LTIP as part of his Executive Board compensation.

The LTIPs cover a period of three financial years. The allocation volume is either already contractually agreed or set by the Supervisory Board before the respective three-year period commences.

At the start of the three-year performance period, the Supervisory Board also determines the key indicators and specifications for the target values of the success factors for the LTIP concerned. The relevant factors are (i) the performance factor and (ii) the strategy factor.

The key indicator for the performance factor is the EVA over the performance period. The EVA in this context is the Group EBIT (on a consolidated basis) less minimum interest (9%) on the Group’s capital employed. The Supervisory Board stipulates the target values at its discretion, divided into (i) minimum target, (ii) target and (iii) maximum target. The minimum target corresponds to a performance factor of 0.50, the target to a performance factor of 1.00 and the maximum target to a performance factor of 1.50.

The relevant key indicators for the strategy factor are determined by the Supervisory Board at its discretion. The Supervisory Board also defines the target values for each key indicator. The minimum target corresponds to a strategy factor of 0.00, the target to a strategy factor of 1.00 and the maximum target to a strategy factor of 2.00.

The gross disbursement amount is calculated by multiplying the individual allocation value, performance factor and strategy factor for the performance period.

Under specific conditions defined in the LTIP, entitlement to payment of the gross disbursement amount may be waived in full or limited pro rata temporis.

Both the phantom share program that has not yet been settled and the LTIP still in effect are limited in terms of amount, with the effect that the total Executive Board compensation (fixed annual salary, variable bonuses and payments from a phantom share program or LTIP) is limited as of 2018 by the accumulation of caps on individual items.

The employment contracts of Executive Board members contain “termination payment caps”. This means that a restriction is agreed upon in the event of the employment contracts being terminated prematurely without good cause in relation to potential severance payments. The regulations specifically stipulate that the settlement shall not exceed the compensation value for the remaining term of the employment contract, restricted to twice the annual compensation.

The employment contract of Mr. Mohnen also contains a change-of-control clause. In the event of a change in control within the company (sections 29 para. 2 and 30 of the German Securities Acquisition and Takeover Act (WpÜG)), he is entitled to terminate the employment contract within three months of the change in control occurring, subject to a notice period of three months. In the event of a termination, he will be entitled to a severance payment, which is measured against the compensation due for the remainder of his contract, but is restricted to twice the annual compensation at most. The employment contract of Mr. Pabst does not include such an arrangement.

No loans were granted to Executive Board members during the year under review.

2. Compensation for 2018

Executive Board compensation for fiscal 2018 is disclosed for each individual member in accordance with the standardized reference tables recommended in the GCGC. Following this, the compensation is disclosed separately according to “granted benefits” (table 1) and “actual inflow” (table 2). The target values (payment for 100% target achievement) and the minimum and maximum values achieved are also disclosed for the benefits.

Table 1: Executive Board compensation for 2018 – Overview of benefits

	Peter Mohnen CEO[1] since Dec. 6, 2018				Andreas Pabst CFO[2] since Dec. 6, 2018				Dr. Till Reuter CEO[3] until Dec. 5, 2018			
in € thousands	2017	2018	2018 (min)	2018 (max)	2017	2018	2018 (min)	2018 (max)	2017	2018	2018 (min)	2018 (max)
Fixed compensation (basic compensation)	575	628	628	628	–	42	42	42	775	800	800	800
Fringe benefits[4]	31	35	35	35	–	1	1	1	25	50	50	50
Other compensation[5]	150	200	200	200	–	0	0	0	300	400	400	400
Total	**756**	**863**	**863**	**863**	**–**	**43**	**43**	**43**	**1,100**	**1,250**	**1,250**	**1,250**
One-year variable compensation[6]												
Bonus for 2017	288	–	–	–	–	–	–	–	475	–	–	–
Bonus for 2018	–	300	0	600	–	14	0	28	–	500	500	500
Multi-year variable compensation												
Company targets bonus for 2017[7]	288	–	–	–	–	–	–	–	475	504	504	504
Company targets bonus for 2018[7]	–	328	0	656	0	28	0	56	0	500	500	500
Phantom share program 2016 – 2018[8]	–	–	–	–	–	–	–	–	–	400	400	400
Long-term incentive plan 2017 – 2019[9]	300	–	–	–	–	–	–	–	–	333	333	333
Long-term incentive plan 2018 – 2020[9]	–	300	0	900	–	–	–	–	500	167	167	167
Severance payment[10]	–	–	–	–	–	–	–	–	–	5,597	5,597	5,597
Total	**1,632**	**1,791**	**863**	**3,019**	**0**	**85**	**43**	**127**	**2,550**	**9,251**	**9,251**	**9,251**
Pension cost	0	0	0	0	0	0	0	0	0	0	0	0
Total compensation	**1,632**	**1,791**	**863**	**3,019**	**0**	**85**	**43**	**127**	**2,550**	**9,251**	**9,251**	**9,251**

1 Peter Mohnen has been Chief Executive Officer since December 6, 2018. Previously, he was Chief Financial Officer.

2 Andreas Pabst has been Chief Financial Officer since December 6, 2018.

3 Dr. Reuter was a member of the Executive Board and its Chairman (CEO) until December 5, 2018. His employment contract ended on December 31, 2018. The Company and Dr. Reuter have reached an amicable and definitive agreement regarding settlement of all of Dr. Reuter's contractually stipulated compensation within the framework of a termination agreement dated November 28, 2018 (the "Termination Agreement").

4 The fringe benefits include expenses and non-cash benefits for the provision of company cars and insurance allowances. The premium for D&O insurance is included in the fringe benefits because, unlike the accident insurance, it cannot be allocated individually, as the company pays a lump-sum premium for the insured group of persons which goes beyond the members of the Executive Board. Furthermore, the Company has undertaken to reimburse the lawyer's fees up to a sum of €25,000 incurred by Dr. Reuter in connection with the conclusion of the Termination Agreement.

5 Compensation for activities as administrative board members of Swisslog Holding AG.

6 Portion of variable bonus for achieving personal targets (with 100% target achievement) in the specified fiscal years (possible target achievement from 0 to 200%). For Dr. Reuter, the amount of the bonus for 2018 was stipulated in the Termination Agreement.

7 Deferred portion (50%) of variable bonus (with 100% target achievement) for the specified fiscal years. For Dr. Reuter, the respective amounts of the company targets bonus for 2017 and the company targets bonus for 2018 were stipulated in the Termination Agreement.

8 For Dr. Reuter, the amount for the phantom share program 2016 – 2018 was stipulated in the Termination Agreement.

9 Allocation values for the long-term incentive plan 2017 – 2019 and long-term incentive plan 2018 – 2020. For Dr. Reuter, the amount for the long-term incentive plan 2017 – 2019 and the long-term incentive plan 2018 – 2020 was stipulated in the Termination Agreement.

10 Severance payment agreed under the terms of the Termination Agreement.

Table 2: Executive Board compensation for 2018 – Overview of inflow

	Peter Mohnen CEO [1] since Dec. 6, 2018		Andreas Pabst CFO [2] since Dec. 6, 2018		Dr. Till Reuter CEO [3] until Dec. 5, 2018	
in € thousands	**2017**	2018	**2017**	2018	**2017**	2018
Fixed compensation (basic compensation) [4]	575	600	0	0	775	800
Fringe benefits [5]	31	35	0	0	25	25
Other compensation [6]	150	200	0	0	340	400
Total	**756**	**835**	**0**	**0**	**1,140**	**1,225**
One-year variable compensation						
Bonus for 2016 [7]	383	–	–	–	392	–
Bonus for 2017 [8]	–	552	–	–	–	756
Bonus for 2018 [8]	–	–	–	–	–	500
Multi-year variable compensation						
Company targets bonus for 2015 [9]	290	–	–	–	452	–
Company targets bonus for 2016 [10]	–	191	–	–	–	298
Company targets bonus for 2017 [10]	–	–	–	–	–	504
Company targets bonus for 2018 [10]	–	–	–	–	–	500
Phantom share program 2014 – 2016 [11]	1,339	–	–	–	1,928	–
Phantom share program 2015 – 2017 [12]	–	370	–	–	–	582
Phantom share program 2016 – 2018 [12]	–	–	–	–	–	400
Long-term incentive plan 2017 – 2019 [13]	–	–	–	–	–	333
Long-term incentive plan 2018 – 2020 [13]	–	–	–	–	–	167
Other share-based compensation [14]	4	2	–	–	6	3
Severance payment [15]	0	0	0	0	0	3,597
Total	**2,772**	**1,950**	**0**	**0**	**3,918**	**8,865**
Pension cost	0	0	0	0	0	0
Total compensation	**2,772**	**1,950**	**0**	**0**	**3,918**	**8,865**

[1] Peter Mohnen has been Chief Executive Officer since December 6, 2018. Previously, he was Chief Financial Officer.

[2] Andreas Pabst has been Chief Financial Officer since December 6, 2018.

[3] Dr. Reuter was a member of the Executive Board and its Chairman (CEO) until December 5, 2018. His employment contract ended on December 31, 2018. The Company and Dr. Reuter have reached an amicable and definitive agreement regarding settlement of all of Dr. Reuter's contractually stipulated compensation within the framework of a termination agreement dated November 28, 2018 (the "Termination Agreement").

[4] For the period December 6 to December 31, 2018, Peter Mohnen is entitled to additional, pro rata fixed compensation amounting to €28,000. For the period December 6 to December 31, 2018, Andreas Pabst is entitled to pro rata fixed compensation and fringe benefits amounting to €43,000. These sums will accrue to Peter Mohnen and Andreas Pabst in the form of a supplementary payment in the 2019 fiscal year.

[5] The fringe benefits include expenses and non-cash benefits for the provision of company cars and insurance allowances. The premium for D&O insurance is included in the fringe benefits because, unlike the accident insurance, it cannot be allocated individually, as the company pays a lump-sum premium for the insured group of persons which goes beyond the members of the Executive Board. The reimbursement to Dr. Reuter of lawyer's fees of up to €25,000 agreed under the terms of the Termination Agreement will be paid in the 2019 fiscal year.

[6] Compensation for activities as administrative board members of Swisslog Holding AG.

[7] Variable compensation paid out in the 2017 fiscal year for the achievement of personal targets.

[8] Variable compensation paid out in the 2018 fiscal year for the achievement of personal targets. The bonus for 2018 was already paid out to Dr. Reuter in the 2018 fiscal year under the terms of the Termination Agreement.

[9] Deferred portion of variable compensation from the 2015 fiscal year, which was paid out in the 2017 fiscal year.

[10] Deferred portions of variable compensation from the 2016, 2017 and 2018 fiscal years, which were paid out in the 2018 fiscal year. The company targets bonus for 2017 and the company targets bonus for 2018 were already paid out to Dr. Reuter in the 2018 fiscal year under the terms of the Termination Agreement.

[11] Phantom share program 2014 – 2016 payout at a final price of €115.00 (in the payout for the phantom share program 2014 – 2016, the final price was set at €115.00 on account of the takeover bid of Midea Group and the obligations to purchase KUKA shares were lifted.).

[12] Phantom share program 2015 – 2017 payout at a final price of €110.80 (average KUKA share price (opening price in Xetra trading on the Frankfurt Stock Exchange) between January 2, 2018 and March 20, 2018). The amounts paid out each represent the gross proceeds. The net payout results from the gross proceeds less taxes and social contributions, other statutory levies and the purchase price for actual KUKA shares. The phantom share program 2016 – 2018 was already paid out to Dr. Reuter in the 2018 fiscal year under the terms of the Termination Agreement.

[13] The long-term incentive plan 2017 – 2019 and the long-term incentive plan 2018 – 2020 were already paid out to Dr. Reuter in the 2018 fiscal year under the terms of the Termination Agreement.

[14] Payment of dividend equivalents in 2018 amounting to €0.50 per provisional share in the phantom share program 2016 – 2018.

[15] Severance payment paid out under the terms of the Termination Agreement. The remaining portion of the termination payment amounting to k€2,000 was paid out in the 2019 fiscal year.

Payments granted to all members of the Executive Board in office in the 2018 fiscal year – taking into account the actual inflow – totaled k€10,815 in the 2018 fiscal year.

Provisions taking the total expected expense from the programs into account were recognized as of December 31, 2018 for the phantom share program 2016 – 2018 in effect on that date and that has yet to be paid out and for the ongoing LTIPs that have yet to be paid out.

Apart from a few exceptions, former Executive Board members whose terms of office ended no later than 2008 were granted company pension benefits that included old age, professional and employment disability, widows' and orphans' pensions. The total sum for the provisions recognized in 2018 for current pensions and expected pension benefits for this group of persons totaled k€9,855 (German Commercial Code) (2017: k€9,824).

Supervisory Board compensation

1. Compensation structure

Based on a resolution at the company's Annual General Meeting on January 1, 2006, the Articles of Association were amended to include fixed compensation for members of the Supervisory Board.

In addition to reimbursement of expenses, each member of the Supervisory Board is paid a fixed amount of €30,000, payable at the end of the fiscal year.

The Chairman of the Supervisory Board is paid four times that amount, and the deputy chair receives double the compensation. Supervisory Board members receive additional compensation of €30,000 for chairing the Annual General Meeting and for membership in any committee that is not of an interim nature, but at most for three committee memberships. A committee chairman additionally receives half the annual compensation even if he chairs more than one committee. This does not apply to the committee pursuant to section 27 para. 3 of the German Act on Company Co-Determination.

In addition, for each Supervisory Board meeting (including meetings of Supervisory Board committees), each Supervisory Board member is reimbursed for appropriate expenses incurred or is given a lump-sum payment of €450 per meeting (plus the applicable value added tax). The employee representatives on the Supervisory Board who are employed by KUKA Aktiengesellschaft or a KUKA Group company are still entitled to their regular salaries based on their employment contracts.

2. Compensation for 2017 and 2018

The following table compares the compensation paid to members of the Supervisory Board in the 2017 and 2018 financial years:

Table 3: Supervisory Board compensation in 2018

in € thousands	Payment in 2018 for 2017 [1]	Payment in 2019 for 2018 [1]
Dr. Yanmin (Andy) Gu Chairman of the Supervisory Board Chairman of the Personnel Committee, Mediation Committee and Nomination Committee	199	225
Michael Leppek [1] Deputy Chairman of the Supervisory Board	150	150
Wilfried Eberhardt	30	30
Hongbo (Paul) Fang	26	30
Siegfried Greulich [1] (until June 6, 2018)	96	39
Manfred Hüttenhofer [1] (from June 6, 2018)	0	34
Prof. Dr. Henning Kagermann Chairman of the Strategy and Technology Committee	44	75
Armin Kolb [1]	90	90
Carola Leitmeir [1]	90	90
Min (Francoise) Liu	74	90
Dr. Myriam Meyer (from June 6, 2018)	0	52
Prof. Dr. Michèle Morner (until June 6, 2018)	53	26
Tanja Smolenski [1]	1	47
Alexander Liong Hauw Tan Chairman of the Audit Committee	86	88

[1] The employee representatives on the Supervisory Board who are also members of IG Metall have declared that they shall pay their Supervisory Board compensation to the Hans Böckler Foundation in line with the guidelines of the Federation of German Trade Unions.

KUKA and the capital market

KUKA share

Weak economic data in a large number of economies and regions show that global economic growth lost momentum overall in the past financial year. Growth slowed in both industrialized nations and emerging economies, and prospects for the future development of the economy also deteriorated. One of the reasons for this was the trade war between the USA on the one hand and China and other countries on the other, involving ever more threats and unilateral measures such as punitive tariffs which caused increased uncertainty around the globe and thus a reluctance to invest. In addition, political uncertainties, such as the fear in Europe of an unregulated Brexit, led to restraint among companies and investors.

The European Central Bank (ECB) retained its loose interest rate policy, leaving the key interest rate unchanged at 0%, which led to continued negative interest rates in the money market. The euro-dollar exchange rate was 1.2008 USD/EUR at the beginning of the year. As early as the second quarter of 2018, however, the euro began to lose strength and closed the year at 1.1469 USD/EUR; the average exchange rate for the year was around 1.18. In contrast to the ECB, the US Federal Reserve raised the key interest rate in four steps in 2018, reaching 2.5% at the end of the year.

The global political and economic developments not only worsened the global economic climate but also depressed the mood on the stock markets. Many stocks and share indices thus closed the year at considerably lower levels in some instances. The DAX, which tracks the performance of the 30 largest and most liquid companies on the German stock market and represents around 80% of the market capitalization of publicly listed corporations in Germany, lost some 18% of its value in 2018. The MDAX too, on which the 50 medium-sized stocks in Germany are listed, fell by about 18% during 2018.

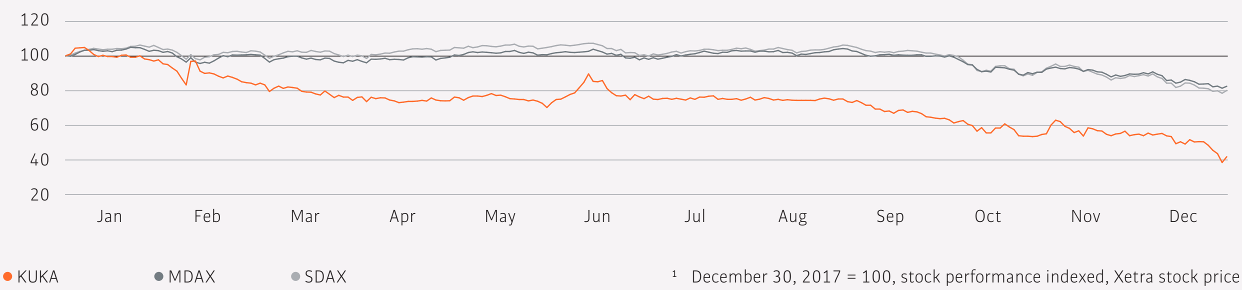
The KUKA share (WKN: 620440, ISIN: DE0006204407) decreased in value in the 2018 trading year. The share started the year at a price of €121.15, declining by about 58% to €50.80 over the course of the year. The share prices of companies in the so-called peer group, i.e. companies that have a similar business profile and are of a comparable size, were also unable to escape the general downward trend on the stock markets and they too developed negatively in a range from −6.3% to −51.5%. In 2018, the daily trading volume of KUKA stock averaged around 6,000 shares. By comparison, the average volume within the peer group was between 13,000 and 1.4 million shares.

According to the last voting rights notification dated December 21, 2018, 94.55% of KUKA shares are attributable to Midea Group Co., Ltd., Foshan, China, the parent company of the Midea Group, as in the previous year. These shares are held directly by Midea Electric Netherlands (I) B.V. (81.04%) and Midea Electric Netherlands (II) B.V. (13.51%), two wholly-owned subsidiaries of the Midea Group. The remaining 5.45% of KUKA shares are in free float. The KUKA share is still traded over the counter on the stock exchange and is listed in the HDAX, CDAX and Prime All Share indices.

		2013	2014	2015	2016	2017	2018
Weighted average number of shares outstanding	millions of shares	33.92	34.17	36.14	39.60	39.78	39.78
Earnings per share	€	1.72	1.99	2.39	2.19	2.22	0.32
Dividend per share	€	0.30	0.40	0.50	0.50	0.50	0.40[1]
High for the year (Xetra closing price)	€	38.50	62.51	85.59	110.00	248.90	126.80
Lowest price (Xetra closing price)	€	26.40	33.85	56.86	68.10	87.38	46.80
Closing price for the year (Xetra closing price)	€	34.05	58.98	83.05	88.55	121.15	50.80
Change year-on-year	%	23.1	73.2	41.0	6.6	36.8	−58.1
Market capitalization (Dec. 31)	€ millions	1,154	2,106	3,198	3,506	4,819	2,021
Average daily volume	No. of shares	144,000	157,000	156,000	83,000	14,000	6,000

[1] Subject to approval by shareholders at the Annual General Meeting on May 29, 2019

KUKA share price performance
January 1 – December 31, 2018[1]



[1] December 30, 2017 = 100, stock performance indexed, Xetra stock price

Consolidated financial report

Consolidated financial report

Fundamental information about the Group

Group structure and business activities

KUKA is one of the world's leading specialists in automation. KUKA's aim is to support its customers in the overall optimization of their value creation processes by providing comprehensive automation and digitization know-how. As a global technology corporation, KUKA offers its customers everything they need from a single source: from the core component – the robot – to cells, turnkey systems and connecting. Through its advanced automation solutions KUKA contributes to increased efficiency and improved product quality for its customers. Industrie 4.0 is bringing digital, connected production, flexible manufacturing concepts and logistics solutions, as well as new business models to the fore. With its decades of experience in automation, in-depth process know-how and cloud-based solutions, KUKA ensures its customers are well ahead of the competition.

The introduction of a new customer centric organization (CCO) commenced on January 1, 2018. KUKA is planning to make further changes to the organizational structure (see "Events after the balance sheet date", page 41). Until then, KUKA will continue to base its reporting on the Robotics, Systems and Swisslog divisions.

The Robotics division develops, manufactures and distributes the core component for automation – the robot. In addition to the production of industrial and service robots, it also focuses on robot control and software along with the analysis and use of big data in production operations. Robotics additionally offers its customers a wide range of services.

The core competence of the Systems division lies in customized solutions for the automation of manufacturing processes. Systems plans and implements automated systems for its customers. It focuses on large-scale projects mainly for the automotive industy. KUKA bundles this expertise of cell business and in-depth process know-how within the KUKA Industries business unit, which forms part of the Systems division.

The Swisslog division is divided into two units. Healthcare Solutions implements automation solutions for future-oriented hospitals in order to sustainably increase efficiency and improve patient care. In the logistics segment the Warehouse & Distribution Solutions unit supplies automated, robot-based and data-controlled intralogistics systems, covering the spectrum from planning to implementation and service. By combining Swisslog's logistics solutions with the robotic automation solutions of the other divisions in the Group, KUKA offers new possibilities of flexible automation along the entire value chain.

Robotics division

The core component for automating manufacturing processes is provided by the Robotics division: industrial robots together with controllers and software. The broad product portfolio covers payload ranges from three to 1,300 kg. This enables KUKA to meet the various requirements of its customers optimally. Customers and employees can attend technical training and professional development courses in KUKA Colleges at more than 30 sites worldwide. Most robot models are developed, assembled, tested and shipped in Augsburg. The control cabinets are produced in two Hungarian plants, in Taksony and Füzesgyarmat. For the Asian market, KUKA also produces robots and control cabinets at its Chinese plant in Shanghai. Additionally, KUKA is building a new robot production facility at the Robotics Park in Shunde.

KUKA Robotics is continuously expanding its range of products to offer customers from all kinds of sectors the solutions that are appropriate for them and to allow even small and medium enterprises to use robots economically. Research and development activities have an important role to play here. KUKA's new products and technologies open up additional markets and create new applications for robot-based automation.

Open connectivity and collaboration are the core ideas of Industrie 4.0, the production of the future. This paradigm shift is already underway today, indeed the company is consciously forcing the pace. After all, robots will play the key role in the factory of the future. By taking these measures, industrial nations will be able to expand their competitiveness and, at the same time, counteract demographic change. Industrie 4.0 for us, is a sustainable investment in our future.

With a focus on digital business transformation, the KUKA Marketplace offers customers a zero touch IoT solution for smart production – KUKA Connect. KUKA Connect is a cloud-based software platform, enabling users to access and analyze their KUKA robots at any time and from anywhere. KUKA Connect allows customers to bring their product to market faster, adapt to regulatory requirements, increase efficiency and introduce innovations quickly. The KUKA Marketplace not only enables customers to search for and buy the latest KUKA products, it also makes available user manuals and videos for additional information.

Systems division

The Systems division offers custom-tailored complete solutions for automating manufacturing processes in the automotive industry. These include body production, the assembly of engines and transmissions, and also future-oriented business areas, such as electromobility with the development of charging assistants and battery module production systems. The portfolio covers the entire value chain of a system: from individual system components, tools and fixtures through automated production cells all the way to complete turnkey systems. Know-how lies in the bundling of experience and expertise in engineering, project management, process knowledge, commissioning and service for the automated production of vehicles.

The Systems division offers expertise in the design of flexible and efficient production processes and can guide its customers towards Industrie 4.0 and electromobility with future-oriented solutions.

KUKA bundles this expertise of cell business and in-depth process know-how within the KUKA Industries business unit, which forms part of the Systems division. At its sites worldwide, KUKA Industries offers its customers innovative joining and machining technologies, laser welding and special welding processes, as well as all the process steps in the foundry sector and in photovoltaic and battery production. KUKA Industries is an expert in process- and customer-oriented cells and solutions, from the initial idea to production support, for customers in the automotive, consumer goods, energy & storage and electronics industries as well as many other sectors.

Markets in Germany and elsewhere in Europe are looked after from Augsburg, while the Greater Detroit area in the USA is responsible for the North/South America region and Shanghai in China handles the Asian market. Automated assembly lines and test rigs for engines and transmissions are designed at and supplied from the KUKA Systems sites in Bremen, Greater Detroit and Shanghai. In Toledo (USA), KUKA Toledo Production Operations (KTPO) manufactures the Jeep Wrangler for Chrysler under the terms of a pay-on-production contract. In 2018, investments were made for conversion of the production system; the start of production of the new Jeep Wrangler JT is scheduled for the second quarter of 2019.

Swisslog division

With its Swisslog division, KUKA is tapping the growth markets of e-commerce/retail,consumer goods and healthcare in the field of intralogistics. Based in Buchs (Aarau)/Switzerland, Swisslog serves customers in over 50 countries worldwide. From planning and design, through to implementation and service over the whole life cycle of a system, Swisslog provides integrated systems and services from a single source.

The Swisslog Healthcare (HCS) unit develops and implements automation solutions for modern hospitals. The aim is to boost efficiency and increase patient safety.

Due to process optimizations in the field of medication management during and after in-patient treatment, hospital staff have more time for patient care, increasing patient satisfaction. At the same time, the use of automation solutions from Swisslog Healthcare demonstrably reduces the incidence of medication errors.

The Warehouse & Distribution Solutions (WDS) unit implements integrated automation solutions for forward-looking warehouses and distribution centers. As a general contractor, the division offers complete turnkey solutions, from planning through to implementation and service, employing data-controlled and robot-based automation in particular. Swisslog offers an Industrie 4.0 portfolio comprising smart technologies, innovative software and adapted support services to ensure that the competitiveness of its customers in the logistics sector is sustainably improved.

By combining Swisslog's logistics solutions with the robotic automation solutions of the other divisions in the Group, KUKA offers new possibilities of flexible automation along the entire value chain.

Markets and competitive positions

Automation of the production world is advancing dynamically. Many factories are no longer imaginable without it. The role of the robot in production shops has undergone great change. Whereas in the past, isolated robots were used to automate individual tasks and process steps behind safety fences, the current trend is towards intelligent assistants that can be fully integrated into production operations. General industry too is profiting from this development and thus small and medium-sized companies whose production until now has hardly been automated. This is one major reason why global robot density is increasing year by year. At the same time, there is a focus on the gradual transformation to smart, digital production. Data collection, analysis and evaluation are opening up new opportunities for making processes more efficient and production competitive for demanding markets.

In 2018, around 50% of KUKA's total sales revenues were generated from the target automotive market. The automotive industry thus remains an important pillar in KUKA Group's success. The company is the market leader in the automotive industry. There are also many opportunities to expand business in sectors outside the automotive industry, i. e. in general industry. For several years, KUKA has been successfully building up its business in this sector. In 2018, KUKA continued to focus on the strategic market segments of automotive, electronics, consumer goods, healthcare and e-commerce/retail.

KUKA has a strong position on the European market. The Asia region shows considerable growth potential, particularly on the Chinese market. KUKA has been represented by several subsidiaries in Asia for years. Its Asian headquarters is in Shanghai. Robots are shipped to the Asian market from this location. According to a forecast from the international robotics association IFR, sales of robot units in China are set to increase by an average of 21% per year between 2019 and 2021. Growth could fall short of this forecast, however, due to current political and economic developments.

Corporate strategy

KUKA has grown strongly in recent years, profiting from the very dynamic, innovation-driven market environment. Robotic automation and increasing networking in factories are a global trend.

In the year under review, especially in the last quarter, the company found itself faced with more adverse market conditions. The trade dispute between the USA and China, in particular, is causing uncertainty among customers, but so too is Brexit.

Business models that enable customers to adjust their production facilities to the digital transformation and associated changes, such as the individualization of products or demographic change, are thus all the more in demand. KUKA's aim is to support its customers in the overall optimization of their value creation processes by providing comprehensive automation and digitization know-how. KUKA is therefore continuously supplementing its automation expertise with know-how in relation to cloud-based networking of machines and systems as well as data analytics. This is one of the topics addressed by the US development site in Austin, Texas. This is where KUKA has bundled its Industrie 4.0 expertise within the company. Munich-based subsidiary Device Insight is playing a central role here. New business models will fundamentally and permanently transform not only production in the future, but also the value creation process as a whole. KUKA regards supporting the customer through this transformation as a core task. Internal corporate structures have also been adapted to the digitized world. With the "Customer Journey", Sales and Service are also being integrated more closely into the digital processes. Important foundations were also laid for a strongly customer-oriented organization in the year under review. KUKA supports its customers on the road to automation and digitization with the relevant expertise spanning from components, cells and systems or logistics solutions to their integration into the world of IT.

KUKA is focusing on three strategic initiatives to ensure its long-term success:

1. Expansion of leadership in technology and innovation

KUKA stands for innovations in robotic automation and is a driver of the digital transformation. Together with customers and partners, we are developing smart products and solutions for the intelligent factory of the future.

With a new generation of robots that are sensitive and can work hand in hand with humans, KUKA is setting new trends in robotics. Enhanced with mobility and autonomous navigation, robots are being transformed into flexible production assistants that are becoming more and more intelligent.

The trend is towards robots that are simple to program, flexible to deploy and easily integrated and networked. The LBR iisy is meanwhile the second sensitive robot from KUKA and meets precisely these requirements. In KUKA Connect, KUKA has placed an innovative product on the market which enables customers from a vast range of sectors to network machines and systems in the cloud digitally.

In this way, KUKA is supporting its customers on the way to the factory of the future. New business models must be developed, as increasing type variety, more frequent changes of model and quantity fluctuations are presenting customers with new challenges. They require flexible automation solutions with production cells that can be adapted quickly. The conversion times of the systems must be as short as possible, however.

It is in response to these needs that KUKA has developed "Smart Production". This is a demo factory that meets exactly these requirements. Parts logistics and production are linked by automated guided vehicles.

With the help of data-driven analytics, manufacturers can also track their energy consumption or the maintenance intervals in their own production facilities.

2. Diversification of business operations in new markets and regions

KUKA is a market leader in the automotive industry. There are also many opportunities to expand business in sectors outside the automotive industry, i. e. in general industry.

KUKA concentrates on markets that are primarily characterized by high growth and profit potential. The degree of automation in many sectors is still relatively low, particularly as compared with the automotive industry. KUKA's aim is to support its customers in the overall optimization of their value creation processes by providing automation and digitization know-how. This enables processes to be designed for greater efficiency and flexibility. Additionally, it will optimize resource and energy consumption while raising quality. With various acquisitions and their integration, KUKA has selectively expanded its know-how, making use of it to strengthen its own market position.

In 2018, KUKA further intensified its focus on the following strategic market segments:

Automotive
The automotive industry has always been of great significance for KUKA. It is a very important driver of technology and innovation. The German premium brands in particular play a key role here. The automotive segment currently accounts for about 50% of revenues. KUKA will continue to grow around the world with its automotive customers and support them as a partner in automation and digitization.

Electronics
The electronics industry is one of the most varied sectors in modern industry. It embraces not only the production of electrical household appliances, so-called white goods, but also cutting-edge technologies such as solar cells, precision medical equipment or electronic automotive and aerospace components. And of course industrial electronics, such as chip production or display manufacture, is also a major part of the electronics sector. The most important submarket with the highest revenues is the 3C market (computers, communications and consumer electronics). The electronics industry will experience a significant rise in the number of new robots deployed in the coming years.

Consumer goods
Robots have been efficiently and successfully supporting the production of fast-moving consumer goods (FMCG) for many years, especially in the food and beverage industry, but also in shoe or textile production, cosmetics and pharmaceuticals. New generations of robots that are sensitive and mobile, and thus able to work hand in hand with humans, are opening up new applications along the process chain.

e-commerce/retail
Electronic commerce results in large quantities of varied goods being sent to consumers via goods distribution centers – quantities which in the long term can only be catered for through automation. The e-commerce segment is therefore an important sales market for smart logistics concepts combined with innovative, robot-based automation.

Healthcare

Automation solutions ensure greater efficiency in hospitals and improve work procedures. The workload on nursing staff is thus reduced, enabling them to concentrate more on patient care in the future. Solutions from Swisslog help modern hospitals and other healthcare facilities with efficient material transport and management of medicines.

China

KUKA has a strong position on the European market. The company sees growth potential in the expansion of global sites, particularly those in the high-growth regions of Asia and North America. The primary focus here is on the potential of the Chinese market. China is already the largest growth market worldwide. Midea, the new majority shareholder, supports this strategic approach and is smoothing the way by facilitating KUKA's access to the Chinese market. Collaboration with Midea takes place in three strategic directions. For this purpose, KUKA has founded joint ventures together with Midea. We are addressing the well-developed healthcare market with Swisslog Healthcare and Midea. We benefit from Midea's good customer relationships and are working to achieve even better market penetration. Furthermore, KUKA is concentrating on the logistics sector together with Midea and developing standardized logistics solutions. KUKA is additionally tapping new segments of the robotics market with Midea and setting up a new manufacturing site in the Robotics Park in Shunde.

Besides the conventional six-axis robots, new robot types will be built in China, such as Scara, Delta and Cartesian robot systems. This closes the gaps in our portfolio and expands our market potential.

KUKA has been represented for many years by several subsidiaries in Asia and has greatly expanded its presence on the Chinese market in recent years.

3. Continuous establishment of sustainable and efficient cost structures

The past financial year was characterized by the expected general economic downturn, particularly in markets that are important for KUKA, namely the automotive and electronics industries and China.

The existing cost structure in all business units is being intensively scrutinized and numerous optimization measures are being implemented at short notice. Our focus for the following financial year remains on increased efficiency in all business units. Particular attention is being paid to the effective preparation of the measures introduced and the results achieved.

Power ON is a key initiative which, over the next few years, will harmonize processes, structures, data and IT systems in our business. In the year under review, numerous projects were launched as part of Power ON, some of which have already been successfully completed. At the beginning of the year under review, a new IT landscape was introduced at KUKA Systems and Industries in Augsburg and Romania. The entire project handling process is thus embedded in an integrated system environment. A number of sales companies around the world also introduced a new ERP system adapted to sales requirements. In addition, a Group-wide process house has been established and process responsibilities defined in order to sustainably maintain the high process and data quality. In the 2019 financial year, our KUKA process template is being expanded to include the template for our product business in the current release of the SAP S/4 HANA enterprise resource planning (ERP) system.

The initiatives and efficiency measures that have been launched will cause our customers to perceive KUKA as even more effective and strengthen our market position.

Financial control system

The Group's strategy is aimed at sustainably increasing the enterprise value. The internal Group management and monitoring of the business performance is based on various key financial performance indicators. KUKA Group's financial targets are also key performance indicators (KPIs) that track the enterprise value of the company.

The most important KPIs for KUKA Group are revenues, EBIT, ROCE and free cash flow. The development of these variables is presented in the "Business performance" section starting on page 31 and under "Financial position and performance" from page 32 on. Earnings before interest and taxes (EBIT) are compared to sales revenues to determine return on sales. This results in the EBIT margin. EBIT is compared to average capital employed to determine the return on capital employed (ROCE). EBIT is calculated for both KUKA Group and the divisions, while ROCE is calculated for KUKA Group. Free cash flow – cash flow from operating and investment activities less capital spending – shows whether the investments can be funded from cash flow, and how much cash is available to pay a dividend and service debt.

These key indicators are components of the target and remuneration system in place at KUKA Group and are published. This ensures that all employees share the same goals.

An important early indicator of business performance for mechanical and systems engineering companies is the volume of orders received. Order backlog for a certain period is determined by subtracting sales revenues from orders received during that time. Order backlog is a key indicator of the expected utilization of operational capacities in the coming months. Orders received and order backlog are determined for KUKA Group and for the divisions.

All key indicators are continuously tracked and reviewed by KUKA Group's management companies and its corporate accounting and controlling departments. Management analyzes any deviations from plan and decides on the necessary corrective actions required to achieve the targets.

Key performance indicators for KUKA Group over 5-year period

in € millions	2014	2015	2016	2017	2018
Sales revenues	2,095.7	2,965.9	2,948.9	3,479.1	3,242.1
EBIT	141.8	135.6	127.2	102.7	34.3
ROCE (in %)	28.9	20.0	16.2	10.9	2.9
Free cash flow	–172.2	95.7	–106.8	–135.7	–213.7

Achievement of targets

In its outlook in the 2017 annual report and at the annual results press conference on March 22, 2018, the Executive Board forecast sales revenues for 2018 of more than €3.5 billion and an EBIT margin of around 5.5% before purchase price allocations totaling €15 million and before expenditure for growth investments and reorganization totaling €30 million.

The original forecast was amended on October 29, 2018. At that point, KUKA anticipated revenues of about €3.3 billion and an EBIT margin of around 4.5% before purchase price allocations and before expenditure for growth investments and reorganization. The forecast for the past financial year 2018 was amended again on January 10, 2019. KUKA then expected revenues of about €3.2 billion euro and an EBIT margin of around 3.0% before purchase price allocations and before expenditure for growth investments and reorganization.

This development is mainly attributable to the increasingly noticeable general economic slowdown since the fourth quarter of 2018, which primarily affected two of KUKA's strategic focus markets: the automotive industry and the electronics industry. KUKA generates more than half of its sales revenues in these industries. Another factor is the slower growth in China, one of our most important sales markets. The growth rates there are currently lower than they have been since the financial crisis. There were also unforeseeable negative influences in the project business. KUKA Group consequently decided to establish measures to counteract the emerging trend at an early stage. These include an efficiency enhancement program, a greater focus within research and development, further optimization in China to improve our ability to respond to the local market requirements, and adjustments to the organizational structure.

KUKA expected demand to increase in the 2018 financial year, especially in North America and Asia. A slight increase in demand was expected for Europe as a whole. From a sector perspective, a positive development was predicted for the general industry market. Demand in the automotive industry was anticipated to remain stable, given the fact that customer investments have risen considerably in recent years.

2018 target values

	Sales revenues	EBIT margin
Annual results press conference for the full year 2017	> €3.5 billion	~ 5.5% [1]
1st quarter 2018	> €3.5 billion	~ 5.5% [1]
2nd quarter 2018	> €3.5 billion	~ 5.5% [1]
3rd quarter 2018	~ €3.3 billion	~ 4.5% [1]
Ad hoc October 29, 2018	~ €3.3 billion	~ 4.5% [1]
Ad hoc January 10, 2019	~ €3.2 billion	~ 3.0% [1]

[1] Before purchase price allocations amounting to €15 million, before growth investments and before reorganization expenditure totaling about €30 million

In the year under review, the adjusted target value for sales revenues released in January 2019 was met. The Group generated sales revenues of €3,242.1 million (2017: €3,479.1 million). Sales revenues in the Robotics and Systems divisions fell year-on-year while the Swisslog division managed to increase its revenues compared with the previous year.

The EBIT margin before purchase price allocations, growth investments and reorganization expenditure was 3.0%, corresponding to the adjusted target value released in January 2019.

The EBIT in the Robotics division of €134.4 million was slightly higher than the previous year's level of €133.1 million. The EBIT margin was 11.4% compared with 11.1% in 2017. Among other factors, the improved cost allocation had a positive effect here. The EBIT margin in the Systems division, on the other hand, declined from 1.1% in 2017 to –2.5%. This was attributable primarily to negative influences relating to individual projects. At Swisslog, the EBIT margin fell from 1.4% in 2017 to –2.0% in 2018. This was due not least to higher expenditure on research & development as Swisslog intensified development of products and solutions for its key markets. Moreover, one-off integration and reorganization expenditure was incurred in 2018 and the operating result was negatively impacted further still by delays in the execution of projects.

In the year under review, KUKA generated net income of €16.6 million, significantly lower than that of the previous year (2017: €88.2 million). Capital expenditure was €295.4 million (2017: €138.8 million). In the year under review, KUKA invested in the expansion of its sites around the world as well as in innovative products and solutions. This also included growth investments for research and development.

Free cash flow in the 2018 financial year was negative, amounting to –€213.7 million. A free cash flow level consistent with that of the previous year was forecast (2017: –€135.7 million). For detailed information, please refer to the chapter "Financial position and performance" from page 32 onwards.

Research and development

The area of research and development (R&D) is of crucial importance for the sustainable and long-term strategy of KUKA as an innovative technology enterprise. That is why KUKA invested heavily in this area once again in the year under review. Research and development expenditure amounted to €151.9 million in 2018, higher than the value for the previous year (2017: €128.7 million).

In the year under review, a total of 164 patent applications were filed by KUKA Group, and 290 patents were granted. The focus was on key technologies for the future of industrial production, such as mobility, human-robot collaboration, easy-to-use instruments and smart platforms, as well as products for targeted growth markets, such as the electronics industry. At major flagship fairs, KUKA showcased solutions for intelligent industrial automation, service robotics and medical robotics.

Robotics Division

KUKA LBR iisy: world premiere at Hannover Messe

With the KUKA LBR iisy, the prototype of which celebrated its world premiere at Hannover Messe, KUKA is enhancing its product portfolio in the field of human-robot collaboration to include the low payload range. The LBR iisy can be adapted quickly to new requirements and is therefore suitable for many new applications, for example in the electronics industry. It is intended for users who have process knowledge, but not necessarily experience in robot programming.

Mobility products for all branches of industry and logistics

The KMR iiwa CR is a mobile robot for electronics and cleanroom applications that is based on an automated guided vehicle (AGV) and an integrated LBR iiwa lightweight robot. This new cleanroom version (CR) of the KMR iiwa opens up a wide range of possibilities in electronics, and in particular in the semiconductor industry. The KMP 600 is an AGV geared towards logistics and is part of Swisslog's CarryPick solution (see "Intelligent technologies for future-proof warehouses").

Visual Components and KUKA.SIM

Future user-friendliness, efficiency gains and even advanced artificial intelligence are based on strong fundamental models or digital twins of both the robot and the most important process elements in every solution. KUKA has placed the emphasis on simulation and digital twins for robots, mobile platforms and key industrial processes. With the acquisition of Visual Components, the simulation engine based on KUKA.Sim, KUKA is well placed to integrate productivity-boosting elements of simulation, in-depth knowledge of robot motion and process characteristics into our new engineering tool suites.

Systems Division

SmartFactory as a Service

Industrie 4.0 and digitization enable new production methods and necessitate new business models. MHP, KUKA and Munich Re show what these may look like in the SmartFactory as a Service in Munich. Using SmartFactory as a Service allows manufacturing companies to focus on customer satisfaction without having to bear peripheral elements of value creation, investment costs and risks themselves. Flexible small-batch production according to individual customer requirements thus becomes economically viable for the first time. The common goal is to digitize the entire value chain, implement an integrated, high-quality data flow and merge previously unconnected areas and systems of the production development process.

Ready2_rivet: the ideal self-pierce riveting solution for body-in-white applications

The new ready2_use solution in the KUKA product portfolio is called ready2_rivet. The automated, flexible self-pierce riveting solution for body-in-white applications has been developed jointly with Böllhoff, one of the world's leading manufacturers and suppliers of fasteners and assembly systems. The KR QUANTEC series robot and the controller are from KUKA, while Böllhoff provides the self-pierce riveting technology. Customers benefit from the low effort required to integrate the self-pierce riveting application and from its versatility. The self-pierce riveting application can be seamlessly integrated into the existing production environment and boosts productivity and efficiency. The KUKA ready2_use packages are application-oriented solutions that are sector-specific, industry-proven and quickly deployable.

Matrix production in the KUKA SmartProduction Center

The KUKA SmartProduction Center at the Augsburg site makes the versatile and flexible matrix solution a reality – a response to the ever wider range of variants, more frequent model changes and variations in production quantities. It makes it possible for different customized products to be manufactured on one and the same system. The new KUKA SmartProduction_control software from KUKA, which is aware of all activities at all times, proactively controls these activities and thus has an overview of the motions of the AGVs, their battery charge and the current status of the production cells, forms the heart of the smart system. The decoupling of intralogistics from production is a key advantage of smart matrix production. Controlled by KUKA SmartProduction_control, the AGVs fetch tools from a tool store and then transport them to the production cells in which they are required. At the same time, the AGVs move to the centralized material warehouse in order to transfer the centrally stored components needed for the production process into the cells.

Swisslog Division

Intelligent technologies for future-proof warehouses

At LogiMAT, the leading trade fair in the intralogistics sector, Swisslog demonstrated how warehouses in the future will be able to optimize themselves through the use of flexible technologies. The focus was on innovative software services such as the Industrie 4.0 solution Condition Monitoring, a software module from the SynQ platform. This enables warehouse operations to be monitored in real time, trends to be documented and potential failure risks to be assessed. The latest module in this solution offering is the "Availability Manager", which is designed to identify critical elements in the warehouse and to eliminate impending bottlenecks within the material flow system. This innovative measurement methodology sets new standards in real-time planning and monitoring of availabilities in the warehouse.

Swisslog presented the redesigned KMP 600 mobile robot unit for CarryPick – the warehouse and order picking system for multichannel logistics. The solution focuses even more strongly on the increasing market requirements with newly devised mechatronics and new, highly scalable software and enhanced support. Furthermore, a virtual reality application was presented, showcasing a 3D CarryPick warehouse replicated in a virtual environment. This provides a means of training warehouse operatives efficiently even before a project has been implemented.

The automatic, robot-based, single-item picking system ItemPiQ combines the existing intralogistics concepts of Swisslog extremely effectively with robotic order picking. The technology from KUKA and Swisslog demonstrates how different products, recognized by a 3D vision system, can be picked from a container. ItemPiQ was further optimized in 2018 and now enables considerably faster work processes with improved precision. Thanks to its versatility, ItemPiQ can be easily adapted to accommodate changes in the customer's product range. The system constantly learns by means of artificial intelligence so it can determine how best to handle each new item.

Presentation of the fifth KUKA Innovation Award and invitation to submit entries for 2019

The winner of last year's KUKA Innovation Award on the theme "Real-World Interaction Challenge" was chosen at Hannover Messe: the CoAware team of Instituto Italiano di Tecnologiga with its demonstration of dynamic human modeling, image processing and interaction control for robots. With an LBR iiwa and specially written software, they showed how movements and ergonomics can be monitored and enhanced in real time using a dynamic model. The focus of the current call for applications for the 2019 KUKA Innovation Award is on "Healthy Living". The applicants are invited to develop an innovative application on this topic, ranging from medicine and rehabilitation to food and the home environment. To help them implement their ideas, KUKA is providing the finalists with a KUKA LBR iiwa or LBR Med and a 3D vision sensor from Roboception for the duration of the competition.

Awards

IERA Award for LBR Med

KUKA has been honored with the IERA Award for the LBR Med lightweight robot. The LBR Med is the world's first robot certified to be integrated into a medical product. It is based on the LBR iiwa, whose hardware and software have been adapted to the medical technology sector. The international jury from research and industry was impressed by the diverse potential applications for the lightweight robot together with the necessary safe technology and the social relevance. The IERA Award is considered one of the most prestigious international awards in robotics and is conferred by the International Federation of Robotics and the IEEE Robotics and Automation Society.

Ford Excellence Award

At the presentation of the 20th Ford World Excellence Award, KUKA was recognized as a leading global supplier to the Ford Motor Company. 30 companies were selected as finalists from among thousands of Ford suppliers worldwide. The Ford World Excellence Awards acknowledge companies that surpass the expectations on suppliers in terms of outstanding quality, delivery and price conditions, and innovations.

Volvo Cars Quality Excellence Award

Each year, the Volvo Cars Group presents the Volvo Cars Quality Excellence (VQE) Award to its best partners and suppliers worldwide. The VQE Award is presented to the companies that best meet the high quality standards of the Volvo Cars Group and provide outstanding support services. KUKA was awarded this distinction for excellent performance in quality management, the design process and project management, as well as in product quality and various other categories.

Further awards for KUKA products and solutions

The KUKA smartPAD 2, the KR AGILUS 2 and the KMP 600 mobile platform received multiple awards in the year under review, including the iF Award 2018, the Good Design Award USA, the IDEA Award USA, the Red Dot Design Award and the German Design Award (Winner 2019). The last of these awards also went to the new KUKA LBR iisy sensitive lightweight robot.

Various awards for Swisslog

Swisslog (Systems & Equipment) won the award for Supply Chain Innovation at the Supply Chain Asia Industry Awards 2018. This prize is aimed at companies who use the most effective, innovative technologies during ongoing operation in the financial year 2017/2018 (MH awards category). Furthermore, the ACPaQ solution from Swisslog received the Innovative Product Award at the LT Summit 2018 in Beijing.

Procurement

Travel and expenses management has been revised for the entire KUKA Group. In the course of this revision, the procedures for travel applications, approvals, bookings and expense reporting have been harmonized. This has enabled cost reductions to be achieved with regard to indirect materials.

Procurement at Robotics

In order to best safeguard the availability of materials, specific monitoring measures were introduced and an increased logistics effort was implemented across the entire supply chain. This enabled us to address the risk of potential capacity bottlenecks at both suppliers and subsuppliers. Furthermore, the Sales & Operations Planning (SOP) project was pushed ahead in 2018 with the aim of ensuring closer communication between Sales, Production and Procurement, reducing planning effort and lowering inventories and storage costs. A structured and consistent SOP will be a significant lever for a successful supply chain in the face of growing requirements.

Further activities were geared towards selecting the most innovative and capable suppliers worldwide.

The proportion of local suppliers in China and second source activities has been increased. In this way, it was possible to expand the supplier base considerably.

Procurement at Systems

Tendering schemes pursuant to game-theory approaches have been successfully implemented for the awarding of larger contracts. They strengthen negotiation skills and also cooperation within the Group.

Moreover, cooperation with strategic partners has been expanded to include shared engineering and costing.

In addition, the role of project purchaser for the management of procurement volumes was further expanded.

Procurement at Swisslog

The positive sales development at Swisslog also affected procurement in 2018. Procurement volumes increased together with orders received. Material cost savings were achieved both in project business and at the production locations. It proved possible to reduce material costs in the Production Purchasing area above all through the combination of targeted design adaptations and optimizations at suppliers. In the Project Purchasing area, the processes for requesting quotations and awarding contracts were further optimized.

Economic report

Macroeconomic and industry conditions

IMF reduces outlook for global economic growth

The International Monetary Fund (IMF) has reduced its forecast for growth of the global economy for both 2018 and 2019 and now expects growth of 3.7% for both years. 3.9% growth had previously been forecast for both years. The decrease is attributed to the trade dispute between the USA and China over import tariffs. Another factor is uncertainty over the planned withdrawal of the United Kingdom from the European Union. A drop of 2.5% in economic growth is also expected in the USA in 2019. The reasons for this include a reduction in the positive effects of tax relief for the US economy, the trade dispute and increasing debt of US citizens.

In its forecast of January 2019, the IMF warned that national economies are more susceptible to risk overall. This also applies to the emerging economies which, for a long time, were the locomotives of the global economy. These countries are being impacted negatively by problems resulting from US economic policy as well as rising interest rates and the strong dollar. According to the IMF, growth in China will slow down slightly in 2019. However, experts still anticipate a comparably high growth rate of 6.2%. For the eurozone, the IMF estimates economic growth of 2.0% over the past year. In 2019, growth is expected to drop slightly to just 1.9%. The reasons for this, according to the IMF, include the trade dispute between the USA and China, the budget dispute between the EU and Italy, and the threat of a no-deal Brexit. The IMF economists have adjusted the anticipated growth for Germany to 1.9% in 2018 and also envisage growth of 1.9% in 2019. They attribute this development to a decline in the export business and in industrial production.

The international downturn has also affected German industry. The Business Climate Index of the Institute of Economic Research (ifo) is regarded as an early indicator of economic development in Germany. The ifo index fell to 101.0 points in December 2018 after 102.0 points in November. On the one hand, it thus remains at a high level of over 100, thereby signaling a positive assessment. On the other hand, however, the assessment of the current business situation indicates growing concerns in German companies. They are therefore less optimistic about future business performance.

Car markets in USA and Europe stable – downturn in China

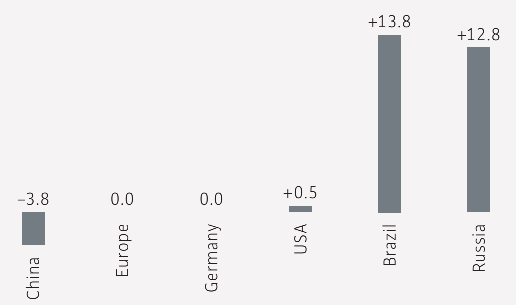
According to the German Automotive Industry Association (VDA), automotive business developed differently around the world in 2018. With about 15.6 million newly-registered cars in 2018, Europe was at the same level as the previous year. While car sales were up +3% in France and +7% in Spain, new registrations were down –3% in Italy and –7% in the UK. With over 3.4 million new registrations, the German market was just below the level of the previous year. Worldwide, German manufacturers produced around 16.5 million cars, around 5.1 million of which were made in Germany.

In China, the overall volume of new registrations was approximately 23.3 million cars in 2018, thus remaining at a high level. However, for the first time in decades, the Chinese market saw a fall in car sales in 2018. Compared with the previous year, new registrations declined by almost 4%. This development was primarily influenced by the uncertainties triggered by the trade dispute between China and the USA.

The US market rose slightly by 0.5% compared to the previous year. Here, sales in the light truck segment increased by 8%, while car sales were down 13%. For German manufacturers, the US market is both an important market and a significant production location. In 2017 they produced more than 800,000 light vehicles in the USA.

Electromobility is increasing greatly worldwide. Initial evaluations indicate that new registrations for electric vehicles were up 38% in the EU, 58% in the USA and 90% in China (January to October 2018). Research investments in alternative drive systems by German manufacturers are among the highest in the world. They are planning to invest 40 billion euro in this area over the next three years.

2018 car sales by region/country
Change year-on-year in %



Source: VDA, January 2019

Further increase in mechanical and systems engineering – growth expected to lose momentum in 2019

According to the German Engineering Federation (VDMA), the production value in 2018 will be €228 billion, representing an increase of 5% on the previous year. In particular, the export segment contributed to this positive development. In the first nine months of 2018, goods worth €131.9 billion were shipped abroad. This corresponds to an increase of 5.2% on the previous year. China and the USA were the largest export markets according to the VDMA. Exports to China increased by 11.4% to €14.2 billion. German machine builders exported goods with a value of €14.2 billion to the USA. This is equivalent to a 6.9% increase. However, the VDMA reports that the weakening domestic economy in China and the punitive tariffs imposed by the US government are negatively impacting the economic outlook.

Another source of increased uncertainty is the threat of a no-deal Brexit. The growth of 4.5% in exports to the United Kingdom in the first nine months of 2018 was due primarily to the accumulation of warehouse stock and the fact that investments were brought forward. The VDMA is predicting production growth of 2% in the German mechanical and systems engineering sector for the financial year 2019. The rate of growth of the global economy is expected to slow down. In the fields of robotics and automation, the VDMA predicts a 5% increase in sales for 2018.

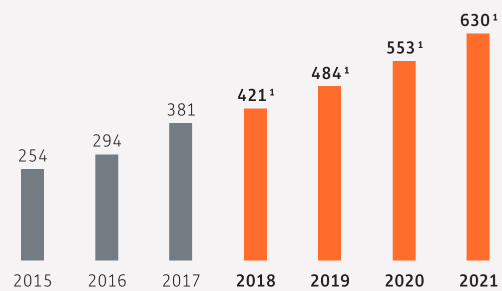
Continued growth in robotics and automation

According to the predictions of the International Federation of Robotics (IFR), the global trend towards robot-based automation of manufacturing processes is set to continue. Research and development activities are placing pioneering technologies and products on the market, leading to new fields of application. Numerous process steps can now be automated where until recently it was hard to imagine robots could be used. Automation enables companies of different sizes in a variety of sectors to structure their production so as to be more efficient. Drivers behind this development are the connection of the real and virtual production worlds in the context of Industrie 4.0, safe human-robot collaboration and mobile robotics. Alongside the safety factor, intuitive operation and solutions for networked digital production are playing an important role. The reasons for this are rising labor costs, growing quality requirements, the focus on increasing efficiency and the previously low robot density.

For the financial year 2018, the International Federation of Robotics (IFR) predicted worldwide sales of 421,000 industrial robots, corresponding to an increase of 10% on the previous year's figure of 381,000. In Asia, the IFR anticipated sales of 298,000 industrial robots in 2018. This corresponds to an increase of 14%. In China alone, sales of 165,000 robots are expected, equivalent to an increase of 20%. The IFR is anticipating an average annual growth rate of 14% worldwide between 2019 and 2021. This includes growth of 13% in North and South America, 16% in Asia/Australia and 10% in Europe. According to IFR estimates, the number of industrial robot shipments will reach approximately 630,000 units in 2021, with China accounting for around 290,000 of these.

According to the IFR, the automotive and electronics industries are among the world's largest customer segments. In 2017, 33% of the industrial robots sold worldwide were installed in the automotive industry, while the electronics industry meanwhile accounts for 32%.

Global sales of industrial robots
in thousands of units



[1] IFR forecast in 2018

Source: IFR World Robotics 2018

Business performance

Orders received

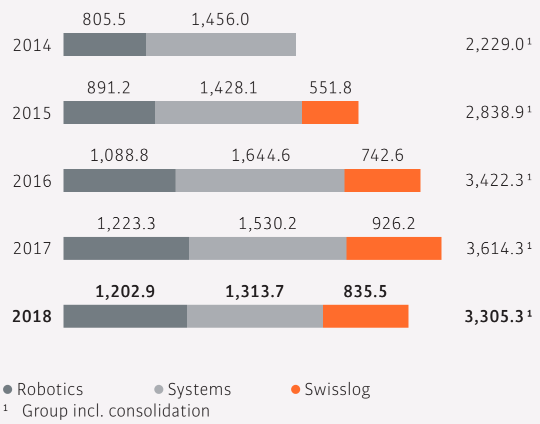
KUKA Group posted orders received amounting to €3,305.3 million in the year under review –8.5% down on the previous year's figure of €3,614.3 million. The Group was unable to match last year's record figure. Orders received were generated primarily in Europe.

Orders received by **Robotics** declined slightly by 1.7% from €1,223.3 million (2017) to €1,202.9 million (2018). The new orders received by Robotics came primarily from Europe and Asia.

During the past financial year, **Systems** generated orders received totaling €1,313.7 million (2017: €1,530.2 million). Compared with the previous year, this represents a decrease of 14.1%. The reasons for this include the lack of new orders at KTPO and the downturn in the strong investment cycle at US automotive customers.

Orders received by **Swisslog** in 2018 amounted to €835.5 million (2017: €926.2 million). Compared with the previous year, this represents a decrease of 9.8%. This is due to the fact that major orders had been posted in the logistics segment in 2017.

Orders received
KUKA Group, Robotics, Systems, Swisslog in € millions



Sales revenues

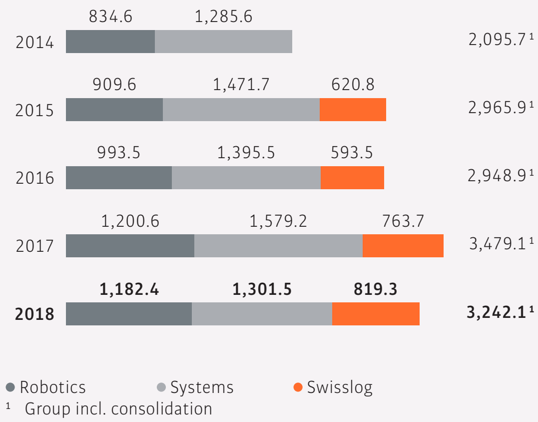
In 2018, the sales revenues of KUKA Group declined from €3,479.1 million (2017) to €3,242.1 million (2018). This corresponds to a decrease of 6.8% on the previous year. This development is mainly attributable to the increasingly noticeable general economic slowdown, which primarily affected two of KUKA's strategic focus markets: the automotive industry and the electronics industry. KUKA generates more than half of its sales revenues in these industries. Another factor was the slower growth in China, one of our most important sales markets.

The **Robotics** division reported sales revenues of €1,182.4 million, falling just short of the previous year's level of €1,200.6 million by 1.5%. Revenues were generated primarily in Europe and Asia.

In 2018, the sales revenues of **Systems** fell 17.6% from €1,579.2 million (2017) to €1,301.5 million (2018). This was largely due to the lack of revenues at KTPO as a result of the ongoing change of model and the downturn in the investment cycle at US automotive customers in 2018.

The **Swisslog** division generated sales revenues of €819.3 million in 2018. Compared to the prior-year value, revenues rose by 7.3% (2017: €763.7 million). Both WDS and HCS managed to increase their sales revenues year-on-year. On account of the large-scale orders posted in the previous year, Swisslog was able to generate high revenues primarily in the growing market of logistics.

Sales revenues
KUKA Group, Robotics, Systems, Swisslog in € millions



Book-to-bill ratio and order backlog

The book-to-bill ratio, in other words the ratio of orders received to sales revenues, came in at 1.02 at Group level (2017: 1.04). Values around 1 represent good capacity utilization and values above 1 signify an increased volume of business. The Robotics division's book-to-bill ratio was 1.02, as in the previous year. The ratio in the Systems division was exactly 1.00 (2017: 0.97) while Swisslog's ratio was just over 1 at 1.02 (2017: 1.21).

KUKA Group's order backlog amounted to €2,055.7 million at year-end 2018. Compared with the previous year, this was a slight decrease of 4.7% (2017: €2,157.9 million). The persistently high order backlog represents around two thirds of annual sales revenues and will thus ensure good capacity utilization for the 2019 financial year.

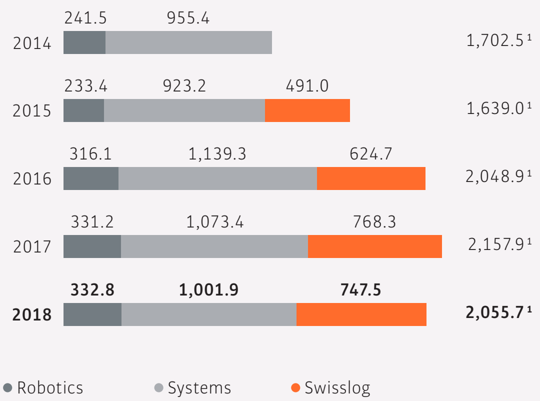
In the **Robotics** division, the year-end order backlog (not including master contracts with the automotive industry) totaled €332.8 million and was thus slightly higher than the previous year's value of €331.2 million.

The order backlog at **Systems** amounted to €1,001.9 million as at the balance sheet date (2017: €1,073.4 million).

Swisslog recorded a year-end order backlog totaling €747.5 million (2017: €768.3 million).

in € millions	2017 Orders received	2017 Sales revenues	2017 Book-to-bill ratio	2018 Orders received	2018 Sales revenues	2018 Book-to-bill ratio
Group	3,614.3	3,479.1	1.04	3,305.3	3,242.1	1.02
Robotics	1,223.3	1,200.6	1.02	1,202.9	1,182.4	1.02
Systems	1,530.2	1,579.2	0.97	1,313.7	1,301.5	1.00
Swisslog	926.2	763.7	1.21	835.5	819.3	1.02

Order backlog (Dec. 31)
KUKA Group, Robotics, Systems, Swisslog in € millions



[1] Group incl. consolidation

EBIT

Before growth investment and reorganization expenditure, EBIT stood at €83.0 million in 2018. This corresponds to an EBIT margin of 2.6%. The figure for the previous year was €134.6 million with an EBIT margin of 3.9%. The reasons for this include negative influences in the project business and also higher expenditure for R&D in the Swisslog division.

Taking into consideration all expenditure in 2018, the earnings before interest and taxes (EBIT) for KUKA Group totaled €34.3 million (2017: €102.7 million). Accordingly, the EBIT margin was 1.1% (2017: 3.0%). Expenditure for growth investment and reorganization amounted to €48.7 million.

In the 2018 financial year, EBIT in the **Robotics** division rose to €134.4 million (2017: €133.1 million). The EBIT margin was up correspondingly to 11.4% (2017: 11.1%).

EBIT in the **Systems** division amounted to –€32.8 million in 2018 (2017: €17.8 million). The EBIT margin decreased from 1.1% in 2017 to –2.5% in 2018. Negative influences in connection with individual projects and the lack of earnings from KTPO were the main contributory factors.

In the 2018 financial year, EBIT in the Swisslog division totaled –€16.3 million after recording €10.4 million in the previous year. This resulted in an EBIT margin of –2.0% in 2018, after a figure of 1.4% in 2017. This was due not least to higher expenditure on research & development as Swisslog intensified development of products and solutions for its key markets. Moreover, one-off integration and reorganization expenditure was incurred in 2018 and the operating result was negatively impacted further still by delays in the execution of projects.

Financial position and performance

Summary

KUKA Group was not able to surpass the strong results of the previous year. This development is mainly attributable to the increasingly noticeable general economic slowdown since the fourth quarter of 2018, which primarily affected two of KUKA's strategic focus markets: the automotive industry and the electronics industry. KUKA generates more than half of its sales revenues in these industries. Another factor is the slower growth in China, one of our most important sales markets. The growth rates there are currently lower than they have been since the financial crisis. There were also unforeseeable negative influences in the project business. KUKA therefore amended its forecast for the past financial year, anticipating sales revenues of €3.2 billion and an EBIT margin of 3.0% before purchase price allocations, growth investments and reorganization expenditure. KUKA Group consequently decided to establish measures to counteract the emerging trend at an early stage. These include an efficiency enhancement program, a greater focus within research and development as well as further optimization in China to improve our ability to respond to the local market requirements, and adjustments to the organizational structure. Continuing to invest in the future, KUKA Group expanded its worldwide locations during the reporting period. The order backlog amounted to €2.1 billion and was thus only slightly below the previous year's value, which is an indication of good capacity utilization in 2019.

Compared to the previous year, the Robotics division recorded a €1.3 million increase in EBIT to €134.4 million (2017: €133.1 million). The Systems and Swisslog segments reported weaker performance than in the previous year with respective EBIT of –€32.8 million and –€16.3 million. The prior-year EBIT of the two segments had been €17.8 million and €10.4 million respectively. Group EBIT amounted to €34.3 million (2017: €102.7 million). The Group recognized growth effects and reorganization expenditure totaling €48.7 million in the 2018 financial year. Adjusted for these effects, EBIT reached €83.0 million (2017: €134.6 million) with an EBIT margin of 2.6% (2017: 3.9%).

Earnings

KUKA Group posted orders received totaling €3,305.3 million in the 2018 financial year. This represents a decline on the figure for 2017 with orders received of €3,614.3 million. The average annual growth rate between 2014 and 2018 was approximately 10%. Sales revenues totaled €3,242.1 million and were therefore below the original target of €3.5 billion and the record year of 2017, but significantly above 2016.

in € millions	2014	2015	2016	2017	2018
Orders received	2,229.0	2,838.9	3,422.3	3,614.3	3,305.3
Order backlog	1,702.5	1,639.0	2,048.9	2,157.9	2,055.7
Sales revenues	2,095.7	2,965.9	2,948.9	3,479.1	3,242.1
EBIT	141.8	135.6	127.2	102.7	34.3
in % of revenues	6.8	4.6	4.3	3.0	1.1
in % of capital employed (ROCE)	28.8	20.0	16.2	10.9	2.9
Extraordinary expenses [1]	–	–	28.0	31.9	48.7
EBIT adjusted [1]	141.8	135.6	155.2	134.6	83.0
EBIT adjusted [1] in % of revenues	6.8	4.6	5.3	3.9	2.6
EBIT adjusted [1] in % of capital employed (ROCE)	28.8	20.0	19.8	14.2	7.0
EBITDA	185.3	259.1	205.3	180.2	121.2
in % of revenues	8.9	8.7	7.0	5.2	3.7
Extraordinary expenses [1]	–	–	28.0	31.9	48.7
EBITDA adjusted [1]	185.3	259.1	233.3	212.1	169.9
EBITDA adjusted [1] in % of revenues	8.9	8.7	7.9	6.1	5.2
(Average) capital employed	492.0	676.8	783.0	950.4	1,185.0
Employees [2] (Dec. 31)	12,102	12,300	13,188	14,256	14,235

[1] 2016: one-off effect due to the takeover bid by Midea Group
2017: one-off effect due to growth investments
2018: one-off effects due to growth investments and reorganization expenditure

[2] Figures for employees are based on the full-time equivalent throughout the annual report.

The 2018 financial year was the first time since 2009 that the Robotics segment was unable to record a year-on-year increase in revenues. However, sales revenues still reached a very high level of €1,182.4 million. The billion euro mark was surpassed again, as had already been the case in 2017. Sales revenues and orders received decreased by 1.5% and 1.7% respectively. The latter amounted to €1,202.9 million. On the other hand, there was an increase in EBIT by 1.0% from €133.1 million in 2017 to €134.4 million in 2018. Contributory factors here were the sale of an equity holding for a double-digit million euro amount and the optimization of processes. The Robotics segment is pressing ahead with the development of new products and the optimization of existing ones. For example, the performance, economy and flexibility of the KR QUANTEC product series have been enhanced.

Sales revenues in the Systems segment decreased from €1,579.2 million in 2017 to €1,301.5 million in 2018. This represents a decline of €277.7 million, corresponding to 17.6%. The volume of orders received is the highest compared to the other divisions, though it decreased by €209.2 million on the previous year to €1,313.7 million. The reasons for this include the decline in the strong investment cycle of US automotive customers and the lack of new orders and revenues from KTPO whose plant is currently undergoing conversion. As at the balance sheet date, the Systems division has an order backlog of €1,001.9 million, which is equivalent to an imputed share in the segment's annual revenues of 77.0% (2017: 68.0%). EBIT in the Systems division amounted to −€32.8 million in 2018 (2017: €17.8 million). The EBIT margin decreased from 1.1% in 2017 to −2.5% in 2018. Negative influences in connection with individual projects and the lack of earnings from KTPO were mainly responsible for this. Discounting the reorganization expenditure and growth investments, adjusted EBIT was −€21.3 million in the 2018 financial year (2017: €25.2 million EBIT).

Revenues in the Swisslog division amounted to €819.3 million and were thus substantially higher than the previous year (2017: €763.7 million). About three quarters of the revenues were generated in Warehouse & Distribution Solutions and approximately one quarter in Healthcare Solutions. EBIT stood at −€16.3 million (2017: €10.4 million). This was largely attributable to higher expenditure on research and development, one-off integration and reorganization expenses, and delays in the execution of projects, which negatively impacted the operating result further still. The high order backlog totaling €747.5 million indicates excellent capacity utilization in 2019.

KUKA Group's gross profit amounted to €725.9 million and was thus slightly below the prior-year value of €754.3 million. The gross margin of 22.4%, on the other hand, was higher than the previous year's figure of 21.7%. The cost of sales showed a more substantial decrease than sales revenues, which explains the increase in the gross margin. Within the cost of sales, savings were made in both personnel and material expenditure compared to the previous year. The gross margin of 35.7% in the Robotics division was higher than the previous year's figure of 34.7%. The gross margins in the Systems and Swisslog divisions were slightly below those of the previous year (Systems 2018: 9.3%; 2017: 9.8%; Swisslog 2018: 21.8%; 2017: 23.8%).

The key figures for the individual divisions were as follows:

Key figures – Robotics

in € millions	2014	2015	2016	2017	2018
Orders received	805.5	891.2	1,088.8	1,223.3	1,202.9
Order backlog	241.5	233.4	316.1	331.2	332.8
Sales revenues	834.6	909.6	993.5	1,200.6	1,182.4
EBIT	88.9	100.2	100.7	133.1	134.4
in % of revenues	10.7	11.0	10.1	11.1	11.4
in % of capital employed (ROCE)	53.1	56.6	51.7	56.4	40.6
EBITDA	112.0	126.1	123.2	157.2	162.8
in % of revenues	13.4	13.9	12.4	13.1	13.8
Capital employed	167.3	177.1	194.9	235.9	330.8
Employees (Dec. 31)	3,644	4,232	4,726	5,010	5,399

Key figures – Systems

in € millions	2014	2015	2016	2017	2018
Orders received	1,456.0	1,428.1	1,644.6	1,530.2	1,313.7
Order backlog	955.4	923.2	1,139.3	1,073.4	1,001.9
Sales revenues	1,285.6	1,471.7	1,395.5	1,579.2	1,301.5
EBIT	80.2	114.7	91.3	17.8	–32.8
in % of revenues	6.2	7.8	6.5	1.1	–2.5
in % of capital employed (ROCE)	67.9	87.9	42.8	6.3	–9.9
EBITDA	97.4	135.6	113.5	34.5	–17.0
in % of revenues	7.6	9.2	8.1	2.2	–1.3
Capital employed	118.1	130.5	213.1	281.9	331.5
Employees (Dec. 31)	5,810	5,146	5,189	5,459	4,811

Key figures – Swisslog

in € millions	2014[1]	2015	2016	2017	2018
Orders received	–	551.8	742.6	926.2	835.5
Order backlog	517.2	491.0	624.7	768.3	747.5
Sales revenues	–	620.8	593.5	763.7	819.3
EBIT	–	–45.9	4.8	10.4	–16.3
in % of revenues	–	–7.4	0.8	1.4	–2.0
in % of capital employed (ROCE)	–	–14.5	1.5	3.0	–4.3
EBITDA	–	24.5	28.2	36.8	9.2
in % of revenues	–	3.9	4.8	4.8	1.1
Capital employed	154.6	315.9	317.4	346.8	383.5
Employees (Dec. 31)	2,369	2,555	2,679	2,904	3,075

[1] Swisslog was consolidated for the first time as of December 31, 2014.

The functional costs, which are made up of KUKA Group's administration, sales and research & development costs rose in the 2018 financial year to €718.5 million (2017: €646.8 million). The ratio of functional costs to revenues increased from 18.6% in 2017 to 22.2% in 2018.

Selling expenses were up €13.2 million from €306.7 million in 2017 to €319.9 million in 2018. In 2018, the number of sales employees increased from 1,690 as at December 31, 2017 to 1,712 employees as at December 31, 2018. This planned expansion demonstrates the strategic implementation aimed at increasing market penetration and tapping new markets. KUKA invested in a Group-wide customer relationship management system and was thus able to achieve close interaction of customers and partners with sales, service and marketing employees along the entire value chain. These measures should also be reflected in sales revenues in the future. The selling expenses ratio rose from 8.8% in 2017 to 9.9% in 2018.

As was already the case in previous years, KUKA invested in ongoing internal projects relating to the harmonization, standardization and optimization of processes as well as in global IT platforms. The administrative costs increased by €35.3 million to €246.7 million (2017: €211.4 million). This was mainly due to the higher rental and leasing expenditure – especially for software licenses – as well as the other administrative expenditure. Higher write-downs were recognized on intangible assets and tangible assets in the 2018 financial year following the capitalizations carried out in the preceding financial years – as too in the 2018 financial year – as a result of acquisitions and in-house purchases. Development costs from the internal IT harmonization program were capitalized, for example, leading to a higher depreciation amount. Administrative costs are likely to be optimized in the future through the integration of further Group companies. The administrative expenditure in relation to revenues increased from 6.1% in 2017 to 7.6% in 2018.

KUKA invests in innovative products and solutions as well as future-oriented technologies in order to secure the company's success in the long term. Research and development costs thus increased from €128.7 million in 2017 to €151.9 million in 2018. On the one hand, the number of employees in research and development was expanded as planned. On the other hand, the write-downs of non-current assets in this area were also higher. Even though there was no increase in revenues in the past financial year, it is essential for a company in the Industrie 4.0 sector to constantly research and develop future-oriented technologies. The focus here lies not only on new developments and internal Group projects but also on the upgrading of existing products and solutions. Examples include the new generation of the KR QUANTEC series, the development of the robotic order picking system ItemPiQ, the modular warehouse management system SynQ and new areas of application based on the LBR Med lightweight robot.

As one of the drivers of Industrie 4.0, KUKA offers its customers products and key technologies for the fourth digital revolution. Human-robot collaboration together with cloud computing and evaluation of big data opens up completely new paths in automation. Thanks to omniMove drive technology, mobile robots and platforms can maneuver omnidirectionally and autonomously through the factory of the future. This is only possible by networking automated production technologies with conventional mechanical engineering and intelligent IT systems. High-quality one-off products can thus be manufactured with the advantages of series production. Complex process steps are optimized and dovetailed with a focus on flexibility and cost-efficiency.

The approaches on which KUKA as a group focuses for Industrie 4.0 – and which result in expenditure and growth investments in the R&D, sales and administration areas – are just as diverse as the innovations in other technologies. The following projects, implemented in fiscal 2018, are worthy of mention at this point by way of example:

- IT networking in Industrie 4.0: through KUKA Connect, a cloud-based software platform that allows customers to view the data of their robots from anywhere in the world and thus to increase the performance and effectiveness of their production operations. This platform has been enhanced and now offers the customer new features.
- Further development of human-robot collaboration (HRC): sensitive systems make it possible for safety fences between the human operator and the robot to be made smaller or dispensed with entirely. This enables the installation of cells on an area up to a quarter smaller than that for designs without HRC capability. For these scenarios, the KUKA LBR iisy has been developed, which can be adapted quickly to new requirements and thus offers a broad range of potential applications.
- The new ready2_use solution in KUKA Group is called ready2_rivet. It is a flexible self-pierce riveting solution for body-in-white applications that was developed together with Böllhoff.
- Cooperative ventures with partners from both inside and outside the industry: productivity-boosting simulation elements and process characteristics are integrated into the engineering tool suites together with Visual Components.

Another main focus of research and development was on the upgrading of an existing robot series. The new generation of the KR QUANTEC series was developed on the basis of KUKA's experience in the dynamic world of automation. This has resulted in a reliable, versatile and efficient high-quality solution for the production environment of KUKA customers. The customers benefit from a wide range of applications. The KR QUANTEC robot stands out for its performance, economy and flexibility. The result of the new generation goes way beyond technical details, also encompassing long-term aspects such as simplification of commissioning, maintenance requirements and process optimization of the system. The new generation of the KR QUANTEC series will be the world's first industrial robots to have digital plug-in motion modes. These are digitized motion modes that optimize the robot sequence for specific application scenarios. Path mode, for example, enables high-precision continuous-path motion, while dynamic mode allows a higher velocity in order to minimize cycle times.

In the Swisslog segment, the further development of the ItemPiQ robotic order picking system was driven forward. This system combines considerably faster work processes with improved precision. The versatility of ItemPiQ makes it possible to respond to the customer's changing product range and to make adaptations. Another development by Swisslog is SynQ, which stands for synchronized intelligence and represents a modular service-oriented software platform for warehouse management. The platform brings intelligence to warehouse operations and synchronizes the activities in an automated warehouse. SynQ comprises functions for warehouse management, material flow and automation control as well as a number of business intelligence tools for enhancing performance. Through investments in software development and analytics, Swisslog Healthcare was able to help hospitals achieve better market positions in 2018 with integrated solution systems for material handling and medication management. Swisslog is already successfully implementing Pharmacy Manager and is achieving constant progress in the development of Delivery Manager and within pharmacy automation production; these products are already being used in pilot projects in North America and Europe. This pursuit of innovation supports forward-looking hospitals and helps to make health systems more efficient, allowing the focus to be placed on the patients again. The market-leading Translogic pneumatic tube system (PTS) was further improved by means of the Nexus station, which reduces the burden on nursing staff and means they can devote more time to hospital patients. Therapick, an automated packing and order picking system, has already been put into operation in three hospitals in Europe and Asia with the aim of reducing incorrect treatment caused by medication errors.

Please refer to the research and development section of this Management Report for further information and details.

The opportunities existing in areas of Industrie 4.0 can only be exploited and expanded with adequate personnel resources. KUKA Group therefore had 1,251 employees in R&D as at the balance sheet date (2017: 1,027 employees), corresponding to a share of 8.8% (2017: 7.2%).

Compared to the previous year, the capitalized costs incurred for new developments increased by €4.7 million (2018: €36.4 million; 2017: €31.7 million). They will be recognized as expenditure – mainly in the research and development segment – through scheduled amortization in subsequent periods. Expenditure for amortization increased from €11.3 million in 2017 to €15.6 million in 2018. This means a continued high capitalization ratio of 21.1% (2017: 21.3%).

The comparison of other expenses and income showed a positive surplus of €29.2 million (2017: –€2.6 million). They included expenses for other taxes (2018: €8.4 million; 2017: €5.6 million), income from subsidies (2018: €1.6 million; 2017: €2.3 million) and income from the sale of shares in the companies KBee AG, Munich and connyun GmbH, Karlsruhe.

EBIT margin of 1.1%

Earnings before interest and taxes (EBIT) amounted to €34.3 million (2017: €102.7 million), corresponding to an EBIT margin of 1.1% (2017: 3.0%). This includes one-off effects due to growth investments and reorganization expenditure in the amount of €48.7 million (2017: growth investments totaling €31.9 million). Disregarding these one-off effects, adjusted EBIT for the financial year was €83.0 million (2017: €134.6 million). The adjusted EBIT margin stood at 2.6% (2017: 3.9%). The €51.6 million decline in adjusted EBIT was additionally attributable to project deteriorations and measures for increasing profitability. As was the case in the previous year, KUKA Group made investments in future growth fields during the reporting period. The focus here was on topics such as Industrie 4.0, mobile robotics, intralogistics and human-robot collaboration as well as expenditure relating to the complete restructuring of the overall organization with a consistent customer focus across all KUKA companies.

	2017	2018
EBIT (in € millions)	102.7	34.3
EBIT margin (in %)	3.0	1.1
EBIT adjusted [1] (in millions)	134.6	83.0
EBIT adjusted [1] (in %)	3.9	2.6
EBITDA (in € millions)	180.2	121.2
EBITDA margin (in %)	5.2	3.7
EBITDA adjusted [1] (in millions)	212.1	169.9
EBITDA adjusted [1] (in %)	6.1	5.2

[1] One-off effects 2018: growth investments and reorganization expenditure (€48.7 million)
One-off effects 2017: growth investments (€31.9 million)

The Robotics division was able to increase the already high EBIT of the previous year (2017: €133.1 million) again by €1.3 million to €134.4 million. This rise was mainly achieved due to the improvement in efficiency and the sale of KBee AG, Munich.

The EBIT in the Systems division decreased to –€32.8 million from €17.8 million in the previous year. The EBIT margin fell from 1.1% to –2.5%. The decline is primarily attributable to the deterioration of several projects in the fourth quarter. Disregarding the one-time effects, EBIT amounted to –€21.3 million.

Swisslog recorded a decrease in EBIT of €10.4 million to –€16.3 million after the strong results of 2017, which corresponds to an EBIT margin of –2.0% (2017: 1.4%). If the one-time effects are not included in the EBIT, the margin stood at –1.2%.

Depreciation and amortization increased by €9.4 million in the 2018 financial year to €86.9 million (2017: €77.5 million). EBITDA (earnings before interest, taxes, depreciation and amortization) fell from €180.2 million in 2017 to €121.2 million in 2018. Depreciation and amortization of €28.3 million (2017: €24.0 million) was attributable to Robotics, €15.8 million (2017: €16.7 million) to Systems, €25.5 million (2017: €26.4 million) to Swisslog and €17.3 million (2017: €10.3 million) to other areas.

EBITDA of €162.8 million (2017: €157.2 million) was generated by the Robotics division, –€17.0 million (2017: €34.5 million) by Systems and €9.2 million (2017: €36.8 million) by Swisslog. The EBITDA margin of Robotics increased from 13.1% to 13.8%, the margin at Systems decreased from 2.2% to –1.3% and Swisslog's margin fell from 4.8% to 1.1%. The adjusted EBITDA of €169.9 million and an EBITDA margin of 5.2% were significantly below the previous year's values of €212.1 million and a margin of 6.1%.

Financial result increases compared to the previous year

The net expenses and income in the financial result equated to income of €0.6 million in the 2018 financial year. This represents an increase of €9.8 million compared to the previous year (2017: €9.2 million loss).

Interest income rose from €6.2 million in 2017 to €14.1 million in 2018. The main reason for the rise was interest income relating to the joint venture founded in the third quarter. Income was also generated from finance leases, though a decline is evident here that is attributable to the suspended finance lease of KUKA Toledo Production Operations LLC., Toledo/USA.

The net balance of foreign exchange gains and losses in connection with financial assets led in the past financial year to a foreign currency gain of €3.0 million (2017: –€5.8 million loss), which is allocated to the interest income. The interest expense amounted to €13.4 million in the 2018 financial year and is therefore €1.7 million below the previous year's level (2017: €15.2 million). Most of this relates to the promissory note loan placed in October 2015 and the new USD promissory note loan with interest expenditure of €5.2 million (2017: €3.6 million) and to the net interest expense for pensions of €1.7 million (2017: €1.9 million). Expenditure on sureties and guarantees amounted to €1.8 million (2017: €1.3 million).

Earnings before taxes (EBT) therefore stood at €34.9 million (2017: €93.5 million). The tax expense of KUKA Group totaled €18.3 million in 2018 (2017: €5.3 million), which corresponds to a tax ratio of 52.4% and is therefore significantly above the level of the previous year (2017: 5.7%). The very low tax ratio of the previous year was mainly due to the significantly improved options for utilizing US tax subsidies and the decline of nominal tax rates in the USA. The current, very high tax ratio for the 2018 financial year is influenced by value adjustments to tax assets based on loss histories and new losses. These opposite effects in two subsequent years resulted in two very different tax rates. We assume that the tax ratio will normalize again in 2019 at approximately 25%.

Proposed dividend of €0.40 per share

Earnings after taxes of KUKA Group were positive for the eighth year in a row, but were significantly lower than the previous year at €16.6 million (2017: €88.2 million). Earnings per share amounted to €0.32 in 2018 (2017: €2.22).

The Executive Board is proposing to the Annual General Meeting that a dividend of €0.40 per share be paid for fiscal 2018.

Consolidated income statement (condensed)

in € millions	2014	2015	2016	2017	2018
Sales revenues	2,095.7	2,965.9	2,948.9	3,479.1	3,242.1
EBIT	141.8	135.6	127.2	102.7	34.3
EBIT adjusted [1]	141.8	135.6	155.2	134.6	83.0
EBITDA	185.3	259.1	205.3	180.2	121.2
EBITDA adjusted [1]	185.3	259.1	233.3	212.1	169.9
Financial result	–25.3	–7.4	–4.9	–9.2	0.6
Income taxes	–45.2	–39.3	–36.1	–5.3	–18.3
Earnings after taxes	68.1	86.3	86.2	88.2	16.6

[1] 2016: one-off effect due to the takeover bid by Midea Group
2017: one-off effect due to growth investments
2018: one-off effects due to growth investments, purchase price allocation and reorganization expenditure

Financial position

Principles and goals of financial management

KUKA Aktiengesellschaft is responsible for the central financial management of all KUKA Group companies. Acquired companies are successively included in the Group's financial management. Group financing and interest rate and currency risk management are controlled centrally via KUKA Aktiengesellschaft. The financing and investment needs of Group companies and hedging transactions for interest rate and currency management are bundled by KUKA Aktiengesellschaft, which concludes the necessary internal and external financial transactions with Group companies and banks. KUKA Aktiengesellschaft performs these tasks on the basis of a uniform planning and reporting system in which risks related to credit, liquidity, interest rates and exchange rates are recorded. The objective of interest rate and currency management is to minimize the risks involved. Only standard derivative financial instruments are used to hedge risk. The hedging transactions are concluded exclusively on the basis of the hedged item or planned transactions. KUKA has issued a standard set of guidelines for all Group companies for the purpose of managing financing risk. As in previous years, the guidelines were continuously reviewed and optimized during the financial year to ensure that they remained up to date and were also transferred to the acquired companies.

Group financing and cash pooling

The Group's financing policy is aimed at securing not only sufficient liquidity reserves in the form of liquid assets and non-utilized, committed long-term credit lines but also sufficient guarantee facilities at all times to be able to ensure the operating and strategic financing requirements of the Group companies and also to have sufficient reserves as a buffer against unforeseen events. The financing requirements of the Group companies are calculated on the basis of the multi-year budget and financial projections and monthly rolling liquidity forecasts over twelve months, each of which includes all the relevant companies consolidated in the Group accounts.

Payments received on the basis of operating activities of Group companies represent the Group's most important source of liquidity. KUKA Aktiengesellschaft's cash management uses the liquidity surpluses of individual Group companies to meet the liquidity requirements of other Group companies. This central, intra-Group cash pooling optimizes the Group's liquidity position and has a positive impact on net interest income.

Components of the financing structure

Promissory note loan

KUKA AG issued unsecured promissory note loans with a total volume of €250.0 million in two tranches on October 9, 2015. Tranche 1 has a volume of €142.5 million with an original term to maturity of five years; tranche 2 has a volume of €107.5 million and an original term to maturity of seven years.

The promissory note loan carries interest coupons of 1.15% for tranche 1 and 1.61% for tranche 2.

In order to finance the construction of a new manufacturing facility under the terms of a pay-on-production contract of KUKA Toledo Production Operations LLC, Toledo, Ohio/USA, this company has issued USD promissory note loans with a total volume of USD 150.0 million in several maturity tranches, underwritten by KUKA AG: tranche 1 has a volume of USD 10 million with a term to maturity of 2 years, tranche 2 has a volume of USD 90 million with a term to maturity of 3.5 years, and tranche 3 has a volume of USD 50 million with a term to maturity of 5 years. The interest rate of the tranches is linked to the 3-month USD LIBOR rate and is thus variable. The margins on this reference interest rate depend on the term to maturity and amount to 85.105 and 140 basis points. As at the reporting date, the interest rates of the tranches were 3.46%, 3.66% and 4.01% p.a. The funds from this promissory note loan were received on August 10/September 10, 2018.

Syndicated loan agreement

KUKA AG concluded a new syndicated facilities agreement with a bank consortium on February 1, 2018 with a volume of €520.0 million and in doing so replaced and refinanced the previous credit facility of €400.0 million. The new agreement includes a surety and guarantee line (guaranteed credit line) in the amount of €260.0 million and a working capital line (cash line), which can also be used for sureties and guarantees, likewise in the amount of €260.0 million.

The initial term of the loan agreement was five years until February 1, 2023 and contained two contractually agreed one-year extension options. With the approval of all banks for the first agreed extension option, the term has been extended by one year. The loan agreement now runs until February 2024 and can still be extended for a further year by exercising the remaining extension option at the end of 2019. The syndicated facilities agreement remains unsecured as before and contains only the customary equal treatment clauses and negative pledges. Unchanged financial covenants were agreed with thresholds for leverage (net financial liabilities/EBITDA) and interest coverage (EBITDA/net interest expense).

Guaranteed credit lines

In addition to the guarantee lines and the cash facilities which can be used for guarantees under the syndicated loan agreement, there were also further guarantee line framework agreements in 2018 to support operating business. The guarantee facilities agreed bilaterally with banks and surety companies had a commitment volume of €118.0 million as at December 31, 2018 (2017: €118.0 million). In total at December 31, 2018, KUKA therefore had credit lines to utilize for sureties and guarantees in an amount of €638.0 million (2017: €620.0 million). These were utilized in the amount of €311.3 million (2017: €255.7 million).

Asset-backed securities program

Alongside this, there was an ABS program, unchanged in relation to the previous year, with a program volume amounting to €25 million as at the balance sheet date. This program expired at the end of January 2019 in accordance with the contract.

KUKA Group's financing requirements are primarily covered by the following elements:

1) The promissory note loans with a nominal value of €250.0 million issued in October 2015 and maturing in October 2020 and October 2022.

2) The promissory note loans with a nominal value of USD 150.0 million issued in August/September 2018 and maturing in August 2020, February 2022 and August 2023.

3) The €520.0 million syndicated loan agreement signed in February 2018 with a term extending to February 2024. Cash drawings up to a volume of €260.0 million are possible under this agreement.

4) Bilateral agreements with banks and surety companies for surety and guarantee lines in the amount of €118.0 million.

From the perspective of the Executive Board, the measures taken ensure that KUKA Group has appropriate long-term financing and the necessary leeway to quickly implement important strategic decisions.

Assessment by rating agencies

The two rating agencies Moody's and Standard & Poor's continue to rate KUKA Group as investment grade at Baa3 and BBB–. On the basis of an analysis of the market situation, KUKA came to the assessment at the end of 2018 that the desired positive support through an external rating can still be achieved even if only one rating is maintained. For this reason, talks were initiated with Moody's with the aim of terminating their rating support. Consequently, Moody's withdrew KUKA's rating in January 2019.

Condensed consolidated cash flow statement

in € millions	2014	2015	2016	2017	2018
Cash earnings	181.3	260.8	203.9	184.6	129.0
Cash flow from current business operation	184.7	169.2	–9.6	92.0	–48.2
Cash flow from investment activities	–356.9	–73.5	–97.2	–227.7	–165.5
Free cash flow	–172.2	95.7	–106.8	–135.7	–213.7

As a result of the lower earnings after taxes compared to the previous year and the associated lower non-cash income, the cash earnings were also significantly below those of the previous year (2018: €129.0 million; 2017: €184.6 million). The cash earnings are an indicator derived from the earnings after taxes, adjusted for income taxes (excluding deferred taxes), net interest, cash-neutral depreciation on tangible assets, together with other non-cash income and expenses (including deferred taxes).

Cash flow from current business operations of KUKA Group changed from €92.0 million in 2017 to –€48.2 million in 2018. The change is mainly attributable to the lower earnings after taxes (2018: €16.6 million; 2017: €88.2 million), the reduction in trade payables and the increase in inventories.

Trade working capital rose from €453.9 million in 2017 to €566.3 million at the end of the 2018 financial year. The increase had to be financed and therefore had a negative impact on the cash flow from operating activities.

Trade receivables and receivables from contract assets were at a high level compared to the previous year. Inventories increased again on the previous year (2017: €387.4 million; 2018: 466.8 million). This reflects a high volume of orders received and the associated procurement measures. Trade payables decreased from €549.2 million in 2017 to €402.7 million in 2018.

Overall, trade working capital has developed as follows:

Trade working capital

in € millions	2014	2015	2016	2017	2018
Inventories[1]	272.4	297.8	318.8	387.4	466.8
Trade receivables and contract assets	612.9	658.3	888.9	923.8	909.0
Trade payables and contract liabilities[1]	600.5	691.5	778.6	857.3	809.5
Trade working capital	**284.8**	**264.6**	**429.1**	**453.9**	**566.3**

[1] For reasons of better comparability, the trade working capital KPI has been adjusted for the previous year's figures and the advance payments received are shown under contract liabilities.

Capital expenditure in KUKA Group

Capital expenditure in KUKA Group was again at a high level in the 2018 financial year. In total, the volume of expenditure on intangible and tangible fixed assets amounted to €295.4 million (2017: €138.8 million). This also includes advance payments for construction of the production plant for the finance lease (KTPO), which will start in April 2019. The high investment volume reflects major capital expenditure in the research and development sector and increased investment in tangible assets. The carrying amount of the company's own development work and internally generated intangible assets totaled €94.2 million (2017: €72.1 million). (For information on the development focuses, see the "Research and development" section, page 27 et seq.)

Investments in intangible assets and property, plant and equipment

in € millions	2014	2015	2016	2017	2018
Group	94.3	107.0	99.6	138.8	295.4
of which Robotics	30.4	39.4	29.4	39.9	75.1
of which Systems	28.7	23.5	23.9	53.9	157.1
of which Swisslog	–	22.2	20.0	21.6	24.0
of which others	35.2	21.9	26.3	23.4	39.2

Investments in intangible assets amounted to €59.7 million in the 2018 fiscal year (2017: €53.3 million) and were attributable to rights and assets in an amount of €18.7 million (2017: €9.1 million), internally produced software and development costs in an amount of €36.4 million (2017: €31.7 million) and advances paid of €3.9 million (2017: €12.5 million).

Investments in tangible assets amounted to €235.7 million in the year under review (2017: €85.5 million) and were attributable to land, property rights and buildings, including buildings on third party land (2018: €37.9 million; 2017: €3.2 million), technical plant and machinery (2018: €17.5 million; 2017: €12.9 million), other plant/operating and office equipment (2018: €19.1 million; 2017: €18.4 million) and advances paid and construction in progress (2018: €161.2 million; 2017: €51.0 million). The very high increase in advance payments made and construction in progress mainly relates to the two new production buildings in Augsburg and Shunde/China as well as the construction of the plant in the context of a finance lease (KTPO) in the USA starting in April 2019. The rise in investments in land, property rights and buildings, including buildings on third party land, results from the reclassification of a partial amount of the finance lease receivable from KTPO (see note 11). This reclassification has no effect on the cash flow.

Broken down by division, capital expenditure was as follows in 2018: in the Robotics division, the corresponding figure was €75.1 million (2017: €39.9 million). In addition to the capitalized development work, most of the investments were made in technical equipment and machinery, particularly for the optimization of production, but also for operating and office equipment. The Systems division registered additions of €157.1 million (2017: €53.9 million). This is primarily due to the system currently being built for production of the new JK model, the successor to the Jeep Wrangler JT in Toledo, USA (for further details please refer to note 11. Finance leases). Here also, most of the investments were again made in technical equipment and machinery. Investments in the Swisslog division of €24.0 million (2017: €21.6 million) mainly concern investments in internally produced software and development costs to constantly improve the customer software, but primarily in the further development of individual products in the automation solutions for future-oriented warehouse and distribution centers and for hospitals. Investments in the “Other” segment amounted to €39.2 million (2017: €24.0 million) and related mostly to advance payments. These were made for ongoing internal projects relating to the harmonization, standardization and optimization of processes as well as the introduction of global IT platforms and the construction of a new production facility and parking garage at the Augsburg location.

Spending on acquisitions of consolidated companies and other business units during the past fiscal year came to a total of €23.0 million (2017: €97.0 million) and were subdivided as follows:

Company acquisitions

in € millions	2017	2018
Company acquisitions		
Talyst Systems LLC, Delaware/USA	25.7	–
Visual Components	19.9	–
Device Insight GmbH	18.9	–
Reis Group Holding GmbH & Co. KG, Obernburg/Germany	9.1	–
UTICA Enterprises, Shelby Township, Michigan/USA	6.6	11.4
Mor-Tech Design Inc.; Mor-Tech Manufacturing Inc., Michigan/USA	–	9.4
Other	1.9	2.2
Total	**82.1**	**23.0**
Investments accounted for at equity		
Pipeline Health Holdings LLC, San Francisco/USA	13.9	–
KBee AG, Munich/Germany	1.0	–
Total	**14.9**	**–**
Total payments	**97.0**	**23.0**

Cash inflows for investments in financial assets mainly comprise the capital contributions of Midea’s investment in the joint ventures.

Negative free cash flow

Cash flow from investment activities (2018: –€165.5 million; 2017: –€227.7 million) along with cash flow from current business activities resulted in a negative free cash flow of –€213.7 million. In the previous year, the free cash flow was still –€135.7 million. This development is primarily due to the heavy investment activities as well as to the significant increase in trade working capital.

Positive cash flow from financing activities

At year-end, KUKA shows a positive cash flow from financing activities amounting to €89.6 million (2017: –€10.7 million). This includes dividend payments for the 2017 financial year to shareholders of €0.50 per share (2017: €0.50 per share), making a total of €19.9 million, and the promissory note loan issued in 2018 with a nominal amount of USD 150.0 million.

Consolidated net liquidity/debt

	2017	2018
Cash and cash equivalents	223.6	478.6
Current financial liabilities	19.1	5.2
Non-current financial liabilities	249.7	380.5
Group net liquidity (previous year: Group net debt)	**–45.2**	**92.9**
Cash and guaranteed facilities from Syndicated Senior Facilities Agreement	520.0	520.0
Guaranteed facility from banks and surety companies	118.0	118.0
ABS program line	25.0	25.0

The net liquidity at the end of the financial year amounted to €92.9 million – an increase of €138.1 million compared to the previous year (2017: net debt of €45.2 million). The payment flows consist of the balance of liquid funds and the current and non-current financial liabilities. The cash and cash equivalents of the Group at year-end 2018 totaled €478.6 million (2017: €223.6 million), which is related to the subsidiary with additional cash assets contributed by Midea to the joint venture in the third quarter.

Net worth

The non-current assets increased from €977.4 million in 2017 to €1,190.4 million as at December 31, 2018, which was due to the investments made (please also refer to the comments on the financial position). Amortization of €13.4 million (2017: €13.7 million) on the purchase price allocations for corporate acquisitions had the opposite effect. A value of €308.7 million was recorded for goodwill (December 31, 2017: €300.1 million).

Property, plant and equipment increased from €296.0 million in 2017 to €493.7 million in 2018.

The carrying amount for investments in associated companies and joint ventures amounted to €13.9 million (2017: €15.7 million), which is reported under “At-equity financial assets”. The reduction results from the development of pro rata earnings of at-equity investments.

Deferred tax assets totaled €90.5 million (2017: €79.6 million). Of this, €42.6 million was attributable to losses carried forward (2017: €20.7 million).

Current assets amounted to €2,028.1 million as at the balance sheet date of the 2018 fiscal year (2017: €1,662.7 million). The main factors contributing to this increase were the rise in inventories (2018: €466.8 million; 2017: €387.4 million) and the increase in cash and cash equivalents. The latter grew from €223.6 million in 2017 to €478.6 million in 2018.

Group net assets

in € millions	2014	2015	2016	2017	2018
Balance sheet total	1,979.5	2,381.7	2,543.9	2,640.1	3,218.5
Equity	541.1	732.5	840.2	866.6	1,339.6
in % of balance sheet total	27.3	30.8	33.0	32.8	41.6
Net liquidity/debt	32.6	199.9	113	–45.2	92.9

The balance sheet total of KUKA Group rose by €578.4 million from €2,640.1 million as at December 31, 2017 to €3,218.5 million as at December 31, 2018, which was due to the increase in equity, among other things.

Equity ratio of 41.6%

Equity increased from €866.6 million in 2017 to €1,339.6 million in 2018 on account of the higher retained earnings and the rise in minority interests. The equity ratio thus grew by almost 9 percentage points to 41.6% (2017: 32.8%). The minority interests rose from –€0.5 million in 2017 to €259.7 million in 2018 in connection with the joint venture founded with Midea Group. As in the previous year, the payment of the 2017 dividend to the shareholders of KUKA AG had the effect of reducing equity (2018: €19.9 million; 2017: €19.9 million). Actuarial gains from pension accounting, including the associated deferred taxes, totaled €5.2 million (2017: loss of €0.6 million) and is attributable to the new valuation assumptions, among other things. The recognized currency translation effects of €25.4 million (2017: –€41.0 million) also had a positive effect on equity. Besides the US dollar, this affected the Swiss franc and Chinese renminbi.

Financial liabilities mainly relate to the promissory note loans of nominally €250.0 million and USD 150.0 million placed in October 2015 and August 2018 respectively as well as the corresponding interest accruals and the short-term utilization of cash lines in the low double-digit million euro range.

Deferred tax liabilities rose from €27.5 million to €42.4 million and are mainly attributable to non-current assets.

Current liabilities declined from €1,357.9 million to €1,309.7 million as at the 2018 balance sheet date. Financial liabilities and trade payables decreased on the previous year. Other provisions rose to €166.7 million (2017: €132.5 million); other liabilities and accruals amounted to €287.7 million, remaining at almost the same level as the previous year, which resulted in a total increase of €24.3 million (2018: €454.4 million; 2017: €430.1 million).

Other liabilities include personnel costs of €145.2 million (2017: €155.0 million) and the contingent purchase price liabilities amounting to €28.1 million (2017: €37.4 million). These mainly relate to the acquisitions of previous fiscal years.

Group assets and financial structure

in € millions	2017	2018
Current assets	1,662.7	2,028.1
Non-current assets	977.4	1,190.4
Assets	**2,640.1**	**3,218.5**
Current liabilities	1,357.9	1,309.7
Non-current liabilities	415.6	569.2
Equity	866.6	1,339.6
Liabilities	**2,640.1**	**3,218.5**

Return on capital employed (ROCE)

in % of capital employed	2014	2015	2016	2017	2018
Group[1]	28.8	20.0	16.2	10.9	2.9
of which Robotics	53.1	56.6	51.7	56.4	40.6
of which Systems	67.9	87.9	42.8	6.3	–9.9
of which Swisslog	–	–14.5	1.5	3.0	–4.3

[1] incl. consolidation

Increase in working capital and capital employed due to business performance

The working capital increased during the financial year from €158.9 million at the start of the year to €293.2 million at year-end. This meant that in the financial year under review the current business operations had to be financed from the available liquidity of the Group as well as from customer prepayments and supplier liabilities. All divisions have, as was the case in the previous year, positive working capital (Robotics 2018: €209.2 million; 2017: €129.4 million; Systems 2018: €51.1 million; 2017: €18.0 million; Swisslog 2018: €49.9 million; 2017: €54.2 million).

Return on capital employed (ROCE)

Return on capital employed (ROCE) is an important indicator for KUKA Group. It describes how effectively and profitably a company uses capital employed.

The capital employed is calculated as the average of capital employed at the beginning and end of the financial year. On average, KUKA Group's capital employed in 2018 and 2017 amounted to €1,185.0 million and €950.4 million respectively. The ROCE declined from 10.9% in 2017 to 2.9% in 2018.

Regarded individually, the divisions show very different developments. The Robotics division generated a ROCE of 40.6% on average capital employed of €330.8 million (2017: €235.9 million). This represents, on the one hand, a decline on the previous year (2017: 56.4%), but, on the other hand, the best value of the divisions subject to reporting requirements. The negative effects on earnings in the Systems and Swisslog segments resulted in negative ROCE for both divisions. The Systems division achieved a ROCE of –9.9% (2017: 6.3%) on average capital employed of €331.5 million (2017: €281.9 million). With average capital employed of €383.5 million (2017: €346.8 million), the ROCE in the Swisslog division amounted to –4.3% and was thus below the 2017 figure of 3.0%.

Events after the balance sheet date

The events after the balance sheet date relate to both KUKA Group and KUKA Aktiengesellschaft. The customer centric organization (CCO) launched on January 1, 2018 was further improved. Central elements, such as the systematic customer centricity, were retained and transferred to the new KUKA Business Organization (KBO). This comprises five business segments – Systems, Robotics, Logistics Automation, Healthcare and China. Each business segment has a different focus in order to achieve targeted development of KUKA Group's market and competitive position. The customer remains the main focus in all cases. In addition, there will be greater entrepreneurial responsibility in the business segments.

As of January 3, 2019, Midea Group acquired a direct 50% stake in each of two Chinese companies of KUKA Group in the form of a cash contribution. On account of the control structure, the investment in the Chinese Swisslog Healthcare company will still be fully consolidated in KUKA Group, whereas the investment in the Chinese Swisslog Logistics company will be included at equity in KUKA Group's consolidated financial statements in the future. Overall, Midea Group invested a mid-double-digit million euro amount in these companies.

Notes to the annual financial statements of KUKA Aktiengesellschaft

KUKA Aktiengesellschaft acts as the management holding company within the Group with central management responsibilities such as accounting and controlling, finance, human resources, legal, IT and financial communications. The financial position is mainly determined by the activities of its subsidiaries. This is reflected in the direct allocation of the main companies of the Robotics, Systems and Swisslog divisions.

The annual financial statements of KUKA Aktiengesellschaft are prepared in accordance with the provisions of the German Commercial Code (HGB) and the German Stock Corporation Act (AktG).

The financial statements of KUKA Aktiengesellschaft are published in the electronic Federal Gazette (Bundesanzeiger) and on the KUKA Group website (www.kuka.com).

Income statement of KUKA Aktiengesellschaft (HGB)

in € millions	2017	2018
Sales revenues	99.4	128.6
Other company-produced and capitalized assets	0.4	1.4
Other operating income	36.2	52.4
Cost of materials	–54.7	–69.5
Personnel expense	–56.4	–61.5
Depreciation and amortization of tangible and intangible assets	–10.1	–14.8
Other operating expenses	–70.1	–59.2
Income from equity investments	20.9	86.7
Other interest and similar income	11.3	13.0
Depreciation of long-term investments	–9.0	–
Interest and similar expenses	–6.5	–10.4
Taxes on income	–0.1	–0.3
Net loss/net profit for the year	**–38.7**	**66.4**
Profit carryforward from the previous year	67.7	9.1
Transfer to retained earnings	–	–33.2
Balance sheet profit	**29.0**	**42.3**

KUKA Aktiengesellschaft balance sheet (HGB)

Assets in € millions	2017	2018
Fixed assets		
Intangible assets	30.5	34.9
Tangible assets	90.2	109.4
Financial investments	493.9	484.8
	614.6	**629.1**
Current assets		
Receivables from affiliated companies	481.3	557.6
Other receivables and assets	17.3	4.3
	498.6	**561.9**
Cash and cash equivalents	**7.8**	**5.6**
	506.4	**567.5**
Prepaid expenses	**1.7**	**2.6**
	1,122.7	**1,199.2**

Liabilities in € millions	2017	2018
Equity		
Subscribed capital	103.4	103.4
Capital reserve	305.8	305.8
Other retained earnings	254.3	287.4
Balance sheet profit	29.0	42.3
	692.5	**738.9**
Provisions		
Pension provisions	11.5	11.6
Provisions for taxes	7.0	7.6
Other provisions	31.5	34.8
	50.0	**54.0**
Liabilities		
Liabilities due to banks	269.1	255.1
Trade payables	18.5	6.5
Accounts payable to affiliated companies	88.7	128.4
Liabilities to provident funds	2.7	2.4
Other liabilities	1.2	13.9
	380.2	**406.3**
	1,122.7	**1,199.2**

Results of operations of KUKA Aktiengesellschaft

The income situation of KUKA Aktiengesellschaft significantly depends on the results of the (direct) subsidiaries, the financing activities and the expenditure and income relating to the holding function.

Sales revenues increased from €99.4 million in 2017 to €128.6 million in 2018. KUKA Aktiengesellschaft mainly generates its sales revenues from cost allocations and cost transfers to subsidiaries. They rose by 28.0% to €114.3 million in the past fiscal year (2017: €89.3 million). KUKA Aktiengesellschaft generated €14.2 million (2017: €10.0 million) by renting buildings to companies which belong to the Group. In line with sales revenues, the expenditure associated therewith, which is disclosed in the income statement as cost of materials and services purchased, also rose from €54.7 million in 2017 to €69.5 million in 2018.

Other operating income is mainly composed of currency translation gains, particularly relating to the US dollar, Swiss franc and the Brazilian real, and income from the disposal of financial assets (2018: €51.0 million; 2017: €33.9 million). In the previous year, the amortization of financial assets related to the complete impairment of the investment in KBee AG, Munich. Other operating expenses dropped from €70.1 million to €59.2 million. The currency exchange losses, which were one of the main cost drivers in the previous year, decreased from €35.3 million in 2017 to €17.6 million. Costs were increased by external services, which were related partly to a global IT project. The change to the KUKA Aktiengesellschaft Executive Board as of December 6, 2018 also had a negative impact on the other operating expenditure.

Personnel expenditure increased by 9.0% compared to the previous year to €61.5 million (2017: €56.4 million). The additional personnel expenditure resulted from the increased number of employees. The average number of employees rose to 624 in 2018 (2017: 512). The increase is due to the centralization of further activities such as marketing and corporate strategy. Personnel was additionally built up in the Facility Management area as planned.

The income from participations increased from €20.9 million to €86.7 million in 2018. Compared to the previous year, the expenditure resulting from loss assumptions for companies which have an existing profit and loss transfer agreement with KUKA Aktiengesellschaft decreased while the income from equity investments rose.

The interest result declined by €2.2 million to €2.6 million (2017: €4.8 million). Both the interest income and interest expenditure rose in the 2018 fiscal year. Compared to 2017, more expenditure was recorded for bank loans and interest expenditure to financial institutions than was the case in the previous year. This is countered by higher interest income. The interest result with affiliated companies increased from €10.7 million in the previous year to €11.3 million.

The income taxes disclosed include €2.8 million for tax refunds from the previous year and €3.1 million for non-creditable foreign withholding taxes.

The net income of KUKA Aktiengesellschaft amounted to €66.4 million in the 2018 fiscal year (2017: net loss of €38.7 million). Taking into account the profit carried forward from the previous year of €9.1 million and the transfer to revenue reserves of €33.2 million, this results in a balance sheet profit of €42.3 million.

Financial position of KUKA Aktiengesellschaft

One of KUKA Aktiengesellschaft's most important tasks is to provide funds and guarantees for its subsidiaries' current operations. The resources used for external finance such as the promissory note loan and the syndicated loan agreement, including the changes made to it after the balance sheet date, are described in detail in the section on the financial position of KUKA Group.

KUKA Aktiengesellschaft's financing role is reflected in its receivables from and liabilities to affiliated companies, which are predominantly the result of cash pooling accounts with subsidiaries and loans provided. On balance, this results in a receivable of €429.2 million (2017: €392.6 million), which is attributable to increased financing requirements of the subsidiaries, resulting mainly from investments and working capital financing in the Systems division.

Overall, the liquid assets of KUKA Aktiengesellschaft decreased from €7.8 million to €5.6 million. The financial liabilities declined by €14.0 million to €255.1 million compared to the previous year (2017: €269.1 million) and consist almost exclusively of the promissory note loan.

Net assets of KUKA Aktiengesellschaft

The net assets of KUKA Aktiengesellschaft are impacted by the management of its equity investments as well as the way in which it executes its management function for the companies in KUKA Group. For information on receivables from and liabilities to affiliated companies and financial items, please refer to the information on KUKA Aktiengesellschaft's financial position.

The depreciation and amortization of intangible assets and tangible assets increased from €10.1 million in 2017 to €14.8 million in 2018. This is due to the increased investment volume in both intangible and tangible assets. Investments of €38.0 million (2017: €22.8 million) were made in the fiscal year. Investments during the fiscal year were mainly concentrated on IT-based projects started in previous years to harmonize, standardize and optimize processes as well as on the construction work at the Augsburg plant. The additional car park was completed in the middle of the fiscal year; construction of the new production building is still ongoing.

KUKA Aktiengesellschaft's direct equity investments in its subsidiaries are reported under financial assets. The carrying amounts on the balance sheet decreased from €493.9 million to €484.8 million compared to the previous year, this being due to the sale of connyun GmbH, Karlsruhe.

Other assets declined to €4.3 million in 2018 (2017: €17.3 million), which is attributable to the significantly lower income tax receivables.

The changes in equity reflect the earnings for the fiscal year. Additionally, the dividend of €19.9 million for the 2017 fiscal year was paid out in the 2018 fiscal year. The equity ratio of KUKA Aktiengesellschaft amounted to 61.6% as at the balance sheet date, December 31, 2018 – a slight reduction on the previous year (2017: 61.7%).

Other provisions amounted to €34.8 million as at December 31, 2018 (2017: €31.5 million) and are thus above the level of the previous year.

Other liabilities increased from €1.2 million in 2017 to €13.9 million in 2018 on account of tax liabilities.

The balance sheet total of KUKA Aktiengesellschaft amounted to €1,199.2 million as at December 31, 2018, which represents an increase of 6.8% on the previous year (2017: €1,122.7 million).

Dependency report

The Executive Board has prepared a report on relationships with affiliated companies in the period under review pursuant to section 312 of the German Stock Corporation Act (AktG), concluding with the following declaration:

"We declare that for each legal transaction in relation to the legal transactions and measures listed in the report on relationships with affiliated companies, the company received appropriate compensation according to the circumstances known to us at the time the legal transaction was performed or the measure was taken and was not put at a disadvantage as a result of the measure being taken. There were no omitted measures."

Non-financial key performance indicators

Sustainability at KUKA

At KUKA, sustainability is embedded in the corporate culture and stands for responsible business practices aimed at protecting the environment, our employees, customers, investors and our social environment.

In order to align its own strategy with this, KUKA has identified the following topics to be addressed within a materiality analysis:

- Digitization/automation
- Training and further education
- Product safety
- Leadership and values
- Diversity
- Employment
- Procurement
- Anti-corruption and fair competition
- Human rights
- Sustainable/efficient products
- Occupational health and safety
- Resource-saving production
- Social engagement

These key topics are addressed in detail in the Sustainability Report for the 2018 fiscal year.

Resource-saving production and environmental protection

KUKA products and systems stand for innovation and quality. We therefore set the bar very high when it comes to our own production processes. KUKA also contributes to environmental protection by minimizing the use of raw materials and the level of pollution generated. KUKA has taken extensive measures to minimize its environmental impact. Most of our production locations work according to internationally recognized management standards in the areas of quality (ISO 9001), environment (ISO 14001), energy (ISO 50001) and other industry-specific regulations. The publicly accessible "KUKA guidelines for health, safety, sustainability and quality" are applicable not only throughout the Group but also for our suppliers. Since 2017, KUKA has additionally been working on the implementation of an integrated management system that facilitates cross-location environmental management. In 2018, the main focus was on the sites in Germany and the Czech Republic.

Reducing energy consumption

Energy savings can be achieved first and foremost in the production of robots. KUKA has production locations in Germany, Hungary and China. At the production sites in Germany, KUKA analyzes the consumption of electric power with the aid of a software tool. Detailed analyses – for example of the paint shop, individual assembly areas or production machine units – help us to initiate needs-based improvements. In Augsburg, for example, data are collected using meter installations with more than 550 measurement points, the number of which is continuously being increased. Other environmentally friendly and energy-saving influences that have an impact on the purchase of new components are also evaluated at all sites.

Our global, strategic energy and environmental objectives are:

- Lowering of energy consumption
- Lowering of CO_2 emissions
- Reduction of waste
- Research and development of sustainable products and technologies

Focus on emissions and water usage

By using certified environmental management systems, KUKA can ensure that the impact of energy consumption and production processes on the environment is as low as possible. KUKA also considers the development of emissions and the volume of waste and effluents to be components of the environmental management system, even if they are less significant than energy consumption. Production waste is separated and disposed of or recycled expertly by trained personnel.

At KUKA, water is only used to a limited extent in the paint shop and in cooling processes. At our largest production locations, the total water consumption in 2018 amounted to 112,872 m^3 (2017: 104,360 m^3).

CO_2 emissions at our largest production locations totaled 35,353 tonnes in 2018 (2017: 35,209 tonnes).

Energy-efficient solutions in systems engineering

KUKA offers its customers intelligent, energy-efficient solutions. These include tailored complete solutions for automating the manufacturing processes of systems, covering all activities from planning and design through to the implementation of automated production systems. In this connection, KUKA can offer its customers alternative, energy-efficient solutions.

In addition, Swisslog has created its own energy efficiency label called GreenLog, which provides information on potential savings. Examples of energy-efficient system components at Swisslog are the VECTURA pallet crane and the ProMove pallet conveyor system. VECTURA is equipped with an energy recovery system, in which horizontal movement of the crane generates power for lifting. Energy is also fed back into the storage system during braking procedures. With ProMove, the use of frequency inverters for controlling the motors enhances energy efficiency, reduces wear on parts, increases the service life and lowers maintenance requirements.

Contribution to the circular economy – recycling and retooling

We offer our customers a retooling service for older robots. Robots that are no longer in use are taken back by KUKA and refurbished. These are sold again as used machines in many cases. Where this is not possible, KUKA offers disposal services or recycling for used robots. Together with its customers, KUKA thus strives to achieve a closed-loop materials cycle.

Corporate social responsibility

KUKA employees in Augsburg founded Orange Care e. V., a non-profit association which supports people in need, especially in terms of helping young people and families. Orange Care has also sponsored a children's daycare center since 2014 with the goal of improving the work-life balance for our employees. In 2018, for example, Orange Care supported the KlinikClowns e. V. of the pediatric ward at the Josefinum Hospital in Augsburg. The two clowns visit the children's ward once a week and make everyday life in the hospital easier for the children through play and fun. Orange Care also donated to the Regens Wagner Foundation in Holzhausen. The foundation offers people with disabilities broad support for school, training, employment and daycare. With its donation, Orange Care helped severely handicapped people to learn a musical instrument. Orange Care also provided financial support to "Verein Kinderweihnachtswunsch" (Christmas wish association for children), through which it was able to fulfill several Christmas group wishes for children and young people in social institutions. This included tickets to the movies and zoo as well as for leisure facilities in the surrounding area. The family of a deceased colleague was also supported in a hardship situation.

In Augsburg, KUKA works with the Ulrichswerkstätten of the social enterprise CAB Caritas Augsburger Betriebsträger GmbH. The Ulrichswerkstätten find jobs for people who are unable to find employment in the general labor market due to the nature or severity of their disability.

KUKA employees worldwide take on responsibility in the community and support social causes. Employees in the USA, for example, are involved in the KUKA Cares Foundation, which was established by KUKA Systems and partner companies. One of the core missions of the foundation is to support people in distress and families in need, for example in terms of health, their financial situation or educational projects.

Bringing robotics and automation closer to the public

European Robotics Week was initiated by the European robotics association euRobotics and takes place every year in November. In November 2018, KUKA took part in European Robotics Week (ERW) for the eighth time with the central event happening in Augsburg. During this week of events, KUKA employees have the opportunity to get involved in raising awareness of robotics and automation in the general public. Another aim is to arouse the interest of young people in technology and scientific subjects. Children's lectures on robotics were offered in schools and kindergartens in the year under review along with presentations on the topic of "Humans and Robots". There were also opportunities to attend presentations and take part in guided tours of the production department or the "SmartFactory as a Service", a joint project run by KUKA, MHP and Munich Re.

Focus on occupational health and safety

Occupational health and safety are an essential requirement for ensuring that business operations run smoothly in manufacturing companies like KUKA. Appropriate management systems and the general awareness of occupational health and safety serve to protect the health of employees. Occupational health and safety is therefore firmly embedded in management systems and supported in some cases by external certifications at the major locations of KUKA Group.

The awareness of employees was also enhanced by means of specific campaigns. For example, a campaign on preventing accidents on the way to work, with particular focus on cycling, was held at the Augsburg location. The campaign "Für deine Sicherheit – Gib acht – FahrRad" (pay attention to your safety when cycling) raised employees' awareness on how best to avoid frequent causes of accidents. Training courses on occupational health and safety are also carried out on an annual basis at key sites in China, not to mention additional induction courses for new employees and campaigns such as safety and fire protection months.

Employees

Employees in KUKA Group

As a global supplier of intelligent automation solutions, KUKA has grown considerably in recent years, not only on a global basis but also at our home location in Augsburg. Our employees are the pillars of our success. KUKA therefore places great importance on further improving its appeal as an employer. This includes a pleasant working environment, promoting diversity, high-quality vocational training and a wide range of further education and training courses. As a global solutions provider, KUKA is working on new concepts in order to further enhance the in-house working environment.

Stable headcount

In the year under review, KUKA Group employed 14,235 people. The headcount was thus slightly lower than in the previous year (2017: 14,256). From a regional perspective, Asia recorded a slight increase. The Robotics division expanded its workforce by 7.8% to 5,399 employees (2017: 5,010). The headcount at Swisslog rose by 5.9% to 3,075 (2017: 2,904). In contrast, the workforce in the Systems division decreased by 11.9% to 4,811 (2017: 5,459).

High standard of training and further education

In 2018, KUKA trained a total of around 200 apprentices and dual degree students in Germany. In addition to providing apprentices with technical expertise throughout their vocational training, KUKA also affords them an intercultural learning environment and the opportunity to think and act globally on a Group-wide scale. KUKA maintains a high standard in the quality of training and the level of performance. This is why KUKA apprentice graduates finish best in class in their respective training occupation time and again. Professional training is offered at the German sites in Augsburg, Obernburg and Bremen. The Group offers apprenticeships ranging from technical professions such as industrial mechanic, lathe/milling machine operator, mechatronics technician, electronics technician for automation technology, warehouse logistics specialist and specialist for trucking and logistics services to the commercial sector with occupations such as industrial clerk, IT specialist and technical product designer.

In addition to the traditional apprenticeships, KUKA offers a dual, training-integrated degree course at the Augsburg University of Applied Sciences with the aim of attaining a Bachelor's degree. In addition to the dual integrated study course for mechanical engineering, mechatronics and electrical engineering, the disciplines of business administration, information technology, technical information systems and business information systems are also available to choose from.

As part of our continuing education programs at the KUKA Academy, KUKA accompanies and supports its employees in their personal and professional development. At the KUKA Academy, KUKA offers all its employees an extensive and varied range of technical/methodical and personal further education courses. These include standard courses, such as computer and language courses, specific professional courses from the fields of sales, purchasing, business administration, strategic implementation and project management, along with seminars for leadership, communication and change management.

Diversity and tolerance are the order of the day

At KUKA, diversity involves promoting and benefiting from the diversity of our employees as a source of creativity, innovation and business success. Embracing and promoting diversity is part of the corporate culture at KUKA. Taking this approach allows KUKA to benefit from the wealth of experience and talent on offer. At many of its sites KUKA offers its employees flexible working time models to allow for greater reconciliation of their working and private lives. Accepting and promoting diversity to benefit from different experiences and talents is part of the corporate culture at KUKA.

Our aim is to create a working environment that is free of prejudice and characterized by acceptance and tolerance. All employees should be valued – regardless of their origin, religious affiliation, age or gender. At the end of 2017, KUKA signed the "Charta der Vielfalt" (diversity charter) in Germany, making a clear commitment to diversity.

Promoting networks

KUKA supports the internal women's network orangeWIN, which helps to identify and promote female talent. KUKA has also been involved in the Augsburg cross-mentoring program since 2011, which is committed to gender equality at work, and is engaged in MigraNet, which aims to achieve the professional integration of people with a migrant background.

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 risks, especially technical ones. 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 divisions, 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 divisions. 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. These plenums also assess the plausibility of the reported risks and determine how to avoid similar risks in future. The risk report is also reviewed during Executive and Supervisory Board meetings, especially by the Audit Committee.

The managers of the divisions and subsidiaries are directly responsible for the early identification, control and communication of 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 in line with the size of the company. Internal ad hoc announcements are mandatory whenever risks exceed the Group's defined reporting thresholds. The standard risk management procedures applied throughout the Group are efficient and effective. The head of risk management coordinates the risk management system. He compiles the individual risks identified into the aforementioned top 10 risk overviews or risk exposure overviews and communicates and monitors them. This role is based within KUKA Aktiengesellschaft's Group 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 55 et seq.) 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 opportunities 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.

In order to reduce the complexity of the presentation in the annual reports of previous years and also to increase transparency, the aggregated expected risk values are given for all risks managed and quantified in the Group. Below you will find a quantification of 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.

Risk management organization

Group risk exposure

in € millions	2017	2018
Legal risks	11.0	10.7
Economic risks	1.6	–0.7
Financial risks	15.6	13.0
Total for the Group	**28.2**	**23.0**

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

Operational risks and opportunities in the divisions

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 operative 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.

Particularly in the second half of 2018, KUKA felt the effects of weakened investment activities in both the automotive industry and the general machinery and systems engineering sector. A deviation from the planning and thus also a correction of the earnings targets were primarily caused by an economic slowdown in the key automotive and electronics industries, weak growth in the important Chinese market, and challenges in project business. 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 digitization strategy has been continuously implemented by means of 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 rises 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 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 electronics. One of the company's key strategic thrusts is to penetrate new, non-automotive markets. The company's profitability should become less and less dependent on exchange-rate fluctuations as it increasingly spreads its value added across different local currencies.

Robotics risk exposure

in € millions	2017	2018
Legal risks	0.0	0.3
Economic risks	0.0	0.0
Financial risks	0.0	0.0
Total for Robotics	**0.0**	**0.3**

The balance of risks is neutral in most cases (the expected risk value for economic and financial risks is thus 0).

KUKA Systems

This division's sales 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. There were capacity bottlenecks and delays with several projects in Europe in 2018, which resulted in considerable additional costs. Significantly more external resources had to be obtained than planned to address the bottlenecks and make up for the delays. These effects have been taken into account in the amended project calculation and are already included in earnings for 2018 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 harmonizing its global IT systems and 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. 2018 saw investment in the infrastructure of the location in order to recommence production in 2019 for a new vehicle. Here risks involve greater dependence on the volumes produced for the car market.

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 mitigating risks.

Systems risk exposure

in € millions	2017	2018
Legal risks	0.2	0.3
Economic risks	1.1	−0.2
Financial risks	0.0	0.0
Total for Systems	**1.3**	**0.1**

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

Swisslog

The division is subject to long-term investment cycles spread over various industries, such as hospitals, pharmaceuticals, food and e-commerce. The competition and the associated pressure on prices vary from one region to another. High investments in its own products to expand its range of solutions serve to strengthen the company's competitive position considerably. The Swisslog segment broadens KUKA's product portfolio 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.

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.

Swisslog risk exposure

in € millions	2017	2018
Legal risks	−0.7	0.0
Economic risks	0.5	−0.5
Financial risks	0.0	3.4
Total for Swisslog	**−0.2**	**2.9**

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, personnel and IT, not 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.

KUKA AG risk exposure

in € millions	2017	2018
Legal risks	11.5	10.1
Economic risks	0.0	0.0
Financial risks	15.6	9.6
Total for the Group	**27.1**	**19.7**

Strategic risks and opportunities

KUKA's business divisions 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.

Residual 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.

The two rating agencies Moody's and Standard & Poor's still rated KUKA Group as investment grade Baa3/BBB–. This rating level guarantees access to a broad investor base as a source of finance while also supporting the Group companies in their negotiations with customers, suppliers and service providers. On the basis of an analysis of the market situation, KUKA decided at the end of 2018 that the desired positive support can be achieved even if only one rating is maintained. For this reason, talks were initiated with Moody's with the aim of terminating their rating support. Consequently, Moody's withdrew KUKA's rating in January 2019.

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 and a syndicated loan extended and amended again at the start of 2018 with a term until 2024 and a remaining extension option for a further year. 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 the 2018 fiscal year. As at December 31, 2018, both covenants were well within the contractually defined limits. Beyond these financing agreements, additional financing options are available to KUKA within a factoring program. The ABS program that was still active as at December 31, 2018, expired at the end of January 2019. Please refer to the notes to the annual financial statements, "Financial liabilities/Financing", page 99 et seq., for comprehensive details of the promissory note loans and syndicated loan as well as the extent to which the agreed credit lines have been utilized.

KUKA hedges the risks from operations, especially currency risks, and risks from financial transactions with financial derivatives. Transactions in financial derivatives are only entered into for hedging purposes, i.e. solely 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 101.

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 continuously 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 digitization 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. Strategic projects, transactions and capital market measures could suffer as a consequence.

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

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 2018 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 makes use of buildings and properties for its business operations, some of which it owns. 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 risk improvement measures are adopted.

Please refer to page 59 for information about material agreements subject to conditions related to a change of control.

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. 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.

Forecast

General economic environment

The International Monetary Fund (IMF) expects slower overall growth of the global economy and lowered its forecast for 2018. According to the latest estimates, the global economy will grow by 3.7% in 2018, i.e. 0.2 percentage points lower than previously assumed. Reasons for this are US trade policy and the record levels of debt in private and public budgets. Added to this are the uncertainties in connection with Brexit and the weakened emerging economies, which could encounter difficulties as US interest rates rise. The IMF expects growth of only 3.7% for 2019 too. Until now, the forecast was for 3.9%.

Due to the prevailing economic conditions, economic growth in the eurozone is also anticipated to be lower. According to the latest forecasts, the eurozone will grow by 2.0% in 2018, thus 0.2 percentage points lower than forecast at the start of the year. The IMF expects growth of 1.9% for 2019.

For Germany too, the IMF has lowered its forecasts for 2018 and 2019. Instead of the previous forecasts of 2.2% for 2018 and 2.1% for 2019, growth is now only expected to be 1.9%. The reason for the decline is stated as the higher trade barriers, which have a negative impact on exports and further weaken industrial production. Another major risk for the German economy is the fear of an unregulated Brexit.

For the US economy, growth of 2.9% is forecast for 2018. The IMF expects growth to slow to 2.5% in 2019. Economic policy and the trade dispute with China are seen as the main causes of the decline.

In China too, the mood in domestic industry has further deteriorated. The Purchasing Managers' Index (PMI) dropped from 50 points to 49.4 in December 2018. It was the first time in two years that the value has fallen below the 50-point mark. Economists consider the reasons for this to be generally weaker economic activity and the trade dispute between the USA and China. The IMF expects growth of 6.6% for 2018. Due to the trade dispute, the IMF has lowered its forecast for 2019 from 6.4% to 6.2%.

IMF expectations for the most significant global markets from KUKA's viewpoint:

Economic growth

in %	2017	2018	2019
Germany	2.5	1.9	1.9
Eurozone	2.4	2.0	1.9
USA	2.2	2.9	2.5
China	6.9	6.6	6.2
Developing/emerging economies	4.7	4.7	4.7
World	3.7	3.7	3.7

Source: IMF, October 2018

Robotics and automation

The forecast for growth in robotic automation is high around the globe, even if it is down slightly on previous forecasts. The International Federation of Robotics (IFR) is expecting a worldwide growth rate of 10% in 2018 for all robot types. The previous forecast was 14%. According to the latest estimates, the Asian market will only grow by 14% instead of 19% as had been assumed until now. For Europe, growth of 7% is forecast instead of the 16% forecast previously. Development in the market for articulated robots which is relevant to KUKA has been even poorer than was assumed by the IFR at the start of the year. Contrary to the trend at the time, the market for articulated robots in Asia actually fell by 2% year-on-year in the first half of 2018.

Technological developments will have a positive effect. They are the driver of new robot applications and markets. Examples include human-machine collaboration, intelligent IIoT solutions with cloud-based systems and easy-to-use applications. Further growth potential is generated by the challenges involved in meeting climate protection targets. For example, new car models with low or zero emissions will offer growth potential in the automotive industry.

Growth opportunities for KUKA

China

The Chinese market is by far the largest market in the world. With an average annual growth rate between 2019 and 2021 of 21%, China is one of the fastest-growing markets. According to the IFR, the annual sales figure of 57,100 in 2014 increased to a new record high of 138,000 units in 2017.

Although the robot market in China grew more slowly in 2018 than originally forecast by the IFR, the demand for automation solutions remains high. Robot density (number of robots per 10,000 employees), and thus the degree of automation, is still significantly lower than in industrialized nations. According to the IFR, robot density in China is 97. By comparison, the robot density in Germany is 322. There is high growth potential in both the automotive sector and general industry.

The main reason for the high growth rates in China is the demographic development, which poses new challenges for the country. The percentage of the working population is stagnating, while wages are rising. Automation solutions can help to absorb the increasing cost pressure and to meet the growing quality requirements for the products. The Chinese government is therefore pushing ahead with the automation of its industry. The modernization plan "Made in China 2025" was launched with the aim of improving the international competitiveness of Chinese industry.

Due to its high growth potential, the Chinese robot and automation market is a core element of KUKA's growth strategy. For this reason, KUKA concentrated on expanding its local market presence in 2018. The production capacity of the robot assembly facility in Greater Shanghai was doubled in 2018. Furthermore, KUKA has founded joint ventures together with Midea with the goal of growing even faster in the Chinese market. In 2018, the Robotics joint venture concentrated on the construction of a new robot production site at the Technology Park in Shunde. The first robots will be produced there in 2019. The planned capacity by 2024 is 75,000 robots.

General industry

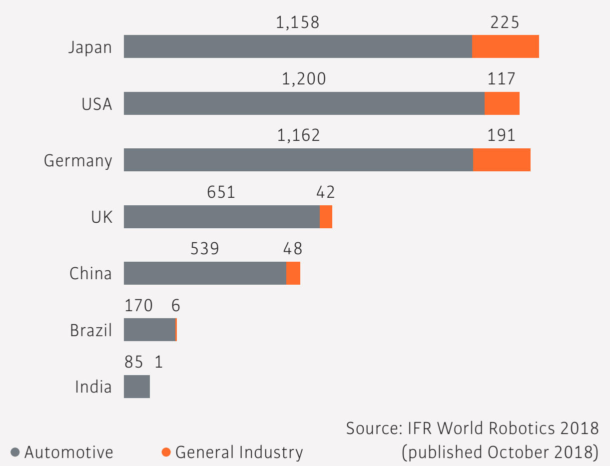
The robot density in general industry is still relatively low. Even in industrial nations, the potential is great due to necessary modernization measures and retooling of existing production facilities. According to the IFR, there is particular growth potential in the electronics industry (computers, communications and consumer goods), especially in Asia. Moreover, high demand is also forecast for the logistics/e-commerce, machine tools and food industries.

This is partly due to the challenges facing manufacturing companies in general industry. These include the ever shortening product life cycles, the desire of consumers for customized products, increasing competitive pressure and the efforts required to further reduce emissions. The automation of production processes can assist in overcoming these challenges. This is why the sales potential in the automation sector is high. In general, increasing global consumption will necessitate the expansion of production capacities and thus have a positive effect on the growth of general industry.

Digitization will play an increasingly important role in enabling companies to produce flexibly. The right technologies are required here, such as human-robot collaboration, cloud technologies, ready-to-use and plug-and-play applications, and mobility. Companies can make their production more efficient and flexible with the digital factory.

KUKA is therefore expecting the demand for automation solutions in general industry to be considerably higher over the next few years and is pursuing the strategy of further expanding its market shares in this segment.

Robot density in automotive and general industry
Robots per 10,000 employees



Automotive

The automotive industry is one of KUKA's focus markets. According to the IFR, this industry, with a 33% share of the overall market, remains the largest customer for industrial robots in 2017. The compound annual growth rate (CAGR) of robot sales to the automotive industry between 2012 and 2017 was 14%. Automotive manufacturers have already been automating their plants since the 1970s. Today, they are at the forefront of technology with their innovative solutions and high degree of automation. Investments by the automotive industry have increased since 2010, serving to further expand production capacities and to modernize existing plants.

Despite the high robot density in the automotive industry, continued high demand is expected. This is because current market conditions demand suitable and competitive production solutions. To meet these requirements, KUKA has developed matrix production, a versatile and flexible production solution. Faced with increasing type variety, frequent changes of model and quantity fluctuations, the production system can be converted extremely quickly as required. The system is equipped with software based on artificial intelligence. Quickly adaptable production cells are thus replacing rigid systems, where conversion can take many weeks or even months. In fiercely competitive markets, flexible systems can boost the competitiveness of our customers.

Growth potential in the automotive industry is also expected for applications involving human-robot collaboration. This allows robots to work together with people directly and safely and to support them flexibly in their tasks.

Digital transformation and Industrie 4.0

Megatrends such as digital transformation, customization, aging society and manufacturing with a minimized impact on resources will affect all branches of industry. Companies will therefore have to change. The focus is increasingly on intelligent technologies and innovative solutions. With the aid of Industrie 4.0, production equipment and components are becoming networked, giving rise to intelligent factories. These smart factories are versatile, flexible and efficient in terms of resources. In this way, the advantages of series production, such as low unit costs, can be combined with high-quality one-off production. As an automation company, KUKA is actively shaping the transformation of industrial production and is playing a central role in the practical implementation of Industrie 4.0.

The production of the future involves increasingly complex requirements. With Industrie 4.0 technologies, data can be collected from production processes and analyzed, thereby enabling efficiency improvements. However, digitization is more than just an instrument for increasing efficiency. Companies can use big data to open up new business segments and business models. Trends can be recognized at an early stage, products can be optimized according to customer requirements and new service models can be created. The digital representation of products, processes and production systems can be used to explore options and to enhance them until a decision can be made. In this way, resources are managed efficiently and the automated, resource-optimized processing of customer and production orders is prepared and initiated.

Furthermore, artificial intelligence helps with using the collected data effectively and thus enables flexible and individual production. For this, vast quantities of data from the production process are required. Networked machines and robots forward their data to a software or cloud application, for example. From the data volume, AI algorithms identify specific patterns and anomalies. General information about the production process is obtained in this way, for example information about day-to-day manufacturing sequences and forthcoming maintenance work. This predictive maintenance makes it possible to detect impending malfunctions in advance and thus prevent them from occurring in the first place. AI is thus expanding the potential of automation.

In order to be able to continue growing profitably in the future, KUKA has further expanded its expertise in the fields of digital transformation and Industrie 4.0. For example, together with MHP and Munich Re, KUKA developed the "SmartFactory as a Service", a model factory in which customers can plan their digital factory. In this model, the customer is no longer necessarily the operator of his own production facility, but can commission this service and insure it against loss of production.

Summary

Given the current economic forecasts and general conditions and taking into consideration the existing risk and opportunity potential, KUKA anticipates a slight increase in demand in the 2019 financial year. Growth is expected primarily in Asia, and there especially in China. A slightly positive development is anticipated in Europe and the Americas. From a sector perspective, KUKA expects an increase on the previous year for the sales markets in general industry. Demand in the automotive industry is expected to remain stable. Uncertainties are due primarily to current political and global economic developments. This also affects the world's largest robotics markets, such as the automotive and electronics industries, where we shall keep a close eye on developments.

KUKA is active in various currency areas around the world. Its key financial indicators are thus exposed to the effects of exchange rate fluctuations (transaction and translation risks). The US market, for example, contributes approximately one third of worldwide Group revenues and is therefore one of the most important regions. These US revenues are predominantly generated in US dollars. A US dollar that is strong against the euro thus has a positive effect on the key financial indicators of KUKA Group. A weaker US dollar, on the other hand, would have negative impacts. The handling of interest rate and currency risks in KUKA Group is described in detail in the opportunity and risk report from page 46 onwards and in the notes from page 101 onwards.

Anticipated business development at KUKA

Summary	2018 result	2019 outlook
Sales revenues	3,242.1	~ €3.3 billion
EBIT margin	3.0% [1]	~ 3.5%
Net income for the year	16.6	rising
Investments [2]	295.4	below prior-year level
Free cash flow	–213.7	significantly above prior-year level
Dividend per share	0.40 [3]	at prior-year level

1 Before purchase price allocations, growth investments and reorganization expenditure

2 Before financial investments

3 For details, please refer to the report of the Supervisory Board.

Definitions:
rising/declining: absolute change compared to prior year >10%

Sales revenues and EBIT margin

On the basis of the current general conditions and exchange rates, KUKA is expecting a slight increase in sales revenues to around €3.3 billion for the full year 2019. Given the current economic environment and anticipated business development, KUKA Group expects to achieve an EBIT margin of around 3.5%.

KUKA AG acts as the Group's management holding company with central management responsibilities. The income situation of KUKA AG depends on the results of subsidiaries, its financing activities and the expenditure and income relating to the holding function. This includes, for example, income from the rental of buildings to the KUKA companies at the Augsburg location. A forecast for revenues and the EBIT margin is specified exclusively at Group level due to the purely holding function of KUKA AG.

Net income for the year (in forecast)

In the 2018 fiscal year, KUKA Group generated net income for the year of €16.6 million. The planned increase in revenues and the cost reductions in connection with the efficiency program should have a positive effect on the net income for 2019. KUKA thus expects an increase in the net income at Group level for 2019. KUKA Aktiengesellschaft too is anticipating a slight improvement in earnings compared with the previous year, depending on the distribution of profits within the Group.

KUKA AG's result in the separate financial statements depends primarily on the profit transfers of the German subsidiaries and on dividends from the subsidiaries.

Research and development/investments

With the aim of securing the long-term success of the company, KUKA is investing in the expansion of its locations worldwide and in innovative products and solutions. The expenditure for research and development in 2019 primarily focuses on software solutions and on the enhancement of existing products in terms of performance, costs and customer benefits. KUKA is also investing in digitization/Industrie 4.0, mobility and cobots. KUKA plans to invest 5% of the expected revenue volume (about €150 million to €180 million) in research and development in 2019 (2018: €151.9 million).

Free cash flow

KUKA Group's free cash flow is primarily generated from operating profits and the development of working capital. Based on the current general conditions, the planned sales growth and scheduled investments, KUKA Group expects a considerably improved free cash flow in 2019 compared with the previous year.

Dividend

The Executive and Supervisory Boards will recommend to shareholders at the Annual General Meeting on May 29, 2019 that a dividend of €0.40 per share be paid for 2018.[1]

For the 2019 fiscal year, KUKA plans to maintain its dividend, allowing for the general conditions at the time.

[1] For details, please refer to the report of the Supervisory Board.

Internal control and risk management system

Basic principles

Pursuant to section 289 para. 4 and section 315 para. 4 of the German Commercial Code (HGB), KUKA Aktiengesellschaft, as a publicly traded parent company, must describe within the Management Report the key characteristics of its internal control and risk management system with regard to the accounting process. The description must include the accounting processes of the companies included in the consolidated financial statements.

The risk management system comprises all organizational rules and measures related to identifying risk and dealing with entrepreneurial risk (see the Opportunity and Risk Report on page 46 et seq.). The internal control system is an integral part of the risk management system.

The internal control system (ICS) comprises all principles, processes and measures introduced to the company by management that result in systematic and transparent risk management. The internal control system focuses on organizational implementation of management decisions made to ensure the effectiveness and efficiency of business operations (including the preservation of assets, which includes preventing and exposing asset misappropriation), adherence to generally accepted accounting principles and the reliability of internal and external accounting and compliance with the legal provisions relevant to the company.

The objective of the ICS is to obtain sufficient certainty using the implemented controls and to be able to monitor and manage risks to ensure that the company's goals can be achieved. Various monitoring measures – both integrated into and independent of the processes – contribute to the preparation of annual and consolidated financial statements that are in conformity with the legal provisions.

Regardless of its specific form, an ICS is unable to provide absolute certainty as to whether it will achieve its objectives. Taking this into account, the accounting-related ICS can only provide relative certainty rather than absolute certainty that material misstatements in accounting will be avoided or detected.

Structures and processes

With regard to the accounting process, the structures and processes described below have been implemented in KUKA Group. The Executive Board of KUKA Aktiengesellschaft bears full responsibility for the scope and design of the ICS.

The system extends via clearly defined management and reporting structures to all subsidiaries that are included in the consolidated financial statements.

For the Group's German companies, the Shared Service Center of KUKA Aktiengesellschaft is responsible at a central level for accounting and human resource operations.

Intra-group tasks such as treasury, legal services and taxes are also largely performed centrally by KUKA Aktiengesellschaft on the basis of uniform Group processes.

The principles, organizational structures and processes of the (Group) accounting-related internal control and risk management system are defined in guidelines and organizational procedures. Adjustments based on external and internal developments are integrated on a continuous basis and made available to all employees concerned.

Characteristics of the internal control and risk management system

With respect to the accounting process, we regard those characteristics of the internal control and risk management system as material that can significantly impact the accounting and the overall presentation of the consolidated and annual financial statements, including the combined Management Report. At KUKA Group, these include, in particular:

- Identifying the main areas of risk (see the Opportunity and Risk Report on page 46 et seq.) and control that affect the (Group) accounting process;
- Quality controls to monitor the (Group) accounting process and the accounting results at the level of the Group Executive Board, the management companies and individual reporting entities included in the consolidated financial statements;
- Preventive control measures in the finance and accounting systems of the Group and the companies included in the consolidated financial statements as well as in operational performance-related processes that generate key information for the preparation of the consolidated and annual financial statements and the combined Management Report, including a separation of functions of predefined approval processes in relevant areas;
- Process-integrated monitoring measures such as the principle of dual control for which each material business transaction must be signed or otherwise approved by at least two authorized persons;
- Measures to ensure proper, IT-supported processing of (Group) accounting-related facts and data. These include, for example, central management of access rights to the bookkeeping systems and automated plausibility checks when data are recorded in the reporting and consolidation system;
- Implementation of the control requirements to be met by the accounting-related ICS is defined and monitored by the central Group ICS department, which remains independent of the processes. By means of a defined procedure, the internal controls are documented by the responsible departments and then examined by independent parties – normally the Group ICS department – for functional capability and effectiveness. Any weak points in the control system are targeted through action plans, whose implementation is monitored. Significant control weaknesses and the implementation of action plans are reported to the Executive and Supervisory Boards.

Internal Audit constitutes an additional control entity that is independent of processes and regularly reviews the organizational structures, processes and orderliness in addition to the defined ICS requirements, thus contributing to compliance with the ICS and risk management system.

In addition, the CFOs of all subsidiaries must provide an internal responsibility statement in the context of external reporting every quarter, confirming that the data reported are correct. Only then do the members of the Executive Board of KUKA Aktiengesellschaft issue and sign a responsibility statement at year-end, by which they confirm that they have adhered to the prescribed accounting standards of KUKA Group and that their figures give a true and fair view of the Group's financial performance, financial position and cash flows.

The elements of the ICS relevant for financial reporting are evaluated by an auditor to determine their effectiveness as part of a risk-oriented audit approach.

In its meetings, the Audit Committee of the Supervisory Board regularly reviews the effectiveness of the accounting-related internal control system. The Supervisory Board therefore continuously obtains an appropriate view of the Group's risk situation and monitors ICS effectiveness. In so doing, the Executive Board of KUKA Aktiengesellschaft presents the risks associated with financial reporting at least once per year, outlines the control measures implemented, and monitors their correct execution.

Summary

The structures, processes and characteristics of the internal control and risk management system that have been depicted ensure that the accounting processes of KUKA Aktiengesellschaft and KUKA Group are uniform and are implemented in accordance with the legal requirements, generally accepted accounting principles, international accounting standards and internal Group guidelines.

They also ensure that transactions are recognized and measured uniformly and accurately throughout the Group and that accurate and reliable information is therefore provided to the internal and external recipients of the information reported.

Disclosures in accordance with section 289a para. 1 and section 315a para. 1 of the German Commercial Code (HGB) including accompanying explanations

The disclosures in accordance with takeover law required by sections 289a para. 1 and 315a para. 1 of the German Commercial Code (HGB) are presented as of December 31, 2018 and explained in the following.

Composition of subscribed capital

As of December 31, 2018, the total share capital of KUKA Aktiengesellschaft amounted to €103,416,222.00 and consisted of 39,775,470 no-par-value bearer shares with pro rata share capital of €2.60 per share. The share capital is fully paid up. All shares have equal rights and each share guarantees its holder one vote at the Annual General Meeting. Shareholders are not entitled to have share certificates issued for their shares (section 4 para. 1 of the Articles of Association). When new shares are issued, the start of profit sharing may be established at variance with section 60 para. 2 of the German Stock Corporation Act (AktG) (section 4 para. 3 of the Articles of Association).

Restrictions affecting voting rights or transfer of shares

There are no restrictions affecting voting rights or transfer of shares.

Shareholdings that exceed 10% of the voting rights

According to the German Securities Trading Act (WpHG), any investor who reaches, exceeds or falls below the voting rights threshold pursuant to section 21 of the WpHG through purchase, sale or by other means is obliged to report this to the company and the German Federal Financial Supervisory Authority (BaFin).

KUKA Aktiengesellschaft was informed of the following shareholdings of more than 10% of the voting rights by the following persons and companies until December 31, 2018 as follows:

Midea Group – Notification dated December 21, 2018

1.	Midea Electric Netherlands (I) BV	81.04%	directly
2.	Midea Electric Netherlands (II) BV	13.51%	directly
3.	Guangdong Midea Electric Co., Ltd.	94.55%	allocated
4.	Midea Group Co., Ltd.	94.55%	allocated

The reason for the aforementioned notification was an intra-Group transfer of KUKA shares within the Midea Group.

Shares with special rights that confer powers of control

There are no shares with special rights conferring powers of control.

Method of voting rights control when employees hold an interest in the share capital and do not directly exercise their rights of control

No employees hold an interest in the share capital within the meaning of section 289a para. 1 no. 5 and section 315a para. 1 no. 5 of the German Commercial Code (HGB).

Legal provisions and provisions of the Articles of Association regarding the appointment and dismissal of Executive Board members and amendments to the Articles of Association

Pursuant to section 6 para. 1 of the Articles of Association, the company's Executive Board must consist of at least two persons. The Supervisory Board determines the number of Executive Board members (section 6 para. 2 of the Articles of Association). The appointment and dismissal of members of the Executive Board are governed by sections 84 and 85 of the Stock Corporation Act (AktG), section 31 of the Co-Determination Act (MitbestG) and section 6 of the Articles of Association.

Pursuant to sections 119 para. 1 no. 5 and 179 para. 1 of the Stock Corporation Act (AktG), any changes to the Articles of Association require a resolution by the Annual General Meeting. Section 22 para. 1 of the Articles of Association states that a simple majority of the share capital represented at the Annual General Meeting is sufficient to pass a resolution, provided that a greater majority is not required by law. A greater majority is required in particular for resolutions concerning changes to the company's business purpose, reductions in the share capital and changes to the form of incorporation.

Pursuant to section 11 para. 3 of the Articles of Association, the Supervisory Board is authorized to make amendments to the company's Articles of Association that only affect the wording.

The resolution passed at the Annual General Meeting held on June 10, 2015 also authorized the Supervisory Board to amend the wording of section 4, para. 1 and 5 of the Articles of Association following complete (or partial) execution of the capital increase after Authorized Capital 2015 has been used and, if Authorized Capital 2015 has not been fully used by June 9, 2020, following expiration of the authorization.

With regard to the changes in the Authorized Capital and Conditional Capital 2010 and in the Conditional Capital 2013, the Supervisory Board was/is authorized by resolutions of the Annual General Meetings held on June 5, 2013 and May 28, 2014 to amend the wording of section 4 para. 1, 6 and 7 of the Articles of Association as per the respective issue of subscription shares and all other associated amendments to the Articles of Association that only affect the wording.

Furthermore, the Supervisory Board was authorized by resolution of the Annual General Meeting of May 28, 2014 to amend the wording of section 4 para. 1 and 8 of the Articles of Association after (fully or partially) increasing the share capital after utilizing Conditional Capital 2014 and, in the event this has not or not fully been utilized by May 27, 2019, after expiry of the respective authorizations or deadlines for exercising conversion rights.

Executive Board authorization to issue and buy back shares

Authorized capital

As per the resolution of the Annual General Meeting on June 10, 2015 and section 4 para. 5 of the company's Articles of Association, which was added on the basis of this resolution, the Executive Board, subject to approval by the Supervisory Board, is authorized to increase the company's share capital on or before June 9, 2020 by up to €46,420,808.20 through the issue of new shares in exchange for contributions in cash or in kind on one or more occasions (Authorized Capital 2015). The shareholders shall be granted subscription rights. The new shares may also be underwritten by one or more financial institutions or by enterprises operating according to section 53 para. 1 sentence 1 or section 53b para. 1 sentence 1 or para. 7 of the German Banking Act, as specified by the Executive Board, subject to the obligation that they are offered to the shareholders for subscription (indirect subscription right). However, the Executive Board shall be authorized, subject to approval by the Supervisory Board, to exclude fractional amounts from shareholder subscription rights and to exclude shareholder subscription rights if a capital increase in exchange for contributions in kind takes place for the purpose of acquiring companies or parts of companies or interests in companies or other assets (including third-party claims against the company). Subject to approval by the Supervisory Board, the Executive Board shall be further authorized to exclude shareholder subscription rights in the event of Authorized Capital 2015 being used once or several times in exchange for cash contributions in an amount not exceeding 10% of the existing share capital at the time this authorization comes into effect and – if this value is lower – at the time this authorization is exercised, in order to issue the new shares at a price that is not significantly lower than the price of the company's shares already quoted on the stock exchange at the time the new share issue price is finalized. Shares sold as a result of, and during the term of, the authorization granted at the Annual General Meeting of May 28, 2014 in accordance with section 71 para. 1 no. 8 sentence 5 AktG in conjunction with section 186 para. 3 sentence 4 AktG shall count towards the aforementioned 10% threshold. Furthermore, this 10% threshold shall also include shares issued for the purpose of servicing warrant or convertible bonds, participation rights or participating bonds or a combination of these instruments, provided that these instruments were issued as a result of, and during the term of, an authorization granted at the Annual General Meeting of May 28, 2014 in accordance with the appropriate application of section 186 para. 3 sentence 4 AktG.

The Executive Board, subject to approval by the Supervisory Board, is only permitted to use the aforementioned authorization to exclude shareholder subscription rights to the extent that the pro rata amount of the total shares issued under exclusion of subscription rights does not exceed 20% of the share capital at the time the authorization becomes effective or of the existing share capital at the time this authorization is exercised, should this amount be less. The Executive Board is authorized, subject to approval by the Supervisory Board, to stipulate other details regarding the capital increase and its execution, in particular with regard to share rights and the terms and conditions relating to the issuance of shares.

Conditional capital

Section 4 para. 8 of the Articles of Association stipulates a conditional increase in the company's share capital by up to €33,486,707.80, divided into up to 12,879,503 no-par-value bearer shares (Conditional Capital 2014). The conditional capital increase will only be carried out to the extent that holders or creditors of option or conversion rights or conversion or option obligations exercise their option or conversion rights in exchange for cash for options and or convertible bonds, participation rights or participating bonds (or combinations of these instruments), issued or guaranteed by KUKA Aktiengesellschaft or a dependent Group company of KUKA Aktiengesellschaft up to May 27, 2019 on the basis of the authorization granted to the Executive Board by shareholders at the Annual General Meeting of May 28, 2014, or, to the extent they were obligated to exercise their conversion or option rights, fulfill their conversion or option obligations, or to the extent that KUKA Aktiengesellschaft exercises its option to grant shares of KUKA Aktiengesellschaft wholly or partially instead of paying the monies due, provided no cash settlement or treasury shares or shares of another listed company are used to service the bonds. The new shares will be issued at the option or conversion price to be determined in accordance with the aforementioned authorization resolution. The new shares will participate in the profits as of the beginning of the financial year in which they are created. The Executive Board is authorized, subject to approval from the Supervisory Board, to define the further details of the execution of the conditional capital increase.

There was also Conditional Capital 2010 (section 4 para. 6 of the Articles of Association) and Conditional Capital 2013 (section 4 para. 7 of the Articles of Association) amounting to €2,958.80 and €25,789.40 respectively. This concerns the remaining amounts of the original Conditional Capital 2010 and 2013 after the complete service of convertible bonds issued on February 12, 2013 and July 26, 2013 with a total nominal amount of €150,000,000.00.

Acquisition of treasury shares

As per the resolution passed by the Annual General Meeting on May 28, 2014, the company is authorized, until May 27, 2019, to buy back its own shares in an amount not to exceed 10% of the share capital existing at the time the resolution was passed via the stock market or in the form of a public purchase offer addressed to all shareholders by the company. In doing so, the purchase price (excluding transaction costs) may not be more than 10% higher or lower than the average stock market price defined in detail in the authorization.

The company may exercise this authorization in whole or partial amounts, once or several times; however, it may also be executed by dependent companies or companies in a majority holding of the company, or through a third party on behalf of the company or its dependants.

Pursuant to the above resolution, the Executive Board is also authorized, subject to approval by the Supervisory Board, to treat the treasury shares acquired subject to the exclusion of shareholder subscription rights on the basis of that and earlier authorizations as follows:

(1) To sell the treasury shares acquired to third parties in connection with company mergers or the acquisition of companies, or parts of companies, or interests in companies, or for the purpose of acquiring other assets (including claims of third parties against the company);

(2) To sell the treasury shares acquired by means other than via the stock exchange or an offer to all shareholders, provided the shares are sold for cash at a price that is not substantially lower than the quoted stock market price of treasury shares at the time of sale.

However, this authorization only applies subject to the proviso that the shares sold subject to the exclusion of subscription rights pursuant to section 186 para. 3 sentence 4 of the German Stock Corporation Act (AktG) may not, in total, exceed 10% of the share capital, whether on the effective date of the authorization or on the date on which it is exercised. The limit of 10% of the share capital is to include shares

(a) that are issued to service bonds with warrants or convertible bonds, participation rights or participating bonds, or a combination of these instruments, provided the instruments were issued on the basis of an authorization resolved by the Annual General Meeting of May 28, 2014 pursuant to the corresponding application of section 186 para. 3 sentence 4 of the German Stock Corporation Act (AktG);

(b) that are issued by exercising an authorization – in effect on the date on which the above authorization took effect or that was resolved by the Annual General Meeting of May 28, 2014, from authorized capital pursuant to section 186 para. 3 sentence 4 of the German Stock Corporation Act (AktG), under exclusion of subscription rights;

(3) To use the treasury shares acquired to introduce the treasury stock on foreign stock exchanges on which they have not previously been admitted for trading.

Treasury shares acquired on the basis of this authorization or authorizations granted at an earlier time may be canceled without requiring a further resolution at the Annual General Meeting for the cancelation. Cancelation leads to reduction of the share capital. However, the cancelation can also be effected by means of a simplified process without the reduction of share capital by adjusting the proportionate amount of share capital of the remaining shares according to section 8 para. 3 of the German Stock Corporation Act (AktG). The Executive Board is in this case authorized to change the disclosure of the number of shares in the Articles of Association accordingly. This authorization for the acquisition of treasury shares, as well as the resale or cancelation of such shares, may be used once or several times, in whole or in part. Moreover, subject to approval by the Supervisory Board, the Executive Board is authorized to withdraw or resell the treasury shares acquired. Both the purchase and disposal authorization may be exercised in part on one or more occasions.

Significant company agreements that are conditional upon a change of control, and the resulting impact

Employment contracts of Executive Board members

The employment contracts of the Executive Board members usually contain change-of-control clauses. In the event of a change of control within the company (sections 29 para. 2 and 30 of the German Securities Acquisition and Takeover Act (WpÜG)), the Executive Board members are entitled to terminate the employment contract within three months of the change in control occurring, subject to a notice period of three months. In the event of a termination, the Executive Board members will be entitled to a severance payment, which is measured against the compensation due for the remainder of their contract, but is restricted to twice the annual compensation at most.

Syndicated bank loan

KUKA Aktiengesellschaft and its associated companies signed a new syndicated loan agreement on February 1, 2018 with a banking syndicate led by Commerzbank AG, Deutsche Bank AG Deutschlandgeschäft branch, Deutsche Bank Luxembourg S.A., UniCredit Bank AG, Landesbank Baden-Württemberg, Bayerische Landesbank, BNP Paribas S.A. German branch, DZ Bank AG Zentral-Genossenschaftsbank (Frankfurt am Main) and Credit Suisse AG. According to the terms of the loan agreement, the creditors provide working capital and guarantee lines of up to €520,000,000. Upon conclusion of this loan agreement, the existing loan agreement for €400,000,000 was canceled.

The loan agreement covers the main working capital requirements of KUKA Group (including the furnishing of bank guarantees). The contract contains a change-of-control clause that is typical in the industry, under the terms of which the syndicated banks may demand repayment of the loan in the event that a shareholder (or group of shareholders acting in concert) acquires control of at least 30% of the voting rights of KUKA Aktiengesellschaft, or otherwise has the ability to direct the business policy of the company. A change of the direct owner within Midea Group is not affected by this provision as long as Midea Group Co., Ltd. directly or indirectly holds 100% of the shares and voting rights of the new owner. The creditors may also declare the loan agreement due for repayment in the cases of a delisting, a squeeze-out or the conclusion of a control and/or profit transfer agreement with a company of Midea Group.

Promissory note loan 2015

On October 9, 2015, led by Landesbank Baden-Württemberg and UniCredit Bank AG, KUKA Aktiengesellschaft issued a promissory note loan with an overall volume of €250,000,000 and staggered terms to 2020 and 2022.

The terms and conditions of the promissory note loan contain a standard change-of-control clause. Accordingly, immediately it learns of a change of control, KUKA Aktiengesellschaft must disclose this in accordance with the terms and conditions of the loan. The lenders then have the right, within 30 days of receiving notification of a change of control, to demand repayment of their (pro rata) loan at the next interest due date after receipt of the request for repayment and the interest due up to the date of repayment. A "change of control" within the meaning of the terms and conditions of the loan is given if a person or persons acting in concert directly or indirectly (i) either hold more than 30% of the voting shares, (ii) hold more than 30% of the voting rights in the company and/or (iii) otherwise have the possibility of directing the company's business policy.

US assignable loan of KUKA Toledo Production Operations LLC

On August 7, 2018 and September 6, 2018, led by Deutsche Bank AG, Landesbank Baden-Württemberg and UniCredit Bank AG, KUKA Toledo Production Operations LLC ("KTPO") as borrower and KUKA Aktiengesellschaft as guarantor issued a total of four assignable loans with an overall volume of USD 150,000,000 and staggered terms to 2020, 2022 and 2023. The assignable loans serve to finance an investment by KTPO in connection with a new production facility at the Fiat Chrysler plant in Toledo, Ohio/USA.

The terms and conditions of the assignable loans contain a standard change-of-control clause. Accordingly, immediately it learns of a change of control, KUKA Aktiengesellschaft must disclose this in accordance with the terms and conditions of the loan. In this case, the lenders have the right, within 15 days of receiving notification of a change of control, to terminate the assignable loan agreements prematurely and demand repayment of their (pro rata) loan. A "change of control" within the meaning of the terms and conditions of the assignable loans is given if a person or persons acting in concert directly or indirectly (i) either hold more than 30% of the voting shares, (ii) hold more than 30% of the voting rights in KTPO or KUKA Aktiengesellschaft and/or (iii) otherwise have the possibility of directing the business policy of KTPO or KUKA Aktiengesellschaft. A change of the direct owner within Midea Group is not affected by this provision as long as Midea Group Co., Ltd. directly or indirectly holds 100% of the shares and voting rights of the new owner. Also excluded is restructuring within KUKA Group, i. e. a change of control at KTPO insofar as control is exercised by a KUKA Group company.

Agreements concluded between the company and members of the Executive Board or employees governing compensation in the event of a takeover bid

No agreements have been concluded between the company and members of the Executive Board or employees governing compensation in the event of a takeover bid. The change-of-control clauses in the employment contracts of the Executive Board members do not constitute compensation clauses as defined in sections 289a para. 4 sentence 1 no. 9 and 315a para. 4 sentence 1 no. 9 of the German Commercial Code (HGB).

Declaration regarding corporate governance

Reference is made to published information on the KUKA AG website for the declaration regarding corporate governance pursuant to section 289f HGB: www.kuka.com/en-de/investor-relations/corporate-governance/corporate-management.

Non-financial declaration

Please refer to the website at www.kuka.com for the non-financial declaration pursuant to sections 315b, 315c, 289c of the German Commercial Code (HGB).

Group financial statements

Group financial statements

Group income statement

of KUKA Aktiengesellschaft for the period January 1 – December 31, 2018

in € millions	Notes	2017	2018
Sales revenues	**1**	**3,479.1**	**3,242.1**
Cost of sales	2	−2,724.8	−2,516.2
Gross income		**754.3**	**725.9**
Selling expenses	2	−306.7	−319.9
Research and development costs	2	−128.7	−151.9
General and administrative expenses	2	−211.4	−246.7
Other operating income	3	18.8	45.8
Other operating expenses	3	−21.4	−16.6
Loss from companies consolidated at equity	10	−2.2	−2.3
Earnings before interest and taxes (EBIT)		**102.7**	**34.3**
Depreciation and amortization		77.5	86.9
Earnings before interest, taxes, depreciation and amortization (EBITDA)		**180.2**	**121.2**
Depreciation of financial investment		−0.2	−0.1
Interest income	4	6.2	14.1
Interest expense	4	−15.2	−13.4
Financial result		**−9.2**	**0.6**
Earnings before taxes		**93.5**	**34.9**
Taxes on income	5	−5.3	−18.3
Earnings after taxes		**88.2**	**16.6**
(of which: attributable to minority interests)		(−0.3)	(3.9)
(of which: attributable to shareholders of KUKA AG)		(88.5)	(12.7)
Earnings per share (undiluted/diluted) in €	**6**	**2.22**	**0.32**

Group statement of comprehensive income

of KUKA Aktiengesellschaft for the period January 1 – December 31, 2018

in € millions	Notes	2017	2018
Earnings after taxes		**88.2**	**16.6**
Items that may potentially be reclassified to profit or loss			
Translation adjustments		−41.0	25.4
Third party translation adjustments		0.1	1.1
Items that are not reclassified to profit or loss			
Changes of actuarial gains and losses	23	2.5	−5.8
Deferred taxes on changes of actuarial gains and losses		−2.0	0.6
Changes recognized directly in equity		**−40.4**	**21.3**
Comprehensive income		**47.9**	**37.9**
(of which: attributable to minority interests)		(−0.2)	(4.9)
(of which: attributable to shareholders of KUKA AG)		(48.1)	(33.0)

Group cash flow statement [1]

of KUKA Aktiengesellschaft for the financial year 2018

in € millions	2017	2018
Net income after taxes	**88.2**	**16.6**
Income taxes	58.2	14.7
Net interest result	8.9	–0.9
Depreciation of intangible assets	36.8	44.9
Depreciation of tangible assets	40.7	42.0
Depreciation of financial investments	0.2	0.1
Other non-payment related income	–59.2	–6.3
Other non-payment related expenses	10.8	17.9
Cash earnings	**184.6**	**129.0**
Result on the disposal of assets	0.1	0.3
Changes in provisions	–28.1	29.3
Changes in current assets and liabilities		
Changes in inventories	–81.4	–74.1
Changes in receivables and deferred charges	–75.9	32.2
Changes in liabilities and deferred income (excl. financial debt)	144.1	–93.0
Income taxes paid	–46.4	–32.8
Investments/financing matters affecting cash flow	–5.0	–39.1
Cash flow from operating activities	**92.0**	**–48.2**
Payments from disposals of fixed assets	4.4	2.1
Payments for capital expenditures on intangible assets	–54.4	–55.2
Payments for capital expenditures on tangible assets	–85.7	–208.4
Payments for/proceeds from investment in financial investments	–0.9	104.1
Payments received from the sale of consolidated companies and other business units	0.0	4.0
Payments for the acquisition of consolidated companies and other business units	–97.0	–23.0
Interest received	5.9	10.9
Cash flow from investing activities	**–227.7**	**–165.5**
Free cash flow	**–135.7**	**–213.7**
Dividend payments	–19.9	–19.9
Proceeds from the acceptance/repayment of bank loans	11.4	115.8
Payments from grants received	5.0	5.0
Interest paid	–7.2	–11.3
Cash flow from financing activities	**–10.7**	**89.6**
Payment-related changes in cash and cash equivalents	**–146.4**	**–124.1**
Changes in cash and cash equivalents related to the scope of consolidation	5.3	379.4
Exchange rate-related and other changes in cash and cash equivalents	0.5	–0.3
Changes in cash and cash equivalents	**–140.6**	**255.0**
(of which net increase/decrease in restricted cash)	(–0.7)	(0.1)
Cash and cash equivalents at the beginning of the period	364.2	223.6
(of which net increase/decrease in restricted cash)	(1.1)	(0.4)
Cash and cash equivalents at the end of the period	**223.6**	**478.6**
(Restricted cash)	(0.4)	(0.5)

[1] See page 108 for further information on the cash flow statement

Group balance sheet

of KUKA Aktiengesellschaft as of December 31, 2018

Assets

in € millions	Notes	Dec. 31, 2017	Adjustments	Jan. 1, 2018	Dec. 31, 2018
Non-current assets					
Intangible assets	7	520.4		520.4	563.9
Property, plant and equipment	8	296.0		296.0	493.7
Financial investments	9	5.1		5.1	8.7
Investments accounted for at equity	10	15.7		15.7	13.9
		837.2		**837.2**	**1,080.2**
Finance lease receivables	11	43.1	−1.0	42.1	1.0
Other long-term receivables and other assets	15	17.5		17.5	18.7
Deferred taxes	5	79.6		79.6	90.5
		977.4	**−1.0**	**976.4**	**1,190.4**
Current assets					
Inventories	12	387.4		387.4	466.8
Receivables and other assets					
Trade receivables	13	408.1	−1.5	406.6	415.1
Contract assets	14	515.7	−2.0	513.7	493.9
Finance lease receivables	11	9.8		9.8	0.6
Income tax receivables		32.7		32.7	42.8
Other assets, prepaid expenses and deferred charges	15	85.4		85.4	130.3
		1,051.7	−3.5	1,048.2	1,082.7
Cash and cash equivalents	**16**	**223.6**	**−0.2**	**223.4**	**478.6**
		1,662.7	**−3.7**	**1,659.0**	**2,028.1**
		2,640.1	**−4.7**	**2,635.4**	**3,218.5**

Equity and liabilities

in € millions	Notes	Dec. 31, 2017	Adjustments	Jan. 1, 2018	Dec. 31, 2018
Equity	**17**				
Subscribed capital	18	103.4		103.4	103.4
Capital reserve	19	306.6		306.6	306.6
Revenue reserve	20	457.1	–4.7	452.4	669.9
Minority interests	21	–0.5		–0.5	259.7
		866.6	**–4.7**	**861.9**	**1,339.6**
Non-current liabilities, provisions and accruals					
Financial liabilities	25+26	249.7		249.7	380.5
Other liabilities	27	29.5		29.5	35.9
Pensions and similar obligations	23	108.9		108.9	110.4
Deferred taxes	5	27.5		27.5	42.4
		415.6		**415.6**	**569.2**
Current liabilities					
Financial liabilities	25+26	19.1		19.1	5.2
Trade payables		549.2		549.2	402.7
Advances received		94.0	–94.0	0.0	–
Contract liabilities	14	214.1	94.0	308.1	406.8
Accounts payable to affiliated companies		0.1		0.1	0.1
Income tax liabilities		51.2		51.2	40.5
Other liabilities and deferred income	27	297.7		297.7	287.7
Other provisions	24	132.5		132.5	166.7
		1,357.9	**0.0**	**1,357.9**	**1,309.7**
		2,640.1	**–4.7**	**2,635.4**	**3,218.5**

Development of Group equity

of KUKA Aktiengesellschaft for the financial year 2018

Notes	18	18	19
in € millions	Number of shares outstanding	Subscribed capital	Capital reserve
Jan. 1, 2017	**39,775,470**	**103.4**	**306.6**
Result after tax	–	–	–
Other income	–	–	–
Comprehensive income	**–**	**–**	**–**
Dividend of KUKA AG	–	–	–
Change in scope of consolidation/other changes	–	–	–
Dec. 31, 2017	**39,775,470**	**103.4**	**306.6**
Initial application effect of IFRS 9			
Jan. 1, 2018	**39,775,470**	**103.4**	**306.6**
Result after taxes	–	–	–
Other income	–	–	–
Comprehensive income	**–**	**–**	**–**
Dividend of KUKA AG	–	–	–
Difference from the valuation of associates not affecting net income			
Change in scope of consolidation/other changes	–	–	–
Dec. 31, 2018	**39,775,470**	**103.4**	**306.6**

20				21	Total
Revenue reserves					
Translation gains/losses	Actuarial gains and losses	Annual net profit and other revenue reserves	Equity to shareholders	Minority interests	
61.1	**–23.7**	**393.1**	**840.5**	**–0.3**	**840.2**
–		88.5	88.5	–0.3	88.2
–41.0	0.6	–	–40.4	0.1	–40.3
–41.0	**0.6**	**88.5**	**48.1**	**–0.2**	**47.9**
–	–	–19.9	–19.9	–	–19.9
–	–	–1.6	–1.6	–	–1.6
20.1	**–23.1**	**460.1**	**867.1**	**–0.5**	**866.6**
		–4.7	–4.7		–4.7
20.1	**–23.1**	**455.4**	**862.4**	**–0.5**	**861.9**
–	–	12.7	12.7	3.9	16.6
25.4	–5.2	–	20.2	1.1	21.3
25.4	**–5.2**	**12.7**	**32.9**	**5.0**	**37.9**
–	–	–19.9	–19.9	–	–19.9
		–0.5	–0.5		–0.5
–	–	205.0	205.0	255.2	460.2
45.5	**–28.3**	**652.7**	**1,079.9**	**259.7**	**1,339.6**

Group notes

Group segment reporting[1]

of KUKA Aktiengesellschaft for the financial year 2018

in € millions	Robotics 2017	Robotics 2018	Systems 2017	Systems 2018
Orders received	1,223.3	1,202.9	1,530.2	1,313.7
Order backlog	331.2	332.8	1,073.4	1,001.9
Group external sales revenues	1,159.9	1,147.8	1,557.0	1,270.6
as a % of Group sales revenues	33.3%	35.4%	44.8%	39.2%
Intra-Group sales revenues	40.7	34.6	22.2	30.9
Sales revenues by division	**1,200.6**	**1,182.4**	**1,579.2**	**1,301.5**
Operating profit/loss	**417.0**	**422.0**	**154.4**	**120.7**
as a % of sales revenues of the division	34.7%	35.7%	9.8%	9.3%
Earnings before interest and taxes (EBIT)	**133.1**	**134.4**	**17.8**	**–32.8**
as a % of sales revenues of the division	11.1%	11.4%	1.1%	–2.5%
as a % of average capital employed (ROCE)	56.4%	40.6%	6.3%	–9.9%
Extraordinary expenses[2]	9.2	16.3	7.4	11.5
EBIT adjusted[2]	142.3	150.7	25.2	–21.3
EBIT adjusted[2] as a % of sales revenues of the division	11.9%	12.7%	1.6%	–1.6%
EBIT adjusted[2] as a % of average capital employed (ROCE)	60.3%	45.6%	8.9%	–6.4%
Earnings before interest, taxes, depreciation and amortization (EBITDA)	**157.2**	**162.8**	**34.5**	**–17.0**
as a % of sales revenues of the division	13.1%	13.8%	2.2%	–1.3%
Extraordinary expenses[2]	9.2	16.3	7.4	11.5
EBITDA adjusted[2]	166.4	179.1	41.9	–5.5
EBITDA adjusted[2] as a % of sales revenues of the division	13.9%	15.1%	2.7%	–0.4%
Capital employed (annual average)	235.9	330.8	281.9	331.5
Capital employed (end of the financial year)	260.0	401.6	262.2	400.9
Assets	575.3	703.4	877.2	976.0
Liabilities	327.8	318.0	650.1	599.7
Investments accounted for at equity	0.0	–	4.0	4.5
Earnings of investments accounted for at equity	–1.0	–	–0.1	0.4
Capital expenditure	39.9	75.1	53.9	157.1
Depreciation/amortization of intangible assets	24.0	28.3	16.7	15.8
Depreciation/amortization of interest capitalized under intangible assets	0.1	0.1	–	–
Employees (Dec. 31)	5,010	5,399	5,459	4,811

[1] See page 108 for more information on Group segment reporting.

[2] One-off effects 2018 due to growth investments and reorganization expenditure
One-off effect 2017 due to growth investments

	Swisslog		KUKA AG and other companies		Reconciliation and consolidation		Group	
	2017	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
	926.2	835.5	–	9.2	–65.4	–56.0	3,614.3	3,305.3
	768.3	747.5	–	0.4	–15.0	–26.9	2,157.9	2,055.7
	761.6	814.4	0.6	9.3	–	–	3,479.1	3,242.1
	21.9%	25.1%	–	0.3%	–	–	100.0%	100.0%
	2.1	4.9	94.8	113.7	–159.8	–184.1	–	0.0
	763.7	**819.3**	**95.4**	**123.0**	**–159.8**	**–184.1**	**3,479.1**	**3,242.1**
	181.8	**178.3**	**95.7**	**115.1**	**–94.6**	**–110.2**	**754.3**	**725.9**
	23.8%	21.8%	–	–	–	–	21.7%	22.4%
	10.4	**–16.3**	**–57.1**	**–50.8**	**–1.5**	**–0.2**	**102.7**	**34.3**
	1.4%	–2.0%	–	–	–	–	3.0%	1.1%
	3.0%	–4.3%	–	–	–	–	10.9%	2.9%
	1.8	6.3	13.5	14.6	–	–	31.9	48.7
	12.2	–10.0	–43.6	–36.2	–1.5	–0.2	134.6	83.0
	1.6%	–1.2%	–	–	–	–	3.9%	2.6%
	3.5%	–2.6%	–	–	–	–	14.2%	7.0%
	36.8	**9.2**	**–46.6**	**–33.5**	**–1.7**	**–0.3**	**180.2**	**121.2**
	4.8%	1.1%	–	–	–	–	5.2%	3.7%
	1.8	6.3	13.5	14.6	–	–	31.9	48.7
	38.6	15.5	–33.1	–18.9	–1.7	–0.3	212.1	169.9
	5.7%	1.9%	–	–	–	–	6.1%	5.2%
	346.8	383.5	87.3	141.0	–1.5	–1.8	950.4	1,185.0
	381.4	385.6	117.2	164.9	–2.4	–1.3	1,018.4	1,351.7
	717.7	746.7	668.2	725.0	–501.4	–501.7	2,337.0	2,649.4
	357.5	386.3	131.4	136.9	–44.3	–45.5	1,422.5	1,395.4
	11.7	9.4	–	–	–	–	15.7	13.9
	–1.1	–2.7	–	–	–	–	–2.2	–2.3
	21.6	24.0	24.0	39.2	–0.6	0.0	138.8	295.4
	26.4	25.5	10.5	17.3	–0.2	–0.1	77.4	86.8
	–	–	–	–	–	–	0.1	0.1
	2,904	3,075	883	950	–	–	14,256	14,235

General comments

Accounting principles

KUKA Aktiengesellschaft, registered at the district court of Augsburg under HRB 22709 and headquartered in Augsburg, has prepared its consolidated financial statements for the period ending December 31, 2018 according to the International Financial Reporting Standards (IFRS) of the International Accounting Standards Board (IASB) applicable and endorsed by the European Union as at the balance sheet date. The term IFRS also includes all valid international accounting standards (IAS). The interpretations of the Standing Interpretations Committee (SIC) and the International Financial Reporting Standards Interpretations Committee (IFRS IC) – supplemented by the guidelines stipulated in section 315 a para. 1 of the German Commercial Code (HGB) – are also taken into consideration.

The accounting policies used conform to the methods applied in the previous year. Exceptions from this are the standards and interpretations for which application is mandatory for the first time in the 2018 fiscal year and the other reporting changes described under “Changes in accounting and valuation methods”. The consolidated financial statements comply with German law and the currency reported in these statements is the euro. Unless otherwise noted, all amounts in the notes to the accounts are stated in millions of euros (€ million).

With the exception of specific financial instruments reported in fair values, the Group’s consolidated financial statements are prepared based on historical costs. In this case, fair value is defined under IFRS 13 as the price that would be paid by independent market participants in an arm’s length transaction on the measurement date if an asset were sold or a liability transferred.

KUKA Group does not carry any assets with an indefinite useful life with the exception of goodwill and specific brand names.

The Group’s consolidated income statement is prepared using the cost of sales method. The classification regulations of IAS 1 are applied in the consolidated financial statements. The presentation in the Group’s consolidated balance sheet distinguishes between current and non-current assets and liabilities.

The identically worded declarations of compliance with the German Corporate Governance Code pursuant to section 161 of the German Stock Corporation Act (AktG) made by the Executive Board on January 28, 2019 and the Supervisory Board on February 15, 2019 can be accessed on the Internet through the company’s website (www.kuka.com). The Executive Board prepared the consolidated financial statements on March 5, 2019.

KUKA Aktiengesellschaft is a 94.55% subsidiary of Midea Group Co. Ltd., Foshan City, Guangdong Province / China and is included in its consolidated financial statements. These statements are available on the website www.cninfo.com.cn or directly on the website of Midea Group Co. Ltd. at www.midea.com/global/investors/financial_statements.

Scope of consolidation

In comparison to the beginning of the fiscal year, the scope of consolidation has changed due to initial consolidations, deconsolidations and mergers.

The following table shows the development of the scope of consolidation for the 2018 fiscal year:

Country	EMEA		Americas		APAC		Total	
	consolidated companies	at equity consolidated companies	consolidated companies	at equity consolidated companies	consolidated companies	at equity consolidated companies	consolidated companies	at equity consolidated companies
Jan. 1, 2018	**59**	**1**	**20**	**1**	**25**	**2**	**104**	**4**
First-time consolidations	2	–	–	–	3	–	5	–
Mergers	–2	–	–	–	–	–	–2	–
Deconsolidations	–3	–1	–	–	–2	–	–5	–1
Total changes	–3	–1	–	–	1	–	–2	–1
Dec. 31, 2018	**56**	**0**	**20**	**1**	**26**	**2**	**102**	**3**

The number of fully consolidated companies in the Robotics division increased from 27 in 2017 to 29 in 2018. KBee AG, Munich, which was consolidated at equity as at December 31, 2017 was deconsolidated in the 2018 fiscal year, with the result that no company is now consolidated at equity in the Robotics division. At Systems, the number of fully consolidated companies decreased from 39 to 35. The number of companies consolidated at equity remained unchanged at 2. The scope of consolidation in the Swisslog division increased by one company to 34 (2017: 33). As was the case in the Systems division, there were no changes to the companies consolidated at equity (2017 and 2018: 1). The Other category comprised 4 fully consolidated companies at the end of the fiscal year (2017: 5). There was therefore an overall decrease in the number of companies consolidated either fully or at equity from 108 in 2017 to 105 in 2018.

Additions of companies through company acquisitions

In the year under review, assets in the following companies were acquired as part of asset deals and integrated into existing legal entities:

- Mor-Tech Design, Inc., Sterling Heights, Michigan/USA
- Mor-Tech Manufacturing, Inc., Michigan/USA
- IRT SA, Neuchatel/Switzerland

Mergers

Reis Asia Pacific GmbH, Obernburg, was merged into Reis Group Holding GmbH & Co. KG, Obernburg, during the fiscal year. KUKA Industries GmbH, Augsburg, was merged into KUKA Deutschland GmbH, Augsburg, during the fiscal year.

The mergers took place within a segment and therefore do not influence the comparability with the previous year.

Company acquisitions 2018

Mor-Tech Design, Inc., Sterling Heights, Michigan/USA & Mor-Tech Manufacturing, Inc., Michigan/USA

The business activities of Mor-Tech Design, Inc., Sterling Heights, Michigan/USA and Mor-Tech Manufacturing, Inc., Michigan/USA (referred to hereinafter as “Mor-Tech”) were taken over by a wholly owned subsidiary of KUKA AG in the fourth quarter of 2018 as part of an asset deal.

Mor-Tech builds automated guided vehicles that transport materials and assemblies to the production facilities. Mor-Tech’s business activities also include the design and build of automated guided vehicles that are used for positioning assembly tools and also in conjunction with Ergo lifts. While Mor-Tech has already sold its products in 14 countries, the USA is nevertheless the main sales market. Through the asset deal, KUKA Group is enlarging its product portfolio and expanding its customer base and the market segments in which KUKA Group is active. Quicker market penetration can also be achieved in the American car market through the acquisition. The company is allocated to the Systems segment. The purchase price of USD 11.1 million was paid at the time of the takeover.

Sales revenues of around €3.8 million and net income of approximately €1.0 million were attributable to the acquisition during the reporting period. If the company had already been taken over at the beginning of 2018, the contribution to sales revenues would have been around €15.2 million and to net income around €4 million.

The following table shows the carrying amounts acquired as a result of the purchase immediately prior to the acquisition as well as the opening balance sheet at fair values:

in € millions	Carrying amounts assumed	Opening balance sheet in fair values
Intangible assets	0.0	2.7
Tangible assets	0.3	0.3
Inventories	2.2	2.4
Receivables and other assets	2.9	2.9
Total	**5.4**	**8.3**

The intangible assets acquired consisted primarily of customer relationships and technologies. The receivables and inventories acquired are mainly related to orders in house at the time of the acquisition. Liabilities and provisions were not taken over. Deferred taxes were not recognized in this connection. The transaction thus results in goodwill of €1.6 million. This particularly reflects the future synergies resulting from the acquisition and the know-how of the employees in the cash generating unit.

Other acquisitions

With effect from April 1, 2018, the main assets and liabilities of IRT SA were acquired for a low single-digit million euro amount.

IRT SA specializes in the development of hardware and software and the production of servo drives. The company is a KUKA supplier for servo drives and their spare parts for robots. For this reason, the company is allocated to the Systems segment.

Establishment of joint ventures

In the first quarter, KUKA and majority shareholder Midea jointly announced the founding of joint ventures in China. KUKA and Midea will have equal 50% stakes in the companies and also contribute other subsidiaries to a certain extent.

On July 1, 2018, the first joint venture companies were set up under the control of KUKA and are thus fully consolidated in KUKA Group. Compliance with the control principle is given by the composition of the Board: KUKA Group appoints three of the five members, including the chairman. Parent company Midea made a payment for this and also contributed a subsidiary with additional cash assets to the joint venture. Altogether, KUKA Group received cash assets in the three-digit million euro range.

At Shunde/China, where a new production facility is currently being set up, new robots will be developed, produced and sold specifically for the Chinese market in the future, in addition to 6-axis robots. By 2024, capacity for the production of up to 75,000 robot units per year is scheduled to be achieved in several expansion stages. The joint ventures form a very sound basis for implementing the target growth plans, especially in the Chinese market. Competitiveness and market penetration are to be further increased. It is planned for these goals to be achieved also by means of further joint ventures in the other segments of KUKA Group. Please refer to events after the balance sheet date for information on the other joint ventures.

Consolidation principles

According to the regulations of full consolidation, subsidiaries are included in the KUKA consolidated financial statements if they are controlled directly or indirectly in accordance with the control concept of IFRS 10. The Group controls a company if there is a right to the variable returns and the Group is able to use the control over the company such that the level of returns from the company can be influenced. The date on which control is effectively gained or lost is decisive for the inclusion of a company in consolidation or for its deconsolidation.

The consolidated financial statements are based on the financial statements of KUKA Aktiengesellschaft and those of the consolidated subsidiaries and were prepared according to the uniform accounting policies for the Group. Capital consolidation takes place by offsetting the carrying amounts of the investment against the pro rata newly measured equity capital of the subsidiaries at the time of acquisition. In line with IFRS 3, any positive differences are capitalized as goodwill under intangible assets. Any negative differences are recognized in the income statement.

Intra-Group sales, expenses and earnings as well as receivables and payables are offset, and inter-company profits and losses are eliminated. The required tax deferrals are recognized for the consolidation procedures.

If KUKA AG issues guarantees and warranties on behalf of consolidated subsidiaries, they are eliminated provided they have no external effect.

Currency translation

Receivables and payables denominated in foreign currency are converted at the valid middle exchange rate at the balance sheet date. Any associated translation gains or losses are recognized in the income statement. The allocation of a translation gain or loss depends on the functional area in which this has occurred. This is reported under the cost of sales if the translation gain or loss resulted from a foreign currency transaction in respect of supplies and services. If translation gains or losses occur, for example, in connection with intra-Group loan transactions, they must be added to the financing transactions, which is why they are reported in the interest result.

The annual financial statements of foreign companies that are included in the consolidated financial statements are converted from their functional currency into euro in accordance with IAS 21. These are the respective local currencies as the companies operate predominantly within their currency area. The only exception is KUKA Robotics Hungária Ipari Kft., Taksony/Hungary, whose functional currency is the euro. If new derivative goodwill results from the acquisition of foreign subsidiaries, the Group treats it as an asset of the economically independent subsidiary and translates this goodwill at the closing rate, if necessary, pursuant to IAS 21.47. The resulting currency differences are recognized in the foreign currency translation reserve. Currency differences ensuing therefrom are recognized in the foreign currency translation reserve. Unrealized price differences from the translation of equity-replacing loans to foreign subsidiaries in foreign currency are reported directly in the aggregate income/loss and so recognized directly in equity. These effects are reversed with an impact on income if there is a loss of control.

Assets and liabilities are translated at the middle exchange rate effective on the balance sheet date. Derivative goodwill recognized prior to January 1, 2005, and also equity are translated using historical rates. Expenditure and income are translated at the average rate for the year. If differences arise from the translation of assets and liabilities denominated in foreign currencies compared to the prior year, they are recognized in equity under the revenue reserves with no impact on income. The same method is applied for translation differences between the income statement and the balance sheet. Existing currency differences are reversed with an effect on income when a company leaves the Group.

The exchange rates used for the reporting period and the previous year are shown in the following table:

Country	Currency	Balance sheet date		Average rate	
		Dec. 31, 2017	Dec. 31, 2018	2017	2018
Australia	AUD	1.5346	1.6220	1.47258	1.58002
Brazil	BRL	3.9729	4.4440	3.60273	4.30845
Canada	CAD	1.5039	1.5605	1.46398	1.53025
China	CNY	7.8044	7.8751	7.62497	7.80749
China, Hongkong	HKD	9.3720	8.9675	8.7992	9.26022
Czech Republic	CZK	25.5350	25.7240	26.32757	25.64253
India	INR	76.6055	79.7298	73.50738	80.73165
Japan	JPY	135.0100	125.8500	126.68676	130.41846
Hungary	HUF	310.3300	320.9800	309.2782	318.81669
Korea	KRW	1,279.6100	1,277.9300	1,276.1977	1,299.29616
Malaysia	MYR	4.8536	4.7317	4.84949	4.76431
Mexico	MXN	23.6612	22.4921	21.3363	22.71543
New Zealand	NZD	1.6850	1.7056	1.5891	1.70597
Norway	NOK	9.8403	9.9483	9.32509	9.60073
Romania	RON	4.6597	4.6639	4.56816	4.65345
Russia	RUB	69.3920	79.7153	65.90797	74.05934

Country	Currency	Balance sheet date		Average rate	
		Dec. 31, 2017	Dec. 31, 2018	2017	2018
Singapore	SGD	1.6024	1.5591	1.55815	1.59292
Sweden	SEK	9.8438	10.2548	9.6359	10.25703
Switzerland	CHF	1.1702	1.1269	1.11153	1.15498
Taiwan	TWD	34.1922	33.8434	34.00556	34.30734
Thailand	THB	39.1210	37.0520	38.28389	38.16428
United Arab Emirates	AED	4.3743	4.1822	4.15003	4.30964
United Kingdom	GBP	0.8872	0.8945	0.87628	0.88475
USA	USD	1.1993	1.1450	1.12903	1.18153

Accounting and valuation principles

Orders received

An order is recognized as an incoming order on receipt of a binding purchase order. Framework agreements in their own right do not result in an incoming order. Legally binding order releases of volumes are only recognized as an incoming order upon receipt. Letters of intent are also excluded from the reported orders received.

Order backlog

If a binding customer order has not yet been invoiced or not yet realized as a sale in the case of long-term contract production, an order is recorded as an order backlog.

Revenue recognition

Sales revenues of KUKA Group are recognized upon the performance of services or transfer of the power of disposal to the customer in accordance with the valid Incoterms. Sales revenues are thus recorded when either the products or goods are delivered or the contractually agreed services have been provided, i. e. the performance obligations have been fulfilled. The material risks and potential rewards of ownership must also have passed to the purchaser, the proceeds must be reliably determinable and the economic benefits resulting from the sale must be sufficiently probable. Finally, the costs associated with the sale must be reliably determined in order to be able to ascertain the percentage of completion for accounting over time. If a performance obligation is satisfied at a point in time, the invoice is generally issued after the performance obligation has been fulfilled, whereas invoicing is linked to milestones in the case of satisfaction of a performance obligation over time. Performance obligations with regard to returns, reimbursements, guarantees or similar obligations are not of material importance in KUKA Group.

KUKA Aktiengesellschaft adopted the new standard for revenue recognition (IFRS 15) for the first time as of January 1, 2018. Accounting over time is applied for orders that meet the criteria of IFRS 15.35. Revenue recognition is carried out based on the percentage of completion of the order, which is determined separately for each project based on the cost-to-cost method. The cost-to-cost method involves placing the costs already incurred for the project, based on an assessment of the progress already achieved, in relation to the anticipated total costs. The profit of an order that is accounted for over time is recognized on the basis of the calculated percentage of completion. If the advance payments exceed the services already provided, the resulting negative balance will be disclosed under contract liabilities. If, however, more services have been provided than advance payments made, the resulting positive balance will be disclosed under contract assets. Borrowing costs are in principle taken into account for long-term orders in accordance with IAS 23, but they have not been recognized since the 2016 fiscal year due to cost-benefit considerations. For impending losses, please refer to the “Provisions” section within this chapter.

Cost of sales

The cost of sales includes the cost of production of the goods sold as well as the acquisition cost of any merchandise sold. In addition to the cost of attributable direct materials and labor, this also comprises indirect costs, including the depreciation and amortization of production plants and intangible assets, write-downs of inventories and the recognized borrowing costs. If provisions for product warranties have to be taken into account, this expense is recorded as part of the cost of sales at the time of revenue recognition. If the current estimated total costs exceed the sales revenue of an order, the impending losses are taken into account in the reporting period in which they first exceed the sales revenue.

Business combinations

Business combinations are accounted for using the acquisition method. The cost of acquisition is measured at the fair value of the assets given up and the liabilities incurred or assumed at the acquisition date. An agreed contingent consideration from KUKA as the acquirer is recognized at fair value at the acquisition date. The identifiable assets acquired and the liabilities (including contingent liabilities) assumed in a business combination are initially measured at their fair values at the acquisition date, irrespective of the extent of any non-controlling interests. Uniform accounting policies are used here. After initial recognition, gains and losses are attributed without limit in proportion to the interest held; a negative balance with respect to non-controlling interests can arise as a result. The non-controlling interests are involved in profit sharing during the reporting period.

Investments in associates and joint ventures

Investments in associates and joint ventures are reported at cost in the first instance. A difference between the cash contribution and pro rata equity capital is recognized directly in equity. Subsequent measurement takes place using the equity method as described in IAS 28. The result of associates or joint ventures is recognized in a separate item of the income statement.

Goodwill

Existing goodwill of the company is tested for impairment at least annually (usually in the fourth quarter). This involves the carrying amount of goodwill allocated to the defined cash generating units (CGUs) being compared to the recoverable amount. If the carrying amount of a cash generating unit exceeds the recoverable amount, an impairment loss must be recognized for the goodwill allocated to this cash generating unit. The recoverable amount is defined as the higher of the cash generating unit's fair value less any costs to sell and its value in use. KUKA uses a cash generating unit's value in use to determine its recoverable amount. The data from the detailed planning phase from the business plan for the next three years have been used as the underlying data to determine the value in use. For subsequent years it is assumed that the annual cash flows will generally correspond to those of a calculated transitional year.

With respect to the segment-specific discount rates as well as the further parameters and their derivation, and also for the identification of the principal items of goodwill, please refer to the discussions under note 7.

Self-developed software and other development costs

The development costs incurred for newly developed products or internally generated intangible assets (e.g. software) are capitalized if the technical feasibility and commercialization of the newly developed products are assured, and this will result in an inflow of economic benefits to the Group. The requirements of IAS 38.57 also have to be met. In this context, the costs attributable to the development process are capitalized.

The scheduled linear depreciation, which usually amounts to three to five years, begins with the economic use of the asset. Moreover, the value recognized for capitalized costs of development projects not yet completed is subject to annual impairment tests.

Research and development costs that are not eligible for recognition as an asset are recognized as expenses when they occur.

Other intangible assets

In KUKA Group, the purchased intangible assets essentially comprise software and patents. They are recognized at their acquisition cost and are amortized over their expected economic useful life of usually three to five years using the straight-line method.

Property, plant and equipment

Property, plant and equipment are recognized at acquisition or production costs. The depreciation method, which is continuously reviewed, is usually the straight-line method.

The following table shows the useful lives which the scheduled depreciations are based on:

	Years
Buildings	25 – 50
Property facilities	2 – 15
Technical plant and equipment	2 – 15
Other equipment	2 – 15
Factory and office equipment	2 – 15

An impairment loss on intangible and tangible assets is recorded in accordance with IAS 36 if the recoverable amount of the asset is less than its carrying amount entered in the balance sheet. In addition to changes in individual parameters that affect computation such as a significant increase in market yields, a particular focus is placed on changes with an adverse effect on the company in the technological, market, economic or legal environment in which it operates. KUKA Group regularly observes whether a triggering event is present that would necessitate an impairment test in accordance with IAS 36. In this context, the recoverable amount is the higher of the fair value less costs to sell and the value in use of the asset in question. If the reasons for a previous impairment no longer apply, the value is recovered.

Borrowing costs and qualifying assets

Financing expenses must be deferred for qualifying assets in accordance with IAS 23. Provided they are material, borrowing costs are capitalized for these qualifying assets. In accordance with IAS 23.5, KUKA Group defines a qualifying asset as an asset for which a period longer than twelve months is required to make it ready for its intended use or sale. Examples here within KUKA Group are generally manufacturing systems, internally generated intangible assets and long-term construction contracts. Since the 2016 fiscal year, KUKA has no longer taken any borrowing costs into account for long-term contract manufacturing for the time being.

Government grants

Government grants including non-monetary grants are only recognized at fair value in accordance with IAS 20.7 if there is sufficient certainty that the company will fulfill the associated conditions and that the grants will be received. Government grants related to assets (e. g. investment subsidies and allowances) are disclosed as deferred income and recognized as profit or loss on a systematic basis throughout the useful life of the asset. Grants related to income are immediately disclosed in the income statement.

Finance and operating leases

KUKA Group acts as a lessee in most cases. In the case of finance leases, ownership is attributed to the lessee if the latter essentially assumes all the risks and opportunities associated with the lease object in accordance with IAS 17. If the criteria of the finance lease are met, the lease object is capitalized as of the date of the lease agreement at its fair value or at the lower present value of the minimum lease payments. Amortization takes place over the shorter period of the economic useful life and the contractual period. The discounted payment commitments that result from lease payments are disclosed under other liabilities.

If KUKA Group acts as a lessor for finance leases, these agreements are accounted for as sales or financing business. A receivable is valued at the amount of the net investment in the lease and the interest income is recognized in the income statement.

In operating lease agreements in accordance with IAS 17 in which KUKA Group acts as the lessee, the lease and rent payments are recognized directly as expenditure in the income statement using the straight-line method over the contractual period unless another systematic basis better reflects the pattern of use over time.

KUKA Group will adopt the new standard for the reporting of leases (IFRS 16) as of January 1, 2019. For more information, please refer to the section "Effects of new accounting standards to be applied as of the 2018 fiscal year". Note 30 provides an overview of the corresponding future expenditure that will change in the coming fiscal year with the introduction of IFRS 16.

Financial instruments

KUKA Group holds both primary financial instruments (e. g. trade receivables or trade payables) and derivative financial instruments (e. g. transactions to hedge the risks of changes in fair value).

Derivative financial instruments are financial contracts whose value is derived from the price of an underlying asset (e. g. stocks, bonds, money market instruments or commodities) or a reference rate (such as currencies, indices or interest rates). They require little or no initial investment and are settled at a future date. Examples of derivative financial instruments include options, forward contracts and interest rate swap transactions. KUKA Group only uses derivative financial instruments to hedge foreign currency risk. No hedge accounting has taken place in KUKA Group since 2009.

KUKA Group has applied IFRS 9 since January 1, 2018, which distinguishes between the following relevant categories within the financial instruments (please also refer to note 29):

- Debt/equity instruments and derivatives measured at fair value through profit and loss (FVtPL)
- Debt instruments measured at amortized cost (AC)

Further details of the changeover effects and implementation of IFRS 9 are contained in the section "Changes in accounting and valuation methods".

As a general rule, financial instruments are initially recognized when the asset is delivered to or by KUKA and they are therefore accounted for as of the settlement date (please also refer to note 29).

Derivatives

KUKA Group recognizes all derivatives at fair value as of the settlement date. The fair values are determined with the aid of standard financial mathematical techniques, using current market parameters such as exchange rates and counterparty credit ratings (mark-to-market method) or quoted prices. Middle rates are used for this calculation.

Derivatives are used to hedge currency fluctuations.

Derivatives with a positive fair value are recognized under other assets. If the fair value of derivatives is negative, this results in recognition under other liabilities.

Investments in non-consolidated companies and financial investments

In KUKA Group, investments in continuing business units that are not material to the net assets, financial position and performance of the Group are reported under available-for-sale financial assets. They are recognized at cost of purchase. Current market values are not available for shares held by KUKA, since no shares are traded in an active market.

Receivables and other assets

The receivables and other assets of KUKA Group are accounted for at amortized cost using the effective interest method. Appropriate discounts are additionally made for all recognizable individual risks. If a general credit risk is detectable, appropriate valuation adjustments are made. This involves grouping similar risk default characteristics of financial assets, testing them together for impairment and if necessary adjusting the value. The amount of the value adjustment takes both the contractually stipulated payment flows and the empirical default history into account.

The carrying amounts of the assets to be depreciated are reduced using value adjustment accounts. If actual defaults occur, these result in a write-off of the receivables in question. For determining the extent of the provision for credit losses, a three-stage model is used, according to which, as of the time of addition, twelve-month expected credit losses and, in the event of a significant deterioration in credit risk, the expected total losses are to be recognized. An exception to the general impairment model is the so-called simplified impairment model for trade receivables, receivables from leases and for contract assets in accordance with IFRS 15. Under the simplified impairment model, a provision for credit losses has to be recognized in the amount of the expected losses over the remaining term for all instruments, regardless of their credit quality.

Cash and cash equivalents

Cash and cash equivalents are measured at cost and include all cash funds recognized on the balance sheet, i.e. cash on hand, checks and cash balances at financial institutions with a remaining term of three months or less. Securities with an original remaining term of more than three months are, however, recognized under other assets.

Liabilities

Liabilities are generally recognized at amortized cost; liabilities arising from finance leases are, however, recognized at the present value of future lease payments. Liabilities with a term of more than one year are discounted to the balance sheet date on the basis of applicable interest rates provided that the interest effect is classified as material.

Financial liabilities are initially recognized at fair value less transaction costs. The subsequent valuation is carried out at amortized cost. Any difference between the amount paid out (less transaction costs) and the settlement amount is recognized in the interest result for the term of the loan using the effective interest method. If fees are incurred when setting up credit lines, they are capitalized as credit transaction costs and are recognized as interest expense over the term of the corresponding loan commitment.

Trade payables also include payments due on outstanding supplier invoices. KUKA Group has launched a supplier finance program for the purpose of being able to manage trade payables more efficiently. A separate agreement is made for each supplier based on a framework agreement with banks in which the supplier can discount authorized receivables at the bank at any time (that means those that have been approved by KUKA Group). The liability is paid to the bank on the due date by KUKA Group, irrespective of the supplier's discounting date. This gives both suppliers and KUKA Group added flexibility and security.

Inventories

In accordance with IAS 2, KUKA Group inventories are capitalized at the lower of cost and the net realizable value. The average method is used to measure the acquisition or production cost. In addition to the direct unit costs, production costs also include appropriate costs for indirect materials and production overheads. Write-downs to lower net realizable value have been taken to the extent necessary. In addition to valuation allowing disposal at no net loss, these write-downs also cover all other inventory risk. If the reasons that led to a devaluation of inventories in the past no longer apply, impairment losses are reversed.

Current and deferred taxes

Tax receivables and liabilities are assessed using the expected amount of the reimbursement from or payment to the tax authorities. The local tax laws are taken into consideration for the calculation.

Deferred tax assets and liabilities are recorded according to IAS 12 for all temporary differences between the carrying amounts of assets and liabilities on the Group balance sheet and their recognized value for tax purposes (liability method) as well as for tax loss carryforwards. Deferred tax assets for accounting and valuation differences as well as for tax loss carryforwards are only recognized to the extent that there is a sufficiently probable expectation that the corresponding benefit will be realized in the future. Deferred tax assets and liabilities are not discounted. Deferred tax assets are netted against deferred tax liabilities if the tax creditor is the same.

Pension provisions and similar obligations

The measurement of pension provisions and similar obligations is performed in accordance with IAS 19 and includes pension liabilities of KUKA Group from performance-based pension systems. Company obligations from defined benefit plans are determined separately for each defined benefit plan according to actuarial principles. The first step involves the retirement benefits being estimated that employees have acquired in return for their service in the current period and prior periods. The next step involves these retirement benefits being discounted using the project unit credit method. Not only known pensions and vested benefits are taken into consideration as of the balance sheet date. This method also takes expected future increases in salaries and pensions into account. The calculation is based on actuarial reports that must be prepared annually based on biometric data. If actuarial gains or losses occur in a period, they are recognized in other comprehensive income. The company determines the net interest expense (net interest income) by multiplying the net liability (net asset value) at the beginning of the period with the underlying interest rate of the discount of the gross defined benefit pension obligation at the beginning of the period. If a past service cost is incurred due to changes to the plan, this is recognized directly in the period in which the change occurs. The standard return on plan assets is recognized in the amount of the discount rate applied to pension obligations. Administrative expenses that are incurred for plan assets are recognized as part of the revaluation component in other comprehensive income, while other administrative costs are allocated to operating profit at the time the costs occur. Reinsurance policies with insurance companies are in place for obligation surpluses from pre-retirement schemes according to the block model, which are taken into account with the same interest rate as for the corresponding obligation. The amount added for obligations from pre-retirement schemes is proportional to the amounts in the applicable collective bargaining agreements.

Other provisions

If there is a present obligation to third parties from an event in the past, another provision is recognized. It must be possible to estimate the amount of the provision reliably and the outflow of resources must be classified as more likely than not. Provisions are only recognized for legal and constructive obligations to third parties. No provisions are therefore recognized for future expenses, since these do not represent an external obligation.

Provisions for restructuring measures are only recognized if the conditions in IAS 37.72 are met. These include a detailed, formal restructuring plan that has to be created and communicated to the parties affected by it; it must be highly probable that the company can no longer withdraw from the obligation.

Vacation pay, flex-time credits and pre-retirement schemes, which come under the obligations from the human resources segment, are disclosed under other liabilities, as neither the time of occurrence nor the amount are subject to uncertainty.

If a provision is likely to occur within an ordinary business cycle, it is classified as current. This period may also last for longer than a year in individual cases. Non-current provisions with a term of more than one year are discounted to the balance sheet date on the basis of appropriate interest rates provided that the interest effect is classified as material.

Assets and liabilities held for sale

Non-current assets (or disposal groups) are classified as held for sale in accordance with IFRS 5.6 – 9 if the associated carrying amount is mainly realized by a sales transaction or a distribution to shareholders and not by continued use. For this to be the case, the asset (or disposal group) in its current state under conditions that are established practice and common for the sale of such assets (or disposal groups) must be immediately available for sale and such sale must be highly probable. A sale is highly probable if the responsible management level has adopted a plan for the sale of the asset (or disposal group) and has actively started searching for a buyer and executing the plan. The asset (or disposal group) must also be actually offered for sale at a price which is proportionate to the current fair value. Moreover, the disposal must be expected to qualify for recognition as a completed sale within one year from the date of classification. Non-current assets and disposal groups held for sale are measured at the lower of carrying amount and fair value, less disposal costs, unless the items presented in the disposal group do not fall within the scope of IFRS 5.

Share-based compensation

KUKA has an annual phantom share program for the executive management team, which was introduced in 2012. The last phantom share program was launched in 2016 and relates to the years 2016 to 2018. There was thus one phantom share program still in place at the balance sheet date. The programs are treated as a cash-settled, share-based compensation instrument using the fair value at the balance sheet date. The measurement parameters correspond to the phantom share program of KUKA Aktiengesellschaft’s Executive Board.

In place of the previous phantom share programs, the members of the executive management team have been entitled to participate in long-term incentive plans (hereinafter “LTIPs”) with annual allocation volumes since 2017. The LTIPs are variable compensation elements with long-term target-based incentives and a timespan of three fiscal years. The current plans thus cover the periods 2017 to 2019 and 2018 to 2020. The targets are based on performance and strategy factors. The measurement parameters correspond to the LTIP of KUKA Aktiengesellschaft’s Executive Board. The LTIP is not linked to the share price.

The entitlements from both the phantom share programs and the LTIPs are paid out at the end of the contractually agreed period. Early payment is possible only under certain conditions when leaving the Group.

An amount of €1.7 million (2017: €9.2 million) was set aside as at December 31, 2018 for future claims arising from the phantom share program for the executive management team and an amount of €0.2 million (2017: €0.4 million) for the LTIP.

See the compensation report for further details about the structure of the phantom share program and LTIP.

Assumptions and estimates

KUKA prepares the consolidated financial statements in accordance with the IFRS to be applied in the EU, but it is necessary to make estimations and assumptions in certain cases based on the structure of the rules and regulations. These assumptions may change over time and differ from the amounts that actually occur. The assumptions and estimates could also have been made differently by the company management in the same reporting period for equally justifiable reasons. In the application of accounting policies, the company has made the following discretionary decisions, which in some cases have a significant effect on the amounts in the annual financial statements. These do not include those decisions that represent estimates.

KUKA Group made assumptions and estimates about the following issues:

- Definition of the scope of consolidation
- Calculation of fair value
- Development costs
- Goodwill impairments
- Impairments of brand names with an indefinite useful life
- Deferred tax assets on loss carryforwards
- Trade receivables
- Contract assets and contract liabilities
- Pensions and other post-employment benefits
- Provisions

Definition of the scope of consolidation

Subsidiaries are those companies over which KUKA AG has existing rights to direct their significant operations. Significant operations are those business operations which have a material impact on the profitability of a company. If KUKA Group is exposed to variable returns as a result of its relationship with a company and has the possibility to influence these returns through its power to control the significant operations, a controlling influence can be assumed. As a rule, the possibility of exercising control is based on KUKA Group having direct or indirect majority voting rights. Further parameters are usually required for the assumption of control of a subsidiary. These include, for example, additional contractual agreements and this is why an assessment of the overall structure is required. Only after all factors have been considered can a final assessment be made on the type of consolidation. Joint ventures are based on joint agreements that are present if KUKA Group shares the management of activities conducted with a third party on the basis of a contractual agreement. Joint management is only present if decisions on significant activities require unanimous agreement from the parties involved. In the case of joint ventures the parties exercising the joint management hold rights to the net assets of the agreement. Joint ventures are accounted for according to the equity method. Associates are also measured by the equity method for which as a rule KUKA Group exercises significant influence based on a shareholding of between 20% and 50%. In both cases all the parameters of the particular relationship are examined for the type of consolidation and the assessment made concerning the type of consolidation.

Calculation of fair value (fair value measurement)

The fair value is a market-based valuation in accordance with IFRS 13 and not a company-related valuation. The standard governs how to determine fair market value and stipulates disclosures related to the measurement of the fair market value. It is not explicitly stipulated in which cases the fair value is to be used as a yardstick. Fair value is defined as the price that would be paid by independent market participants in an arm's length transaction at the measurement date if an asset were sold or a liability transferred. In accordance with IFRS 13, assets and liabilities measured at market values are to be attributed to the three levels of the fair value hierarchy. The three levels of the fair value hierarchy are defined as follows:

Level 1
Quoted prices in active markets for identical assets or liabilities

Level 2
Inputs other than quoted prices that are observable either directly or indirectly

Level 3
Inputs for assets and liabilities that are not based on observable market data

Development costs

Development costs are recognized as assets in accordance with the methods described under accounting policies. For the purpose of testing the potential impairment of the amounts recognized as assets, management must make assumptions concerning the expected future cash flows from assets, the applicable discount rates and the timing of the inflow of expected future cash flows. Moreover, assumptions must be made regarding costs yet to be incurred and the period until completion for projects that are still in the development stage.

Goodwill

Assets recognized as goodwill are tested at least once a year for impairment in KUKA Group. This requires an estimate to be made of the value in use for each cash generating unit to which the goodwill has been attributed. To determine the value in use, management must estimate the future cash flows of the respective cash generating units and select an appropriate discount rate for calculating the present value of these cash flows. The selected discount rate, for example, is influenced by volatility in capital markets and interest rate trends. The expected cash flows are also influenced by fluctuations in exchange rates and the expected economic developments. Furthermore, continuous review is necessary to determine whether there is any indication of impairment. In addition to changes in individual parameters that affect computation such as a significant increase in market yields, a particular focus is placed on changes with an adverse effect on the company in the technological, market, economic or legal environment in which it operates. By means of these indicators KUKA regularly observes whether a triggering event is present that would necessitate an impairment test in accordance with IAS 36 for goodwill, but also for other non-current assets. For details about the carrying amounts of the assets recognized as goodwill and the performance of the impairment tests please refer to the discussion under note 7.

Brand names with an indefinite useful life

KUKA Group assesses the intrinsic value of brand names with an indefinite useful life at least once a year. This involves estimating the future cash flows based on a potentially fictitious licensing income and selecting an appropriate discount rate for calculating the present value of these cash flows for each brand name. In this case too, the selected discount rate, for example, is influenced by volatility in capital markets and interest rate trends. The expected cash flows are also influenced by fluctuations in exchange rates and the expected economic developments.

Deferred tax assets on loss carryforwards

Deferred tax assets for loss carryforwards are recognized to the extent that it is probable that taxable income will be available such that the loss carryforwards can actually be used. The determination of the amount of deferred tax assets requires an estimate on the part of management of the expected timing and amount of anticipated future taxable earnings as well as future tax planning strategies. For details please refer to the explanations under note 5.

Trade receivables

Impairment of doubtful receivables involves making significant estimates and assessments regarding individual receivables based on the creditworthiness of the respective customer, the current economic trends and the analysis of historical bad debts on a portfolio basis. As far as the company derives the impairment on a portfolio basis using historical default rates, a decrease in the volume of receivables reduces such provisions accordingly and vice versa.

Contractual assets and liabilities

There is a significant share of business from long-term projects, especially in the Systems and Swisslog segments, which are accounted for over time in accordance with IFRS 15.35. In this case, the sales revenues of a project are disclosed depending on the percentage of completion. Particular emphasis is placed on the careful estimate of the progress of the work performed. Depending on the method used to determine the percentage of completion, the most important estimates include the total order costs, the costs yet to be incurred until completion, the total project revenues and risks as well as other assessments. The management team responsible for the respective project continuously monitors all estimates on a monthly basis and adjusts these as needed. Depending on the project progress and the consideration received, there is a contractual asset or a contractual liability for each project that is disclosed in the balance sheet.

Pensions and other post-employment benefits

Expenditures under defined benefit plans and other post-employment benefits are determined on the basis of actuarial calculations. The actuarial calculations are prepared on the basis of assumptions with respect to discount rates, future increases in wages and salaries, mortality rates and future pension increases. In line with the long-term orientation of these plans, such estimates are subject to significant uncertainties. Please see note 23 for further details.

Provisions

To a large degree, the designation and measurement of provisions for impending losses from contracts, of provisions for warranty obligations and of litigation provisions involve making estimates.

Long-term projects in particular are awarded based on invitations to tender. KUKA Group recognizes a provision for impending losses when the current estimated total costs arising from the respective contract exceed the expected total revenue. These estimates may change due to new knowledge as the project progresses. Deficit orders are identified based on continuous project costing. This requires an assessment of the performance standards and warranty costs.

KUKA Group is also confronted with various legal disputes, the proceedings of which may result in penal or civil sanctions or fines. A provision is always recognized when it is likely an obligation will result that will lead to future cash outflows and the amount of which can be reliably assessed. The underlying issues are often complex and associated with great uncertainties. Judgment whether a present obligation arising from a past event is to be recognized on the balance sheet date, whether future cash outflows are probable and the obligation can be reliably assessed is therefore largely at the discretion of management. The company, with the assistance of external legal professionals, regularly assesses the respective stage of the proceeding. New findings can change the assessment and it may be necessary to adjust the provision accordingly. For further details, please refer to note 24.

Changes in accounting and valuation methods

KUKA Group applied IFRS 9 – Financial Instruments and IFRS 15 – Revenue from Contracts with Customers for the first time in the 2018 fiscal year. IFRS 9 replaces the existing guidelines in IAS 39 regarding the recognition and measurement of financial instruments. IFRS 9 contains revised guidelines for the classification and valuation of financial instruments, also including a new model of the expected credit defaults for calculating the impairment of financial assets, and the new general accounting requirements for hedging transactions. The impairment for incurred losses valid under IAS 39 was replaced by a new impairment model under IFRS 9. The threshold for recording losses is lowered and impairments must already be recognized for expected losses.

IFRS 15, which is replacing the existing standards IAS 11 – Construction Contracts and IAS 18 – Revenue, governs how, when and over what period IFRS reporters should recognize revenue. The standard provides a principles-based five-step model to be applied to all contracts with customers. IFRS 15 additionally governs the scope of qualitative and quantitative notes to financial statements which are considerably more extensive (please refer to 1. Sales revenues and 14. Contract assets and contract liabilities). The first-time application of IFRS 15 resulted in advance payments amounting to €94.0 million being reclassified as contract liabilities. Under IAS 11 and 18, advance payments exceeding the PoC receivable were reported as a PoC liability. The designations of receivables and liabilities from construction contracts were also adapted to contract receivables and liabilities. With the introduction of IFRS 15, payments made by a customer prior to the fulfillment of a performance obligation are reported in a liability item (contract liabilities). The new rules of IFRS 15 have no significant changeover effects on KUKA's earnings, since the procedure applied in the past (PoC method for specific periods) does not lead to any material changes within KUKA Group. For presentation, KUKA applies the modified retrospective transition method.

Initial application of the standards essentially led to changes in presentation and impairments in the opening balance sheet. Overall, the balance sheet total fell as a result by €4.7 million to €2,635.4 million from December 31, 2017, to January 1, 2018.

The new model for expected credit defaults in accordance with IFRS 9 resulted in impairments of financial assets. In this connection, finance lease receivables were reduced by €1.0 million, trade receivables by €1.5 million and contract assets by €2.0 million. Cash and cash equivalents also decreased by €0.2 million. These changeover effects were booked without affecting net income. Changes due to the current measurements of financial instruments are recognized as income or expense. The Group has made use of the exemption to not amend comparative information for previous periods with regard to the change in classification and valuation (including impairment). In this respect, the information disclosed for 2017 generally does not correspond to the requirements of IFRS 9, but instead to those of IAS 39, which is also indicated accordingly at the relevant points in the notes. The assessments have been made on the basis of facts and circumstances existing at the time of the first application:

- Defining the business model in the framework of which a financial asset is held.
- Defining and revoking previous provisions in relation to particular financial assets and financial liabilities that are measured as FVtPL.
- Defining particular equity investments held as financial assets, which are not held for trading purposes, as FVOCI.

KUKA Group also took the following revised standards and interpretations into account in the consolidated financial statements for the first time in the 2018 fiscal year, which did not have any material impact:

- Amendments to IFRS 4 – Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts
- Amendments to IFRS 2 – Classification and Measurement of Share-based Payment Transactions
- Amendments to IAS 40 – Transfers of Investment Property
- Amendments to IFRIC 22 – Foreign Currency Transactions and Advance Consideration
- Annual Improvements 2014 – 2016 – Amendments to IFRS 1 and IAS 28

These changed standards had no material impact on the consolidated financial statements.

Amendments to IFRS 4 – Applying IFRS 9 Financial Instruments with IFRS 4 Insurance Contracts

The amendments are aimed at reducing the effects of different dates of the first application of IFRS 9 and the successor standard to IFRS 4, especially for companies with extensive insurance activities. Two optional approaches are introduced which can be used by insurers if certain requirements are met: the overlay approach and the deferral approach.

Amendments to IFRS 2 – Classification and Measurement of Share-based Payment Transactions

The amendments deal with individual issues relating to the accounting of share-based payment transactions with cash settlement. The essential amendment and modification is that there are now requirements in IFRS 2 which relate to the calculation of the fair value of obligations resulting from share-based payment transactions.

Amendments to IAS 40 – Transfers of Investment Property

The amendments serve to clarify the requirements relating to transfers to or from the inventory of investment property. In particular, this concerns whether property being constructed or developed which has previously been classified as inventories can be reclassified to the category of investment property if there has been an obvious change in use.

Amendments to IFRIC 22 – Foreign Currency Transactions and Advance Consideration

This clarifies the reporting of business transactions which include the receipt or payment of a consideration in a foreign currency.

Annual Improvements 2014 – 2016 – Amendments to IFRS 1 and IAS 28

The short-term exemptions in paragraphs E3-E7 were deleted in IFRS 1. IAS 28 clarified that the option to measure an investment in an associate or joint venture held by a company that is a venture capital company or another qualifying company at fair value, with reporting of the changes in the income statement, is available on initial recognition for any investment in an associate or joint venture on an individual investment basis.

Altogether, the following standards, standard adjustments and interpretations were approved by the balance sheet date and have in part already been adopted into EU law:

Standard/Interpretation	Effective date	Planned application by KUKA AG
IFRS 16 – Leases	Jan. 1, 2019	Fiscal year 2019
IFRIC 23 – Uncertainty over Income Tax Treatments	Jan. 1, 2019	Fiscal year 2019
Amendments to IFRS 9 – Prepayment Features with Negative Compensation	Jan. 1, 2019	Fiscal year 2019
Amendments to IAS 28 – Long-term Interests in Associates and Joint Ventures	Jan. 1, 2019	Fiscal year 2019[1]
Annual Improvements 2015 – 2017 – Amendments to IFRS 3, 11 and IAS 12, 23	Jan. 1, 2019	Fiscal year 2019[1]
Amendments to IAS 19 – Plan Amendment, Curtailment or Settlement	Jan. 1, 2019	Fiscal year 2019[1]
Amendments to References to the Conceptual Framework in IFRS Standards	Jan. 1, 2020	Fiscal year 2019[1]
Amendments to IFRS 3 – Business Combinations	Jan. 1, 2020	Fiscal year 2019[1]
Amendments to IAS 1 and IAS 8 – Definition of Materiality	Jan. 1, 2020	Fiscal year 2019[1]
IFRS 17 – Insurance Contracts	Jan. 1, 2021	Fiscal year 2021[1]
Interim Standard IFRS 14 – Regulatory Deferral Accounts	n. a.[2]	n. a.[2]

[1] Pending adoption (endorsement) by the European Union
[2] Endorsement process does not start until IFRS standard is finalized

Effects of new accounting standards to be applied as of the 2019 fiscal year

KUKA does not plan to apply at an early stage the following new or amended standards and interpretations whose application is not mandatory until later fiscal years. The effects of these new standards are being continuously evaluated. A more detailed description is provided below for selected standards.

IFRS 16 – Leases

IFRS 16 introduces a uniform accounting model by which leases have to be reported in the balance sheet of the lessee. A lessee reports a right-of-use asset that represents its right to use the underlying asset and a liability from the lease that represents its obligation to make lease payments. There are exceptions for short-term leases (term of less than 12 months) and leases for assets whose original price is less than €5,000. Accounting by the lessor is comparable with the current standard – this means that lessors still classify leases as financing or operating leases.

IFRS 16 replaces the existing guidelines on leases, including IAS 17 Leases, IFRIC 4 Determining Whether an Arrangement Contains a Lease, SIC-15 Operating Leases – Incentives and SIC-27 Evaluating the Substance of Transactions Involving the Legal Form of a Lease.

The standard must be applied for the first time in the first reporting period of a fiscal year starting on or after January 1, 2019. KUKA Group has started to assess the potential effects of the application of IFRS 16 on its consolidated financial statements but the project was not yet concluded as at the balance sheet date. A first analysis showed that a balance sheet extension in a lower three-digit million region is to be expected. KUKA Group will apply the modified retrospective transition method.

Overall, the other standards to be applied as of January 1, 2019 have no material impact on the consolidated financial statements.

Explanation of items in the financial statements

Notes to the Group income statement

1. Sales revenues

Reported under sales revenues are those revenues generated as soon as a contractual obligation is fulfilled by transferring promised goods to a customer or performing a service. KUKA Group generates its sales revenues by selling products such as industrial robots, from construction contracts and (mainly downstream) services. In the case of products, the performance obligation is fulfilled at a specific point in time, whereas the performance obligation in the case of construction contracts is fulfilled over a period of time. For services, the performance obligation can be fulfilled either over a period of time or at a point in time.

KUKA Group achieved sales revenues totaling €1,561.9 million for products and services provided at a specific point in time. For the fulfillment of performance obligations over a period of time, KUKA Group generated sales revenues of €1,680.2 million. The highest sales revenues were generated in EMEA followed by the Americas.

in € millions	Group	Europe / Middle East / Africa	Americas	Asia / Australia
Services provided over a period of time	1,680.2	593.4	799.6	287.2
Services provided at a specific point in time	1,561.9	984.6	225.3	352.0
Total	**3,242.1**	**1,578.0**	**1,024.9**	**639.2**

The breakdown of sales revenues by segments subject to reporting shows that the Robotics segment is mainly active in the product business, whereas Systems and Swisslog are primarily engaged in project business and therefore have revenue recognized over a period of time. The segment with the highest sales revenues is Systems followed by Robotics. See segment reporting for more information.

in € millions	Group	Robotics	Systems	Swisslog	Other / consolidations
Services provided over a period of time	1,680.2	16.9	999.6	674.4	–14.2
Services provided at a specific point in time	1,561.9	1,165.5	301.9	144.9	–46.9
Total	**3,242.1**	**1,182.4**	**1,301.5**	**819.3**	**–61.1**

The anticipated sales revenues from the existing order backlog of €2,055.7 million are expected to be generated in the following timeframe:

in € millions	2018
Anticipated sales revenues from the existing order backlog	2,055.7
(of which, not later than one year)	(1,532.8)
(of which, later than one year and not later than five years)	(516.4)
(of which, later than five years)	(6.6)

2. Cost of sales, selling expenses, research & development expenses and general and administrative expenses

The following is a breakdown of the cost of sales, selling expenses, research & development expenses and general and administrative expenses:

	Cost of sales		Selling expenses		Research and development expenses		General and administrative expenses		Total	
in € millions	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Cost of materials	1,959.8	1,720.2	2.5	4.7	8.3	11.9	8.4	7.8	1,979.0	1,744.6
Personnel expenses	651.4	642.6	160.4	167.0	83.8	100.9	142.6	149.2	1,038.2	1,059.7
Amortization	33.2	31.9	10.7	11.8	12.8	17.9	20.8	25.1	77.5	86.7
Other expenses and income	80.4	121.5	133.1	136.4	23.8	21.2	39.6	64.6	276.9	343.7
Total	**2,724.8**	**2,516.2**	**306.7**	**319.9**	**128.7**	**151.9**	**211.4**	**246.7**	**3,371.6**	**3,234.7**

The decline in the cost of sales is due to the lower use of materials. The increase in other expenses and income within the cost of sales is attributable to currency effects amongst other factors. The total of all functional costs decreased by 4.1% compared to the previous year. The research & development expenses include €0.1 million amortization on borrowing costs capitalized in prior years (2017: €0.1 million). Foreign currency gains and losses from operational foreign currency transactions totaling €6.5 million (2017: –€2.8 million) are also recognized in other expenses and income under the cost of sales. The rise in personnel costs within the research and development functional area is due to the expansion of employee capacity. The capacity increased on average to 1,124 employees in the previous fiscal year (2017: 963 employees). The increase in expenses and income in the general administrative costs is attributable to costs relating to personnel changes.

Personnel costs are directly allocated to the functional areas. The following figures result:

in € millions	2017	2018
Wages and salaries	843.9	874.7
Social security payments and contributions for retirement benefits and provident funds	194.3	185.0
(of which, for retirement benefits)	(27.8)	(23.3)
Personnel costs	**1,038.2**	**1,059.7**

The table below shows the number of employees as an annual average as well as on the balance sheet date of KUKA Group:

Employees by functional areas	Annual average		Balance sheet date			
	2017	2018	Total 2017	Total 2018	of which, Germany	of which, abroad
Manufacturing	9,602	9,549	9,830	9,436	3,017	6,419
Sales	1,611	1,717	1,690	1,712	565	1,147
Administration	1,242	1,396	1,314	1,461	599	862
Research and development	963	1,124	1,027	1,251	676	575
	13,418	**13,786**	**13,861**	**13,860**	**4,857**	**9,003**
Apprentices	277	265	296	295	231	64
Student trainees	98	97	99	80	59	21
Total	**13,793**	**14,148**	**14,256**	**14,235**	**5,147**	**9,088**

3. Other operating income and expenses

The line items under other operating income and expenses capture income and expenses that are not allocated to any of the functional categories – cost of sales, selling expenses, research & development expenses, general and administrative expenses – or cannot be reported separately at any other point. Other operating income increased from €18.8 million in 2017 to €45.8 million in the 2018 fiscal year. This includes income from the sale of the companies KBee AG, Munich, and connyun GmbH, Karlsruhe, which took place in the second quarter. Other operating income also includes subsidies, special discounts, income from compensation claims and the reversal of provisions no longer required.

Other operating expenses, which decreased from €21.4 million in 2017 to €16.6 million in 2018, include other taxes amounting to €8.4 million compared to €5.6 million in 2017.

4. Financial result

The balancing of expenses and income in the financial result led to a surplus of income amounting to €0.6 million in the 2018 fiscal year. Compared to the previous year, this represents an improvement of €9.8 million (2017: –€9.2 million).

in € millions	2017	2018
Depreciation of financial assets	**0.2**	**0.1**
Interest income from finance lease	5.3	1.8
Currency effects in the area of financing	–	3.0
Remaining interest and similar income	0.9	9.3
Other interest and similar income	**6.2**	**14.1**
Interest component for allocations to pension provisions	1.9	1.7
Guarantee commissions	1.3	1.8
Interest expense for the promissory note loan	3.6	5.2
Financing costs reclassified to operating results and capitalized	–0.2	–0.4
Foreign currency gains and losses	5.8	–
Remaining interest and similar expenses	2.8	5.1
Other interest and similar expenses	**15.2**	**13.4**
Financial result	**–9.2**	**0.6**

Interest income increased from €6.2 million in 2017 to €14.1 million in 2018. The main reason for the increase is interest income relating to the joint venture newly founded in the third quarter. Income was also generated in connection with the finance lease, with a decline being evident here. This relates to the suspended finance lease of KUKA Toledo Production Operations LLC., Toledo/USA. See 11. Finance leases for more information. Currency effects in the area of financing are shown in the financial result. The net balance of foreign exchange gains and losses in the 2018 fiscal year led to a profit of €3.0 million (2017: loss of €5.8 million).

Within the reporting period, interest expenditure decreased from €15.2 million to €13.4 million. €5.2 million of this was attributable to the promissory note loan and €1.7 million to the net interest expenditure for pensions. Expenditure for guarantee commissions rose from €1.3 million to €1.8 million. Further information about the promissory note loan and the guarantee commissions can be found in note 26.

5. Taxes on income/deferred taxes

Tax expense

Income tax expense breaks down by origin as follows:

in € millions	2017	2018
Current taxes	58.2	14.7
(of which, relating to other periods)	(–10.2)	(–15.0)
Deferred taxes	–52.9	3.6
(of which, from temporary differences)	(–41.8)	(25.8)
(of which, from loss carryforwards)	(–11.1)	(–22.2)
Tax expense	**5.3**	**18.3**

Of the current expenses for tax on earnings, €5.0 million is attributable to domestic expenditure compared to –€0.2 million in 2017, whereas €9.7 million is attributable to foreign expenditure compared to €58.4 million in 2017.

Deferred tax expenses of –€20.9 million are attributable to domestic operations and €24.5 million to foreign. This compares with –€19.3 million and –€33.6 million respectively in 2017.

The expected tax expense based on earnings before taxes and the applicable tax rate for the KUKA companies in Germany remained unchanged at 32.0% and leads to the following actual tax expense.

in € millions	2017	2018
Earnings before tax expense	**93.5**	**34.9**
Expected tax expense	**29.9**	**11.2**
Tax rate-related differences	3.4	–3.4
Tax reductions due to tax-exempt income	–16.7	–13.3
Tax increases due to non-deductible expenses	3.8	10.1
Tax expenses (+)/tax income (–) for prior years	–24.7	–4.8
Change in allowance on deferred taxes	12.3	15.6
First-time recognition of previously unrecognized deferred tax assets on tax loss carryforward	–2.2	–1.6
Change in permanent differences	0.1	0.1
Tax impact of investments accounted for by the equity method	0.2	0.0
Effects resulting from tax rate changes	–0.9	0.0
Tax effect due to non-creditable withholding taxes	0.0	4.5
Other differences	0.1	–0.1
Taxes on income (actual tax expense)	**5.3**	**18.3**

The applicable tax rate in Germany still comprises corporate income tax (Körperschaftsteuer) of 15.0% as well as reunification tax (Solidaritätszuschlag) of 5.5% and earned income tax (Gewerbesteuer) based on a uniform tax rate of 16.2% as was the case in the previous year.

In principle, deferred taxes were recognized on the basis of the applicable tax rate for each company in question.

There are no tax credits for which deferred taxes would need to be accounted.

Current tax expense in other accounting periods totaling –€15.0 million (2017: –€10.2 million) resulted in the German and foreign operations.

Deferred taxes

The value of deferred tax assets and liabilities due to temporary differences and tax loss carryforwards in the Group is associated with the following items:

	Deferred tax assets		Deferred tax liabilities	
in € millions	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018
Non-current assets	21.3	47.3	70.6	115.8
Current assets	98.8	83.1	78.9	64.5
Provisions	52.7	67.8	4.0	9.6
Liabilities	39.9	45.4	15.9	30.9
Subtotal	**212.7**	**243.6**	**169.4**	**220.8**
Balancing item	–141.9	–178.4	–141.9	–178.4
Valuation allowance	–11.9	–17.3	–	–
Subtotal	**58.9**	**47.9**	**27.5**	**42.4**
Deferred taxes on temporary differences	**58.9**	**47.9**	**27.5**	**42.4**
Deferred taxes on tax loss carryforwards	20.7	42.6	–	–
Total	**79.6**	**90.5**	**27.5**	**42.4**
(of which, from items recognized in equity)	(2.4)	(3.3)	–	–

Valuation allowances to the carrying amount of deferred tax assets are recognized if the realization of the expected benefit of the deferred taxes is not sufficiently probable. The estimates made are subject to change over time, which may result in the reversal of the valuation allowance in subsequent periods.

The recognized values on the balance sheet are written off in the event that the tax benefits that they represent were no longer expected to be realized.

In the loss carryforwards of €418.3 million (2017: €269.0 million), amounts totaling €285.1 million (2017: €200.5 million) are not considered in the accounting of deferred taxes.

Loss carryforwards amounting to €43.9 million (2017: €61.6 million) are available with a time limit and the remaining €374.4 million (2017: €207.4 million) is not subject to a time limit.

The loss carryforwards for which deferred taxes were capitalized relate to the total loss carryforwards as follows:

	Loss carryforwards for which deferred taxes were capitalized		Total existing loss carryforwards	
in € millions	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018
Swisslog (Deutschland) GmbH	2.2	–	24.5	35.3
KUKA Industries GmbH & Co. KG	0.3	–	34.5	65.7
KUKA Aktiengesellschaft	47.2	127.2	65.2	161.8
Other	18.8	6.1	144.8	155.5
Total	**68.5**	**133.3**	**269.0**	**418.3**

Deferred tax income in the amount of €1.6 million (2017: €2.2 million) results from the recognition of deferred tax receivables on loss carryforwards from earlier periods which until now had not been included in or written down from the tax accrual/deferral. Deferred tax assets previously recognized but not recognized in the current year in the amount of €15.6 million (2017: €12.3 million) were not reported. In accordance with IAS 12, deferred tax items must be recognized for the difference between the proportionate equity of a subsidiary recognized on the Group balance sheet and the investment carrying amount of this subsidiary on the tax balance sheet of the parent company (so-called “outside basis differences”) if it is likely that this difference will be realized. Since both KUKA Aktiengesellschaft and the subsidiaries in question are corporations, these differences are predominantly tax-exempt under section 8b of the Corporation Tax Law (KStG) upon realization and thus are permanent in nature. According to IAS 12.39, no deferred tax liability should be recognized even for temporary differences (e. g. those resulting from the 5% flat-rate allocation under section 8b KStG) if it is not likely, given control by the parent company, that these differences will reverse in the foreseeable future. Since no such reversal is expected, no deferred tax items had to be recognized on the balance sheet for this purpose. There are outside basis differences in the amount of €25.7 million (previous year: €13.0 million).

Overall, the change to deferred tax assets and liabilities of –€4.0 million (2017: €52.9 million) came from amounts affecting net income totaling –€3.6 million (2017: €48,6 million) as well as, for the most part, amounts not affecting net income due to changes in deferred taxes on pension obligations amounting to –€0.9 million (2017: –€2.6 million). The first-time recognition of newly acquired companies (2017: –€2.9 million) did not result in any changes. There were also relevant currency effects amounting to €0.5 million (2017: €1.2 million).

Where loss carryforwards have not been written off, it is expected in the five-year planning period that this tax-reducing potential will be utilized via taxable income, which is likely based on the expectations of Group companies.

6. Earnings per share

Undiluted / diluted earnings per share break down as follows:

	2017	2018
Net income for the year attributable to the shareholders of KUKA AG (in € millions)	88.5	12.7
Weighted average number of shares outstanding (No. of shares)	39,775,470	39,775,470
Diluted / undiluted earnings per share (in €)	**2.22**	**0.32**

Undiluted earnings per share due to shareholders of KUKA Aktiengesellschaft were calculated in accordance with IAS 33 and the weighted average number of shares outstanding for the year.

The weighted average number of shares in circulation remained unchanged at 39.8 million on the balance sheet date (December 31, 2017: 39.8 million shares).

Notes to the Group balance sheet: Assets

7. Intangible assets

Schedule of changes in intangible fixed assets in 2018

The breakdown of the intangible fixed asset items and their development through the reporting period are shown in the following table.

	Acquisition/manufacturing costs						
in € millions	Status as of Jan. 1, 2018	Exchange rate differences	Additions	Disposals	Change due to business combinations/others	Reclassifications	Status as of Dec. 31, 2018
1. Rights and similar assets	246.2	5.5	18.7	10.2	17.0	13.8	291.0
2. Self-developed software and other development costs	92.9	2.1	36.4	3.0	–	0.0	128.4
3. Goodwill	308.5	7.3	0.7	1.0	1.6	–	317.1
4. Advances paid	21.2	–	3.9	0.0	–	–13.8	11.3
	668.8	**14.9**	**59.7**	**14.2**	**18.6**	**0.0**	**747.8**

Schedule of changes in intangible fixed assets in 2017

	Acquisition/manufacturing costs						
in € millions	Status as of Jan. 1, 2017	Exchange rate differences	Additions	Disposals	Change due to business combinations/others	Reclassifications	Status as of Dec. 31, 2017
1. Rights and similar assets	220.0	–12.0	9.1	2.7	25.5	6.3	246.2
2. Self-developed software and other development costs	69.2	–3.5	31.7	4.6	0.1	0.0	92.9
3. Goodwill	265.9	–16.5	0.0	–	59.1	–	308.5
4. Advances paid	14.5	–	12.5	–	–	–5.8	21.2
	569.6	**–32.0**	**53.3**	**7.3**	**84.7**	**0.5**	**668.8**

The impairment of the brands is assessed at least once a year as part of an impairment test or if a triggering event occurs. The impairment of the residual carrying amount of €22.2 million was also assessed during the 2018 financial year and the test results did not lead to an impairment requirement.

Goodwill

Recognized goodwill amounts to €308.7 million (2017: €300.1 million). It is distributed across the cash generating units (CGUs) listed below:

	Dec. 31, 2017		Dec. 31, 2018	
in € millions	Goodwill	WACC (%)	Goodwill	WACC (%)
Robotics	19.6	11.3	18.9	13.0
Systems	65.9	14.0	68.3	15.1
Swisslog	184.1	12.3	191.0	11.3
Other	30.5	12.0	30.5	12.5
Total	**300.1**		**308.7**	

Compared with the 2017 financial year, there are now only four cash generating units (CGUs) – Robotics, Systems, Swisslog and Other. Due to changes in process structures, the data are no longer available on a profit center basis – in contrast to the previous year – which is why the impairment test is carried out on the basis of the segments subject to reporting requirements. The figures for the 2017 financial year have been reconciled.

The goodwill of €1.6 million resulting from the asset deals of Mor-Tech Design Inc., Sterling Heights, Michigan/USA, Mor-Tech Manufacturing Inc., Sterling Heights, Michigan/USA as well as IRT SA was allocated to the Systems CGU. The goodwill of Visual Components Oy, Espoo/Finland and its subsidiaries was allocated to the Robotics segment, in contrast to the 2017 financial year (allocation to “Other”). The “Other” segment now only contains Device Insight GmbH, Munich.

All other amendments to the goodwill listed for each CGU are attributable to the currency translation effects on goodwill in a foreign currency.

The impairment test is based on a three-year planning period. A transitional year is determined from the three planning years and a market-specific growth rate of 2.0%; this transitional year is used to calculate the perpetuity. The discount rates applied in the fiscal year before taxes (weighted average cost of capital (WACC)) may be noted from the table on the left

Accumulated depreciation and impairment losses							Net carrying amount
Status as of Jan. 1, 2018	Exchange rate differences	Additions	Disposals	Change due to business combinations/ others	Reclassifica-tions	Status as of Dec. 31, 2018	Status as of Dec. 31, 2018
119.2	2.2	29.3	9.5	0.0	0.0	141.2	149.8
20.8	0.9	15.6	3.0	–	–	34.3	94.1
8.4	–	–	–	–	–	8.4	308.7
–	–	–	–	–	–	–	11.3
148.4	**3.1**	**44.9**	**12.5**	**0.0**	**0.0**	**183.9**	**563.9**

Accumulated depreciation and impairment losses						Net carrying amount
Status as of Jan. 1, 2017	Exchange rate differences	Additions	Disposals	Change due to business combinations/ others	Status as of Dec. 31, 2017	Status as of Dec. 31, 2017
100.9	−4.9	25.5	2.4	0.1	119.2	127.0
15.2	−1.2	11.3	4.5	–	20.8	72.1
8.4	–	–	–	–	8.4	300.1
–	–	–	–	–	–	21.2
124.5	**−6.1**	**36.8**	**6.9**	**0.1**	**148.4**	**520.4**

The cost of equity capital and borrowing costs were determined on the basis of segment-specific peer groups. The peer group is made up of KUKA's most important national and international competitors and thus includes companies with similar activities and product portfolios.

The market risk premium is deemed as the key component for the CGUs in the WACC calculation. It amounts to 6.5% in the Swisslog CGU and 6.75% in all other CGUs (2017: 6.75%; Swisslog 6.5%). The beta factor was determined as a three-year average of the respective peer group; it was 1.118 for the Systems CGU (2017: 1.064); 1.076 for the Robotics CGU (2017: 1.063), 1.034 for Swisslog (2017: 1.012) and 1.115 for the Other segment (2017: 1.115). While observing the possible ranges of the market risk premium, a 1% higher WACC would only marginally influence the impairment of goodwill – as marginally as a reduction in sales revenues over the entire planning period by 10% with a correspondingly lower cash flow.

The ratios for the cost of equity capital and the cost of borrowed capital were determined by CGU based on the average leverage ratios of the respective peer group for the last three years. As in the previous year, the tax rate used was 29.7% (2017: 29.7%) with the exception of Swisslog where it was 17.9% (2017: 17.9%).

Self-developed software and other product development costs

Total expenditures for research and development increased by €23.2 million from €128.7 million to €151.9 million in the 2018 fiscal year. According to IAS 38, costs for self-developed software and other product developments must be capitalized. For the purpose of this capitalization, KUKA Group uses the costs of production, which include directly attributable costs as well as an appropriate allocation for overheads and depreciation. Borrowing costs for qualifying assets are included in the production costs based on the Group capitalization rate of 1.7% (2017: 1.3%).

The development costs of KUKA Group are capitalized in all three reporting segments – Robotics, Systems and Swisslog.

The companies are working on several projects involving mechanical systems and power and control software for robots as well as new applications in the area of medical technology and automation solutions. Borrowing costs of €0.4 million (2017: €0.1 million) were accounted for.

The development costs were capitalized with a carrying amount of €94.1 million (2017: €72.1 million). Additions for the 2018 fiscal year totaled €36.4 million compared to €31.7 million in 2017. The additions mainly included software solutions for the KR C5 and LBR iisy robots.

Please see the research and development report for more detailed information.

The amortization of intangible fixed assets results from the statement of changes in intangible fixed assets.

8. Tangible assets

Schedule of changes in KUKA Group's tangible assets 2018

The breakdown of the tangible asset items and their development through the reporting period are shown in the following table. The investment focuses of the fiscal year are described in the Management Report.

	Acquisition/manufacturing costs						
in € millions	Status as of Jan. 1, 2018	Exchange rate differences	Additions	Disposals	Change due to business combinations/others	Reclassifications	Status as of Dec. 31, 2018
1. Land, similar rights and buildings including buildings on land owned by third parties	218.3	1.9	37.9	2.4	–0.1	13.5	269.1
2. Technical plant and equipment	140.1	0.8	17.5	3.6	–0.1	2.7	157.4
3. Other equipment, factory and office equipment	152.0	0.3	19.1	12.7	–0.2	2.5	161.0
4. Advances paid and construction in progress	50.8	4.4	161.2	0.1	–	–18.7	197.6
	561.2	**7.4**	**235.7**	**18.8**	**–0.4**	**0.0**	**785.1**
The following amounts have been capitalized under "Tangible assets" due to finance leases in which KUKA Group acts as the lessee:	0.6	–	–	0.1	–	–	0.5

Schedule of changes in KUKA Group's tangible assets 2017

	Acquisition/manufacturing costs						
in € millions	Status as of Jan. 1, 2017	Exchange rate differences	Additions	Disposals	Change due to business combinations/others	Reclassifications	Status as of Dec. 31, 2017
1. Land, similar rights and buildings including buildings on land owned by third parties	224.2	–4.8	3.2	4.6	–	0.3	218.3
2. Technical plant and equipment	136.9	–3.8	12.9	6.1	0.4	–0.2	140.1
3. Other equipment, factory and office equipment	139.1	–3.3	18.4	5.9	0.3	3.4	152.0
4. Advances paid and construction in progress	4.7	–0.1	51.0	0.8	–	–4.0	50.8
	504.9	**–12.0**	**85.5**	**17.4**	**0.7**	**–0.5**	**561.2**
The following amounts have been capitalized under "Tangible assets" due to finance leases in which KUKA Group acts as the lessee:	0.6	–	0.0	–	–	–	0.6

The depreciation figures result from the schedule of changes shown above. No unscheduled impairment losses on tangible assets were recorded for the current year and the previous year. Additions of €161.2 million for assets under construction are to be allocated to the new production facilities in Augsburg, Shunde/China and of KUKA Toledo Production Operations LLC., Toledo/USA.

Government grants

No or only negligible grants and allowances were deducted from the acquisition or production costs of the tangible assets, as in the previous year.

Accumulated depreciation and impairment losses							Net carrying amount
Status as of Jan. 1, 2018	Exchange rate differences	Additions	Disposals	Change due to business combinations / others	Reclassifications	Status as of Dec. 31, 2018	Status as of Dec. 31, 2018
81.8	0.6	7.8	2.3	0.0	0.0	87.9	181.2
87.7	–0.1	14.7	2.7	0.0	0.0	99.6	57.8
95.7	0.5	19.5	11.7	–0.1	0.0	103.9	57.1
0.0	0.0	–	–	–	0.0	0.0	197.6
265.2	**1.0**	**42.0**	**16.7**	**–0.1**	**0.0**	**291.4**	**493.7**
0.4	–	0.1	0.1	–	–	0.4	0.1

Accumulated depreciation and impairment losses							Net carrying amount
Status as of Jan. 1, 2017	Exchange rate differences	Additions	Disposals	Change due to business combinations / others	Reclassifications	Status as of Dec. 31, 2017	Status as of Dec. 31, 2017
78.4	–1.3	8.0	3.3	–	0.0	81.8	136.5
81.0	–2.1	14.8	4.5	0.1	–1.6	87.7	52.4
83.5	–2.2	17.9	5.0	–0.2	1.7	95.7	56.3
0.8	–	–	0.8	–	0.0	0.0	50.8
243.7	**–5.6**	**40.7**	**13.6**	**–0.1**	**0.1**	**265.2**	**296.0**
0.3	–	0.1	–	–	–	0.4	0.2

Government grants totaling €5.0 million (2017: €5.0 million) were received and directly released to income. There were no contingently repayable grants as of the balance sheet date.

9. Financial investments

Financial investments predominantly relate to equity investments where KUKA usually does not hold more than 10% of the voting rights.

10. Investments accounted for at equity

As at December 31, 2018, there were three (December 31, 2017: four) investments accounted for at equity.

Taken individually or jointly, the investments that exist at the end of the fiscal year are of minor significance for KUKA Group and this is why there are no notes in accordance with IFRS 12.B12 and B13. No new company was acquired in the 2018 fiscal year that is accounted for at equity.

The aggregate amount of the shares in the loss of the investments accounted for at equity that has to be disclosed pursuant to IFRS 12. B16 is €2.3 million (2017: €2.2 million loss). The pro rata earnings of KBee AG, Munich, are also included in the previous year's amount and until the sale in the second quarter.

11. Finance leases

KUKA as a lessor

KUKA Toledo Production Operations LLC., Toledo/USA (KTPO)

KTPO manufactures Jeep Wrangler bodies under the terms of a pay-on-production contract with Chrysler.

The contract is set up as a finance lease with KUKA Group acting as lessor. Due to discontinuation of production of the JK model in April 2018, the existing contract has been adapted to the production of the JT successor model of the Jeep Wrangler that is scheduled to commence in April 2019. Existing contractual arrangements have been adapted to the new product requirements and the overall contract has been extended to March 2025. The new contract also includes the supply of car bodies. Conclusion of the new contract means that the previous contract is suspended. As a result, the previous finance lease receivable was derecognized and €27.3 million from the previous contract was capitalized in the fixed assets together with €31.0 million in other current assets. Furthermore, a positive effect in the single-digit million euro range was recognized with an effect on earnings from operating activities. The expenditure for construction of the new manufacturing facility will be capitalized under "Assets under construction" until the facility is put into operation. With the start of series production, a finance lease receivable from the customer will be capitalized and the fixed assets derecognized.

Translogic Corporation, Denver/USA

Finance leases for portioning systems for medicines were also taken on in the context of the acquisition of Talyst Systems LLC, Delaware/USA in the 2017 fiscal year. A non-current lease receivable of €1.0 million and a current lease receivable of €0.6 million exist as at the balance sheet date.

Sales revenues shown on Translogic's balance sheet will thus be reduced by the fictitious leasing rate. The interest component included in the fictitious leasing rate is booked under interest result, while the repayment component of this payment reduces the receivables as per schedule.

Full payout lease agreements exist for both KTPO (future) and Translogic due to the design of the respective leases. Future minimum lease payments thus correspond to the gross investment.

A non-current lease receivable of €1.0 million (2017: €43.1 million) and a current lease receivable of €0.6 million (2017: €9.8 million) existed as at the balance sheet date.

The following table shows the reconciliation to the total present value of the outstanding total minimum lease payments:

in € millions	2017	2018
Future minimum lease payments/Finance lease gross investments	62.2	1.6
(of which, not later than one year)	(14.1)	(0.6)
(of which, later than one year and not later than five years)	(48.1)	(1.0)
Unrealized financial income	–9.3	0.0
Present value of outstanding minimum lease payments	**52.9**	**1.6**
(of which, not later than one year)	(9.8)	(0.6)
(of which, later than one year and not later than five years)	(43.1)	(1.0)

KUKA as a lessee

The interest rates for finance leases for technical plant and equipment range from 1.38% p.a. (2017: 1.00%) to 8.99% p.a. (2017: 8.99%).

Future payments due for finance lease agreements as well as the present values for future lease payments are recognized under other liabilities and amount to €0.0 million (2017: €0.1 million).

For information on operating lease agreements please see note 30 "Contingent liabilities and other financial commitments".

12. Inventories

in € millions	Dec. 31, 2017	Dec. 31, 2018
Raw materials and supplies	162.2	178.9
Work in process	128.1	131.4
Finished goods	69.7	106.6
Advances paid	27.4	49.9
Inventories	**387.4**	**466.8**

Write-downs, relative to gross value, amounted to €61.0 million, which represents an increase of €9.7 million compared to the previous year (2017: €51.3 million). Reversals occurred in the amount of €1.2 million.

13. Trade receivables

As at the balance sheet date, trade receivables amounted to €415.1 million (2017: €408.1 million) and have a term of less than one year.

The following table breaks down receivables by age and recoverability:

	Receivables subject to IFRS 9										
in € millions	Less than 30 days	30 to 60 days	61 to 90 days	91 to 180 days	More than 180 days	Total of receivables subject to IFRS 9	Impaired receivables before recording of impairment losses	Impairment loss	Carrying amount of impaired receivables	Total receivables not subject to IFRS 9	Net carrying amount
As of Dec. 31, 2017	79.2	18.3	10.5	7.8	16.4	132.2	15.6	13.2	2.4	273.5	408.1
As of Dec. 31, 2018	84.8	27.9	8.8	13.2	13.2	147.9	33.7	26.5	7.2	260.0	415.1

Receivables of KUKA Deutschland GmbH are regularly sold as part of ABS programs. See note 26 for more details.

With the introduction of IFRS 9, a new mandatory impairment model has also been introduced. The incurred loss model was replaced by the expected loss model. This lowered the threshold for recording losses from losses incurred to losses already expected. A loss rate was determined depending on the overdue period. Each company in the Group has the option of making additional write-downs based on empirical values. The loss rate for the "none" category, for example, is higher because a receivable has been in default in the past even though there was no maturity. The expected loss on trade receivables is shown below.

Overdue period in days	Loss rate	Impairment in € millions
None	0.037%	0.0
1–29	0.013%	0.0
30–59	0.013%	0.0
60–89	0.433%	0.1
More than 90	10.580%	2.7

Total bad debt allowances on trade receivables increased by €1.5 million from €13.2 million as at December 31, 2017 to €14.7 million as at January 1, 2018 as a result of the introduction of IFRS 9. The following table shows the development of the allowances:

in € millions	2017	2018
Impairment losses as of Jan. 1	**11.9**	**14.7**
Change in scope of consolidation	0.2	–
Additions	5.8	22.6
Consumption and foreign currency effects	–2.4	–2.0
Reversals	–2.3	–8.8
Impairment losses as of Dec. 31	**13.2**	**26.5**

The total additions amount to €22.6 million (2017: €5.8 million) and break down into additions for individual value adjustments of €16.8 million (2017: €3.1 million) and lump-sum value adjustments of €5.8 million (2017: €2.7 million).

14. Contractual assets and liabilities

The category of "Receivables from construction contracts" was replaced with the contractual assets through the introduction of IFRS 15. The contractual assets show the entitlement to a consideration for goods or services transferred to a customer provided this entitlement is not linked to a period of time. The contractual liabilities are also presented in this chapter for better comparability despite it being an explanation of the group balance sheet assets. Contractual liabilities represent the obligation to transfer goods or services to a customer for which the company has already received a consideration from the customer. The development of contractual assets and liabilities is shown below. The figures are only shown for the 2018 fiscal year in accordance with IAS 8 on account of the first-time application and the chosen conversion method.

in € millions	Contractual assets	Contractual liabilities
Dec. 31, 2017	515.7	308.1 [1]
Adjustments	–2.0	0.0 [1]
Jan. 1, 2018	513.7	308.1 [1]
Sales revenues included in contractual liabilities at the beginning of the period		18.1
Increase due to customer payments received less the value recognized as revenue during the period		34.9
Reclassification from contractual assets to trade receivables	–168.2	
Changes due to adjustment of the progress	136.2	24.7
Changes due to mergers	0.0	11.3
Other changes	12.2	9.7
Dec. 31, 2018	**493.9**	**406.8**

[1] Consisting of advances received and construction contracts

Revenues from performance obligations recorded in the reporting period which were fulfilled (or partially fulfilled) in previous periods amount to €0.2 million. The payments of customers are based on payment plans which are an integral part of the contracts with the customers. The major part of contractual assets and contractual liabilities relates to services under long-term construction contracts, as the service provided by KUKA and the payments from customers in the course of the contract may differ here. The main change to contractual assets and liabilities is therefore attributable to the fulfillment of the performance obligation. No contract costs were capitalized during the fiscal year. An expected loss on the contractual assets amounting to €3.0 million was recognized in the fiscal year.

15. Other assets, prepaid expenses and deferred charges

in € millions	2017	2018
Non-current other assets		
Non-current other receivables	13.2	14.5
Other	4.3	4.2
Total	**17.5**	**18.7**
Current other assets		
Claims on tax authorities	37.8	41.3
Other	47.6	89.0
Total	**85.4**	**130.3**
Other assets, prepaid expenses and deferred charges	**102.9**	**149.0**

The claims on tax authorities shown are predominantly sales tax receivables. The increase within the “Other” category relates to the temporary suspension of the finance lease of KUKA Toledo Production Operations LLC., Toledo/USA. In this connection, part of the outstanding finance lease receivable was transferred to the other assets.

The following table shows the financial instruments recognized under other assets as outlined in IFRS 7 according to age and impairment:

in € millions	Impaired receivables before recording of impairment losses	Impairment loss	Carrying amount of impaired receivables	Neither impaired nor past due as of the balance sheet date	Net carrying amount
Dec. 31, 2017	1.6	–1.5	0.1	26.4	26.5
Dec. 31, 2018	1.5	–1.5	0.0	32.5	32.5

There are no other assets that are past due but not yet impaired as at December 31, 2018 or December 31, 2017.

Impairment losses on other assets as at December 31, 2018 totaled €1.5 million (2017: €1.5 million).

16. Cash and cash equivalents

Cash and cash equivalents include all cash funds recognized on the balance sheet, i. e. cash on hand, checks and cash balances with financial institutions with a remaining term of three months or less.

KUKA Group maintains bank balances exclusively at financial institutions with an excellent credit rating. Furthermore, funds to be invested are distributed across several financial institutions and the parent company in order to diversify risk.

€0.5 million of cash is subject to a restriction on availability (2017: €0.4 million). The increase in the balances at financial institutions is due to the cash on hand of the newly founded joint venture in the Robotics segment.

in € millions	Dec. 31, 2017	Dec. 31, 2018
Cash on hand	0.1	0.2
Cash and bank balances	223.1	477.9
Cash with limited availability	0.4	0.5
Total	**223.6**	**478.6**

Notes to the Group balance sheet: Equity and liabilities

17. Equity

Changes in equity including changes with no effect on profit or loss are presented in the consolidated statement of changes in equity and in the statement of comprehensive income.

For more information on equity see the notes in the management report under “Disclosures in accordance with section 315 para. 4 of the German Commercial Code (HGB) including accompanying explanations”.

18. Subscribed capital

The company’s share capital amounts to €103,416,222.00 (December 31, 2017: €103,416,222.00) and is subdivided into 39,775,470 no-par-value bearer shares outstanding (December 31, 2017: 39,775,470 shares). Each share carries one vote. The no-par-value bearer shares have a theoretical portion of the share capital amounting to €2.60.

19. Capital reserve

The capital reserve applies to KUKA Aktiengesellschaft.

20. Revenue reserves

The revenue reserves include:

- The accumulated retained earnings of KUKA Aktiengesellschaft and its consolidated subsidiaries
- Consolidation and exchange rate effects
- Actuarial gains and losses included in provisions for pensions and the associated deferred taxes

This item also includes other equity components. The increase results from Midea Group’s contribution to fully consolidated subsidiaries in which KUKA holds 50% of the share capital.

Deferred taxes totaling €3.7 million (2017: €2.4 million) from transactions not recognized in profit or loss are included in equity. These are primarily attributable to actuarial gains and losses from pensions.

Based on the resolution of the Annual General Meeting for the 2017 fiscal year, a dividend of €0.50 per share was distributed in the 2018 fiscal year.

21. Minority interests

Minority interests relate to Swisslog Healthcare Trading MEA LLC, Dubai/United Arab Emirates and Swisslog Middle East LLC, Dubai/United Arab Emirates, KUKA Robotics (China) Co. Ltd., Shanghai/China as well as KUKA Robotics Manufacturing China Co. Ltd., Shanghai City/China.

Taking into account the effects of exchange rate variations and pro rata minority earnings, the carrying amount in equity arising from the minority holdings increased from –€0.5 million to €259.7 million. This increase is related to the founding of joint ventures in the third quarter.

22. Management of capital

The primary goal of managing capital for KUKA Group is to support ongoing business operations by providing adequate financial resources and to increase shareholder value.

This requires sufficient equity (equity ratio), liquidity (net debt/liquidity) and a sufficient return on capital employed (ROCE). Management and controlling of the business divisions therefore also takes place based on these key indicators.

		2017	2018
Equity	€ millions	866.6	1,339.6
/Total equity	€ millions	2,640.1	3,218.5
Equity ratio	**%**	**32.8**	**41.6**
EBIT	€ millions	102.7	34.3
/Capital employed	€ millions	950.4	1,185.0
ROCE	**%**	**10.8**	**2.9**
Cash and cash equivalents	€ millions	223.6	478.6
Non-current financial liabilities	€ millions	–249.7	–380.5
Current financial liabilities	€ millions	–19.1	–5.2
Net debt/Net liquidity	**€ millions**	**–45.2**	**92.9**

The equity ratio rose from 32.8% in 2017 to 41.6% at the end of the 2018 fiscal year. There was also a positive development in net debt/liquidity. The Group recorded debt of –€45.2 million at the end of 2017, whereas net liquidity of €92.9 million was reported at the end of 2018. The increase relates to the subsidiary contributed by Midea to the joint venture. Only the ROCE decreased, this being due to the lower EBIT and the higher capital employed for the 2018 fiscal year.

23. Pension provisions and similar obligations

Corresponding pension provisions were established for liabilities from vested benefits and from current benefits paid to vested and former employees of KUKA Group as well as their surviving dependents. Depending on the legal, economic and tax situation in each of the countries concerned, various retirement benefit systems are in place that are as a rule based on employees’ length of service and compensation.

Company retirement benefit coverage in the Group is provided through both defined contribution and defined benefit plans.

Defined benefit plans

Defined benefit plans in KUKA Group primarily concern plans in Germany, the United States, Switzerland, the United Kingdom and Sweden. The country-specific characteristics and legal regulations relating to defined benefit plans are presented in the following.

Germany
Obligations in Germany arise from agreements on company pension schemes concluded with various insurance institutions. The prerequisites regarding the type and amount of the entitlement depend on the employee's age and number of years with the company. The benefits include the components old-age pension, disability pension, widow's pension, death benefits and emergency assistance. New biometric actuarial assumptions (RT 2018G) were published in the 2018 fiscal year. The average life expectancy continued to rise in Germany in the last few years, but not by as much as recently. It has not yet been possible to derive any long-term decline in the trend, but this circumstance has been taken into account in the new tables. Research results relating to observed mortality were also taken into account for the first time with a flat-rate discount. These indicate that employees with a higher income also have a greater life expectancy. Finally, the long-term decline in the probability of invalidity in the age range from 58 years onwards were taken into account in the new tables.

USA
The Systems division makes pension payments to its employees after they retire. Employees who entered the worker's union before September 14, 2004 are eligible to participate in the pension plan. The benefits are calculated on the basis of the rate applicable on the date they retire. This rate is composed of the years of service credited to the employee. Eligible employees are also provided with medical care. Owing to their benefit character, the obligations for post-employment medical benefits are also disclosed in this item according to IAS 19. These post-employment benefit provisions represent €0.6 million (2017: €0.6 million) of the total provisions and accruals. The Employee Retirement Income Security Act (ERISA) in the United States provides the legal and regulatory framework for these plans.

The defined benefit plan of the Swisslog division exists for both the salaried workforce and the factory workers. Both plans are managed by an insurance company and are legally independent. Both are closed to new participants and are financed entirely by the employer. Swisslog Group is able to determine the distribution of the assets. The plans are designed to avoid the necessity to provision for the expenses of additional benefits. However, each individual savings basket bears a fixed percentage of interest (guaranteed minimum return).

Switzerland
The plan is affiliated to a larger collective pension fund which is legally independent and exceeds the statutory minimum requirements in Switzerland (Occupational Old Age, Survivors' and Invalidity Pension Provision, BVG). All employees in this are insured for the financial consequences of age, invalidity and death. Contributions to the collective pension fund are made by the employer and employees. Responsibility for investing the assets is borne by the board of the collective pension fund, whilst Swisslog Group is only able to define the investment style. In addition Swisslog Group sets the interest rate on the individual age tranches – subject to the statutory rules. In the event of a deficit for the Swisslog pension tranche within the collective pension fund, various measures can be taken such as a reduced interest rate or additional pension contributions. The level of cover pursuant to BVG exceeds 100% as at the balance sheet date, as was the case at the balance sheet date of the previous year. The Swiss pension plan is based on the BVG 2015 generation tables (without risk sharing).

UK
The British defined benefit plan is also independent and has been closed to new participants since 2001. The assets are invested in an insurance fund. The plan is financed by the employer with the employees. Based on the statutory requirements a valuation is undertaken by an actuary every three years. In the event a deficit is calculated, it is necessary to establish a restructuring plan which also sets the future amortization payments to make good the deficit.

Sweden
The Swedish defined benefit plan is legally mandatory and is based on a collective agreement (agreement between the trade union and the Swedish employers). The plan cannot be changed by the company. The plan is available to all employees born before 1979. It covers the financial consequences of age, invalidity and illness. There is a defined contribution plan for those employees born after 1979. The defined benefit plan is financed by the employer. The liability is covered by plan assets in a pension institution administered by an external insurance company.

Defined contribution plans
For the defined contribution plans, the company pays contributions to a public or private pension insurance carrier. Upon payment of the contributions, the company has no further obligations. Total payments for pensions under defined contribution plans in the amount of €55.2 million compared to €56.0 million in 2017 are disclosed as expenses for the respective years. Under defined benefit plans, the company incurs an obligation to provide the benefits promised by the plan to current and former employees.

Disclosures on actuarial assumptions
The amount of pension obligations (defined benefit obligation) was calculated by actuarial methods for which estimates are unavoidable. In addition to assumptions related to life expectancy, this involves assumptions detailed below, which are dependent on the economic environment for each country in question:

Dec. 31, 2018	Germany	Switzerland	UK	Sweden	USA	Other
Demographic assumptions	RT 2018G	BVG 2015 GT mod	PMA08/PFA08, using the CMI 2017 projection model with a long term rate of improvement of 1,25%.	FFFS 2007:31	RP–2006/ MP–2018 Blue Collar MP2018	diverse
Discount factor	1.75%	0.85%	2.80%	2.31%	4.10 – 4.14%	1.75 – 9.60%
Expected rate of return on assets	n/a	0.85%	2.80%	2.31%	4.10 – 4.14%	1.75 – 9.60%
Wage dynamics	0.50%	1.25%	2.90%	2.45%	n/a	1.00 – 6.0%
Pension dynamics	1.00 – 2.50%	0.0%	3.70%	1.95%	n/a	0.00 – 1.50%
Changes in cost of medical services	n/a	n/a	n/a	n/a	6.75%	n/a

Dec. 31, 2017	Germany	Switzerland	UK	Sweden	USA	Other
Demographic assumptions	RT 2005G	BVG 2015 GT mod	MA08/PFA08, using the CMI 2016 projection model with a long term rate of improvement of 1,25%	FFFS 2007:31	RP–2006/ MP–2017 Blue Collar; RP2014 projected MP2017	diverse
Discount factor	1.55%	0.60 – 0.65%	2.50%	2.54%	3.50 – 3.68%	1.55 – 7.60%
Expected rate of return on assets	n/a	0.60 – 0.65%	2.50%	2.54%	3.50 – 3.68%	1.55 – 7.60%
Wage dynamics	0.50%	1.0%	2.70%	2.40%	n/a	1.00 – 5.0%
Pension dynamics	1.00 – 2.50%	0.0%	3.70%	1.90%	n/a	0.00 – 3.0%
Changes in cost of medical services	n/a	n/a	n/a	n/a	6.75%	n/a

The discount factor is determined based on the returns from high-quality, fixed-rate corporate bonds.

Wage dynamics encompass future increases in wages and salaries that are estimated annually by reference to factors such as inflation and economic conditions, among others.

The expected returns are derived from consensus forecasts for the respective asset classes. The forecasts are based on experience, economic data, interest forecasts and stock market expectations.

For funded plans, the pension obligations are reduced by an amount equal to the fund assets. If the fund assets exceed the defined benefit obligation, an asset is recognized according to IAS 19 and disclosed under other assets. If the fund assets do not cover the commitment, the net obligation is recognized as a liability under pension provisions.

Increases or decreases in either the present value of the defined benefit obligation or the fair value of the plan assets may give rise to actuarial gains or losses. This may be caused by factors such as changes in actuarial parameters, changes to estimates for the risk profile of the pension obligations and differences between the actual and expected returns on the fund assets.

The sensitivity analysis illustrates the extent to which changes in actuarial assumptions would impact defined benefit obligations recognized as at December 31, 2018:

Sensitivity analysis

Nature and degree of change in actuarial assumptions in € millions		Present value of the defined benefit obligation after change	Change[1]
Increase in the discount rate	by +0.25%	274.4	–8.4
Decrease in the discount rate	by –0.25%	291.4	8.6
Pension increase	by +0.25%	288.9	6.1
Pension reduction	by –0.25%	279.7	–3.1
Increase in life expectancy	by +1 year	292.4	9.6
Decrease in life expectancy	by –1 year	273.1	–9.7
Increase in wages and salaries	by +0.25%	283.9	1.1
Decrease in wages and salaries	by –0.25%	281.6	–1.2

[1] The changes in the actuarial assumptions have no linear impact on the calculation of the present value of the defined benefit obligation due to specific effects such as compound interest. Changing multiple assumptions simultaneously does not always correspond to the cumulative effect because there are interdependencies between factors. A new calculation of the defined benefit obligation must be made for each case.

Funding status of defined benefit pension obligations

	Germany		Switzerland		UK	
in € millions	2017	2018	2017	2018	2017	2018
Present value of pension benefits covered by provisions	74.4	70.3	–	–	–	–
Present value of pension benefits based on plan assets	–	–	137.7	141.0	21.5	20.0
Defined benefit obligation	74.4	70.3	137.7	141.0	21.5	20.0
Fair value of plan assets	–	–	121.6	121.1	16.0	14.4
Net obligation as of Dec. 31	**74.4**	**70.3**	**16.1**	**19.9**	**5.5**	**5.6**

Reconciliation / Development of the defined benefit obligation

The reconciliation of the obligation for key items from the beginning to the end of the fiscal year breaks down as follows:

	Germany		Switzerland		UK	
in € millions	2017	2018	2017	2018	2017	2018
Jan. 1	**78.3**	**74.4**	**145.0**	**137.7**	**21.2**	**21.5**
Change in scope of consolidation and other changes	–0.3	–	–	–	–	–
Current service costs	0.5	0.5	3.5	3.6	0.2	0.1
Interest expense (+) / interest income (–)	1.1	1.1	0.8	0.9	0.5	0.5
Actuarial gains (–) / losses (+)	–0.4	–0.5	5.0	0.7	0.5	–0.7
Gains (–) / losses (+) on settlement	–	–0.1	–	–1.4	–	–
Past service cost	–	–	–3.6	–	–	–
Payments made	–4.8	–5.1	–1.1	–5.8	–0.1	–1.5
Currency translation	–	–	–11.9	5.3	–0.8	0.1
Dec. 31	**74.4**	**70.3**	**137.7**	**141.0**	**21.5**	**20.0**
(of which, funded by provisions)	(74.4)	(70.3)	(–)	(–)	(–)	(–)
(of which, based on plan assets)	(–)	(–)	(137.7)	(141.0)	(21.5)	(20.0)

Current service costs and interest expenses totaling €9.0 million (2017: €9.2 million) compare to benefit payments of €15.2 million during the fiscal year (2017: €7.7 million). The strong exchange rate effects for the Swiss franc and US dollar in the previous year weakened during the 2018 fiscal year and had an opposite impact, leading to an increase in the defined benefit obligation by €5.8 million (2017: reduction by €17.1 million). The defined benefit obligation decreased only slightly overall compared to the previous year (2018: €282.8 million; 2017: €284.2 million).

Reconciliation / Development of plan assets

The reconciliation of plan assets and asset classes at the close of the fiscal year breaks down as follows:

in € millions	2017	2018
Jan. 1	**179.3**	**175.3**
Interest expense (–) / interest income (+)	2.3	2.4
Change in scope of consolidation and other changes	–	–0.1
Actuarial gains (+) / losses (–)	4.7	–6.5
Employer contributions	8.4	8.4
Payments	–5.4	–12.1
Currency translation	–14.0	4.9
Fair value of plan assets as of Dec. 31	**175.3**	**172.3**
Cash and cash equivalents	3.6	3.6
Shares	50.9	52.4
Bonds	86.6	78.8
Real estate	20.5	21.1
Other	13.7	16.4
Total	**175.3**	**172.3**

Sweden		USA		Other		Total	
2017	2018	2017	2018	2017	2018	2017	2018
–	–	–	–	5.7	6.5	80.1	76.8
16.7	17.4	26.8	26.0	1.4	1.5	204.1	205.9
16.7	17.4	26.8	26.0	7.1	8.0	284.2	282.7
14.3	13.5	22.2	21.9	1.2	1.4	175.3	172.3
2.4	**3.9**	**4.6**	**4.1**	**5.9**	**6.6**	**108.9**	**110.4**

Sweden		USA		Other		Total	
2017	2018	2017	2018	2017	2018	2017	2018
18.0	**16.7**	**29.5**	**26.8**	**10.0**	**7.1**	**302.0**	**284.2**
–	–	–	–	–0.6	1.2	–0.9	1.2
0.4	0.3	–	–	0.5	0.4	5.1	4.9
0.4	0.4	1.2	1.0	0.2	0.1	4.2	4.0
–1.3	1.1	1.0	–1.4	–2.6	0.1	2.2	–0.7
–	–	–	–	–	0.1	0.0	–1.4
–	–	–	–	–	–0.2	–3.6	–0.2
–0.3	–0.4	–1.1	–1.6	–0.3	–0.8	–7.7	–15.2
–0.5	–0.7	–3.8	1.2	–0.1	–	–17.1	5.9
16.7	**17.4**	**26.8**	**26.0**	**7.1**	**8.0**	**284.2**	**282.7**
(–)	(–)	(–)	(–)	(5.7)	(6.5)	(80.1)	(76.8)
(16.7)	(17.4)	(26.8)	(26.0)	(1.4)	(1.5)	(204.1)	(205.9)

Investment and risk strategy

The allocation of plan assets to the various asset classes is determined taking potential returns and risks into account. Ratings and forecasts are used as the basis for selecting high-quality stocks and bonds. An optimal portfolio is achieved by ensuring a good balance of risky and risk-free investments. A corresponding committee has been set up for this to monitor the results at least once every half-year and to make changes if necessary to the composition of the plan assets. The company has identified the deterioration of the funded status due to the unfavorable development of plan assets and/or defined benefit obligations as a risk. KUKA monitors its financial assets and defined benefit obligations to identify this risk. In the case of the Swisslog Group pension plans the plan assets are managed by an independent entity as a rule. It provides a regular report so that by this means risk management is possible.

Maturity profile of defined benefit obligations

The following table provides an overview of the expected benefit payments over the next ten years:

in € millions	2017	2018
Not later than one year	13.2	17.9
Later than one year and not later than five years	48.7	51.9
Later than five years and not later than ten years	59.6	69.3

24. Other provisions

in € millions	Status as of Jan. 1, 2018	Exchange rate differences	Change in scope of consolidation	Consumption	Reversals	Additions	Status as of Dec. 31, 2018
Warranty commitments and risks from pending transactions	51.8	0.0	–	32.9	3.4	52.0	67.5
Provisions for restructuring obligations	15.9	0.0	–	3.6	4.3	1.9	9.9
Miscellaneous provisions	64.8	0.6	–	34.4	4.7	63.0	89.3
Total	**132.5**	**0.6**	**–**	**70.9**	**12.4**	**116.9**	**166.7**

The provisions for warranty commitments and risks from pending transactions include provisions for impending losses of €20.6 million (2017: €3.8 million) and warranty risks of €46.9 million (2017: €48.0 million).

Provisions for restructuring obligations totaling €9.9 million were established in connection with measures for increasing the profitability of the Systems division.

Of the miscellaneous provisions, €35.8 million (2017: €27.1 million) relates among other items to costs still to be incurred for orders already invoiced and litigation risks of €2.0 million (2017: €2.3 million).

The expected remaining term of the other provisions is up to one year.

25. Liabilities

The development of contract liabilities from the beginning of the fiscal year to the end of the fiscal year is presented under note 14.

in € millions	Remaining maturity		Dec. 31, 2018
	Up to one year	More than one year	Total
Liabilities due to banks	5.2	380.9	385.7
Financial liabilities	**5.2**	**380.9**	**385.7**
Trade payables	402.7	0.0	402.7
Contractual liabilities	406.8	0.0	406.8
Income tax liabilities	40.5	0.0	40.5
Other liabilities and deferred income	287.7	35.9	323.6
(of which, for other taxes)	(58.1)	(–)	(58.1)
(of which, for social security payments)	(10.8)	(–)	(10.8)
(of which, liabilities relating to personnel)	(145.2)	(15.0)	(160.2)
(of which, for leases)	(–)	(–)	(0.0)
(of which, for forward exchange transactions for currency hedging)	(3.7)	(0.5)	(4.2)
Total	**1,142.9**	**416.4**	**1,559.3**

in € millions	Remaining maturity		Dec. 31, 2017
	Up to one year	More than one year	Total
Liabilities due to banks	19.1	249.7	268.8
Financial liabilities	**19.1**	**249.7**	**268.8**
Trade payables	549.2	0.0	549.2
Advances received	94.0	0.0	94.0
Liabilities from construction contracts	214.1	0.0	214.1
Accounts payable to affiliated companies	0.1	0.0	0.1
Income tax liabilities	51.2	0.0	51.2
Other liabilities and deferred income	297.7	29.5	327.2
(of which, for other taxes)	(58.7)	(–)	(58.7)
(of which, for social security payments)	(10.7)	(–)	(10.7)
(of which, liabilities relating to personnel)	(155.0)	(11.7)	(166.7)
(of which, for leases)	(0.1)	(0.0)	(0.1)
(of which, for forward exchange transactions for currency hedging)	(6.1)	(–)	(6.1)
Total	**1,225.4**	**279.2**	**1,504.6**

26. Financial liabilities / Financing

The existing financial liabilities are mainly the promissory note loans issued in 2015 and 2018.

Fixed interest rate agreements

	Face value as of balance sheet date		Nominal interest rate	Original maturity	Net carrying amount	
in € millions	Dec. 31, 2017	Dec. 31, 2018			2017	2018
EUR – promissory note loan						
Tranche 1	142.5	142.5	1.15% p.a. (MS +80bps)	2015 – 2020	142,6	142.3
Tranche 2	107.5	107.5	1.61% p.a. (MS +100bps)	2015 – 2022	107,1	107.3
Total promissory note loan	**250.0**	**250.0**	**ø 1.35% p.a.**	**5 / 7 years**	**249,7**	**249.6**

Variable interest rate liabilities

	Face value as of balance sheet date		Nominal interest rate	Original maturity	Net carrying amount	
in € millions	Dec. 31, 2017	Dec. 31, 2018			2017	2018
USD – promissory note loan						
Tranche 1	–	8.7	3.46% p.a. (3M USD LIBOR + 85bps)	2018 – 2020	–	8.7
Tranche 2	–	78.6	3.66% p.a. (3M USD LIBOR + 105bps)	2018 – 2022	–	78.3
Tranche 3	–	43.7	4.01% p.a. (3M USD LIBOR + 140bps)	2018 – 2023	–	43.5
Total promissory note loan	**–**	**131.0**	**ø 3.76% p.a.**	**2 / 3.5 / 5 years**	**–**	**130.5**

in € millions	Net carrying amount	Avg. nominal interest rate	Year of latest maturity
Liabilities due to banks as of Dec. 31, 2018	4.3	0.85% p.a.	2019
Liabilities due to banks as of Dec. 31, 2017	18.3	1.20% p.a.	2018

€250 million promissory note loan

KUKA AG issued an unsecured promissory note loan with a total volume of €250.0 million on October 9, 2015. After deducting the transaction costs, KUKA received a total of €248.9 million from this issue.

The total volume was placed in two separate tranches. Tranche 1 has a volume of €142.5 million with an original term to maturity of five years; tranche 2 has a volume of €107.5 million and an original term to maturity of seven years. Interest payments are made at yearly intervals on October 9. Interest of €0.8 million (2017: €0.8 million) was accrued as of the balance sheet date.

The terms and conditions of the promissory note loan contain a standard change-of-control clause. Accordingly, immediately it learns of a change of control, KUKA Aktiengesellschaft must disclose this in accordance with the terms and conditions of the loan. The lenders then have the right, within 30 days of receiving notification of a change of control, to demand repayment of their (pro rata) loan at the next interest due date after receipt of the request for repayment and the interest due up to the date of repayment. A “change of control” within the meaning of the terms and conditions of the loan is given if a person or persons acting in concert directly or indirectly (i) either hold more than 30% of the voting shares, (ii) hold more than 30% of the voting rights in the company and / or (iii) otherwise have the possibility of directing the company’s business policy.

USD 150 million promissory note loan

In order to finance the construction of a new manufacturing facility under the terms of a pay-on-production contract of KUKA Toledo Production Operations LLC, Toledo, Ohio / USA (KTPO), this company has issued USD promissory note loans with a total volume of USD 150.0 million in several maturity tranches, underwritten by KUKA AG: tranche 1 has a volume of USD 10 million with a term to maturity of 2 years, tranche 2 has a volume of USD 90 million with a term to maturity of 3.5 years, and tranche 3 has a volume of USD 50 million with a term to maturity of 5 years. The financing was received on August 10 / September 10, 2018.

The interest rate of all three tranches is variable and based on the 3-month USD LIBOR rate plus a term-dependent margin. Interest payments are made quarterly.

The terms and conditions of the promissory note loans contain a standard change-of-control clause. Accordingly, immediately it learns of a change of control, KUKA Aktiengesellschaft must disclose this in accordance with the terms and conditions of the loan. In this case, the lenders have the right, within 15 days of receiving notification of a change of control, to terminate the promissory note loan agreements prematurely and demand repayment of their (pro rata) loan. A "change of control" within the meaning of the terms and conditions of the promissory note loans is given if a person or persons acting in concert directly or indirectly (i) either hold more than 30% of the voting shares, (ii) hold more than 30% of the voting rights in KTPO or KUKA AG and/or (iii) otherwise have the possibility of directing the business policy of KTPO or KUKA Aktiengesellschaft. A change of the direct owner within Midea Group is not affected by this provision as long as Midea Group Co., Ltd. directly or indirectly holds 100% of the shares and voting rights of the new owner. Also excluded is restructuring within KUKA Group, i.e. a change of control at KTPO insofar as control is exercised by a KUKA Group company.

Syndicated loan for KUKA Aktiengesellschaft

KUKA AG concluded a new syndicated facilities agreement with a bank consortium on February 1, 2018 with a volume of €520.0 million and in doing so replaced and refinanced the previous credit facility of €400.0 million. The new agreement includes a surety and guarantee line (guaranteed credit line) in the amount of €260.0 million and a working capital line (cash line), which can also be used for sureties and guarantees, likewise in the amount of €260.0 million.

The initial term of the loan agreement was five years. After receiving consent from all banks for a first agreed extension request, the maturity date has been extended by one year. The loan agreement, which now expires in February 2024, can be extended by a further year with an outstanding extension option. The syndicated facilities agreement remains unsecured as before and contains only the customary equal treatment clauses and negative pledges. Unchanged financial covenants were agreed with thresholds for leverage (net financial liabilities/EBITDA) and interest coverage (EBITDA/net interest expense).

As at the balance sheet date the utilization of the guarantee facility and cash credit line from the syndicated loan agreement of KUKA AG amounted to a total of €225.4 million (2017: €182.1 million).

The contract contains a change-of-control clause that is typical in the industry, under the terms of which the syndicated banks may demand repayment of the loan in the event that a shareholder (or group of shareholders acting in concert) acquires control of at least 30% of the voting rights of KUKA Aktiengesellschaft, or otherwise has the ability to direct the business policy of the company. A change of the direct owner within Midea Group is not affected by this provision as long as Midea Group Co., Ltd. directly or indirectly holds 100% of the shares and voting rights of the new owner. The creditors may also declare the loan agreement due for repayment in the cases of a delisting, a squeeze-out or the conclusion of a control and/or profit transfer agreement with a company of Midea Group.

Guarantee facility lines from banks and surety companies

The guarantee facility lines pledged by banks and surety companies outside the syndicated loan agreement total €118.0 million (2017: €118.0 million) as at December 31, 2018, and can be utilized up to a total volume of €150.0 million in accordance with the provisions of the SFA. At the end of the reporting year, the company had utilized €85.9 million (2017: €73.6 million). None of these bilaterally agreed guarantee facility lines contains a change-of-control clause.

Asset-backed securities program

KUKA Group had launched an ABS (asset-backed securities) program in June 2011 with a financing volume of €25.0 million and a term of 7 years. The term of the program was extended by 7 months in June 2018 until the end of January 2019 and will then expire.

Under this program, trade receivables of KUKA Deutschland GmbH can be sold in regular tranches to a special purpose vehicle (SPV) of Landesbank Baden-Württemberg. Receivables of €14.0 million were sold as at the balance sheet date. The SPV finances the purchase of the receivables by issuing securities on the capital market or through utilization of a corresponding credit line. Covenants for gearing and leverage are in place for this financing program.

Default guarantees from credit insurers ensure adequate creditworthiness of the receivables sold. KUKA Deutschland GmbH assumes the first 1.15% of credit risk from the sale of receivables. The retention for this credit risk (continuing involvement) amounted to €0.3 million as at December 31, 2018 (2017: €0.3 million) and was fully written off. KUKA Deutschland GmbH manages and processes the receivables that are sold. As in the previous year, no claims to be recognized in the income statement resulted from this.

Financial instruments measured at fair value

The following table shows the breakdown of the financial assets and liabilities measured at fair value:

2018 in € millions	Level 1 [1]	Level 2 [1]	Level 3 [1]	Total
Financial assets	–	4.2	6.9	11.1
Financial liabilities	–	4.2	–	4.2

2017 in € millions	Level 1 [1]	Level 2 [1]	Level 3 [1]	Total
Financial assets	–	8.0	3.2	11.2
Financial liabilities	–	6.1	–	6.1

[1] With regard to the meaning of the individual levels, please refer to the assumptions and estimates/calculation of the fair values.

There were no level 1 financial assets in the 2018 fiscal year or the previous year. The forward exchange transactions carried as assets or liabilities are recorded in level 2. The values for financial assets and financial liabilities decreased compared to the previous year. The second level contains the securities of the Group and the coverage of fluctuations in the exchange rates of major currencies such as USD or CNY. The values are determined with the aid of standard financial mathematical techniques, using current market parameters such as exchange rates and counterparty credit ratings (mark-to-market method) or quoted prices. Middle rates are used for this calculation.

The third level is only used by financial assets. These are shares from shareholdings not traded on the market. They are measured using the discounted future cash flows from the sale of a minority interest. The change on the previous year results from the exercise of options on a convertible bond and the increase in investments.

All other financial instruments are reported at amortized cost and mainly correspond to the carrying amounts.

27. Other current/non-current liabilities and prepaid expenses/deferred charges

The other liabilities for other taxes are primarily from sales, wage and church tax.

Other liabilities in the personnel area are mostly related to obligations from vacation entitlements (2018: €19.2 million; 2017: €23.4 million), flex-time credits (2018: €25.1 million; 2017: €22.6 million), variable compensation elements (2018: €58.4 million; 2017: €78.8 million) and pre-retirement ("Altersteilzeit") (2018: €15.1 million; 2017: €11.4 million). Pre-retirement obligations were reduced by the fair value of the corresponding fund assets (2018: €13.3 million; 2017: €10.5 million). The present value of entitlements from pre-retirement obligations (DBO) before offsetting was €28.4 million (2017: €21.9 million). Also reported under this item are, among other things, special payments, inventor's compensation, long-service awards and trade association fees.

Liabilities arising from finance leases are recognized at the present value of future lease payments and disclosed as other liabilities.

28. Assets and liabilities held for sale

As at December 31, 2018, there were no plans to divest business units or sub-units, meaning that there are no circumstances to report as defined in IFRS 5.

29. Financial risk management and financial derivatives

a) Principles of risk management

As part of its general business activities, KUKA Group is exposed to various financial risks, in particular from movements in exchange rates and interest rates as well as counterparty risk and liquidity risk. The purpose of financial risk management is to identify, assess and manage these risks. The aim is to limit the potential negative impact on the financial position.

KUKA hedges the risks from operations, especially currency risks, and risks from financial transactions with financial derivatives. Transactions in financial derivatives are only entered into for hedging purposes, i. e. solely 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. To reduce the credit risk, hedging transactions are only concluded with financial institutions with an excellent credit rating.

The fundamentals of the Group's financial policy are established by the Executive Board and implemented by Group Treasury in close cooperation with Group companies. The Executive Board is informed on a regular basis of the current risk positions and safeguards.

b) Currency risk

Risks arising from fluctuations in exchange rates that may affect the Group's cash flow – for example from investments, financing and already fixed or planned incoming and outgoing operational payments in foreign currencies – are hedged as they arise or become known through the use of derivative financial instruments with banks. Hedging may also cover future planned transactions such as planned purchases in foreign currencies. KUKA was not exposed to any significant exchange rate risks from its operating activities at the reporting date on account of these hedging activities.

All intra-Group loans denominated in foreign currencies were hedged accordingly. KUKA was therefore not exposed to any significant exchange rate risk in the area of financing at the reporting date.

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.

Currency risk as defined by IFRS 7 arises on account of financial instruments that are denominated in a currency other than the functional currency and are of a monetary nature. Differences resulting from the translation of financial statements into the Group's presentation currency are not taken into consideration. Relevant risk variables are generally all non-functional currencies in which KUKA has financial instruments.

For the presentation of market risks, IFRS 7 requires sensitivity analyses that show the effects of hypothetical changes of relevant risk variables (e. g. interest rates, exchange rates) on profit or loss and shareholders' equity. The periodic effects are determined by relating the hypothetical changes in the risk variables to the balance of financial instruments at the reporting date. It is assumed that the balance at the reporting date is representative for the year as a whole.

Currency sensitivity analyses are based on the following assumptions:

- Major non-derivative monetary financial instruments (liquid assets, receivables, liabilities) are either directly denominated in the functional currency or are transferred as far as possible into the functional currency through the use of derivatives.
- Major interest income and interest expense from financial instruments are also either recorded directly in the functional currency or transferred into the functional currency by using derivatives. For this reason, there can be no material effect on the variables considered in this connection.

The most important currency pairs for KUKA are considered when calculating currency sensitivities. This involves applying a hypothetical upward or downward revaluation of the national currency concerned against the relevant foreign currency.

in € millions	Dec. 31, 2017	Dec. 31, 2018
National currency: EUR		
EUR/USD		
EUR +10%	3.9	–2.2
EUR –10%	–4.7	2.6
EUR/JPY		
EUR +10%	–2.8	–3.2
EUR –10%	3.4	3.9

in € millions	Dec. 31, 2017	Dec. 31, 2018
EUR/CNY		
EUR +10%	0.7	0.7
EUR −10%	−0.8	−0.9
EUR/HUF		
EUR +10%	−1.0	−1.3
EUR −10%	1.2	1.6
EUR/GBP		
EUR +10%	–	0.2
EUR −10%	–	−0.3
EUR/CHF		
EUR +10%	−1.6	1.9
EUR −10%	2.0	−2.3
EUR/CZK		
EUR +10%	−0.5	−0.8
EUR −10%	0.6	1.0
EUR/TWD		
EUR +10%	−0.3	−0.5
EUR −10%	0.4	0.6
EUR/THB		
EUR +10%	−0.3	−0.4
EUR −10%	0.3	0.5
EUR/KRW		
EUR +10%	–	−0.4
EUR −10%	–	0.5
National currency: CNY		
CNY/USD		
CNY +10%	0.7	0.5
CNY −10%	−0.8	−0.6
CNY/EUR		
CNY +10%	1.2	1.8
CNY −10%	−1.5	−2.2
CNY/JPY		
CNY +10%	−0.7	−1.5
CNY −10%	0.9	1.9
National currency: CHF		
CHF/SEK		
CHF +10%	−1.0	−0.2
CHF −10%	1.2	0.2
CHF/USD		
CHF +10%	−8.5	−1.2
CHF −10%	10.3	1.5
CHF/EUR		
CHF +10%	−8.3	−9.7
CHF −10%	10.2	11.8
National currency: USD		
USD/EUR		
USD +10%	−0.2	−0.2
USD −10%	0.3	0.2

Assumptions concerning the future cannot be derived from this presentation of currency effects.

c) Interest rate risk

Risks from interest rate changes at KUKA are essentially the result of the USD promissory notes issued in 2018 and linked to a variable interest rate. These variable future interest payments were converted for the major part of the issue volume by concluding corresponding interest rate hedges in fixed interest rate agreements.

Interest rate risks from short-term investments/borrowings are not hedged as at the balance sheet date.

Interest rate risk is presented by way of sensitivity analyses in accordance with IFRS 7. These show the effects of changes in market interest rates on interest payments, interest income and expense, other income components and shareholders' equity. Interest rate sensitivity analyses are based on the following assumptions:

- Changes in the market interest rates of non-derivative financial instruments with fixed interest rates only affect income if these are measured at their fair value. As such, all financial instruments with fixed interest rates that are carried at amortized cost (e.g. the EUR promissory note loan) are not subject to interest rate risk as defined in IFRS 7.
- Changes in market interest rates affect the interest income or expense of non-derivative variable-interest financial instruments, the interest payments of which are not designated as hedged items of cash flow hedges against interest rate risks.

An increase in market interest rates by 100 basis points across all currencies at December 31, 2018 would have a positive effect on results of +€4.3 million (2017: +€2.1 million) based on positions. A decrease in market interest rates by 100 basis points across all currencies would have a negative effect on results of −€3.9 million (2017: −€1.2 million). The assumption was made for financial investments at the balance sheet date that the lower limit of the relevant interest rate amounts to −50 basis points. This hypothetical effect results solely from non-current investments of €478.5 million and borrowings totaling €48.5 million (2017: €223.6 million in investments and €18.3 million in borrowings) as at the balance sheet date as well as from the variable interest-bearing, unhedged part of the USD promissory notes.

d) Credit risk

KUKA Group is exposed to credit risk from its operating activities and certain financing activities. A default can occur if individual business partners do not meet their contractual obligations and KUKA Group thus suffers a financial loss.

At the level of operations, the outstanding debts are continuously monitored in each area locally. There are regular business relations with major customers at multiple KUKA Group companies. The associated credit risks are subject to separate quarterly credit rating monitoring as part of the risk management system at the Group's Executive Board level for early detection of an accumulation of individual risks. Added to these measures are comprehensive routine checks implemented at segment level as early as the order initiation process (submission of offers and acceptance of orders) to verify the credit rating of potential business partners. Default risk is accounted for accordingly through individual impairments.

The maximum exposure to credit risk is represented by the carrying amounts of the financial assets that are carried in the balance sheet (including derivatives with positive market values). No agreements reducing the maximum exposure to credit risk had been concluded as of the reporting date.

e) Liquidity risk

One of KUKA Aktiengesellschaft's primary tasks is to coordinate and control the Group's financing requirements and to ensure the financial independence of KUKA and its ability to pay on time. With this goal in mind, KUKA Group optimizes the Group's financing and limits its financial risks. The treasury management and reporting system employed consistently throughout the Group is used for this purpose; it is continuously developed taking amendments to the Group structure and changes to market conditions and the regulatory environment into account. In addition, the Group's overall liquidity risk is reduced by closely monitoring Group companies and their control of payment flows.

In order to ensure the payment capability at all times and the financial flexibility of KUKA Group, KUKA Aktiengesellschaft keeps a liquidity reserve in the form of credit lines and cash funds. For this purpose, KUKA has placed promissory note loans, signed a syndicated facilities agreement with a consortium of banks and arranged for surety companies and banks to commit guarantee facility lines. The funding and guarantee requirements for business operations are ensured to a large extent internally by transferring cash funds (intercompany loans) and providing guarantees from the banks and the Group itself.

The following figures show the commitments for undiscounted interest and redemption repayments for the financial instruments subsumed under IFRS 7:

Dec. 31, 2018 in € millions	Cash flows 2019	Cash flows 2020	Cash flows 2021 – 2023	Cash flows 2024 et seq.
Non-current financial liabilities	8.9	159.6	242.0	–
Current financial liabilities	5.2	–	–	–
Accounts payable to affiliated companies	0.1	–	–	–
Trade payables	402.7	–	–	–
Other non-current liabilities and provisions	–	–	0,5	–
(of which, for leases)	(0.0)	(0.0)	(0,5)	(0.0)
Other current liabilities and provisions	72,8	–	–	–
(of which, for leases)	(0.0)	(0.0)	(0.0)	(0.0)

Dec. 31, 2017 in € millions	Cash flows 2018	Cash flows 2019	Cash flows 2020 – 2022	Cash flows 2023 et seq.
Non-current financial liabilities	3.9	3.9	151.0	109.2
Current financial liabilities	18.3	–	–	–
Trade payables	549.2	–	–	–
Accounts payable to affiliated companies	0.1	–	–	–
Other non-current liabilities and provisions	–	0.1	0.1	–
(of which, for leases)	(0.0)	(0.1)	(0.1)	(0.0)
Other current liabilities and provisions	115.0	–	–	–
(of which, for leases)	(0.2)	(0.0)	(0.0)	(0.0)

All financial instruments are included which were held at the balance sheet dates and for which payments have already been contractually agreed. Foreign currency amounts are expressed at the spot rate on the key date. The variable interest payments from the financial instruments were determined on the basis of the interest rates last fixed prior to December 31, 2018. Financial liabilities repayable at any time are always allocated to the earliest period.

f) Hedges

Hedges are used by KUKA Group exclusively in the form of forward exchange transactions and interest rate swaps to secure existing balance sheet items as well as to hedge future payment flows. These are exclusively for the purpose of hedging currency and interest risks.

Other disclosures on financial instruments

Presented below is the reconciliation of the measurement categories and IAS 39 carrying amounts as at December 31, 2017 and IFRS 9 carrying amounts as at January 1, 2018:

in € millions	IAS 39 measurement categories	IFRS 9 measurement categories	Carrying amounts according to IAS 39 as at Dec. 31, 2017	Carrying amounts according to IFRS 9 as at Jan. 1, 2018
Other investments	Classified as instruments available for sale	Measured at fair value through profit or loss	3.2	3.2
Other lendings	Loans and receivables	Measured at cost	1.8	1.8
Fair value of financial instruments capitalized 1 – 5 years	Held for trading	Measured at fair value through profit or loss	0.6	0.6
Fair value of financial instruments > 5 years	Held for trading	Measured at fair value through profit or loss	0.0	0.0
Loans and receivables – non-current other assets	Loans and receivables	Measured at cost	0.0	0.0
Current trade receivables from third parties (incl. valuation adjustments)	Loans and receivables	Measured at cost	408.1	406.6
Current receivables from non-consolidated affiliated companies	Loans and receivables	Measured at cost	0.0	0.0
Current interest receivables	Instruments to be held to maturity	Measured at cost	0.0	0.0
Short-term borrowings	Loans and receivables	Measured at cost	1.1	1.1
Fair value of short-term financial instruments	Held for trading	Measured at fair value through profit or loss	7.4	7.4
Loans and receivables – current other receivables	Loans and receivables	Measured at cost	15.4	15.4
Cash on hand	Loans and receivables	Measured at cost	0.1	0.1
Bank balances	Loans and receivables	Measured at cost	223.5	223.3

The following table presents the carrying amounts of the financial instruments by measurement category according to IFRS 9 for the 2018 fiscal year and IAS 39 for the 2017 fiscal year:

	Abbreviation	Dec. 31, 2017	Dec. 31, 2018
Available-for-Sale Financial Assets	AfS	3.3	–
Held-to-Maturity	HtM	–	–
Loans and Receivables	LaR	1,167.8	–
Financial Assets Held for Trading	FAHfT	8.0	–
At Amortized Cost	AC	–	923.8
At Fair Value through Profit or Loss	FVtPL	–	12.5
Total financial instruments (assets)		**1,179.1**	**936.3**
Financial Liabilities Measured at Amortized Cost	FLAC	927.0	873.0
Financial Liabilities Held for Trading	FLHfT	6.1	–
At Fair Value through Profit or Loss	FVtPL	–	3.7
Total financial instruments (liabilities)		**933.1**	**876.7**

Carrying amounts and fair values by measurement categories for 2018

The carrying amounts and the fair values according to IFRS 9 are derived from the following table:

Assets

in € millions	IFRS 9 measurement category	Net carrying amount/ Status as of Dec. 31, 2018	of which, other assets and liabilities not covered by IFRS 7	of which, other assets and liabilities covered by IAS 17	Net carrying amount of financial instruments/ Status as of Dec. 31, 2018	Fair value/ Status as of Dec. 31, 2018
Financial investments		8.7	–	–	8.7	8.7
(of which, loans)	AC	(1.8)	(0.0)	(0.0)	(1.8)	(1.8)
(of which, participations)	FVtPL	(6.9)	(0.0)	(0.0)	(6.9)	(6.9)
Long-term finance lease receivables	n. a.	1.0	–	1.0	–	–
Other long-term receivables and other assets		18.7	15.4	–	3.3	3.3
(of which, derivatives without a hedging relationship)	FVtPL	(0.2)	(0.0)	(0.0)	(0.2)	(0.2)
(of which, trade receivables)	AC	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
(of which, from the category AC)	AC	(3.1)	(0.0)	(0.0)	(3.1)	(3.1)
(of which, other)	n. a.	(15.4)	(15.4)	(0.0)	(0.0)	(0.0)
Trade receivables	AC	415.1	–	–	415.1	415.1
Contract assets	n. a.	493.9	(493.9)	–	–	–
Receivables from affiliated companies	AC	–	–	–	–	–
Current finance lease receivables	n. a.	0.6	–	0.6	–	–
Other assets, prepaid expenses and deferred charges		130.4	(99.8)	–	(30.6)	(30.6)
(of which, derivatives without a hedging relationship)	FVtPL	(4.0)	(0.0)	(0.0)	(4.0)	(4.0)
(of which, other from the category AC)	AC	(25.2)	(0.0)	(0.0)	(25.2)	(25.2)
(of which, other from the category FVtPL)	FVtPL	(1.4)	(0.0)	(0.0)	(1.4)	(1.4)
(of which, other)	n. a.	(99.8)	(99.8)	(0.0)	(0.0)	(0.0)
Cash and cash equivalents	AC	478.6	–	–	478.6	478.6
Total financial instruments (assets) IFRS 9					**936.3**	**936.3**

Liabilities

in € millions	IFRS 9 measurement category	Net carrying amount/ Status as of Dec. 31, 2018	of which, other assets and liabilities not covered by IFRS 7	of which, other assets and liabilities covered by IAS 17	Net carrying amount of financial instruments/ Status as of Dec. 31, 2018	Fair value/ Status as of Dec. 31, 2018
Non-current financial liabilities	FLAC	380.4	–	–	380.4	380.4
Other non-current liabilities and provisions		35.4	35.4	–	–	–
(of which, for leases)	n. a.	(0.0)	–	(0.0)	(0.0)	(0.0)
(of which, other)	n. a.	(35.4)	(35.4)	–	(0.0)	(0.0)
Current financial liabilities	FLAC	5.2	–	–	5.2	5.2
Trade payables	FLAC	402.7	–	–	402.7	402.7
Contract liabilities	n. a.	406.8	(406.8)	–	–	–
Accounts payable to affiliated companies	FLAC	–	–	–	–	–
Other current liabilities, prepaid expenses and deferred charges		287.5	199.1	–	88.4	88.4
(of which, for leases)	n. a.	(0.0)	–	(0.0)	(0.0)	(0.0)
(of which, derivatives without a hedging relationship)	FVtPL	(3.7)	–	–	(3.7)	(3.7)
(of which, other from the category FLAC)	FLAC	(84.7)	–	–	(84.7)	(84.7)
(of which, other)	n. a.	(199.1)	(199.1)	–	(0.0)	(0.0)
Total financial instruments (liabilities) IFRS 9					**876.7**	**876.7**

Carrying amounts and fair values by measurement categories for 2017

The carrying amounts and the fair values according to IAS 39 are derived from the following table:

Assets

in € millions	IAS 39 measurement category	Net carrying amount/ Status as of Dec. 31, 2017	of which, other assets and liabilities not covered by IFRS 7	of which, other assets and liabilities covered by IAS 17	Net carrying amount of financial instruments/ Status as of Dec. 31, 2017	Fair value/ Status as of Dec. 31, 2017
Financial investments		5.1	–	–	5.1	5.1
(of which, loans)	LaR	(1.8)	(0.0)	(0.0)	(1.8)	(1.8)
(of which, participations)	AfS	(3.3)	(0.0)	(0.0)	(3.3)	(3.3)
Investments accounted for by the equity method	n.a.	15.7	15.7	–	–	–
Long-term finance lease receivables	n.a.	43.1	–	43.1	–	–15.6
Other long-term receivables and other assets		17.6	13.9	–	3.7	3.7
(of which, derivatives without a hedging relationship)	FAHfT	(0.6)	(0.0)	(0.0)	(0.6)	(0.6)
(of which, from the category LaR)	LaR	(3.1)	(0.0)	(0.0)	(3.1)	(3.1)
(of which, other)	n.a.	(13.9)	(13.9)	(0.0)	(0.0)	(0.0)
Trade receivables	LaR	408.1	–	–	408.1	408.1
Receivables from construction contracts	LaR	515.7	–	–	515.7	515.7
Current finance lease receivables	n.a.	9.8	–	9.8	–	–
Other assets, prepaid expenses and deferred charges		85.4	62.5	–	22.9	22.9
(of which, derivatives without a hedging relationship)	FAHfT	(7.4)	(0.0)	(0.0)	(7.4)	(7.4)
(of which, other from the category LaR)	LaR	(15.5)	(0.0)	(0.0)	(15.5)	(15.5)
(of which, other from the category HtM)	HtM	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
(of which, other)	n.a.	(62.5)	(62.5)	(0.0)	(0.0)	(0.0)
Cash and cash equivalents	LaR	223.6	–	–	223.6	223.6
Total financial instruments (assets)					**1,179.1**	**1,179.1**

Liabilities

in € millions	IAS 39 measurement category	Net carrying amount/ Status as of Dec. 31, 2017	of which, other assets and liabilities not covered by IFRS 7	of which, other assets and liabilities covered by IAS 17	Net carrying amount of financial instruments/ Status as of Dec. 31, 2017	Fair value/ Status as of Dec. 31, 2017
Non-current financial liabilities	FLAC	249.7	–	–	249.7	249.7
Other non-current liabilities and provisions		29.5	29.5	0.0	–	–
(of which, for leases)	n.a.	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
(of which, other)	n.a.	(29.5)	(29.5)	(0.0)	(0.0)	(0.0)
Current financial liabilities	FLAC	19.1	–	–	19.1	19.1
Trade payables	FLAC	549.2	–	–	549.2	549.2
Liabilities from construction contracts	n.a.	214.1	214.1	–	–	–
Accounts payable to affiliated companies	FLAC	–	–	–	–	–
Other current liabilities, prepaid expenses and deferred charges		297.7	182.5	0.1	115.1	115.1
(of which, for leases)	n.a.	(0.1)	(0.0)	(0.1)	(0.0)	(0.0)
(of which, derivatives without a hedging relationship)	FLHfT	(6.1)	(0.0)	(0.0)	(6.1)	(6.1)
(of which, other from the category FLAC)	FLAC	(109.0)	(0.0)	(0.0)	(109.0)	(109.0)
(of which, other)	n.a.	(182.5)	(182.5)	(0.0)	(0.0)	(0.0)
Total financial instruments (liabilities)					**933.1**	**933.1**

With the exception of financial investments and leasing receivables, the assets usually have short remaining terms. It is therefore safe to assume that the carrying amounts essentially correspond to the fair value as at the balance sheet date. Long-term interest-bearing receivables including finance lease receivables are measured and, if necessary, impaired based on different parameters such as interest rates and customer-specific credit ratings. The carrying amounts for long-term interest-bearing receivables therefore also correspond approximately to the market values.

The liabilities are measured in the same way as the assets. Aside from the non-current financial liabilities and the other non-current liabilities, almost all liabilities here have short remaining terms, for which reason the carrying values approximately correspond to the fair value.

The derivative financial instruments recognized at the balance sheet date are forward exchange transactions to hedge exchange rate risks. Their recognition in the balance sheet occurs at the market value determined using standardized financial mathematical methods, among other things, in relation to the foreign exchange rates.

Net results listed according to measurement categories are represented as follows:

Net profit/loss by IFRS 9 measurement categories for the 2018 fiscal year

	Net gains/losses	Total interest income/expenses	Commission income/expenses
At Amortized Cost (AC)	24.6	9.4	–
Fair Value through Profit and Loss (FVtPL)	–4.6	3.0	–
Financial Liabilities Measured at Amortized Cost (FLAC)	7.5	–5.2	–1.6
Total	**27.5**	**7.2**	**–1.6**

Net profit/loss by IAS 39 measurement categories for the 2017 fiscal year

	Net gains/losses	Total interest income/expenses	Commission income/expenses
Loans and Receivables (LaR)	–12.6	–3.7	–
Available-for-Sale Financial Assets (AfS)	–1.5	–	–
Held-to-Maturity (HtM)	–	–1.0	–
Financial Instruments Held for Trading (FAHfT and FLHfT)	8.8	–	–
Financial Liabilities Measured at Amortized Cost (FLAC)	5.4	–2.8	–1.3
Total	**0.1**	**–7.5**	**–1.3**

The net profits in the 2018 fiscal year from the Amortized Cost (AC) measurement category include the proceeds from the sale of KBee AG, Munich as well as connyun GmbH, Karlsruhe, exchange rate effects and income from additions and reversals of impairments. The total interest income includes interest income from banks and foreign currency effects from financing activities.

The Fair Value through Profit and Loss (FVtPL) category primarily includes foreign currency effects relating to total interest expenses and net profits.

The net profit from Financial Liabilities Measured at Amortized Cost (FLAC) includes net profit from the release of liabilities. The total interest expenditure primarily relates to interest expenditure for banks.

Commission expenses are recorded as the transaction costs for financial liabilities due to banks and fees for the provision of guarantees.

30. Contingent liabilities and other financial commitments

At the end of the fiscal year the Group had obligations from guarantees amounting to €2.0 million (2017: €0.0 million) and obligations from warranties amounting to €0.2 million (2017: €0.0 million).

in € millions	2017	2018
Purchase commitments (discounted notes)	13.6	40.8
Rent/lease liabilities	144.0	160.7
Other financial commitments	6.7	14.5
Total	**164.3**	**216.0**

The rise in rental and leasing commitments is largely the result of new or extended tenancies and foreign currency effects.

The increase in the purchase commitments is primarily associated with construction measures and the expansion of production facilities.

Commitments in connection with leases for passenger cars, office and factory buildings, technical office equipment and production facilities primarily include liabilities from leases and rental agreements in connection with operating leases. The lease payments and due dates are broken down as follows:

in € millions	Dec. 31, 2017	Dec. 31, 2018
Due within one year	36.2	36.8
Due between one and five years	80.8	90.9
Due after more than five years	27.0	33.0
Total	**144.0**	**160.7**

Total rental expenses for the fiscal year were €53.8 million compared to €42.6 million in 2017; rental income totaled €0.0 million compared to €0.0 million in 2017.

Notes to the Group cash flow statement

The cash flow statement reports cash flows separately for incoming and outgoing funds from operating, investing and financing activities in accordance with IAS 7. The calculation of cash flows is derived from the consolidated financial statements of KUKA Aktiengesellschaft by using the indirect method.

Cash and cash equivalents in the cash flow statement comprise all cash and cash equivalents disclosed on the balance sheet, i.e. cash on hand, checks and cash with banks provided they are available within three months.

Cash and cash equivalents of €0.5 million (2017: €0.4 million) are subject to restrictions. These restrictions relate among others to a government funding for eligible development projects with a German company.

Cash flow from operating activities is derived indirectly from the earnings after taxes.

Under the indirect method, the relevant changes to the balance sheet items associated with operating activities are adjusted for currency translation effects and changes to the scope of consolidation.

The income taxes include the current tax expenses, while the deferred tax expenses are contained in other non-cash expenses.

The changes in cash and cash equivalents related to the scope of consolidation in 2018 primarily relate to increases in connection with the establishment of the Chinese subsidiaries (China joint ventures in which Midea Group holds a 50% share in equity).

Notes to the Group segment reporting

The data for the individual annual financial statements have been segmented by business field and region. The structure follows internal reporting (management approach). The segmentation is intended to create transparency with regard to the earning power and the prospects, as well as the risks and rewards for the various business fields within the Group.

Segment reporting is designed to accommodate the structure of KUKA Group. KUKA Group was engaged in three major business segments in the reporting year and the previous year.

KUKA Robotics

This segment offers customers from the automotive sector and general industry – as well as those supported by comprehensive customer services – industrial robots, from small models to heavy-duty robots. Medical robotics activities are also bundled in this segment.

KUKA Systems

This segment provides customers in the fields of automotive and general industry with innovative solutions and services for automated production. Applications range from welding, bonding, sealing, assembling and testing, to forming solutions tailored to meet the specific customer needs and production of castings and plastic components.

Swisslog

This segment produces leading automation solutions for future-oriented hospitals, warehouse and distribution centers with the focus on the segments of trading, including e-commerce, pharmaceuticals, and chilled and frozen foods.

KUKA AG and other companies

KUKA Aktiengesellschaft and other investments that are supplementary to the operating activities of KUKA Group are aggregated in a separate segment. Cross-divisional consolidation items are shown in a separate column. The allocation of Group companies to the individual business segments is shown in the schedule of shareholdings.

The breakdown of sales revenues by region is based on the customer's registered office/delivery location. Non-current assets (tangible and intangible assets) are calculated by company location.

	Revenues acc. to customer location		Non-current assets acc. to registered office of the company	
in € millions	**2017**	**2018**	**2017**	**2018**
Germany	553.5	718.0	330.7	341.9
Rest of Europe	765.4	734.7	332.9	336.2
North America	1,351.7	1,108.1	123.4	303.6
Other regions	808.5	681.3	29.4	75.9
Total	**3,479.1**	**3,242.1**	**816.4**	**1,057.6**

KUKA Group did not achieve more than 10% of total sales revenues with any customer in the 2018 fiscal year or in the previous year.

The calculations for segment reporting are based on the following principles, as in the previous year:

- Group external sales revenues show the divisions' respective percentage of consolidated sales for the Group as presented in the Group income statement.
- Intra-Group sales revenues are sales transacted between segments. In principle, transfer prices for intra-Group sales are determined based on the market.
- Sales revenues for the segments include revenues from sales to third parties as well as sales to other Group segments.
- EBIT reflects operating earnings, i.e. the earnings from ordinary activities before financial results and taxes.
- Elimination of scheduled and unscheduled depreciation on tangible and intangible assets from EBIT produces EBITDA.
- ROCE (return on capital employed) is the ratio of EBIT to average capital employed, which is largely non-interest bearing. To calculate ROCE the capital employed is based on an average value.

The reconciliation of capital employed to segment assets and segment liabilities is shown in the following table:

in € millions		2017	2018
Capital employed			
	Intangible assets	520.4	563.9
+	Tangible assets	296.0	493.7
+	Long-term finance lease receivables	43.1	1.0
+	**Asset-side working capital**	**1,456.7**	**1,568.2**
	Inventories	387.4	466.8
	Contractual assets	515.7	493.9
	Trade receivables	408.1	415.1
	Other receivables and assets	145.5	192.4
=	**Asset items of capital employed**	**2,316.2**	**2,626.8**
./.	Other provisions	116.6	156.8
./.	Advances received	94.0	–
./.	Liabilities from construction contracts	214.1	–
./.	Contractual liabilities	–	406.8
./.	Trade payables	549.2	402.7
./.	Other liabilities except for liabilities similar to bonds (incl. deferred income)	323.9	308.8
=	**Liability-side working capital**	**1,297.8**	**1,275.1**
=	**Liability items of capital employed**	**1,297.8**	**1,275.1**
=	Capital employed	1,018.4	1,351.7
	Average capital employed	950.4	1,185.0
Segment assets			
	Asset items of capital employed	2,316.2	2,626.8
+	Other participations	5.1	8.7
+	Investments accounted for at equity	15.7	13.9
=	Segment assets	2,337.0	2,649.4
Segment liabilities			
	Liability items of capital employed	1,297.8	1,275.1
+	Pension provisions and similar obligations	108.9	110.4
+	Substantial restructuring provisions	15.9	9.9
=	Segment liabilities	1,422.6	1,395.4
Working capital			
	Asset-side working capital	1,456.7	1,568.2
	Liability-side working capital	1,297.8	1,275.1
=	**Working capital**	**158.9**	**293.1**

Additional elements of the segment reports are contained in the Management Report on the operating business divisions Robotics, Systems and Swisslog, as well as in the tables at the beginning of the Group notes. Compared to the previous year, the one-time effects have been broken down into the segments. The figures for the 2017 financial year have been adjusted.

Other notes

Related party disclosures

Persons or companies that may be influenced by or have influence on the reporting company must be disclosed in accordance with IAS 24, provided they have not already been included as consolidated companies in the financial statements.

Parties related to KUKA Group include mainly members of the Executive and Supervisory Boards as well as non-consolidated KUKA Group companies in which KUKA Aktiengesellschaft directly or indirectly holds a significant proportion of the voting rights or companies that hold a significant proportion of the voting rights in KUKA Aktiengesellschaft.

As was the case in 2017, the related companies also include the associates Freadix FryTec GmbH, Augsburg, IWK Unterstützungseinrichtung GmbH, Karlsruhe, KUKA Unterstützungskasse GmbH, Augsburg as non-consolidated subsidiaries and the joint venture Chang'an Reis Robotic Intelligent Equipment (Chongqing) Co., Ltd., Chongqing/China, Yawei Reis Robot Manufacturing (Jiangsu) Co. Ltd., Yangzhou City/China, and Pipeline Health Holdings LLC., Delaware/USA. Companies attributable to Midea Group are also related companies.

KBee AG, Munich, was sold in the 2018 fiscal year. The specified values only refer to the period of affiliation to the Group.

The following receivables from and liabilities to related parties existed as at the balance sheet date:

in € millions	Shares of KUKA in %	Group receivables from related parties		Group liabilities to related parties	
		Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018
Midea Group	–	0.3	1.1	0.2	0.1
Chang'an Reis (Chongqing) Robotic Intelligent Equipment Co. Ltd./China	50.0	0.5	0.3	0.4	0.4
Yawei Reis Robot Manufacturing (Jiangsu) Co. Ltd., Yangzhou City/China	49.0	0.2	0.3	0.9	1.1
KBee AG, Munich/Germany	–	0.4	–	–	–
Others/less than €1 million		–	–	0.1	0.1
Total		**1.4**	**1.7**	**1.6**	**1.7**

Over the reporting year, the following services were provided to or purchased from related parties:

in € millions	Shares of KUKA in %	Goods and services provided by the Group to related parties		Goods and services provided to the Group by related parties	
		Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018
Midea Group	–	2.0	0.3	0.0	3.5
Chang'an Reis (Chongqing) Robotic Intelligent Equipment Co. Ltd./China	50.0	7.3	2.2	2.3	12.8
Yawei Reis Robot Manufacturing (Jiangsu) Co. Ltd./China	49.0	2.1	7.9	8.0	1.8
Nebbiolo Technologies Inc., Delaware/USA	16.0	–	0.2	–	
KBee AG, Munich/Germany	–	0.2	–	–	–
RoboCeption GmbH, Munich/Germany	25.1	–	0.8	1.2	–
Others		–	–	0.3	–
Total		**11.6**	**11.4**	**11.8**	**18.1**

Business with all related parties is transacted under the "dealing at arm's length" principle at transfer prices that correspond to market conditions. No business subject to reporting rules was conducted between any KUKA Group companies and members of KUKA Aktiengesellschaft's Executive or Supervisory Boards with the exception of the legal transactions outlined in the compensation report.

Events after the balance sheet date

The events after the balance sheet date relate to both KUKA Group and KUKA Aktiengesellschaft. The customer centric organization (CCO) launched on January 1, 2018 was further improved. Central elements, such as the consistent customer centricity, were retained and transferred to the new KUKA Business Organization (KBO). This comprises five business segments – Systems, Robotics, Logistics Automation, Healthcare and China. Each business segment has a different focus in order to achieve targeted development of KUKA Group's market and competitive position. The customer remains the main focus in all cases. In addition, there will be greater entrepreneurial responsibility in the business segments.

As of January 3, 2019, Midea Group acquired a direct 50% stake in each of two Chinese companies of KUKA Group in the form of a cash contribution. On account of the control structure, the investment in the Chinese Swisslog Healthcare company will still be fully consolidated in KUKA Group, whereas the investment in the Chinese Swisslog Logistics company will be included at equity in KUKA Group's consolidated financial statements in the future. Overall, Midea Group invested a mid-double-digit million euro amount in these companies.

Executive Board and Supervisory Board compensation

The Executive Board of KUKA Aktiengesellschaft received total compensation of €10.8 million (2017: €6.7 million). The total amount also includes parts of the severance payment for Dr. Till Reuter in the amount of €3.6 million. Altogether over the fiscal year, the Executive Board received a fixed salary including payments in kind and other compensation of €2.1 million (2017: €1.9 million). Target achievement and performance-based compensation totaled €5.2 million (2017: €4.8 million). €1.4 million (2017: €3.3 million) of this was paid out for compensation in accordance with the phantom share program.

With a few exceptions, former Executive Board members have been granted benefits from the company pension scheme, which include old-age, vocational and employment disability, widow's and orphan's pensions. The amount of accruals included for this group of persons in 2018 for current pensions and vested pension benefits totals €9.9 million (HGB) compared to €9.8 million in 2017. The retirement benefits paid in this connection amounted to €0.8 million (2017: €0.9 million).

KUKA Aktiengesellschaft has no compensation agreements with the members of the Executive Board or with employees that would come into effect in the event of a takeover bid.

In the 2018 fiscal year, the members of the Supervisory Board received a total of €1.1 million (2017: €1.0 million) for their activities as members of this board.

Please refer to the notes in the audited compensation report for further information and details about the compensation of individual Executive Board and Supervisory Board members. The compensation report is part of the Corporate Governance report and summarizes the basic principles used to establish the compensation of the Executive and Supervisory Boards of KUKA Aktiengesellschaft. The compensation report is an integral part of the Group Management Report.

Audit fees

The fee for the auditor, KPMG AG, Wirtschaftsprüfungsgesellschaft, Augsburg, recognized as an expense in 2018 totals €0.7 million (2017: €1.7 million) for services provided in Germany. €0.7 million (2017: €0.6 million) was recognized for financial statement auditing services. €0.0 million (2017: €0.7 million) was recognized as an expense for tax advisory services performed by the auditor and €0.0 million (2017: €0.4 million) for other services.

€1.2 million (2017: €1.1 million) was recognized as an expense for financial statement auditing services performed for foreign subsidiaries. €0.0 million (2017: €0.1 million) was incurred for tax advisory services abroad and the same sum of €0.0 million (2017: €0.1 million) was incurred for other consultancy services.

Declaration regarding corporate governance

Reference is made to published information on the KUKA AG website for the declaration regarding corporate governance pursuant to section 289f of the German Commercial Code (HGB): www.kuka.com/en-de/investor-relations/corporate-governance/corporate-management.

Corporate bodies

Supervisory Board

Wilfried Eberhardt
Aichach/Germany
Employee representative on the Supervisory Board
Chief Marketing Officer of KUKA Aktiengesellschaft

Hongbo (Paul) Fang
Foshan/China
Member of the Supervisory Board of KUKA Aktiengesellschaft
Chairman and CEO Midea Group

Membership in comparable controlling bodies of business enterprises in Germany and abroad:

- Midea Investment Development Ltd., Tortola/British Virgin Islands
- Midea Investment Development Co., Ltd. /British Virgin Islands

Siegfried Greulich
Augsburg/Germany
Employee representative (until June 6, 2018) on the Supervisory Board
Deputy Chairman of the Works Council of the KUKA Plants at Augsburg (until March 16, 2018)

Dr. Yanmin (Andy) Gu
Guangzhou/China
Chairman of the Supervisory Board of KUKA Aktiengesellschaft
Vice President Midea Group, Board Director

Membership in comparable controlling bodies of business enterprises in Germany and abroad:

- Chongqing Midea General Refrigeration Equipment Co. Ltd., Chongqing/China
- Midea Investment (Asia) Company Limited
- Midea Electric Trading (Singapore) Co. Pte. Ltd.
- Midea Electrics Netherlands B.V.
- PT. Midea Heating and Ventilating Air Conditioner Indonesia
- Midea Intelligent Technologies (Singapore) Pte. Ltd.
- Frylands B.V.
- Beautiland B.V.
- South American HoldCo. II B.V.
- South American HoldCo. III B.V.
- Midea Electric Espana S.R.L.
- Midea Electric Trading (Thailand) Limited
- Midea Heating & Ventilating Equipment Italia S.P.A

Manfred Hüttenhofer
Meitingen/Germany
Employee representative (since June 6, 2018) on the Supervisory Board
Head of Motion Control Competence Center, KUKA Deutschland GmbH

Prof. Dr. Henning Kagermann
Königs Wusterhausen/Germany
Member of the Supervisory Board of KUKA Aktiengesellschaft
Chairman of the acatech Board of Trustees – German Academy of Science and Engineering, acatech Senator

Membership in other statutory supervisory boards:

- Deutsche Bank AG (until May 24, 2018)
- Deutsche Post AG
- Munich Reinsurance Company

Armin Kolb
Augsburg/Germany
Employee representative on the Supervisory Board
Chairman of the Group Works Council of KUKA Aktiengesellschaft
Chairman of the Works Council of the KUKA Plants at Augsburg

Michael Leppek
Stadtbergen/Germany
Deputy Chairman of the Supervisory Board of KUKA Aktiengesellschaft
Employee representative on the Supervisory Board
1st Authorized Representative of IG Metall trade union, Augsburg branch

Membership in other statutory supervisory boards:

- MAN Energy Solutions SE
- SGL Carbon SE (until May 31, 2018)
- AIRBUS Helicopters Deutschland GmbH

Carola Leitmeir
Großaitingen/Germany
Employee representative on the Supervisory Board
Deputy Chairman of the Works Council of the KUKA Plants at Augsburg (since March 16, 2018)

Min (Francoise) Liu
Shunde/China
Member of the Supervisory Board of KUKA Aktiengesellschaft
HR Director Midea Group

Membership in comparable controlling bodies of business enterprises in Germany and abroad:

- Midea Smart Home Technology Co. Ltd., Shenzhen/China
- Guangdong Midea Smart Link Home Technology Co. Ltd., Foshan/China
- Foshan Midea Zihui Real Estate Development Co., Ltd. /Isreal

Dr. Myriam Meyer
Birchwil/Switzerland
Member of the Supervisory Board of KUKA Aktiengesellschaft (since June 6, 2018)
Proprietor of mmtec

Membership in other statutory supervisory boards:

- Lufthansa Technik AG, Hamburg/Germany

Membership in comparable controlling bodies of business enterprises in Germany or abroad:

- Wienerberger AG, Vienna/Austria

Prof. Dr. Michèle Morner
Rosengarten/Germany
Member of the Supervisory Board of KUKA Aktiengesellschaft (until June 6, 2018)
Scientific Director at the Institute of Corporate Management and Governance in Berlin

Membership in other statutory supervisory boards:

- Viscom AG (Chairwoman of the Supervisory Board)
- German Financial Reporting Enforcement Panel (dpr)

Tanja Smolenski
Berlin/Germany
Employee representative on the Supervisory Board
Political Secretary to the Executive Committee of the IG Metall trade union
Head of the Fundamental Issues and Social Policy department of the Executive Committee of the IG Metall trade union, Berlin office

Alexander Tan
Singapore/Singapore
Member of the Supervisory Board of KUKA Aktiengesellschaft
Goodpack IBC (Singapore) Pte Ltd

Executive Board

Dr. Till Reuter
Pfäffikon/Switzerland
Chief Executive Officer (until December 5, 2018)

Membership in comparable controlling bodies of business enterprises in Germany and abroad:

- Rinvest AG, Pfäffikon/Switzerland

Peter Mohnen
Munich/Germany
Chief Executive Officer (since December 6, 2018)
Chief Financial Officer (until December 5, 2018)

Andreas Pabst
Bobingen/Germany
Chief Financial Officer (since December 6, 2018)

Schedule of shareholdings of KUKA Aktiengesellschaft

As at December 31, 2018

	Name and registered office of the company	Currency	Method of consolidation	Share of equity in %
Germany				
1	Bopp & Reuther Anlagen-Verwaltungsgesellschaft mbH, Augsburg	EUR	k	100.00
2	Device Insight GmbH, Munich	EUR	k	50.01
3	Faude Automatisierungstechnik GmbH, Gärtringen	EUR	k	100.00
4	KUKA Deutschland GmbH, Augsburg [1]	EUR	k	100.00
5	KUKA Industries GmbH & Co. KG, Obernburg	EUR	k	100.00
6	KUKA Systems GmbH, Augsburg [1]	EUR	k	100.00
7	Reis GmbH, Obernburg [1]	EUR	k	100.00
8	Reis Group Holding GmbH & Co. KG, Obernburg [1]	EUR	k	100.00
9	Reis Holding GmbH, Obernburg	EUR	k	100.00
10	Swisslog (Deutschland) GmbH, Puchheim	EUR	k	100.00
11	Swisslog Augsburg GmbH, Augsburg	EUR	k	100.00
12	Swisslog GmbH, Dortmund	EUR	k	100.00
13	Swisslog Healthcare GmbH, Westerstede	EUR	k	100.00
14	Verwaltungsgesellschaft Walter Reis GmbH, Obernburg	EUR	k	100.00
15	Visual Components GmbH, Munich	EUR	k	100.00
16	Walter Reis GmbH & Co KG, Obernburg [1]	EUR	k	100.00
17	WR Vermögensverwaltungs GmbH, Obernburg	EUR	k	100.00
18	RoboCeption GmbH, Munich	EUR	b	25.10
19	Freadix FryTec GmbH, Augsburg	EUR	nk	100.00
20	IWK Unterstützungseinrichtung GmbH, Karlsruhe	EUR	nk	100.00
21	KUKA Unterstützungskasse GmbH, Augsburg	EUR	nk	100.00
22	Schmidt Maschinentechnik GmbH (in liquidation), Niederstotzingen	EUR	nk	100.00
Other Europe				
23	Easy Conveyors B.V., Valkenswaard/Netherlands	EUR	k	100.00
24	KUKA Automation CR s.r.o., Chomutov/Czech Republic	CZK	k	100.00
25	KUKA Automatisering + Robots N.V., Houthalen/Belgium	EUR	k	100.00
26	KUKA Automatisme + Robotique S.A.S., Villebon-sur-Yvette/France	EUR	k	100.00
27	KUKA Automatizare Romania S.R.L., Sibiu/Romania	RON	k	100.00
28	KUKA CEE GmbH, Linz/Austria	EUR	k	100.00
29	KUKA Hungaria Kft., Taksony/Hungary	EUR	k	100.00
30	KUKA Iberia, S.A.U., Vilanova i la Geltrú/Spain	EUR	k	100.00
31	KUKA Industries Italia srl, Bellusco/Italy	EUR	k	100.00
32	KUKA Nordic AB, Västra Frölunda/Sweden	SEK	k	100.00
33	KUKA Roboter Italia S.p.A., Rivoli/Italy	EUR	k	100.00
34	KUKA Roboter Schweiz AG (in liquidation), Neuenhof/Switzerland	CHF	k	100.00
35	KUKA Robotics Ireland LTD, Dublin/Ireland	GBP	k	100.00

	Name and registered office of the company	Currency	Method of consolidation	Share of equity in %
36	KUKA Robotics UK LTD, Wednesbury/UK	GBP	k	100.00
37	KUKA Russia OOO, Moscow/Russia	RUB	k	100.00
38	KUKA S-BASE s.r.o. (in liquidation), Roznov p.R./Czech Republic	CZK	k	100.00
39	KUKA Slovakia s.r.o., Dubnica nad Váhom/Slovakia	EUR	k	100.00
40	KUKA Systems Aerospace SAS, Bordeaux-Merignac/France	EUR	k	100.00
41	KUKA Systems France S.A., Montigny/France	EUR	k	100.00
42	KUKA Systems UK Ltd., Halesowen/UK	GBP	k	100.00
43	Reis Espana S.L. (in liquidation), Esplugues de Llobregat (Barcelona)/Spain	EUR	k	100.00
44	Reis France SCI, Pontault Combault/France	EUR	k	100.00
45	Swisslog (UK) Ltd., Redditch/UK	GBP	k	100.00
46	Swisslog AB, Partille/Sweden	SEK	k	100.00
47	Swisslog Accalon AB, Boxholm/Sweden	SEK	k	100.00
48	Swisslog AG, Buchs/Switzerland	CHF	k	100.00
49	Swisslog AS, Oslo/Norway	NOK	k	100.00
50	Swisslog B.V., Culemborg/Netherlands	EUR	k	100.00
51	Swisslog Evomatic GmbH, Sipbachzell/Austria	EUR	k	100.00
52	Swisslog France SAS, Saint-Denis/France	EUR	k	100.00
53	Swisslog Healthcare AG, Buchs AG/Switzerland	CHF	k	100.00
54	Swisslog Healthcare Holding AG, Buchs AG/Switzerland	CHF	k	100.00
55	Swisslog Healthcare Italia S.p.A., Cuneo/Italy	EUR	k	100.00
56	Swisslog Healthcare Netherlands B.V., Apeldoorn/Netherlands	EUR	k	100.00
57	Swisslog Holding AG, Buchs/Switzerland	CHF	k	100.00
58	Swisslog Italia SpA, Milan/Italy	EUR	k	100.00
59	Swisslog N.V., Wilrijk/Belgium	EUR	k	100.00
60	Visual Components Oy, Espoo/Finland	EUR	k	100.00
61	Metaalwarenfabriek's-Hertogenbosch B.V., s-Hertogenbosch/Netherlands	EUR	nk	100.00
North America				
62	KUKA Aerospace Holdings LLC, Michigan/USA	USD	k	100.00
63	KUKA Assembly and Test Corp., Saginaw, Michigan/USA	USD	k	100.00
64	KUKA de Mexico S. de R.L.de C.V., Mexico City/Mexico	MXN	k	100.00
65	KUKA Recursos S. de R.L. de C.V., Mexico City/Mexico	MXN	k	100.00
66	KUKA Robotics Canada Ltd., Saint John NB/Canada	CAD	k	100.00
67	KUKA Robotics Corp., Sterling Heights, Michigan/USA	USD	k	100.00
68	KUKA Systems de Mexico S. de R.L. de C.V., Mexico City/Mexico	MXN	k	100.00
69	KUKA Systems North America LLC., Sterling Heights, Michigan/USA	USD	k	100.00
70	KUKA Toledo Production Operations, LLC., Toledo, Ohio/USA[2]	USD	k	100.00
71	KUKA U.S. Holdings Company LLC., Shelby Township, Michigan/USA	USD	k	100.00
72	Reis Robotics USA, Inc., Elgin, Illinois/USA	USD	k	100.00
73	Swisslog Logistics, Inc., Newport News/USA	USD	k	100.00
74	Swisslog USA Inc., City of Dover/USA	USD	k	100.00
75	Translogic CORPORATION, Denver/USA	USD	k	100.00
76	Translogic Ltd. (Canada), Mississauga/Canada	CAD	k	100.00
77	Visual Components North America Corporation, Michigan/USA	USD	k	100.00
78	Pipeline Health Holdings LLC., Delaware/USA	USD	at	25.00

	Name and registered office of the company	Currency	Method of consolidation	Share of equity in %
Latin America				
79	KUKA Industries Brasil Sistemas de Automação Ltda., São Paulo/Brazil	BRL	k	100.00
80	KUKA Roboter do Brasil Ltda., São Paulo/Brazil	BRL	k	100.00
81	KUKA Systems do Brasil Ltda., São Bernardo do Campo SP/Brazil	BRL	k	100.00
82	Reis Robotics do Brasil Ltda., São Paulo/Brazil	BRL	k	100.00
Asia and Australia				
83	KUKA (Thailand) Co., Ltd., Bangkok/Thailand	THB	k	100.00
84	KUKA Automation Equipment (Shanghai) Co., Ltd., Shanghai/China	CNY	k	100.00
85	KUKA Automation Taiwan Co. Ltd., Chung-Li City/Taiwan	TWD	k	99.90
86	KUKA India Pvt. Ltd., Haryana/India	INR	k	100.00
87	KUKA Industries Automation (China) Co., Ltd., Kunshan/China	CNY	k	100.00
88	KUKA Industries Singapore PTE. Ltd., Singapore/Singapore	SGD	k	100.00
89	KUKA Japan K.K., Tokyo/Japan	JPY	k	100.00
90	KUKA Robot Automation Malaysia Sdn BhD, Kuala Lumpur/Malaysia	MYR	k	100.00
91	KUKA Robotics (China) Co. Ltd., Shanghai/China	CNY	k	50.00
92	KUKA Robotics Australia Pty. Ltd., Victoria/Australia	AUD	k	100.00
93	KUKA Robotics Guangdong Co., Ltd., Guangdong/China	CNY	k	50.00
94	KUKA Robotics Korea Co. Ltd., Kyunggi-Do/South Korea	KRW	k	100.00
95	KUKA Robotics Manufacturing China Co. Ltd., Shanghai City/China	CNY	k	50.00
96	KUKA Systems (China) Co. Ltd., Shanghai/China	CNY	k	100.00
97	KUKA Systems (India) Pvt. Ltd., Pune/India	INR	k	100.00
98	KUKA Vietnam Company Limited, Hanoi/Vietnam	VND	k	100.00
99	Shanghai Swisslog Healthcare Co., Ltd., Shanghai, FTZ/China	CNY	k	100.00
100	Shanghai Swisslog Healthcare Technology Co., Ltd., Shanghai, FTZ/China	CNY	nk	100.00
101	Shanghai Swisslog Logistics Automation Co., Ltd., Shanghai, FTZ/China	CNY	nk	100.00
102	Swisslog Asia Ltd., Hong Kong/China	HKD	k	100.00
103	Swisslog Australia Pty Ltd., Sydney/Australia	AUD	k	100.00
104	Swisslog Healthcare Asia Pacific Pte. Ltd., Singapore/Singapore	SGD	k	100.00
105	Swisslog Healthcare Trading MEA LLC., Emirate of Dubai/United Arab Emirates	AED	k	49.00
106	Swisslog Korea Co. Ltd, Bucheon si, Gyeonggi-do/South Korea	KRW	k	100.00
107	Swisslog Malaysia Sdn Bhd, Selangor Darul Ehsan/Malaysia	MYR	k	100.00
108	Swisslog Middle East LLC., Dubai/United Arab Emirates	AED	k	51.00
109	Swisslog Shanghai Co. Ltd., Shanghai/China	CNY	k	100.00
110	Swisslog Singapore Pte Ltd., Singapore/Singapore	SGD	k	100.00
111	Yawei Reis Robot Manufacturing (Jiangsu) Co. Ltd., Yangzhou City/China	CNY	at	49.00
112	Chang'an Reis (Chongqing) Robotic Intelligent Equipment Co. Ltd, Chongqing/China	CNY	at	50.00

[1] Companies that have made use of the exemption pursuant to section 264 para. 3 or section 264b of the German Commercial Code

[2] Principal place of business

Method of consolidation as of December 31, 2018

k Fully consolidated companies

nk Non-consolidated companies

at Financial asset accounted for by the equity method

b Participating interest

Responsibility statement

“To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Management Report of the Group includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.”

Augsburg, March 5, 2019

KUKA Aktiengesellschaft
The Executive Board

Peter Mohnen Andreas Pabst

Independent auditor’s report

To KUKA Aktiengesellschaft, Augsburg

Report on the audit of the consolidated financial statements and of the Group Management Report

Opinions

We have audited the consolidated financial statements of KUKA AG, Augsburg, and its subsidiaries (the Group), which comprise the Group statement of financial position as at December 31, 2018, the Group income statement, Group statement of comprehensive income, Group cash flow statement, and development of Group equity for the financial year from January 1 to December 31, 2018, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the combined Management Report of KUKA AG and KUKA Group (hereinafter: “Group Management Report”) for the financial year from January 1 to December 31, 2018.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Section 315e (1) HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as of December 31, 2018, and of its financial performance for the financial year from January 1 to December 31, 2018, and
- the accompanying Group Management Report as a whole provides an appropriate view of the Group’s position. In all material respects, this Group Management Report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the Group Management Report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the Group Management Report in accordance with Section 317 HGB and the EU Audit Regulation No. 537/2014 (referred to subsequently as “EU Audit Regulation”) and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). We performed the audit of the consolidated financial statements in supplementary compliance with the International Standards on Auditing (ISAs). Our responsibilities under those requirements, principles and standards are further described in the “Auditor’s Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report” section of our auditor’s report. We are independent of the Group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the Group Management Report.

Key audit matters in the audit of the consolidated financial statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from January 1 to December 31, 2018. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, we do not provide a separate opinion on these matters.

Recognition of deferred tax assets

Please refer to the notes to the consolidated financial statements “General comments, accounting principles” as well as note 5 in the notes to the consolidated financial statements for further information on the recognition and measurement principles applied as well as the deferred tax assets recognized.

The financial statement risk

Shown in the consolidated financial statements of KUKA AG as of December 31, 2018 are deferred tax assets in the amount of €90.5 million.

For the recognition of deferred tax assets, KUKA AG estimates to what extent the deferred tax claims can be utilized in the following reporting periods. The realization of these claims requires that in the future, taxable income will be generated in an adequate amount. If there is justified doubt as to the future realization of the deferred tax claims determined, deferred tax assets are not recognized, or valuation allowances are recognized for deferred tax assets already recorded.

The accounting for deferred tax assets depends to a large extent on the assessment and assumptions of management with respect to the operational development of the companies, and the tax planning of the Group is therefore subject to significant uncertainties. Furthermore, the realization is dependent on the respective legal tax environment.

The risk exists for the financial statements that the assessment of KUKA is not appropriate and the recognized deferred tax assets are not recoverable.

Our audit approach
For the assessment of the tax situation, we have involved our tax specialists in the audit. Initially, we took a critical look at the temporary differences between the IFRS carrying amounts and the carrying amounts for tax purposes. In addition, we reconciled the loss carryforwards to the tax assessments and the tax calculations for the current financial year, and we also assessed the off-balance-sheet adjustments.

We assessed the recoverability of the deferred tax assets on the basis of the internal forecasts prepared by the Company of the future income situation, and we critically evaluated the underlying assumptions. In this connection, we especially compared the planning of the future taxable income with the planning prepared by the Executive Board and approved by the Supervisory Board and reviewed it for consistency. The appropriateness of the planning utilized was assessed based on the tax planning calculations. Furthermore, we convinced ourselves as to the forecasting quality of the Company by comparing the planning of earlier financial years with subsequent actually realized results and by analyzing variances.

Our observations
The assumptions underlying the deferred tax assets are appropriate on an overall basis.

Recoverability of goodwill
Please refer to the notes to the consolidated financial statements "General comments, accounting principles" as well as note 7 in the notes to the consolidated financial statements for further information on the recognition and measurement principles as well as assumptions utilized.

The financial statement risk
As of December 31, 2018, goodwill amounts to €308.7 million (9.6% of the total assets).

The recoverability of goodwill is reviewed annually at the level of the cash generating units. For this purpose, the carrying amount is compared to the recoverable amount of the respective cash generating unit. If the carrying amount is higher than the recoverable amount, there is a need for an impairment write-down. The recoverable amount is the higher amount of the fair value and the value in use of the cash generating unit. The reference date for the impairment test was December 31, 2018.

The goodwill impairment test is complex and is based on a number of discretionary assumptions. These include, among others, the expected development of the business and the results of the business segments for the next three years, the assumed long-term growth rates and the discount rate utilized.

As a result of the impairment test, the Company determined no need for an impairment write-down.

The risk exists for the financial statements that as of the closing date an existing impairment is not recognized in an adequate amount. Furthermore, the risk exists that the related disclosures in the notes are not appropriate.

Our audit approach
With the involvement of our valuation specialists, we have assessed, among other factors, the appropriateness of the significant assumptions and the Company's calculation method. For this purpose, we have discussed the expected development of the business and the results, as well as the assumed long-term growth rate (where available with external forecasts) with the individuals responsible for the planning. Furthermore, we performed reconciliations with other internally-available forecasts, for example, for tax purposes, with external forecasts (where available) and the planning prepared by the Executive Board and approved by the Supervisory Board.

Furthermore, we convinced ourselves regarding the previous forecasting quality of the Company by comparing planning of earlier financial years with the actual results realized and by analyzing variances. Since changes in the discount rate can have a significant effect on the results of the impairment test, we compared the assumptions and parameters underlying the discount rate, in particular the risk-free interest rate, the market risk premium and the beta factor, with our own assumptions and publicly available data.

To ensure the computational correctness of the valuation model utilized, we developed an understanding of the Company's calculations on the basis of a risk-oriented selection of elements.

In order to account for the existing forecast uncertainty for the impairment test, we have investigated potential changes in the discount rates on the recoverable amount (sensitivity analysis) by calculating alternative scenarios and comparing these with the amounts determined by the Company.

Finally, we assessed whether the note disclosures regarding the recoverability of goodwill are appropriate. This comprised also the assessment of the appropriateness of the note disclosures according to IAS 36.134(f) regarding sensitivity in the case of a reasonably possible change in the value of significant assumptions underlying the valuation.

Our observations
The calculation method underlying the impairment test for goodwill is appropriate and is consistent with valuation principles to be applied.

The Company's assumptions and parameters underlying the valuation are reasonable.

The related disclosures in the notes are appropriate.

Accrual-based revenue recognition of long-term construction contracts
Please refer to the notes to the consolidated financial statements "General comments, accounting principles" as well as notes 1 and 14 in the notes to the consolidated financial statements for further information on the recognition and measurement principles as well as the respective amounts.

The financial statement risk

The Group's sales revenues for the 2018 financial year amounted to €3,242.1 million, of which €1,680.2 million was recognized over time, mainly resulting from long-term construction contracts.

KUKA AG recognizes revenues when it fulfills a performance obligation by transferring promised goods to a customer or by rendering promised services. An asset is deemed to be transferred when the customer obtains control of this asset. In accordance with the transfer of control, revenues are to be recognized in the amount to which KUKA AG is expected to be entitled, either at a point in time or over a period of time.

On the basis of the following criteria, KUKA AG has determined that the performance obligation for construction contracts is, as previously, still fulfilled over a period of time and that revenues will therefore be recognized over time:

- Through the Group's performance, an asset is created or improved and the customer obtains control of the asset while the asset is being created or improved.
- Through the Group's performance, an asset is created for which the Group has no alternative use and the Group is legally entitled to receive payment for the services already rendered, including an appropriate margin.

The Group's key markets are in Europe, the USA and Asia. The globally active Group companies enter into various agreements with customers, some of which contain complex contractual provisions.

Owing to the use of various contractual arrangements in different markets and the discretionary scope in assessing the criteria for determining the point in time at which control is transferred, there is a risk for the financial statements that revenues may be incorrectly classified as at the reporting date.

Our audit approach

On the basis of our understanding of the process which we obtained, we have assessed the design, establishment and functionality of identified internal controls, especially relating to the monitoring of costs, risks and plan revenues of the individual orders.

Due to the first-time application of IFRS 15, we focused our audit on appraising compliance with the requirements of the Group-wide accounting guidelines. We assessed the proper implementation of the accounting guidelines on the basis of contracts selected using a risk-oriented approach. Furthermore, for already-completed and still ongoing projects we compared the actual costs incurred with the original calculation in order to be able to assess the overall quality of the planning.

On the basis of contracts selected using a risk-oriented approach, we assessed the significant discretionary decisions, such as the existence of an alternative use of the asset for the Group, the existence of a legally enforceable right to payment, including an appropriate margin for services already rendered, as well as the selection of the measure of progress and estimation of the degree of progress achieved. For this purpose, we discussed the long-term construction contracts, including the existing risks (e.g. legal risks or warranty risks), with management of the segments and with the individuals responsible for the projects, and we analyzed the project calculation.

Building upon the knowledge previously obtained, we assessed the proper determination of the respective stage of completion achieved as well as the accounting and income statement recognition.

Our observations

KUKA's approach for the recognition of revenues for long-term construction contracts over time is proper. The assumptions underlying the accounting are appropriate.

Other information

Management is responsible for the other information. The other information comprises the remaining parts of the annual report, with the exception of the audited consolidated financial statements and Group Management Report and our auditor's report.

Our opinions on the consolidated financial statements and on the Group Management Report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the Group Management Report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of management and the Supervisory Board for the consolidated financial statements and the Group Management Report

Management is responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, management is responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, management is responsible for the preparation of the Group Management Report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, management is responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a Group Management Report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the Group Management Report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the Group Management Report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the Group Management Report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the Group Management Report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) and supplementary compliance with the ISAs will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this Group Management Report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

› identify and assess the risks of material misstatement of the consolidated financial statements and of the Group Management Report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
› obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the Group Management Report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
› evaluate the appropriateness of accounting policies used by management and the reasonableness of estimates made by management and related disclosures.
› conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the Group Management Report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
› evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB.
› obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the Group Management Report. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our opinions.
› evaluate the consistency of the Group Management Report with the consolidated financial statements, its conformity with [German] law, and the view of the Group's position it provides.
› perform audit procedures on the prospective information presented by management in the Group Management Report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by management as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other legal and regulatory requirements

Further information pursuant to Article 10 of the EU Audit Regulation

We were elected as Group auditor by the Annual General Meeting on June 6, 2018. We were engaged by the Supervisory Board on December 7, 2018. We have been the Group auditor of KUKA AG without interruption since the 2011 financial year.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

The fee for the year-end audit services of KPMG AG WPG related in particular to the audit of the consolidated financial statements and the annual financial statements of KUKA AG as well as various year-end audits of its subsidiaries, including legal engagement extensions and audit emphasis areas agreed on with the Supervisory Board. In addition, an audit-integrated review took place of the half-year report.

German public auditor responsible for the engagement

The German public auditor responsible for the engagement is Hans Querfurth.

Munich, March 5, 2019

KPMG AG
Wirtschaftsprüfungsgesellschaft

Signed Querfurth	Signed Specht
German public auditor	German public auditor

Glossary

ABS
Asset-backed securities. Asset-backed securities are bonds or notes that are collateralized with assets (usually receivables). Receivables are purchased within the framework of an ABS program.

AGV
Automated guided vehicle

Capital employed
Capital employed includes working capital as well as intangible assets and tangible fixed assets. Capital employed therefore represents the difference between operating assets and non-interest-bearing outside capital.

Cash earnings
Cash earnings are a measurement for the inflow or outflow of cash from the operating profits (EBIT). They are the resulting balance from operating profits, interest, taxes, depreciation as well as other non-payment-related expenses and income.

Corporate compliance
Corporate compliance means that all employees conform to the company's legislative framework and internal guidelines and do not contravene any applicable laws. Proactive risk minimization is also part of a company's compliance management system.

Corporate governance
Common international term for responsible corporate management and control that aims at creating long-term value.

DAX
German stock index of blue chip companies. It includes the 30 largest German companies admitted to the Prime Standard in terms of market capitalization and volume of stocks traded.

Declaration of compliance
Declaration of the Executive Board and the Supervisory Board in accordance with section 161 of the German Corporation Act (AktG) regarding the implementation of the recommendations of the Government Commission in the German Corporate Governance Code.

Deferred taxes
Temporary differences between calculated taxes on the commercial and tax balance sheets designed to disclose the tax expense in line with the financial accounting income.

Derivatives
Financial instruments whose value is largely derived from a specified price and the price fluctuations/expectations of an underlying base value, e.g. exchange rates.

EBIT
Earnings before interest and taxes.

EBIT margin
EBIT in relation to sales revenues.

Employees
All figures for employees in the annual report are based on full time equivalent.

Equity ratio
Ratio of equity to total assets.

Earnings per share
Earnings per share are calculated on the basis of Group consolidated earnings after taxes and the average number of shares outstanding for the year.

Exposure
A key figure used to assess risk. This key figure includes all incoming payments in a 90-day period prior to the record date of the down payments, payments based on percentage of completion or compensation after acceptance of the work carried out. In addition, the key figure also comprises all customer payments made within 90 days and which have not yet been supplied with deliveries/services including the sum of unpaid invoices following delivery or service supplied to the customer, the POC receivables and any purchase commitments.

Free cash flow
Cash flow from operating activities plus cash flow from investing activities. Free cash flow shows the extent of the funds generated by the company in the business year.

FVOCI
Financial instruments, measured at fair value through other comprehensive income.

FVtPL
Financial instruments, measured at fair value through profit or loss.

GCGC
German Corporate Governance Code: the German Government Commission's list of requirements for German companies (since 2002).

General industry
General industrial markets not including the automotive industry.

Gross margin
Gross margin is determined by dividing gross profit by sales, expressed as a percentage.

Gross profit
Gross profit on sales is defined as total sales minus cost of goods sold. Cost of goods sold includes all direct costs associated with sales revenues generated. Other costs, such as research and development, marketing and administration, are not included.

HCS
Swisslog Healthcare.

HGB
German Commercial Code.

IAS
International Accounting Standards.

IFRIC/SIC
International Financial Reporting Interpretation Committee – interpreter of the international financial reporting standards IAS and IFRS, formerly also SIC. IFRIC is the new name for the Standing Interpretations Committee adopted by the trustees of the IASC foundation in March 2002. SIC was created in 1997 to improve the application and worldwide comparability of financial reports prepared in accordance with International Accounting Standards (IAS). It outlines financial statement practices that may be subject to controversy.

IFRS
International Financial Reporting Standards: The IFRS ensure international comparability of consolidated financial statements and help guarantee a higher degree of transparency.

IIoT
Industrial Internet of Things: Networking of machines and technologies in industrial and manufacturing environments. Through connection of the IT world to physical systems, industrial processes and sequences can be made more efficient and flexible, and new business models can be developed.

MAP
KUKA Aktiengesellschaft's employee share program.

Market capitalization
The market value of a company listed on the stock exchange. This is calculated by taking the share price and multiplying it by the number of shares outstanding.

MDAX
This stock index comprises the 50 largest German companies (after those of the DAX) according to market capitalization and volume of stocks traded.

Net liquidity/Net debt
Net liquidity/net debt is a financial control parameter consisting of cash, cash equivalents and securities minus current and non-current financial liabilities.

Percentage of completion method (POC)
Accounting method of revenue and profit recognition according to the stage of completion of an order. This method is used for customer-specific construction contracts.

R&D
Research and development.

R&D expenses
Expenditures related to research and development.

Rating
Assessment of a company's creditworthiness (solvency) determined by a rating agency based on analyses of the company. The individual rating agencies use different assessment levels.

Reis Group
Reis Group refers to Reis Group Holding GmbH & Co. KG and its subsidiaries.

ROCE
Return on capital employed (ROCE) is the ratio of the operating profit/loss (EBIT) to the capital employed (see Capital employed). To calculate ROCE the capital employed is based on an average value.

SDAX
This stock index comprises 50 smaller German companies that in terms of order book turnover and market capitalization rank directly below the MDAX shares.

Swisslog Group
Swisslog Group comprises Swisslog Holding AG and its subsidiaries.

Trade working capital
Trade working capital is defined as current assets minus current liabilities directly associated with everyday business operations; that is, inventories minus advance payments, trade receivables and receivables for manufacturing orders minus liabilities for trade receivables and manufacturing orders.

Volatility
Intensity of fluctuations in share prices and exchange rates or changes in prices for bulk goods compared to market developments.

WDS
Warehouse & Distribution Solutions.

Working capital
Working capital consists of the inventories, trade receivables, other receivables and assets, accrued items and the balance of receivables and payables from affiliated companies, as far as these are not allocated to financial transactions, minus other provisions, trade payables, other payables with the exception of liabilities similar to bonds and deferred income.

WPHG
German Securities Trading Act.

Financial calendar 2019

First quarter interim report	April 29, 2019
Annual General Meeting, Augsburg/Germany	May 29, 2019
Interim report to mid-year	August 6, 2019
Interim report for the first nine months	October 29, 2019

The annual report was published on March 28, 2019 and is available in German and English from KUKA Aktiengesellschaft Corporate Communications/Investor Relations department. In the event of doubt, the German version applies.

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