ANNUAL REPORT 2018

driving growth

KNORR-BREMSE

PROFILE

28,500

EMPLOYEES

100

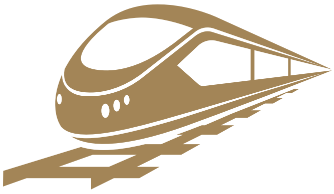
AT OVER 100 LOCATIONS

30

IN MORE THAN 30 COUNTRIES

Knorr-Bremse is the global market leader for braking systems and a leading supplier of subsystems for rail and commercial vehicles, with annual sales of EUR 6.6 billion in 2018. Knorr-Bremse's products make a decisive contribution to greater safety and energy efficiency on rail tracks and roads around the world. For more than 114 years the Company has been driving forward innovation in mobility and transportation technologies with an edge in connected system solutions. As a result, Knorr-Bremse profits from the key global megatrends: urbanization, eco-efficiency, digitization and automated driving.

DIVISIONS



RAIL VEHICLES

The Rail Vehicle Systems division equips vehicles with highly advanced products. Along with braking systems these include entrance systems, HVAC systems and other subsystems. Its system solutions are installed, for example, in high-speed trains, multiple units, metros, streetcars, freight cars, locomotives and special-purpose vehicles.

COMMERCIAL VEHICLES

The Commercial Vehicle Systems division is a leading player in solutions that foster greater traffic safety, connectivity, emissions reduction and electric mobility, as well as automated driving. Its braking systems and vehicle dynamics solutions including driver assistance systems are hard at work in trucks, buses, trailers and agricultural vehicles.

KEY PERFORMANCE INDICATORS

		2018	2017
Revenues	**in € million**	**6,615.8**	**6,153.5**
EBITDA	in € million	1,178.0	1,115.5
EBITDA margin	%	17.8	18.1
EBIT	in € million	972.5	904.0
EBIT margin	%	14.7	14.7
EBT	in € million	875.5	852.5
EBT margin	%	13.2	13.9
Net income	in € million	629.4	587.2
Return on sales after taxes	%	9.5	9.5
Earnings per share	€	3.68	3.32
Incoming orders	**in € million**	**7,001.4**	**6,656.6**
Order book	in € million	4,562.6	4,177.0
Free Cash flow	**in € million**	**401.8**	**450.0**
Operating Cashflow	in € million	725.5	679.9
Capital expenditures	in € million	308.4	235.2
Capital expenditures in % of sales	%	4.7	3.8
F&E costs	in € million	363.6	358.8
F&E costs in % of sales	%	5.5	5.8
Total assets	**in € million**	**6,262.2**	**5,727.4**
Equity	in € million	1,607.1	1,995.7
Equity ratio	%	25.7	34.8
ROCE	%	36.4	37.1
Net Working Capital	days' sales	46.9	45.8
Knorr-Bremse share			
Number of shares		161,200,000	2,600,000
Dividend per share	€	1.75	327.00
Employees		28,452	27,705

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03 CONSOLIDATED FINANCIAL STATEMENTS

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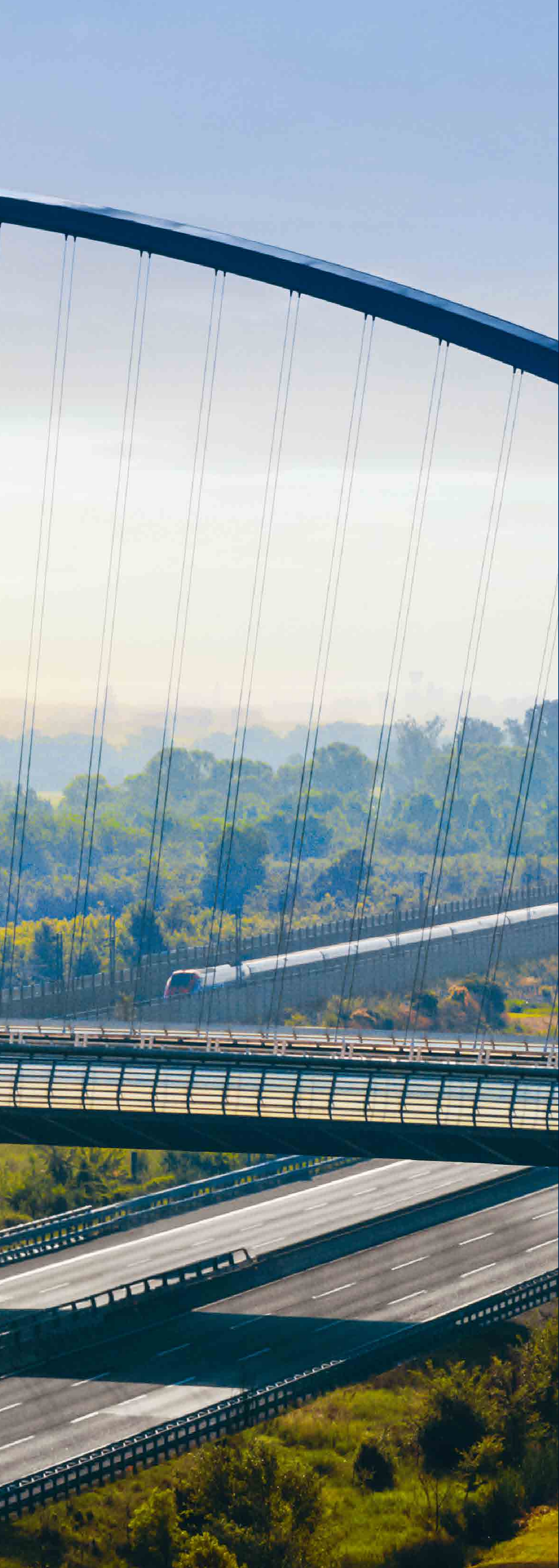
DRIVING GROWTH

2018 was an exceptional and particularly significant year for Knorr-Bremse. The IPO – a major milestone in the 114-year history of the Company – brings us greater independence and financial flexibility as we pursue our successful strategy of driving growth by delivering innovative solutions for the megatrends of our age.

Be it urbanization, digitization, eco-efficiency or automated driving, we are taking the technologies of the future to the next level and thereby driving forward the very trends that advance our own growth. For proof, look no further than our 2018 revenues and earnings. Both figures represent new records in the history of our Company.

All of this is thanks to our approximately 28,500 employees, who spare no effort to create the mobility of the future. They develop and manufacture products in which our customers in the rail and commercial vehicle sectors put their trust. For good reason. Knorr-Bremse's shareholders stand to benefit from the resultant success through a dividend of € 1.75.



01

TO OUR SHAREHOLDERS

Letter from the CEO

Dear readers,

Behind us lies a truly exceptional year. Our initial public offering (IPO) marked a very significant milestone in the 114-year history of our Company and shifted Knorr-Bremse even more firmly into the public gaze. Since the takeover by Heinz Hermann Thiele, our current majority shareholder and honorary Chairman of the Supervisory Board, Knorr-Bremse has evolved into a global market leader and cutting-edge player on the international scene. By deciding to open up Knorr-Bremse to institutional investors, Mr. Thiele has strengthened the Company's independence and assured its financial flexibility. Knorr-Bremse is thus in the best possible position to continue growing strongly in the future, both organically and by acquiring businesses that will further enhance our systems expertise and market penetration. The fact that we are on the right track, and that the capital market acknowledges the Company's positioning and growth strategy, is reflected by the positive development of Knorr-Bremse's share price at a time of significant market volatility, and by the Company's elevation to the MDAX index on March 18, 2019.

On the operations side, we also continued our successful progress as demand for Knorr-Bremse rail and commercial vehicle systems reached a new all-time high. Our two divisions and all the regions in which we are active helped to grow our revenues by 7.5% to EUR 6,616 million. Indeed, when adjusted for currency effects, our revenues actually rose by 10.5% in fiscal 2018. Earnings before interest, taxes, depreciation and amortization (EBITDA) climbed by 5.6% to EUR 1,178 million, which equates to an **EBITDA** **[S. 183]** margin of 17.8% – or 18.0% after adjustment for the cost of the IPO.

These good figures are the fruits of outstanding team performance on the part of our workforce. We wish to thank all 28,500 of our employees around the world for their hard work and commitment.

In the Rail Vehicle Systems division, the strong development of Europe's metro, locomotive and regional & commuter markets made a substantial contribution to the dynamic 6.2% growth of our revenue to EUR 3,462 million. But there were also positive developments elsewhere: In China, our service segment

»Overall, we take an optimistic view of the future. We have the necessary strategic positioning and financial strength to enable further profitable growth.«

KLAUS DELLER CHAIRMAN OF THE EXECUTIVE BOARD (CEO)

showed the strongest growth; in India, our original equipment (OE) business. In North America, the freight segment was the main driver of revenue growth.

Our Commercial Vehicle Systems division's revenue grew by 9.3% to EUR 3,160 million, thus outpacing the market's 6% growth over the same period thanks to an above-average rise in the scope of the equipment we supplied for commercial vehicles. Our business in both Europe and North America posted robust, above-average growth. We even achieved higher revenues in China, despite a drop in commercial vehicle production.

In fiscal 2018, we invested EUR 364 million or 5.5% of revenues in our research and development activities. This means that we invest more in product and system development than our competitors, emphatically reinforcing our position as a technology leader. Knorr-Bremse is the leading innovator in our industries, and in seeking to develop the mobility solutions of the future, we are systematically engaging with the social megatrends of our time: urbanization, eco-efficiency, digitization and automated driving. With this in mind, we took certain strategic steps of major importance to the future of both divisions during the reporting period. In the rail vehicle sector, we further developed our systems expertise by acquiring know-how and technology from Federal-Mogul relating to the development and production of friction materials. This will also help us to strengthen our aftermarket business.

Last year, in the commercial vehicle sector, we took further steps to build up a world-leading position in steering systems for commercial vehicles by acquiring the relevant division of Hitachi Automotive Systems Ltd., and by entering into a partnership with Continental that aims to develop a fully integrated system solution for highly automated driving **(HAD [S. 182])**. And to develop safe, efficient and connected commercial vehicles for the Chinese marketplace, we are now involved in two partnerships, both equally strategic: our joint venture with Dongfeng Auto Parts, which has further expanded our product portfolio with the addition of compressors and compressed air, and our strategic framework agreement with one of China's leading commercial vehicle manufacturers, FAW Jiefang. All these measures are important steps toward the future realization of autonomous driving.

We expect our shareholders to benefit from the Company's positive development. Consequently, the Executive Board and Supervisory Board are proposing to the Annual General Meeting that a dividend of EUR 1.75 per share should be distributed.

Overall, we take an optimistic view of the future. We have the necessary strategic positioning and financial strength to enable further profitable growth. Accordingly, we are anticipating revenues for the current 2019 fiscal year of between EUR 6,800 million and EUR 7,000 million, and an EBITDA margin of 18.0% to19.0% – before acquisitions, restructuring measures and conversion effects of **IFRS [S. 183]** 16 and on the assumption that global economic and political conditions will remain stable.

Knorr-Bremse continues to successfully grow and develop, and we will be delighted if you continue to accompany us as we move forward.

Munich, April 30, 2019

Yours, Klaus Deller

KLAUS DELLER
CHAIRMAN OF THE EXECUTIVE BOARD

The Executive Board

DR. PETER LAIER
MEMBER OF THE EXECUTIVE BOARD
Commercial Vehicle Systems Division

KLAUS DELLER
CHAIRMAN OF THE EXECUTIVE BOARD (CEO)
Human Resources, Business Development, Knorr Excellence, Corporate Communications (until April 30, 2019)

RALPH HEUWING
MEMBER OF THE EXECUTIVE BOARD
Finance, Controlling, Legal, IT

DR. JÜRGEN WILDER
MEMBER OF THE EXECUTIVE BOARD
Rail Vehicle Systmes Division

Report of the Supervisory Board

Ladies and gentlemen,

The following changes occurred on the Supervisory Board of Knorr-Bremse AG during the last fiscal year: My predecessor as Chairman, Hans-Georg Härter, stepped down from the board on August 31, 2018, for health reasons. On behalf of the whole Supervisory Board, I would like to take this opportunity to thank him for his outstanding work and his immense dedication as Chairman. Mr. Härter had been a member of the Supervisory Board since November 2012 and its Chairman since July 2017. His tenure encompassed further changes to the composition of the Executive Board and, most recently, the adaptation of our corporate governance structures and Executive Board remuneration system ahead of Knorr-Bremse AG's initial public offering (IPO) on October 12, 2018. By resolution of the General Meeting on May 29, 2018, I was appointed to the Supervisory Board as a member and successor to Mr. Härter, with effect from September 1, 2018. Also on May 29, 2018, the General Meeting elected Kathrin Dahnke to the Supervisory Board. Ms. Dahnke is now Deputy Chairwoman of the Supervisory Board, Chair of the Audit Committee and a member of the Executive Committee. As Chairman of the Supervisory Board, I am pleased to present for the first time the Report of the Supervisory Board for the completed fiscal year.

Knorr-Bremse can look back on an eventful and financially successful 2018, marked in particular by Knorr-Bremse AG's flotation on the Frankfurt stock exchange. Since Knorr-Bremse AG was first publicly listed on October 12, 2018, around 30% of its stock has been **free floating** **[S. 183]**. The Supervisory Board would like to thank Heinz Hermann Thiele for his constructive help and advice in support of the work of the Supervisory Board, which made a valuable contribution to its success. To implement the corporate governance modifications necessitated by the Company's listing on the German stock exchange, the Supervisory Board revised the terms of reference for the Executive Board and the Supervisory Board on the basis of the Company's new Articles of Association passed by the General Meeting on May 29, 2018, thereby adopting the respective rules governing the day-to-day work of the two boards and the matters that the Executive Board must report to the Supervisory Board. As the commission responsible for the German Corporate Governance Code (**GCGC** **[S. 183]**) has announced its intention to carry out a major review, it is likely that further changes to our corporate governance structures will be necessary and will therefore feature prominently in the future work of the Supervisory Board.

In the course of meetings, the Supervisory Board regularly considered, in consultation with the Executive Board, the current business performance and ongoing strategic development of the Knorr-Bremse Group. As part of implementing the resulting resolutions, and following intensive scrutiny and discussions, the Supervisory Board approved important acquisition and divestment projects. Of particular note is the acquisition of the commercial vehicle steering systems business of Hitachi Automotive Systems, Ltd. Following this acquisition,

PROF. DR. KLAUS MANGOLD,
CHAIRMAN OF THE SUPERVISORY BOARD

Knorr-Bremse became the leading supplier of commercial vehicle steering systems in Japan, taking it a step further toward becoming a global supplier of steering systems for commercial vehicles. On the divestment side, as it was operating at a deficit and no longer constituted part of Knorr-Bremse's core business, we exited from the vehicle maintenance business.

Cooperation Between the Supervisory Board and the Executive Board

The Supervisory Board of Knorr-Bremse AG performed its duties with diligence and due care as required by law, the Company's Articles of Association and the board's terms of reference. As well as advising the Executive Board on governance, planned acquisitions, divestments and other strategic projects, it also continually monitored its management of the Company. It was greatly assisted in the fulfillment of its statutory duties by regular reports from the Executive Board, both at and between scheduled meetings, providing the Supervisory Board with regular updates on business performance, planning and the risk situation.

The Supervisory Board was at all times guided by the principles of good and responsible corporate governance. In terms of supervision and advice, it focused primarily on ensuring that the management of business operations and the Group as a whole was lawful, proper, effective and commercially robust. The individual advisory and oversight duties of the Supervisory Board are set out in the terms of reference of the Supervisory Board and the Executive Board, which the Supervisory Board revised in July 2018 ahead of the IPO. Accordingly, the Supervisory Board is, for instance, closely involved in the business planning and review of strategic projects and issues. There is also a list of specific Executive Board decisions requiring the consent of the Supervisory Board, some of which call for detailed scrutiny in advance and require consideration of complex facts and circumstances from a supervisory and advisory perspective (according to members' own business judgment). Several matters requiring its approval were brought before the Supervisory Board in the 2018 fiscal year.

In written and oral reports, the Executive Board provided us with regular, timely and comprehensive information at and between meetings. The reports encompassed all material facts relating to the strategic development, planning, business performance and position of the Group during the year, the risk situation and risk management, compliance, Knorr-Bremse AG'sdirect competitors (peers), feedback from analysts and investors, and current events. We discussed with the Executive Board all significant business transactions and the further development of the Company. Any divergences between business performance and the approved plans were explained to us in detail. The Supervisory Board was involved in a timely manner in all decisions of fundamental importance to the Company. We fully discussed and adopted all resolutions required by law, the Articles of Association or our own terms of reference. We regularly prepared for these decisions on the basis of documents provided in advance to the Supervisory Board and its committees by the Executive Board. We were also swiftly informed of any urgent matters arising between scheduled meetings. As Chairman of the Supervisory Board, I was also regularly updated by the Executive Board on the current business situation and key developments in the Company between meetings of the Supervisory Board.

1.01 SUPERVISORY BOARD MEMBERS' ATTENDANCE AT MEETINGS IN FY 2018

Name	Supervisory Board (plenary) (Mar. 14, Jul. 12, Dec. 3, Dec. 10)	Executive Committee (Jul. 12, Dec. 10)	Audit Committee (Mar. 2, Sep. 4, Nov. 27)
Prof. Dr. Klaus Mangold (from Sept. 1) (Chairman)	2 (2)	1 (1)	2 (2)
Hans-Georg Härter (until Aug. 31) (Chairman)	2 (2)	1 (1)	1(1)
Kathrin Dahnke (from May 29) (Deputy Chairwoman)	2 (3)	1 (2)	2 (2)
Dr. Wolfram Mörsdorf	4 (4)		
Julia Thiele-Schürhoff	4 (4)		
Wolfgang Tölsner	4 (4)		
Georg Weiberg	4 (4)		
Franz-Josef Birkeneder (Deputy Chairman)	4 (4)	2 (2)	3 (3)
Michael Jell	3 (4)	1 (2)	
Werner Ratzisberger	4 (4)		2 (2)
Sebastian Roloff	4 (4)		
Erich Starkl	4 (4)		
Günter Wiese	2 (4)		
Meeting attendance as %	91.7 %	80 %	100 %

(In brackets: Number of meetings during the term of office of the respective Supervisory Board member or committee member)

Deliberations in the Supervisory Board and its Committees

Prior to Supervisory Board meetings, shareholder representatives and employee representatives regularly met in separate preparatory meetings, which were usually also attended by the Chairman of the Executive Board and other Executive Board members.

A total of four committees has been established to prepare for meetings of the full board: the Executive Committee, the Audit Committee, the Mediation Committee, and the Nominations Committee. The committee chairs regularly report to the full board on the work of the Executive Committee and the Audit Committee. The Mediation Committee and the Nominations Committee were not convened during the reporting period.

In fiscal 2018, we recorded a consistently high participation rate at our meetings. The average attendance at full board meetings was 91.7%. During the fiscal year, all members of the Supervisory Board attended at least half the meetings, and participated on committees as appropriate. Any members unable to attend a meeting usually participated in the voting through proxies. The timely advance distribution of preparatory documents by the Executive Board greatly facilitated preparation for meetings by Supervisory Board members, and largely dispensed with the need for handouts on the day.

Key Topics Discussed by the Supervisory Board

The Supervisory Board held four meetings during the fiscal year. In addition, two decisions were also taken using a document circulation procedure. The individual meetings focused on the following matters:

1. At the plenary meeting on March 14, 2018, the Supervisory Board reviewed business performance during the previous 2017 fiscal year and the current 2018 fiscal year, with reference to the audited annual and consolidated financial statements, the combined Group management report, and the distribution of net earnings to be proposed at the General Meeting. The Supervisory Board also reviewed the report of the Executive Board on relations with affiliated companies in accordance with Article 312 of the German Stock Corporation Act (AktG). The auditors present at the meeting reported on the principal findings of their audit. Following extensive discussions and our own detailed examination, the Supervisory Board then approved the annual and consolidated financial statements, the Report of the Supervisory Board, the proposed distribution of net earnings, and further resolutions to be put to the Annual General Meeting. In addition, the Supervisory Board discussed with the Executive Board and approved the issue of a corporate bond on the Luxembourg Euro MTF stock exchange with a total volume of EUR 700-800 million. This was effected in June 2018. Finally, during the meeting on March 14, 2018, the Supervisory Board considered the requirements of and timeline for a possible initial public offering (IPO) of Knorr-Bremse AG.

2. At the extraordinary meeting held on July 12, 2018, the Supervisory Board approved the principal changes to Knorr-Bremse AG's corporate governance documentation in preparation for the IPO. Based on the fully revised Articles of Association that took effect on July 10, 2018, the terms of reference for the Executive Board and for the Supervisory Board were updated to incorporate the new requirements. At the same time, the Supervisory Board finalized and passed resolutions on the schedule of executive responsibilities describing the functions and duties allocated to individual Executive Board members, a

list of legal transactions and measures that require approval, and the rules setting out what information the Executive Board must report to the Supervisory Board. The Chairman of the Executive Board was appointed as the board member responsible for labor relations in accordance with Article 33 of the German Codetermination Act (MitbestG). The Supervisory Board also agreed on a skills profile for and the desired composition of the Supervisory Board, in line with 5.4.1 paragraph 2 of the German Corporate Governance Code (GCGC). During the meeting on July 12, 2018, the Board also filled vacant positions and set up a new committee (the Nominations Committee). A highlight of the meeting was the election of Kathrin Dahnke to the positions of Deputy Chairwoman of the Supervisory Board and Chair of the Audit Committee. Details of individual committee members are provided below. In accordance with Article 111 (5) AktG, the Supervisory Board set a target for the proportion of women on the Executive Board of 20% by June 30, 2023. The Supervisory Board resolved to extend the tenure of Dr. Laier, which was due to come to an end on December 31, 2018, by another five years. His revised employment contract takes full account of the GCGC recommendations. Along with project cost planning, the progress of preparations for the IPO and the changeover of the Group's accounting system from German GAAP (HGB) to IFRS were discussed at length with the Executive Board. In this regard, the Supervisory Board also considered the measures taken to implement the capital market requirements of the EU's Market Abuse Regulation (MAR).

3. By resolution of the General Meeting held on August 29, 2018, Prof. Dr. Klaus Mangold was elected to the Supervisory Board, with effect from September 1, 2018. The Supervisory Board elected Professor Mangold to be Chairman on August 30, 2018. He took over the reins from Hans-Georg Härter, who stepped down from the Supervisory Board for health reasons.

4. Also on August 30, 2018, Dr. Jürgen Wilder was appointed to the Executive Board of Knorr-Bremse AG for a term of three years with effect from September 1, 2018. The Supervisory Board assigned Dr. Wilder responsibility for the Rail Vehicle Systems division, which Klaus Deller had previously headed since 2016, alongside his duties as CEO. The schedule of executive responsibilities was amended accordingly.

5. On September 27, 2018, Klaus Deller was appointed to the Executive Board of Knorr-Bremse AG for a term of three years with effect from October 1, 2018, and, in accordance with Article 33 MitbestG, was also appointed board member responsible for labor relations.

6. At an extraordinary meeting held on December 3, 2018, the Supervisory Board deliberated the acquisition of the commercial vehicle steering systems business of Hitachi Automotive Systems, Ltd. in Japan and Thailand. The takeover will make Knorr-Bremse the leading supplier of commercial vehicle steering systems in Japan, taking it a step further toward becoming a global supplier of steering systems for commercial vehicles. It will also improve the Company's access to the Japanese and Southeast Asian markets. The Supervisory Board approved this acquisition following intensive consultations and assessment of the steering business strategy, the findings of commercial and legal due diligence procedures, and the business case for the acquisition. The Supervisory Board will carefully monitor the integration of the newly acquired division and further expansion of the Company's steering business.

7. At our meeting on December 10, 2018, we focused on business performance during the current fiscal year and medium-term planning for the years 2019 to 2021, in relation to both the Knorr-Bremse Group and the Rail Vehicle Systems and Commercial Vehicle Systems divisions. After intensive discussions, the Executive Board's plan for the 2019 fiscal year was approved. The Supervisory Board discussed the departures from the GCGC set out in the Declaration of Compliance as required by Article 161 AktG, and approved the declaration. The Supervisory Board also considered ongoing M&A transactions (including divestments), the joint venture with Continental AG in the field of driver assistance systems, and the status of ongoing major legal disputes.

Executive Committee

The Executive Committee coordinates the work of the Supervisory Board, prepares its meetings and verification of its efficiency, and supervises implementation of the resolutions passed by the Supervisory Board and its committees. It is further charged with drafting resolutions on business dealings with Executive Board members pursuant to Article 112 AktG, with approving contracts with Supervisory Board members in compliance with Article 114 AktG, and with long-term succession planning for the Executive Board, as well as preparations for the appointment of Executive Board members (including the terms of their employment contracts). The Executive Committee met twice during the reporting period.

The following are members of the Executive Committee:

- Hans Georg Härter (Chair until August 31, 2018)
- Prof. Dr. Klaus Mangold (Chair from September 1, 2018)
- Franz-Josef Birkeneder
- Kathrin Dahnke (from July 12, 2018)
- Michael Jell (from July 12, 2018)

1. At the meeting on July 12, 2018, the Executive Committee considered the approval of various contracts with consultants and contracts between Supervisory Board members and companies belonging to the Knorr-Bremse Group. Details of remuneration under these contracts during the reporting period are listed for individual board members in the Compensation Report. After detailed examination, the Executive Committee approved the contracts.

2. The Executive Committee meeting on December 10, 2018, was primarily devoted to preparing the matters to be discussed at the full Supervisory Board meeting later that day. There was also some preliminary discussion about the procedure for deciding on IPO bonuses and the state of preparations for the first public General Meeting. The Executive Committee decided to present a resolution on the remuneration system for executive directors to the General Meeting in 2020. This is based on the consideration that the new provisions of the Shareholder Rights Directive and the revised GCGC will need to be implemented in executive directors' contracts by then. The Executive Committee also decided, pursuant to section 5.6 GCGC, to conduct an efficiency review with external assistance in the summer of 2019.

Audit Committee

The Audit Committee makes a recommendation to the Supervisory Board on the appointment of an auditor. It prepares Supervisory Board resolutions for approving the financial statements, the proposed distribution of net earnings, and the Declaration of Compliance. It also appoints the auditor on behalf of the Supervisory Board. The Audit Committee is furthermore responsible for monitoring the auditor, approving any additional non-audit services provided by the auditor, scrutinizing interim and quarterly financial reports, monitoring the accounting process, and monitoring risk management issues. The latter includes monitoring the effectiveness of the internal control system (ICS), the risk management system, the internal audit system, and compliance.

Members of the Audit Committee include:
- Hans Georg Härter (Chair until July 12, 2018, member until August 31, 2018)
- Kathrin Dahnke (Chair from July 12, 2018)
- Franz-Josef Birkeneder
- Prof. Dr. Klaus Mangold (from September 1, 2018)
- Werner Ratzisberger (from July 12, 2018)

The Audit Committee held three meetings during the year under review. The document circulation procedure was used to take two decisions relating to additional non-audit services provided by the auditor, and to previously approved non-audit services.

1. At its meeting on March 2, 2018, the Audit Committee discussed the annual report and the annual and consolidated financial statements for 2017. The committee further deliberated the effectiveness of the risk management system and the development of the compliance management system. Major ongoing legal disputes and the Knorr-Bremse AG bond issue in June 2018 were also considered.

2. The first-time publication of consolidated financial statements prepared in accordance with the International Financial Reporting Standards (IFRS) to the end of December 2017 (with 2015 and 2016 as comparison years) and the interim financial report to the end of June 2018, along with the key content of these publications, were discussed in detail with the CFO and the auditor at an extraordinary meeting of the Audit Committee on September 4, 2018. This meeting also reviewed the state of preparations for Knorr-Bremse AG's IPO.

3. At the meeting on November 27, 2018, the annual and consolidated financial statements were prepared in consultation with the auditor. The Audit Committee approved the scope of the audit and the proposed fee. Progress on the transition to IFRS-based accounting was also discussed. As part of regular corporate governance reporting, the committee also deliberated at length on risk management and internal auditing. Furthermore, the measures taken by the Company to ensure capital market compliance were presented and discussed. Finally, the Audit Committee discussed the principal ongoing legal disputes.

Nominations Committee

Established on July 12, 2018, the task of the Nominations Committee is to propose to the Supervisory Board, whenever required, suitable candidates to nominate for election as new Supervisory Board members at a General Meeting. The Nominations Committee was not convened during the reporting period.

The members of the Nominations Committee include:

- Hans Georg Härter (Chair until August 31, 2018)
- Prof. Dr. Klaus Mangold (Chair from September 1, 2018)
- Kathrin Dahnke (from July 12, 2018)
- Julia Thiele-Schürhoff (from July 12, 2018)

Corporate governance

The Supervisory Board attaches great importance to good corporate governance. This includes regularly and comprehensively considering the corporate governance requirements for German public listed companies, in particular the requirements of the Stock Corporation Act (AktG), the German Codetermination Act (MitbestG), and the German Corporate Governance Code (GCGC). Jointly with the Executive Board, the Supervisory Board issued the Declaration of Compliance for the reporting period as required by Article 161 AktG. The declaration was published on the Company's website (see also page 51 of the Annual Report). Knorr-Bremse currently complies with all GCGC recommendations, with the exception of the recommendation to make the consolidated financial statements and Group management report publicly accessible within 90 days, and to make the mandatory interim financial information accessible within 45 days from the end of the reporting period (section 7.1.2 GCGC). This departure is due to the changeover to International Financial Reporting Standards (IFRS) shortly before the stock market flotation of Knorr-Bremse AG. Details of the Company's corporate governance may be found in the Corporate Governance Statement and the Corporate Governance Report (pages 36 – 41 of the Annual Report).

Conflicts of Interest

The Supervisory Board watched for conflicts of interest throughout the reporting period and found that no conflict of interest occurred in the 2018 fiscal year.

Annual and Consolidated Financial Statements

The Supervisory Board took the necessary steps to ensure that the annual and consolidated financial statements and other financial reporting for the 2018 fiscal year are in line with the statutory requirements. KPMG AG Wirtschaftsprüfungsgesellschaft, Munich (KPMG) audited the annual financial statements of Knorr-Bremse AG prepared in accordance with German GAAP (the German Commercial Code – HGB), the combined management report of Knorr-Bremse AG and the Knorr-Bremse Group, and the consolidated financial statements for the 2018 fiscal year prepared according to International Financial Reporting Standards (IFRS), and issued an unqualified audit opinion in each case. KPMG had been appointed auditor for the 2018 fiscal year at the General Meeting held on March 14, 2018. KPMG has acted as auditor for the Knorr-Bremse Group for over ten years. The independent auditors responsible for the audit, within the meaning of section 319a (1) 4 HGB, were Prof. Dr. Kai Andrejewski (starting with the 2016 financial statements) and Johannes Hanshen (starting with the 2018 financial statements).

The auditor also reviewed the report of the Executive Board on relations with affiliated companies (Article 312 AktG), issuing the following statement on the report: "Based on our audit, duly carried out in accordance with professional standards, we confirm that: 1. the factual statements made in the report are correct; 2. the payments made by the Company in relation to the legal transactions listed in the report were not unreasonably high, or else the negative factors were offset; 3. the measures cited in the report do not indicate any matters that would give rise to an assessment that differs substantially from that of the Executive Board."

The above-mentioned documents, the Executive Board's proposal for the distribution of net earnings, and the auditor's reports, were submitted in good time to all members of the Supervisory Board. At its meeting on April 29, 2019, the Audit Committee examined these documents in advance and reported on them to the Supervisory Board at the latter's scheduled meeting on April 30, 2018. The Executive Board then presented the annual statements and reports to the Supervisory Board where they were discussed in detail. The independent auditors, who were present at both meetings, reported on their findings. The key audit areas for the fiscal year under review had been determined beforehand by the Audit Committee: the process of preparing the financial statements, the value of holdings in affiliated companies and the associated receivables, the value of other provisions for legal risks, the valuation of derivative financial instruments (for the 2018 financial statements), along with the process of preparing the consolidated financial statements, the recognition of revenue from project business in the sense of IFRS 15, the capitalization of development costs in the sense of IAS 38, and the level of warranty provisions (for the 2018 consolidated financial statements).

The Audit Committee could not identify any weaknesses in the risk management system, the internal control system, the internal audit system or the compliance management system. On the basis of our own examination of the annual financial statements, the consolidated financial statements and the Group management report, we did not find any grounds for objections and therefore concur with the Executive Board's evaluation of the position of Knorr-Bremse AG and the Knorr-Bremse Group. At the Audit Committee's recommendation, we approve the financial statements for 2018; the annual financial statements of Knorr-Bremse AG are thereby adopted. We discussed in detail the proposal for distribution of net earnings with the Executive Board and agreed with the Executive Board's proposed dividend of EUR 1.75 per eligible share for the 2018 fiscal year.

Changes on the Supervisory Board and Executive Board

The composition of the Supervisory Board and the Executive Board on December 31, 2018, is detailed on page 18/19 and page 7 respectively.

Supervisory Board

By resolution of the General Meeting held on May 29, 2018, Kathrin Dahnke was elected to serve on the Supervisory Board until the end of the 2021 Annual General Meeting. On July 12, 2018, the Supervisory Board elected Ms. Dahnke as a second Deputy Chair, and as Chair of the Audit Committee. She also sits on the Executive Committee.

By resolution of the General Meeting held on August 29, 2018, Prof. Dr. Klaus Mangold was elected to serve on the Supervisory Board until the end of the 2021 Annual General Meeting. Professor Mangold took over from Hans-Georg Härter, who stepped down from the board on August 31, 2018, for health reasons. The Supervisory Board elected Professor Mangold to be Chairman on August 30, 2018. Professor Mangold also chairs the Executive Committee and sits on the Audit Committee.

Mr. Sebastian Roloff resigned as member of the Supervisory Board due to a career change as of 31 March 2019. He has been a member of the Supervisory Board since 2014. On behalf of the Supervisory Board, I thank Mr Roloff for his work for Knorr-Bremse. As successor, Ms. Annemarie Sedlmair was appointed member of the Supervisory Board by court order effective April 1, 2019.

Executive Board

With effect from September 1, 2018, the Supervisory Board appointed Dr. Jürgen Wilder to the Executive Board for a three-year term and assigned him the responsibility for the Rail Vehicle Systems division, which Klaus Deller had previously headed since 2016, alongside his post as CEO.

With effect from October 1, 2018 the appointment of Klaus Deller as member and Chairman of the Executive Board was extended. Mr Deller has left the company in mutual agreement as of April 30, 2019.

With effect from January 1, 2019, the Supervisory Board extended the appointment of Dr. Peter Laier as a member of the Executive Board for a period of five years with the responsibility for the Commercial Vehicle Systems division, which is headed by Dr. Laier since 2016.

Thanks

2018 was an unusual and significant year for Knorr-Bremse. The Supervisory Board would like to thank all members of the Executive Board and all employees of the Knorr-Bremse Group for their enormous commitment, and for contributing once again to a very successful fiscal year.

Munich, April 30, 2019

On behalf of the Supervisory Board

PROF. DR. KLAUS MANGOLD
CHAIRMAN OF THE SUPERVISORY BOARD

The Supervisory Board

FRANZ-JOSEF BIRKENEDER *

Deputy Chairman of the Supervisory Board, Plant Manager Aldersbach

KATHRIN DAHNKE

Deputy Chair of the Supervisory Board, member of the Management Board of Wilh. Werhahn KG, Bielefeld

GÜNTER WIESE *

Member of the Works Council of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Berlin

ERICH STARKL *

Deputy Chairman of the IG Metall Trade Union, Passau Office, Passau

JULIA THIELE-SCHÜRHOFF

Chair of the Executive Board of Knorr-Bremse Global Care e.V., Munich

PROF. DR. KLAUS MANGOLD

Chairman of the Supervisory Board, independent entrepreneur, Stuttgart

DR. WOLFRAM MÖRSDORF

Retired Member of the Executive Board of thyssenkrupp AG, Essen

WOLFGANG TÖLSNER

Management consultant, Uetersen

MICHAEL JELL *

Chairman of the Works Council of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Knorr-Bremse AG, KB Media GmbH, Knorr-Bremse Services GmbH, Munich

WERNER RATZISBERGER *

Project engineer at Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Aldersbach

SEBASTIAN ROLOFF *

Attorney-at-law with IG Metall Trade Union, Munich Office, Munich

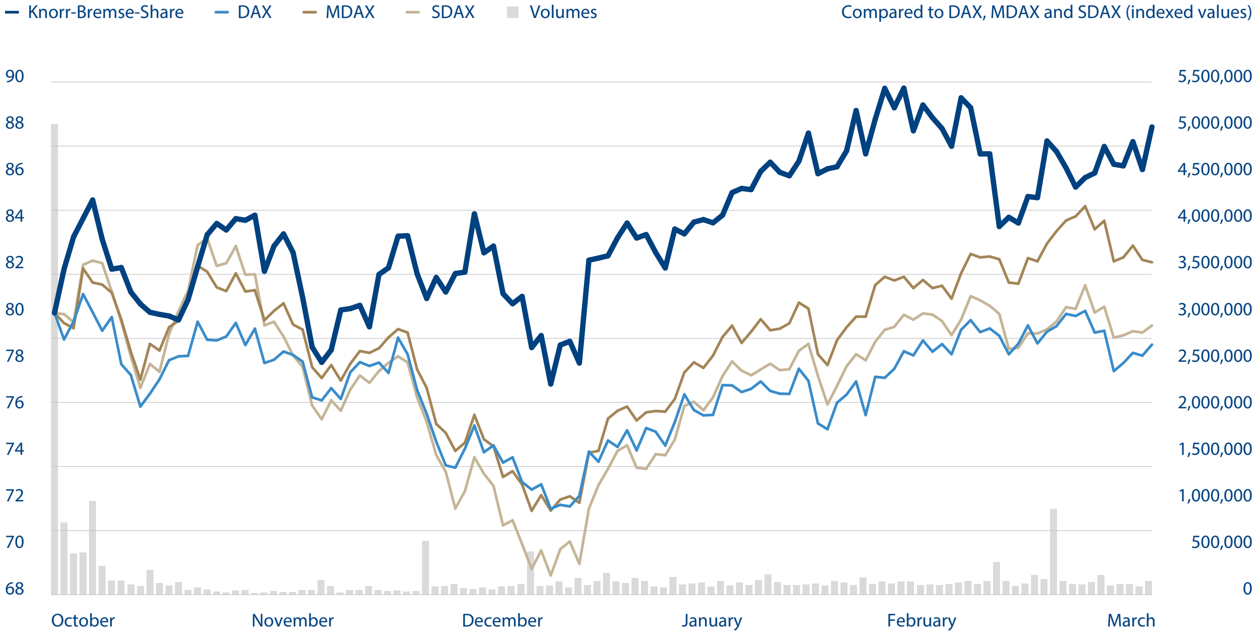
GEORG WEIBERG

Retired Head of Development, Daimler Trucks, Stuttgart

* Employee representative

Knorr-Bremse on the Capital Market

1.02 PRICE HISTORY OF THE KNORR-BREMSE SHARE IN XETRA, FROM IPO TO DEC. 2018



Successful IPO

On October 12, 2018, Knorr-Bremse AG celebrated a successful debut on the Frankfurt Stock Exchange as trading in its shares commenced in the regulated market's Prime Standard segment.

At EUR 80.10, Knorr-Bremse's initial share price was higher than the EUR 80 issue price. A total of 48,360,000 no-par value bearer shares from the KB Holding GmbH portfolio were placed with investors. The included greenshoe option, consisting of 5,256,521 over-allotment shares, was exercised almost in full. The stabilization period ended early on October 19, 2018, underscoring the overall success of the initial public offering (IPO).

Based on the offer price of EUR 80 per share, the total volume of the stock placement came to EUR 3.85 billion. This resulted in a market capitalization at the time of flotation of EUR 12.9 billion, valuing the Company at EUR 14.4 billion (based on net zero debt and minority interests totaling EUR 1.5 billion). This represents the largest IPO by a family-run company ever to have taken place in Europe, and the sixth largest IPO by any company based in the Federal Republic of Germany.

As at December 31, 2018, the proportion of shares in free float was 29.84%; 70.16% of voting rights are still held by the Thiele family.

1.03 KNORR-BREMSE SHARE DATA DEC. 31, 2018/FISCAL YEAR 2018

		2018
Earnings per share (FY 18)	€	3.68
PE ratio (FY 18)		21.38
Cash flow per share (FY 18)	€	4.50
Dividend per share	€	1.75
Dividend yield [1]	%	2.2
Highest price (Xetra)	€	86.18
Lowest price (Xetra)	€	73.93
Closing price (Xetra)	€	78.62
Average daily trading	€ '000	19,240
Market capitalization (Dec. 31)	€ mill.	12,673.5
Number of shares		161,200,000

[1] Dividend proposal for General Meeting

The attention of the capital market leading up to the IPO was very high, the Executive Board held talks with over 400 investors.

The high point was a six-day Management Roadshow in London, New York, Boston, Paris, Frankfurt and Munich, during which the Executive Board met with investors, analysts and financial-market journalists to explain the IPO's business model, future prospects and strategy of Knorr-Bremse AG. Knorr-Bremse was supported by a banking consortium consisting of Deutsche Bank, J. P. Morgan and Morgan Stanley as Joint Global Coordinators, and Berenberg, Commerzbank, UBS and UniCredit as additional Joint Bookrunners.

Despite turbulent market conditions characterized by significant price fluctuations in the days immediately preceding the IPO, the offer period was shortened due to high investor demand. At the final EUR 80 issue price, the issue was 3.7 times oversubscribed (I.1.).

Being listed on the stock exchange gives the Company the necessary entrepreneurial and financial flexibility to remain successful in the future regardless of its ownership structure.

Knorr-Bremse Share Performance

Knorr-Bremse's closing share price on the first day of trading was EUR 81.64, thus 2% above the issue price. In the weeks that followed, the shares continued to perform remarkably well for a new company on the stock exchange in a market environment characterized by volatility.

The figures for the third quarter of the 2018 fiscal year were published on November 28. Investors responded positively to the Company's strong order book and positive revenue development, with the result that the share price rose by around 3%, whereas the MDAX gained just 0.1% in the course of the day's trading.

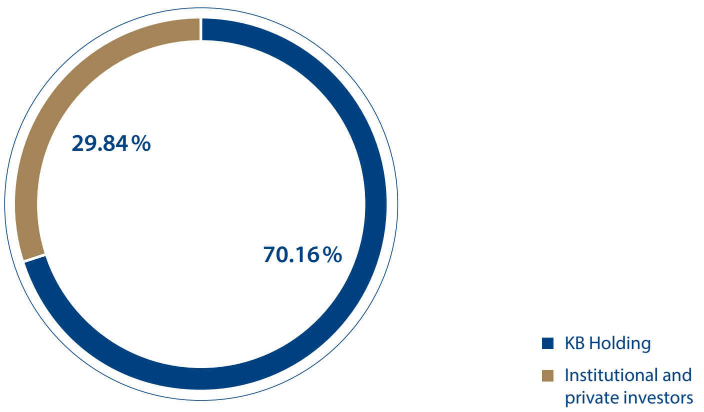
The share price's robust performance continued throughout December, as the capital market – driven by fears of a trade war between the United States and China, and of a disorderly Brexit – fell by several percentage points. Knorr-Bremse shares successfully outperformed the DAX, MDAX and STOXX through to the year-end. On December 28, 2018, Knorr-Bremse shares closed out the year at EUR 78.62 per share. Although this represents a slight decline (1.7%) from the offer price, the DAX lost more than 8% over the same period, while the MDAX lost nearly 10% in value.

After the first week of trading, the trading volume settled at an average of just over 73,000 shares per day. The Company's inclusion in the STOXX Europe 600 index on December 6, 2018, boosted trading to around 100,000 shares per day. On December 21, 2018, the Company's shares were also included in the SDAX, resulting in a further increase in the volume of trading on XETRA. By the end of the year, the average daily trading volume since the IPO reached 23,700 shares (I.3.).

As at year-end 2018, Knorr-Bremse's SDAX ranking put the Company's shares first in terms of market capitalization, and sixth in terms of trading volume. The SDAX comprises the 50 highest-ranked companies in Germany below the DAX and MDAX.

1.04 SHAREHOLDER STRUCTURE DECEMBER 31, 2018

in %



Shares continued to perform well in the new year. On March 18, 2019, Deutsche Börse listed Knorr-Bremse stock on the MDAX. On March 28, 2019, the share price closed out at EUR 87.40, 11% up on the share price at the beginning of the year.

Analysts' Recommendations

Since the IPO, Knorr-Bremse shares have been rated by seven reputable national and international analysts in the IPO consortium. At the end of 2018, four analysts issued a "buy" recommendation, and three analysts issued a "hold" recommendation (I.4.). Having received a large number of inquiries, we assume that other analysts will also initiate coverage of our stock in 2019 (I.5.).

Bonds Issued by Knorr-Bremse AG

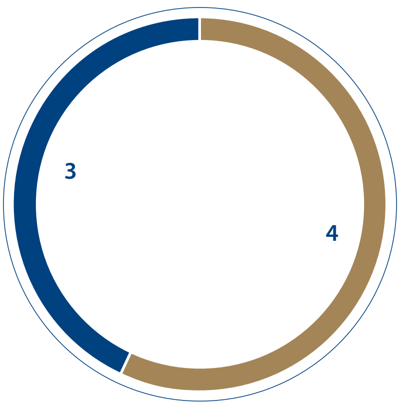
On December 8, 2016, Knorr-Bremse AG issued a EUR 500 million bond with an annual coupon of 0.5% on the Luxembourg EURO MTF stock exchange. The bond will mature in 2021, and was given an 'A' rating by Standard & Poor's.

In 2018, the price of this bond (ISIN XS1531060025) moved within a narrow range. The price at the beginning of the year was 101.140%; at the end of the year it was 100.917%. During the year, it reached a high of 101.227%. At the closing price at year-end 2018, the yield was 0.157%.

In 2018, the Company issued another bond of EUR 750 million with an annual coupon of 1.125%. Due to very high demand, this bond was allocated in its entirety to interested private and institutional investors. The bond is due on June 14, 2025. The bond was given an 'A2' rating by rating agency Moody's.

1.05 ANALYSTS' RECOMMENDATIONS

recommendations



Buy

Berenberg
Commerzbank
Kepler Cheuvreux
UBS

Hold

Deutsche Bank
JP Morgan
Morgan Stanley

The price of this second bond (ISIN XS1837288494) also moved within a narrow range. The opening price was 99.576%, with a reoffer yield of 1.188%. At the end of the year, the price was 100.511%; the mid-year high was 101.849%. At the closing price at the end of 2018, the yield was 1.039%.

The rating agencies gave both bonds the same rating as the Company, thereby acknowledging the continuity of the Company's performance, the strengthening of its competitive position through investment in research and development in particular, and the substantial growth achieved by the Group, not least as a result of acquisitions and joint ventures.

Investor Relations Activities

As part of preparing for the IPO, the Executive Board organized several meetings and presentations and roadshows, to meet the considerable interest among institutional investors worldwide. Even after the IPO, market interest remained high, and discussions and meetings with investors and analysts took place on an ongoing basis. Knorr-Bremse took part in several capital-market conferences and held several roadshows.

Another priority in our investor relations work was the creation of the structures and processes necessary to meet capital-market requirements. With this in mind, we set up an ad-hoc committee, an Investor Relations website, an information mailing list for interested analysts and investors, and appointed a Head of Investor Relations – all with the aim of informing the market and the public about the latest developments. We also actively wooed media targeting private investors in order to establish a channel for communicating with this particular group.

Dividend Policy and Proposal for 2018

When Knorr-Bremse AG announced a dividend policy at the time of its IPO, the Company expressed its fundamental intention of continuing to pay out an attractive dividend every year. Provided stable market conditions and solid business development, the Company will target a dividend ratio of between 40% and 50% of consolidated net income (according to IFRS) for the year. However, the decision as to whether and in what percentage a dividend shall be distributed will depend on a number of factors, including the volume of distributable net earnings for the year in question, the Company's investment policy, and the Company's financing requirements at the time.

For the 2018 fiscal year, the Executive Board and Supervisory Board are proposing to the Annual General Meeting that a dividend of EUR 1.75 per share should be paid out. If this proposal is accepted, the Company will distribute a total of EUR 282 million after the Annual General Meeting, representing a distribution ratio of 45% of consolidated net income (according to IFRS). This would put the ratio in the above-mentioned 40% – 50% target range. At EUR 78.62, this would represent a 2.2% return on the average share price between the IPO on October 12 and year-end 2018; from the Company's perspective, this is above average for the European capital goods sector.

1.06 THE FISCAL YEAR IN FIGURES

7,001

million euros was the figure for incoming orders, exceeding 7 billion euros for the first time

6,616

million euros was the revenue generated by our two divisions in 2018

364

million euros is what we spent on our research and development activities in 2018

28,452

people were employed by the Group worldwide as at December 31, 2018

The Knorr-Bremse Group

PROFILE

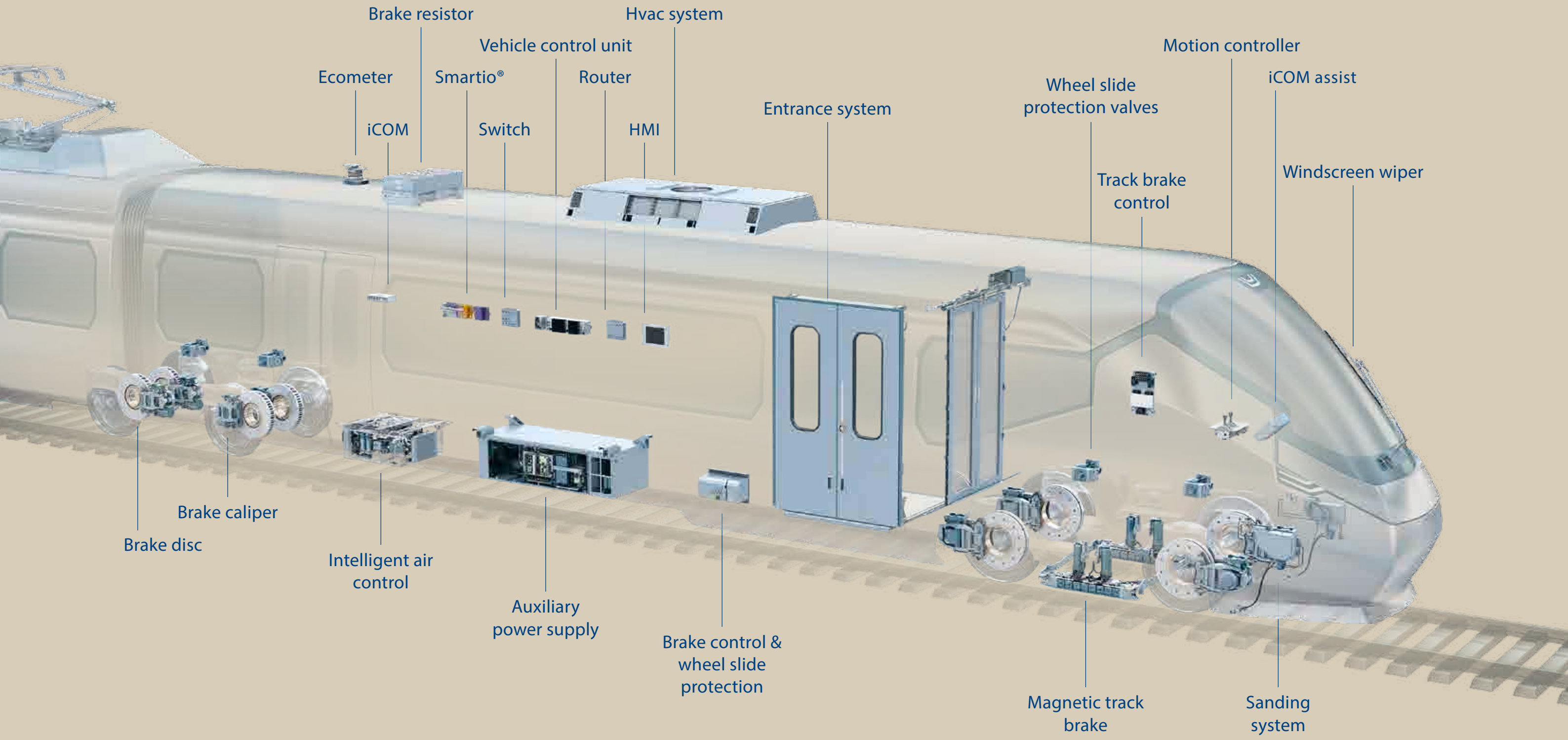
Knorr-Bremse is the global market leader for braking systems and a leading supplier of other safety-critical subsystems for rail and commercial vehicles. Knorr-Bremse's products make a major contribution to greater safety and energy efficiency on roads and railroads around the world. With a history stretching back over 114 years and boasting significantly higher than average growth for many decades now, Knorr-Bremse is one of Germany's most successful industrial companies.

Knorr-Bremse is the only full-range supplier of products and services in the complementary markets of rail and commercial vehicle systems. As an innovator in these industries, Knorr-Bremse has pioneered connected system solutions. Through its global presence and activities, the Group endeavors to be a strong, capable partner to vehicle manufacturers and service operators around the world, complying with all the local regulations and standards in these industries. Localization is therefore a key element of Knorr-Bremse's strategy.

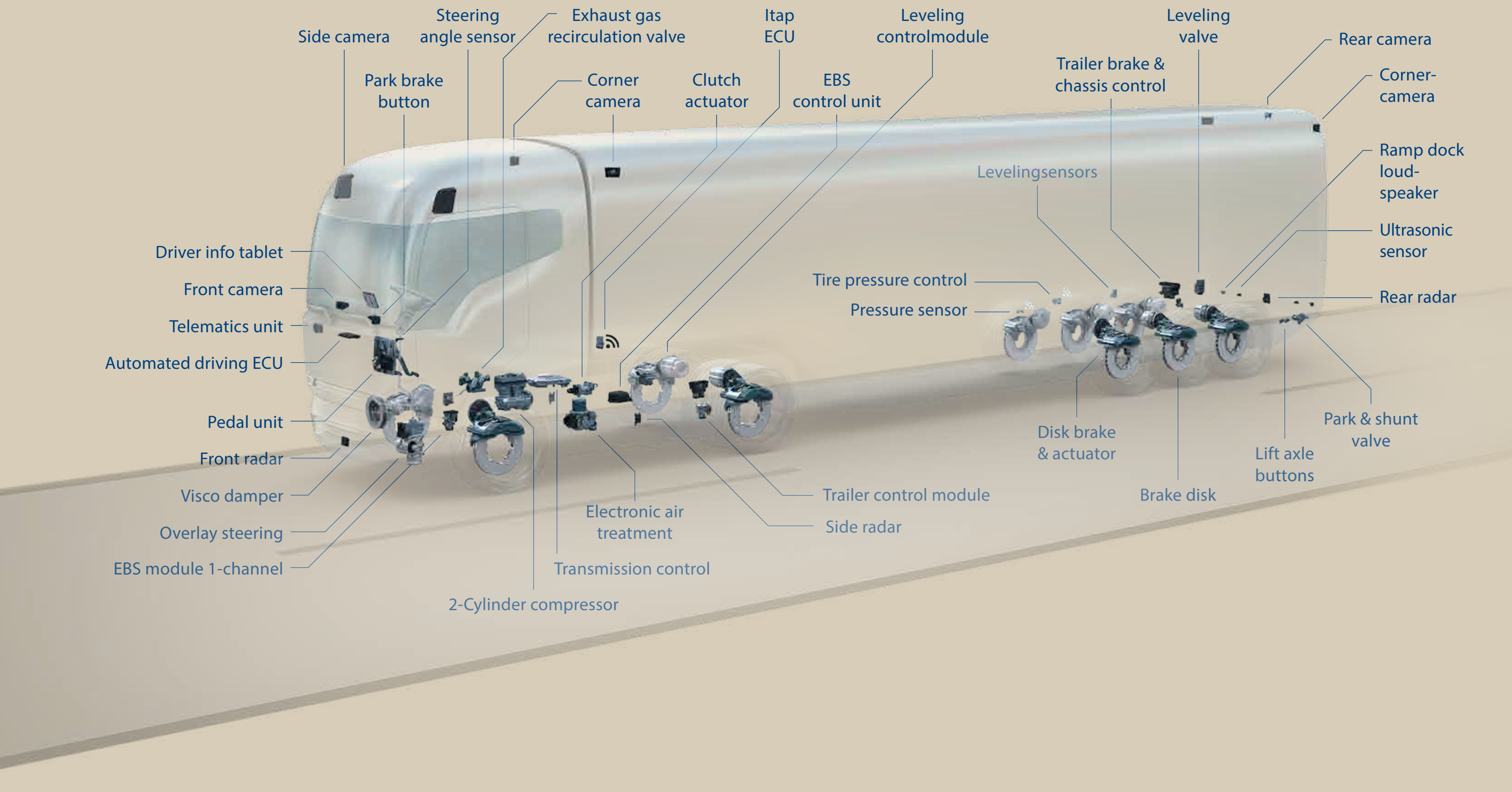
In the light of major global megatrends such as urbanization, eco-efficiency, digitization and automated driving, the rail and commercial vehicle markets offer good long-term sustainable growth prospects. Moreover, due to the stringent quality and safety standards involved, along with the high number of product variants and their extensive approval requirements, the barriers to market entry are high. Knorr-Bremse cultivates very long-term customer relationships in these markets.

1.07 PRODUCTPORTFOLIO

Rail Vehicle Systems



Commercial Vehicle Systems



STRATEGY

We aim to shape the future of rail and commercial vehicle transportation by improving safety, reliability and efficiency while at the same time creating value for our customers, employees and shareholders. We intend to defend our market leaderships and continue achieving profitable long-term growth. Chart → 1.08

The five most important elements of our strategy for pursuing and achieving our goals are:

Expand our Global Technology Leadership

Knorr-Bremse is a global technology leader. We implement innovative solutions that add value, set industry-wide standards for efficiency, emissions reduction and e-mobility, while maintaining a high level of safety, reliability and quality. This is why we are constantly expanding our research and development activities. In our Rail Vehicle Systems division, we create innovative subsystems and smart connected solutions designed to enhance rail vehicle performance, i.e. to maximize operational and functional safety while minimizing life cycle costs. Similarly, in our Commercial Vehicle Systems division we use innovative assisted and automated driving functions, along with smart system connectivity for enhancing vehicle efficiency by reducing emissions and improving road safety.

In addition to driving technological advances within our two divisions, we also leverage the synergies between them. Over the coming years we will systematically extend these synergies, for example by establishing further shared research centers and encouraging technology transfers between our divisions. For instance, we believe there is considerable further potential for synergistic developments in the fields of condition monitoring, condition-based and predictive maintenance, and electromechanical braking systems. Any innovative product solutions developed as a result will then generate additional value for manufacturers, operators and users alike.

Capture the Opportunities Offered by Global Megatrends

We are extending our technological leadership by focusing on new technologies that tie in with current global megatrends such as urbanization, eco-efficiency, digitization and automated driving. Knorr-Bremse is ideally placed not only to benefit from these megatrends, but also to help shape them. For example, we have developed safe entrance systems and solutions for rail vehicles to serve the growing demand for urban transportation in the wake of increasing urbanization. In response to the greater global focus on eco-efficiency, we have launched environmentally friendly HVAC systems and adjusted our portfolio to prioritize more energy-efficient forms of mobility. Digitization exerts a growing influence on our smart mechatronics products, our remote diagnostics offerings as well as our process automatization. Artificial intelligence is used to develop new product generations and create tomorrow's customer solutions.

1.08 LEADERSHIP EXCELLENCE

1

EXPAND TECHNOLOGY LEADERSHIP POSITION

— Growth potential from new technologies
— Introduction of ADAS[1], HAD[2] and connected systems
— Focus on digitization and connectivity
— Significant profitability improvement in non-braking technology products

2

CAPTURE OPPORTUNITIES FROM MEGATRENDS

— Win in RVS deregulated markets
— Continued market outperformance in CVS through ADAS, connectivity and e-mobility
— Megatrends drive continued content growth

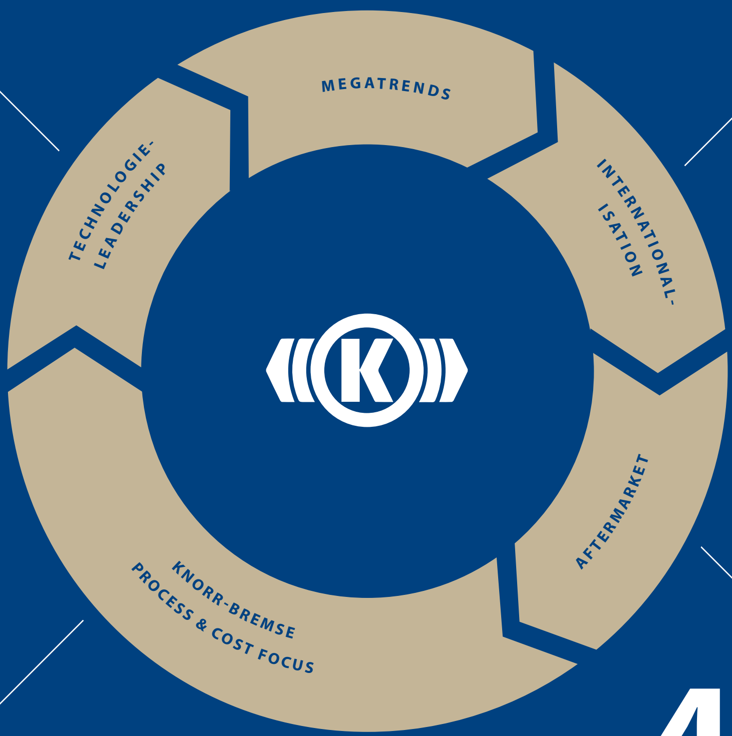
3

DRIVE INTERNATIONAL-ISATION STRATEGY

— Leverage profitable mass urban transport opportunities, in particular in China and India
— Benefit from Belt and Road Initiative (BRI)
— Increase exposure to high margin countries

+4.5–5.5 %

midterm organic growth p.a.



+150 bp

midterm improvement of EBITDA margin

5

CONTINUED COST FOCUS

— Set of initiatives to drive up the margins
— Global supply chain & unified purchasing
— Global process standards (KPS)[3]
— Permanent cost discipline
— Digitization, Industry 4,0
— PMI in newly acquired companies
— Operating leverage

4

GROW PROFITABLE AFTERMARKET

— Leverage large installed base
— Apply new business models (digital & data based)
— Close to customer

[1] ADAS – Advanced driver assistance system; [2] HAD – Highly automated driving; [3] KPS – Knorr-Bremse production system; Source: Knorr-Bremse information

To push the development of automated driving, we have drawn up a structured roadmap progressing from assisted through to highly automated driving, and have entered into a strategic joint venture with Continental AG. We are pioneering innovations with our support systems for train drivers and railroad collision avoidance solutions. Consequently, we are confident that we will continue to set standards in the industry and further strengthen on our position as global technology leader.

We are also continually extending our systems competence, for example by entering the steering technology market by acquiring tedrive Steering Systems GmbH, and, most recently, the commercial vehicle steering systems business of Hitachi Automotive Systems, Ltd. in Japan and Thailand. Our systems deliver integrated solutions with lower operating and life cycle costs. Integrated system solutions are efficient in terms of both space and weight.

Drive International Markets and Global Expansion

For many years, Knorr-Bremse has demonstrated an above-average growth trajectory. From 2010 to 2018, average annual growth was 7.5% (according to German GAAP for the period 2010-2013 and according to IFRS for the period 2014-2018). Alongside focused acquisitions, this was achieved by strong organic growth and the targeted expansion of our product and services portfolio. We intend to maintain this above-average growth in the future, and to this end we have defined strategic objectives both for our business units and for potential M&A opportunities. Further penetration of growth regions is especially important.

In China, we expect our RVS division to grow primarily in the OE metro market segment and in aftermarket. China is characterized by high government spending and a strong trend toward urbanization. In recent years, we have benefited in particular from the Chinese government's efforts to promote efficiency and safety, and have managed to capture a large share of the demand in the high-speed sector and local mass transit infrastructure expansion. To pursue further growth, in the future we intend to leverage our large installed base, our trust-based relationships with leading Chinese railroad companies, and our strong presence in the Chinese market.

In India, we see great market potential in recent trends to electrify railroads and establish freight and high-speed corridors. We will be able to utilize our experience in China as a template for expanding our market share on the Indian subcontinent. Accordingly, we have established a strong presence there. Our business in India is characterized by an entrepreneurial culture that is sharply focused on the needs of our key customers.

In our CVS division, we intend to leverage the current trend for developing vehicle safety and efficiency equipment to further grow our OE business in China, North America and Europe. Moreover, new regulations are helping to drive technology upgrades for trucks and buses to improve safety and cut emissions. We also expect new environmental standards for urban areas in key markets such as China (e.g. Beijing) to drive further growth, especially in view of our expertise with electric vehicles.

In North America, where vehicle equipment levels have historically been lower than in Europe, we expect the content per vehicle to increase with the introduction of brake disk and collision avoidance systems (ADAS). We also anticipate continued strong growth in our business with major Chinese and Indian customers.

In addition to our organic growth, we will also continue to pursue targeted acquisitions, joint ventures and investments in startups, with the aim of strengthening our market positions in Europe, North America and China in particular. The primary focus is on expanding our existing product and services portfolio, boosting international growth, strengthening our systems expertise, and acquiring new technology-related business activities. As well as expanding our current product range, we are seeking to actively participate in market consolidation and identify new areas of business.

Growth from Profitable Aftermarket

Owing to our large installed base, we are well placed to take advantage of the attractive and stable aftermarket opportunities in both divisions.

In our experience, the aftermarket potential could be two to three times higher than the respective OE element of a rail vehicle system over its lifetime. In China, where, today, half the global installed base of high-speed trains already resides, our cumulative OE deliveries of systems for high-speed trains grew at a compound annual growth rate (CAGR) of 27.8% between 2010 and 2017, substantially increasing our installed base. We therefore assume that this relatively recently established and growing installed base will result in a significant amount of aftermarket business for us.

Regulatory bodies worldwide are increasingly prescribing regular inspections and fleet modernization, both of which directly impact our business volume. Furthermore, we intend to offer aftermarket services based on new data-driven business models that support condition-based maintenance and remote diagnostics. Both of these concepts are increasingly becoming established as market standards and driving further growth.

In the aftermarket segment for commercial vehicles, we are also seeking to leverage our large installed base; among other things, this includes 17.3 million disk brakes and 6.8 million air treatment systems sold between 2008 and 2017. The aftermarket offers attractive opportunities with respect to replacement parts during the lifetime of a commercial vehicle (approximately 20 years on average): brake pads and brake disks for disk brakes are replaced on average seven to nine times, and three to five times respectively, over the lifetime of a vehicle, while filter cartridges for air treatment systems may be replaced – depending on the technology – seven to twenty times in a vehicle's working life. Additionally, as well as our global aftermarket platform TruckServices, the AllTrucks service network with its extensive customer base, comprehensive inventories and numerous service facilities ensures a strong local presence where we can offer independent aftermarket solutions that also fit our competitors' systems.

Continued Cost Focus

In a market increasingly driven by consolidation among our OEM customers and the constant pressure to hold down costs, rigorous cost management and efficient processes are more important than ever. We focus on implementing strict cost controls and financial management, enhancing process efficiency (by, for example, introducing global process standards, global supply chains, and unified purchasing standards), and leveraging our sound balance sheet for future growth. In particular, we continually strive to optimize processes, especially in project management and sales. For instance, we should achieve structural cost savings by reducing overheads. Furthermore, we systematically deploy software to improve price negotiations, value analysis and engineering, and to identify any potential product cost savings on an ongoing basis. As well as streamlining our production processes in the value chain, analyzing big data helps us improve our cost and performance quality. In these efforts to reduce costs, we carefully balance our global manufacturing and R&D footprint.

RESEARCH & DEVELOPMENT

At Knorr-Bremse, innovation is the keystone of our corporate strategy. Our goal is to continue developing products, systems and technologies to meet our customers' evolving needs and deliver the highest added value for them, while at the same time keeping abreast of new market requirements and regulations. The reliability and high quality of our products is the result of years of laboratory testing and rigorous field tests carried out under highly demanding conditions. Thanks to our technological excellence, over recent decades Knorr-Bremse has developed and launched on the market nine out of the ten most industry-defining innovations in the rail vehicle sector and eight of the ten most groundbreaking innovations in the commercial vehicle sector.

In our research and development activities, we leverage the potential synergies between our two divisions. For more than half of our product portfolio, the underlying technologies can be applied to both segments. These include, for example, driver assistance (adaptive cruise control – ACC, AEBS, ASR), motion control, brake control, hydraulics, wheelend/bogie equipment, and compressed air generation. The synergies between the segments translate into a faster time to market and reduced development costs. For instance, the technology for both disk brakes and screw compressors was transferred from our RVS division to our CVS division. Our collision avoidance solution for rail vehicles is based on know-how acquired in the field of sensor technology by our Commercial Vehicle Systems division. We also set up joint development teams to work on condition monitoring and collision avoidance.

Research Results

In our CVS division, our research and development activities in recent years have focused on the key industry trends of road safety, automated driving, emission reduction, e-mobility, and connectivity.

With respect to highly automated driving (HAD) on non-public roads, we have developed a solution for **autonomous yard maneuvering**. This is a pilot system that enables a truck to operate completely autonomously, for example in loading yards. The vehicle can maneuver itself to the relevant loading bay. Video cameras, radar and other onboard sensors continuously scan the vehicle's surroundings for possible obstacles.

Global Scalable Brake Control (GSBC) and **intelligent Hydraulic Steering Assist** (iHSA) technologies are used to create a reliable control network for coordinated longitudinal and lateral control of automated vehicles. In addition, we are developing the redundant vehicle architecture required for highly automated driving (HAD level 3+).

The CVS division launched two new disk brake generations: the **SYNACT** two-piston brake for towing vehicles, plus the **NEXTT** single-piston brake for trailers and for towing vehicles with a low axle load. The development goals were to make disk brakes more compact, lighter and more modular, and to prepare them for the challenges of both automated driving and e mobility.

In the RVS division, our development activities have focused on identifying solutions to increase availability and operate vehicles more efficiently in order to optimize their life cycle costs. Efforts have centered above all on automated train operation, eco-design and product digitization.

The EP 2002 brake control system is already the world's most compact mechatronic control unit and is used in many metro applications all over the world. For the latest generation, **EP 2002 3.0**, Knorr-Bremse has expanded the range of applications to include regional and long-distance transportation.

With the new generation of the **Knorr-Bremse control valve** (KEf) we have fundamentally redesigned our flagship control valve for freight cars, enabling telematics solutions for the digitization of freight transportation by rail.

Our innovative **iCOM** platform bundles a number of functions such as low-wear driving, a driver assistance system, real-time measurement of energy consumption, and diagnostics. For example, iCOM Monitor enhances maintenance processes by offering operators real-time information about the condition of fleet vehicles. Its open architecture supports easy integration of supplier or partner solutions.

Knorr-Bremse subsidiary Kiepe Electric has developed a pioneering in-motion charging (IMC) concept for trolley buses. These buses are battery-powered on roads without overhead contact lines, and their batteries are recharged while they are driving on sections equipped with overhead lines.

Other development activities focus on **eco-design**: As an alternative to the R134a refrigerant, for instance, Knorr-Bremse's subsidiary Merak uses the much more environmentally friendly CO_2 – and is already achieving performance comparable to R134a in its Central European sales territory. For increased passenger comfort, Knorr-Bremse subsidiary IFE is about to launch a new sealing system for sliding doors. This system improves acoustic insulation and consequently significantly reduces noise levels for passengers.

Patents

We have put comprehensive patent protection in place to protect our innovations and prevent unauthorized use of the fruits of our research and development activities. Our patent portfolio is extensive, and includes both products and processes. We exercise our rights with respect to employee inventions and submit these for registration. In total, we currently hold or have applications pending for over 11,000 patents worldwide, spread across approximately 3,000 patent families. In our CVS division, the number of patents granted or applied for is approximately 7,900; this figure is around 3,300 for our Rail Vehicle Systems division. Patents also include utility models (e.g. relating to braking systems for commercial and rail vehicles) in Germany and other countries, as well as a number of patents and utility models registered for foreign Group companies in foreign jurisdictions only. However, we may sometimes elect not to register a patent relating to certain secret process technologies in order to avoid disclosing particularly sensitive know-how.

SUSTAINABILITY

Knorr-Bremse's approach to corporate responsibility is based on the principle of sustainable development and covers not just products and their manufacture but also our employees, the environment and society as a whole.

Since 2011, we have been informing our stakeholders of Knorr-Bremse's sustainability activities in our UN Global Compact (UNGC) Progress Report. This report also sets out in detail the impact the Company has on the environment and society, and presents key indicators as well as the targets and measures used by Knorr-Bremse to manage its sustainability activities.

The report includes the consolidated non-financial statement for the Knorr-Bremse Group in accordance with sections 315b and 315c in conjunction with sections 289b to 289e of the German Commercial Code (HGB). The UN Global Compact Report, which contains the non-financial statement, was published on the Company's website on April 30, 2019 www.knorr-bremse.com/en/responsibility.

Together with the Company's corporate values and Code of Conduct, our CR guidelines constitute a framework for the responsible conduct of business at Knorr-Bremse. Knorr-Bremse is also guided by internationally recognized principles and standards such as the UN Global Compact, as well as the Guiding Principles on Business and Human Rights published by the UN Human Rights Council. Together with our employees and external stakeholders, we engage and cultivate close relationships with networks such as "Railsponsible", and sit on committees that address sustainability issues in the German Association of the Automotive Industry (VDA) and Railway Industry Association (VDB).

With its Group-wide CR strategy, Knorr-Bremse systematically fulfills its voluntary commitment to corporate responsibility. Our aim is to make Knorr-Bremse's structures and processes even more sustainable by 2020. Our CR strategy provides a robust framework for this and is divided into the following six action areas: strategy and management, products and partners, employees and leadership, environment and climate, commitment and society, plus communication and cooperation.

In 2018, to further reinforce its commitment to sustainable development, Knorr-Bremse updated its materiality analysis and highlighted its contribution to the United Nations Sustainablity Development Goals. As regards due diligence relating to the central issue of human rights, we are guided by the United Nations Universal Declaration of Human Rights. All these issues are covered in detail in Knorr-Bremse's CR program, which is approved by the CR Council and regularly reviewed to verify our compliance. The Group's Corporate Responsibility department is responsible for sustainability and reports directly to the Executive Board.

Our commitment to sustainability is also recognized by external stakeholders. In 2018, Knorr-Bremse's sustainability performance was assessed for the first time by rating agency ISS-oekom, and was awarded Prime status. In addition, we were able to lift our EcoVadis rating for sustainability performance related to customers from "Silver" to "Gold".

Corporate Governance

The German Corporate Governance Code (GCGC) contains rules and recommendations for the responsible management and oversight of listed companies. Apart from the exceptions stated below, Knorr-Bremse AG has complied with the GCGC's recommendations since October 12, 2018, the date on which its stock was first publicly listed. The departures from GCGC's recommendations set out in sections 1 and 2 of the Declaration of Compliance no longer exist at the time of attestation.

Excerpt from Declaration of Compliance dated December 10, 2018

1. According to section 4.2.3 paragraph 2, sentences 3 and 4 of the GCGC, variable remuneration components should generally have a multiple-year assessment basis relating essentially to forward-looking characteristics. Both positive and negative developments are to be taken into account when determining variable remuneration components. According to section 4.2.3 paragraph 2, sentence 6, the amount of remuneration is to be capped, with maximum levels both as regards variable components and in the aggregate. According to section 4.2.3 paragraph 2, sentences 7 and 8, variable remuneration components are to be based on strict and relevant comparison parameters. Subsequent amendments to the performance targets or comparison parameters should not be permitted. According to the first sentence of section 4.2.3 paragraph 4, when contracts are entered into with Executive Board members, it is important to ensure that payments, including fringe benefits, made to an Executive Board member due to early termination of their employment contract do not exceed twice the annual remuneration (severance cap) and do not constitute remuneration for more than the remaining term of the contract. The Company departed from these recommendations during the 2018 fiscal year because the contract of employment of one Executive Board member will only be changed in line with Knorr-Bremse AG's new remuneration system with effect from January 1, 2019.

2. According to section 5.4.1 paragraph 5 of the GCGC, the curricula vitae of all Supervisory Board members should be published on the Company's website. Biographies of Supervisory Board members were published on the website of Knorr-Bremse AG on December 10, 2018.

3. It is anticipated that Knorr-Bremse AG will not be able to make the consolidated financial statements and Group management report for the 2018 fiscal year publicly accessible within 90 days from the end of the fiscal year, nor make the mandatory interim financial information publicly accessible within 45 days from the end of the respective reporting period, as recommended in section 7.1.2 of the GCGC. This is due to the changeover to International Financial Reporting Standards (IFRS) shortly before the stock market flotation of Knorr-Bremse AG. From the 2019 fiscal year onward, i.e. from January 1, 2020, Knorr-Bremse AG will prepare the consolidated financial statements, the Group management report, and the mandatory interim financial information in accordance with the recommendation in section 7.1.2 of the GCGC.

The full text of the Declaration of Compliance is available on the website of Knorr-Bremse AG under Investor Relations/Corporate Governance.

Furthermore, Knorr-Bremse AG chooses to comply with the GCGC's non-mandatory suggestions, with the exception of the following: Departing from the last sentence of section 4.2.3 paragraph 2 of the GCGC, contracts of employment for Executive Board members include a provision for early disbursement of multi-year remuneration components in the event of permanent disability or death.

Further Information on Corporate Governance

Executive Board and Supervisory Board

As well as managing the day-to-day business of the Company, the Executive Board defines and implements strategy in consultation with the Supervisory Board. It is obliged to act in the best interests of the Company and in accordance with its business policies. The Executive Board reports regularly and comprehensively to the Supervisory Board on business performance, strategy and risks. Terms of reference drawn up by the Supervisory Board set out how roles and responsibilities for the various business units are allocated on the Executive Board, how decisions are reached, and other matters.

The Supervisory Board supervises and advises the Executive Board. In accordance with the German Codetermination Act (MitbestG), the twelve-member Board is composed of an equal number of shareholder representatives and employee representatives: the six members representing equity holders are elected by the General Meeting, and the six members representing employees are elected by the workforce at Knorr-Bremse's German sites. In the event of a tie when the Supervisory Board passes resolutions, the chair has a casting vote. The Supervisory Board may also take decisions using a document circulation procedure.

The Supervisory Board is elected every five years; the last scheduled elections took place in 2016. If a member of the Supervisory Board steps down before the end of their term, a successor will be appointed by the District Court unless a substitute has already been elected. Such court-appointed Supervisory Board members must then stand for election at the next General Meeting (shareholders' representatives), or at the next election date (employees' representatives).

In the view of the Supervisory Board, the majority of its members – with the exception of Julia Thiele-Schürhoff – are independent within the meaning of the GCGC; the Supervisory Board also considers this appropriate when taking the shareholder structure into account. The Supervisory Board of Knorr-Bremse AG has established four committees from among its members. With the exception of the Nominations Committee, each of these committees comprises four members with equal representation of shareholders and employees. Following their meetings, the committee chairs report to the full board. The remit of the committees and the matters they discussed over the course of the past fiscal year are described in detail in the Report of the Supervisory Board (starting on page 8.

- The Executive Committee coordinates the work of the Supervisory Board, prepares its meetings and verification of its efficiency, and supervises implementation of the resolutions passed by the Supervisory Board or its committees.
- The Audit Committee oversees matters relating to accounting, risk management, internal auditing and the internal control system. It also supervises the Knorr-Bremse Group's risk management system, reviews the annual and consolidated financial statements of Knorr-Bremse AG, and prepares relevant resolutions of the full board.
- The Nominations Committee proposes candidates who are suitably qualified in terms of both expertise and character for election as shareholders' representatives at a General Meeting.
- The Mediation Committee is convened if a Supervisory Board resolution on the appointment or removal of an Executive Board member does not obtain a two-thirds majority of votes as required by Article 31 (2) and (5) of the German Codetermination Act (MitbestG).

Skills profile for the Supervisory Board

At a meeting held on July 12, 2018, the Supervisory Board defined a skills profile and objectives for the composition of the Supervisory Board, including minimum quotas with respect to gender and international diversity. This ensures that collectively, Supervisory Board members possess the requisite skills and expertise to properly perform the work of the board. These skills include, for example, specific technical knowledge of the rail, commercial vehicle and automotive industries, including the supply sector; the key markets in which Knorr-Bremse operates; research and development, in particular in technologies and associated areas of relevance to Knorr-Bremse; digitization and smart digitally connected IT applications (Industry 4.0). Also required is experience in management, leadership, accounting, controlling and risk management, corporate governance, and corporate compliance. Members do not all have to be equally skilled in all these areas; rather, their skills should be complementary.

The skills profile stipulates that at least one member should be knowledgeable about accounting or auditing. The chair of the Audit Committee should have a detailed knowledge of the application of accounting principles and internal control procedures. Members of the Supervisory Board should be willing and able to devote sufficient time and expertise to discharge their duties diligently. In particular, this includes being willing to take responsibility for their own continuing professional development.

A wide range of professional and international experience is expected in relation to diversity; according to Article 96 (2) of the German Stock Corporation Act (AktG), the proportion of women and men on the Supervisory Board must be at least 30% in each case. Further salient points are an appropriate number of independent members, the avoidance of conflicts of interest, an upper age limit of 70 at the time of election, and a maximum of three terms in office, i.e. 15 years.

In the view of the Supervisory Board, its current composition meets the requirements set out in the skills profile, with the exception of the gender quota of at least 30% which has come into effect since the Company's stock market flotation, and will therefore apply to new elections under Article 96 (2) of the AktG and Article 25 (2) of the Introductory Act to the German Stock Corporation Act (EGAktG). To date, this quota has been met solely on the shareholder representation side. The employee side includes a female member. The efficiency of the activities of the Supervisory Board will be externally audited for the first time in 2019.

1.09 AREAS OF RESPONSIBILITIES OF EXECUTIVE BOARD MEMBERS OF KNORR-BREMSE AG

Klaus Deller	Ralph Heuwing	Dr. Peter Laier	Dr. Jürgen Wilder
Corporate Human Resources	Corporate Accounting/Taxes	Global Division Truck	Global Division Rail
Corporate Business Development	Corporate Controlling	Research/Development	Research/Development
Corporate Communications	Corporate Treasury	Procurement/Supply Chain Management	Procurement/Supply Chain Management
KB Media GmbH	Corporate Legal, Compliance & Patents	Production/Quality Assurance	Production/Quality Assurance
Knorr Excellence	Investor Relations	Sales/Marketing/Distribution	Sales/Marketing/Distribution
	Corporate Information Technology/ Business Services	Finance/Controlling	Finance/Controlling
	Corporate Internal Audit	Human Resources	Human Resources
	Corporate Risk Management		
	Corporate Security		
	Corporate Responsibility		
	Corporate Real Estate Management		
	KB Global Care e.V.		

General meeting

The first public General Meeting since flotation on the stock exchange will be held on June 18, 2019. During the general discussion, shareholders have the opportunity to speak to matters on the agenda and to put questions to the Executive Board. The shareholders also exercise their voting rights. The chair of the Supervisory Board chairs the General Meeting and reports on the work of the Supervisory Board and its committees during the previous fiscal year. The Executive Board presents the annual financial statements, the consolidated financial statements, the Group management report, and the proposed appropriation of distributable income agreed with the Supervisory Board.

Transparency

Our Corporate Communications department provides timely and comprehensive information. Along with our Annual Report, interim statements, financial reports, press and ad-hoc news releases contain detailed information and explanations of our business performance. All publications are available on our website. We hold press conferences and conference calls for significant events.

Operation of the Executive Board and Supervisory Board at Knorr-Bremse

Knorr-Bremse AG's Executive Board consists of four members:

- Klaus Deller has been Chairman of the Executive Board since January 1, 2015. He is responsible for coordinating the allocation of responsibilities to individual board members and for ensuring cooperation between members. Mr. Deller is also in charge of various central corporate functions.

- Ralph Heuwing joined the Executive Board as Chief Financial Officer on November 1, 2017, succeeding Dr. Lorenz Zwingmann, who stepped down from Knorr-Bremse AG's Executive Board on December 31, 2017. In this role, Mr. Heuwing is responsible for the majority of central corporate functions.

- Dr. Peter Laier has been a member of the Executive Board since January 1, 2016, and is responsible for the CVS division.

- Dr. Jürgen Wilder joined the Executive Board on September 1, 2018, and is responsible for the RVS division.

The table 1.03 provides an overview of the areas of responsibility of Knorr-Bremse AG's individual Executive Board members: Grafik → 1.08

The second tier of management within the Group comprises the senior managers at Knorr-Bremse AG, the managing directors of European subsidiaries Knorr-Bremse Systeme für Schienenfahrzeuge GmbH and Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, and the managing directors of our subsidiaries in North America and the Asia-Pacific region. The managing directors are responsible for the performance of their respective companies and are in close contact with the Executive Board. The various specialist departments at Knorr-Bremse AG work together with the Executive Board.

The work of the Supervisory Board over the previous fiscal year and its modus operandi are set out in detail in the Report of the Supervisory Board [p. 8].

An overview of the members of the Supervisory Board and the Executive Board, together with the respective offices they hold, may be found under heading H 6 in the Notes to the consolidated financial statements.

Relevant corporate governance practices and compliance

In addition to complying with the law and the GCGC, Knorr-Bremse AG is committed to the responsible conduct of business in and across all its divisions. Our internal guidelines may be viewed on our website under Investor Relations/Code of Conduct and Investor Relations/Compliance. Together with further details of our social and community engagement, more information about how we take corporate citizenship seriously and encourage sustainable growth can also be found on the website under Responsibility.

Control

In accordance with Article 8 (1) of Knorr-Bremse AG's Articles of Association, the Supervisory Board determines the size and composition of the Executive Board. The new terms of reference drawn up by the Supervisory Board for the Executive Board on July 12, 2018, include as annexes a list of matters that require approval, an executive organization chart showing allocated responsibilities, and the rules setting out what information the Executive Board must report to the Supervisory Board.

At meetings of the Supervisory Board, the Executive Board states its position on agenda items and answers questions. The proposed resolutions for items on the agenda and any documents required to prepare for the meeting will be communicated to Supervisory Board members no less than five days beforehand, unless urgent business justifies later communication. Separate preliminary meetings among the employee representatives and shareholder representatives respectively are usually held before Supervisory Board meetings; the Executive Board is available to provide any necessary explanations. The chair of the Supervisory Board is also in regular contact with the Executive Board between meetings.

Accounting and auditing of annual financial statements

Our IFRS consolidated financial statements are audited by KPMG AG, who were appointed on the recommendation of the Supervisory Board as our auditors for the 2018 fiscal year by the General Meeting on March 14, 2018. The auditors audited the consolidated financial statements and the separate financial statements of Knorr-Bremse AG prepared by the Executive Board, and the Supervisory Board then reviewed and approved the financial statements, which were published on April 30, 2019. In accordance with section 7.2.3 of the GCGC, the auditor will notify the chair of the Supervisory Board without delay if anything material to the work of the Supervisory Board comes to its attention during an audit. The auditor shall also inform the Supervisory Board of any departures from the Declaration of Compliance in accordance with Article 161 of the German Stock Corporation Act (AktG). Before being awarded the auditing mandate, the auditor will assure the Supervisory Board of its independence.

Management indicators, control system, insider list

The most important metrics for managing the company are revenues, EBITDA, EBITDA margin, EBIT, EBIT margin, EBT, EBT margin, employees, net working capital and ROCE. Details of the 2018 figures along with their calculation methods can be found in the [Business Performance] section [p. 67].

Our risk management system covers 14 specific areas of risk and documents the Group's exposure to risks. The internal control system (ICS) for the accounting process also forms part of this risk management system. Detailed information may be found in the Risk Report [p. 76].

We maintain event-based insider lists in accordance with Article 18 of the Market Abuse Regulation (MAR). All individuals on the list are informed of the applicable statutory obligations and sanctions.

Share ownership and directors' dealings

In accordance with Article 19 of the MAR relating to managers' own-account transactions, we publish notifiable securities transactions by members of Knorr-Bremse AG's Executive Board and Supervisory Board (referred to as directors' dealings) immediately following notification. The current situation is that all members of the Executive Board invested in Knorr-Bremse AG shares at the issue price during the initial public offering (IPO). A summary of these transactions can be found under Investor News in the Investor Relations section of our website.

As at December 31, 2018, Executive Board members held approximately 0.02% of Knorr-Bremse AG's shares in total. To our knowledge, no member of the Supervisory Board directly held shares in Knorr-Bremse AG on December 31, 2018.

Promotion of diversity and equal participation of women and men in leadership positions

To date, the requirements arising from the law on the equal participation of women and men in leadership positions have been fulfilled as follows:

- Since the election of Kathrin Dahnke in 2018, two women have been serving on the Supervisory Board of Knorr-Bremse AG, both representing shareholders. This equates to 33% female representation on the shareholder side and therefore – if the parties are counted separately – complies with the minimum legal quota of 30%.
- The percentage of women currently serving on the Executive Board of Knorr-Bremse AG is 0%. The Supervisory Board has set a 20% target for the proportion of women on the Executive Board by June 30, 2023.
- As at July 26, 2018, the proportion of female managers on the first management tier below Executive Board level at Knorr-Bremse AG was 7.7%, and 16.7% on the second management tier. 7.7% and 16.7% have been set as targets for the first and second management tiers respectively, both to be reached and maintained by June 30, 2023.

Diversity above and beyond the legal requirements is also an integral part of Knorr-Bremse's corporate culture. Any and every form of discrimination – whether on grounds of gender, age, religion, ill health, ethnic origin, skin color, sexual orientation or for any other reason – is unacceptable at Knorr-Bremse. When recruiting, we take account of diversity and equal opportunities, and seek to appoint more women as appropriate. Working-time models flexible enough to cater to individual circumstances help to ensure equality of opportunity. Given the international nature of our business, intercultural diversity and tolerance are important values at Knorr-Bremse. Knorr-Bremse's Code of Conduct defines various measures relating to occupational health and safety, human rights, and inclusivity. Our workforce receives specific training in these matters via an e learning tool. Employees can engage with various viewpoints in talks and workshops on sociopolitical topics.

When appointing Executive Board members, the Supervisory Board considers above all technical expertise and social skills, along with years of experience in similar posts within our sector and in an international context. Further suitability factors are the candidate's character and educational background (university degree or equivalent). Whether a candidate is male or female makes no difference. In order to achieve a balanced age structure, generally any appointees to the Executive Board should be no older than 65.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COMBINED GROUP MANAGEMENT REPORT*

** Combined Management Report: We have combined the management report of the Knorr-Bremse Group with the management report of Knorr-Bremse AG, in accordance with Section 315 (3) of the German Commercial Code (HGB) in conjunction with Section 298 (2) HGB. The management report is therefore termed a combined management report. Unless otherwise specified, the information below is applicable to both the Knorr-Bremse Group and Knorr-Bremse AG. Statements which refer exclusively to Knorr-Bremse AG are marked as such, and appear at the end of the combined management report.*

Combined Group Management Report

ABOUT THE GROUP

Overview of the Group

Organizational Structure of the Group

Knorr-Bremse AG is the management holding company of the Group. It controls the divisions and handles central functions such as treasury, accounting, controlling, HR management, legal affairs, taxes, internal audit and corporate communications. Knorr-Bremse AG serves as the corporate center, along with the regional holding companies Knorr Brake Holding Corporation and Knorr-Bremse Asia-Pacific (Holding) Limited, as well as Knorr-Bremse Services GmbH and KB Media GmbH.

Operationally, the Group has two divisions, which also form our business segments for IFRS reporting purposes:

- Rail Vehicle Systems (RVS division)
- Commercial Vehicle Systems (CVS division)

Divisions, Sales Markets, Market Share, Products and Services

RAIL VEHICLE SYSTEMS DIVISION

The Rail Vehicle Systems division offers highly advanced products and systems to provide mass transit vehicles such as metro cars and light rail vehicles, as well as freight cars, locomotives, passenger and high-speed trains. Knorr-Bremse is the world market leader in the global market for rail vehicle braking systems. Knorr-Bremse holds leading market positions in entrance systems and HVAC systems. The Group's market share figures are based on our own estimates and have not changed significantly since 2017.

The product portfolio comprises:

- braking, entrance and HVAC systems
- power supply systems, control components, windscreen wiper systems, platform screen doors and friction materials, as well as
- driver assistance systems, electronic traction equipment, and control technology.

In the aftermarket sector, using our RailServices brand, we offer spare parts along with maintenance, overhaul and repair services for rail vehicles.

COMMERCIAL VEHICLE SYSTEMS DIVISION

Our Commercial Vehicle Systems division offers products and systems for trucks, buses, trailers and agricultural machinery. Knorr-Bremse is the world market leader in the global market for disk brakes, as well as pneumatic braking systems for commercial vehicles. It is also a leading player in products for braking systems and vehicle dynamics, energy supply and distribution, as well as fuel efficiency. These details of the Group's market position are based on internal market analyses for the fiscal year 2018 and have not changed significantly since 2017.

Our product portfolio comprises:

- braking systems and vehicle dynamics solutions, including driver assistance systems and automated driving, brake control, steering control and electronic leveling control (e.g. driver assistance systems, anti-lock braking systems, emergency brake systems, pneumatic disk brakes, drum brakes, brake cylinders, valves and pedal units, control systems, electronic leveling control, electronic stability programs, etc.);
- energy supply and distribution systems, including compressors and air treatment along with
- products for boosting fuel efficiency such as engine components and transmission control subsystems (e.g. vibration dampers, engine air management, transmission control, and gear/clutch actuation).

We supply high-quality products and service solutions for all types and ages of commercial vehicles using our aftermarket brand, TruckServices.

Business Model/Structure of the Group

Legal Structure of the Group

Knorr-Bremse AG is the parent company of the Knorr-Bremse Group. As at December 31, 2018, the Group included 142 consolidated German and foreign subsidiaries, which the Company controls directly or indirectly. The Group is represented at over 100 locations worldwide.

Knorr-Bremse AG had a successful start on the Frankfurt Stock Exchange on October 12, 2018, when trading in its shares began. By initial public offering (IPO), a total of 48,360,000 no-par bearer shares provided by the KB Holding GmbH were placed with investors, representing a free float of 29.84%. The resulting proceeds were obtained by KB Holding GmbH. Following the IPO, KB Holding GmbH holds a 70.16% interest in Knorr-Bremse AG. Knorr-Bremse AG shares are traded on the Frankfurt Stock Exchange's regulated market (Prime Standard) under the trading symbol KBX100.

In preparation for the IPO, we changed our accounting systems to comply with International Financial Reporting Standards (IFRS). Due to the implementation, planning and management of the Group and its business units are now based on key figures calculated according to German GAAP as set out in the German Commercial Code – HGB. Future planning and management will be based on key figures calculated according to IFRS.

Changes to the Group's Portfolio & Asset Deals

Effective as at April 1, 2018, Knorr-Bremse Nordic Rail Services AB sold its maintenance subsidiary Swedtrac Rail Services AB to Stadler Services Sweden AG. This disposal was closely related to the subsequent sale of the rail vehicle maintenance business of Knorr-Bremse RailServices Ltd. and Kiepe Electric Ltd. in the United Kingdom (UK) to Mutares Holding-25 AG in August 2018. Through these transactions, concerning the Blueprint disposal group, we removed businesses from our portfolio that no longer aligned with our strategic focus as a key supplier to the rail industry.

In June 2018, we signed an agreement with a subsidiary of Federal Mogul Holdings LLC to purchase and back-license know-how in the development and production of friction material products for rail vehicles, and in related technologies. This further strengthens Knorr-Bremse's systems expertise and expands our product range to include refitting and service business with friction materials.

The Rail Vehicles Systems division's driving simulation business, Sydac Pty Ltd., was sold in July 2018 to Oktal, Société par actions simplifiée, a subsidiary of French group Sogeclair. The divestment of Sydac also formed part of the move to streamline the Rail Vehicle Systems division's portfolio.

Further information on changes to our portfolio may be found in the section on "Events of Material Importance to Business Performance".

Business Model

FINANCIAL SIGNIFICANCE OF INDIVIDUAL PRODUCTS, SERVICES AND SALES MARKETS

We sell our products to customers around the world and are partners to all major vehicle OEMs, as well as rail and fleet operators. Traditionally, Europe is our strongest sales region. In 2018, we generated 49% of our revenues by region (i.e. based on the country in which the particular vehicle for which we supply systems or components is operating) in Europe/Africa, with the remainder coming from the Asia-Pacific region (27%) and the Americas (24%). Both divisions have a well-balanced mix of OE and aftermarket business. In 2018, our aftermarket activities accounted for approximately 34% of total revenues (calculated according to German GAAP (HGB)).

BUSINESS PROCESSES AND QUALITY

As many of our products are safety-critical, we believe that a high level of availability, reliability and quality is one of the main reasons our customers decide to buy from us. We have therefore implemented integrated management systems in both divisions, based on established processes for meeting quality, environmental, and health and safety standards.

Knorr-Bremse ensures a high level of quality throughout the Group. Many years ago, we introduced various quality initiatives in our divisions to increase quality awareness and enhance a quality-oriented mindset. A comprehensive management approach helps us to meet all requirements throughout a product's life cycle – from development, testing, careful supplier selection and manufacturing, right through to how the product is used by customers. Compliance with all relevant quality indicators – such as cost of poor quality, supplier delivery quality, functional test failures, product safety audits – is monitored by a monthly global reporting. This focuses on the continuous improvement of our product and system quality, along with the day-to-day responsibility of each individual employee for quality and safe production and work processes.

We review and improve the implementation of our process management system by conducting regular internal audits and assessments around the world. This is also regularly confirmed by external certification audits based on IRIS (International Railway Industry Standard) for our Rail Vehicle Systems division and on IATF (International Automotive Task Force)/ISO TS 16949 for our Commercial Vehicle Systems division.

CUSTOMER RELATIONS

In both divisions, we cultivate long-term relationships with the majority of our customers. As a rule, the latter includes the world's largest operators and vehicle OEMs. Around 60% of our Rail Vehicle Systems division's revenues are generated by OE business. In 2018, aftermarket sales accounted for 40% of the division's revenues (calculated according to German GAAP).

Sales to OE customers generated around 73% of revenues in the Commercial Vehicle Systems division. Aftermarket sales in 2018 accounted for around 27% of the division's revenues (calculated according to German GAAP).

The breakdown of sales revenues according to German GAAP into OE and aftermarket segments for the purposes of the Management Report was not included in the audit of the consolidated financial statements.

PROCUREMENT

As well as ensuring that our production sites are supplied with materials, our procurement activities focus on achieving cost savings and collaborative partnerships with innovative suppliers. The procurement organization plays a key role in the quality of our end-products.

Our Group-wide Supplier Code of Conduct sets out the standards our suppliers are required to meet with respect to working conditions, human rights, environmental protection, health and safety, business ethics, and compliance. We will continue the rolling out the Code of Conduct to our suppliers in the coming reporting year. In particular, we will be extending it to include indirect suppliers (of non-production materials).

Various components and raw materials are among the most important elements in our production and assembly operations. Consequently, we monitor various commodity indices on a monthly basis (such as the German Bundesverband der Deutschen Gießerei-Industrie, the Metal Bulletin and the London Metal Exchange).

Our supply chain management focuses on improving our supply chain capabilities, processes and inventory levels along the entire value chain: inbound, across the Group, outbound and recycling. For over 10 years, we have operated a supply chain finance program with our most important suppliers. Under this program, suppliers receive early payment in return for a discount. Our supply chain management approach is also governed by factors such as integrated planning, parts availability, tariffs and foreign trade, logistics and material handling, transportation, short lead times, and parts traceability. We have a coordinated delivery cycle with a standardized process model and synchronized supply chains across multiple locations. This allows us to guarantee reliable delivery and adequate stock levels, plus high-quality logistics and performance, while keeping costs low.

Global Sourcing

To obtain the most benefit of Asian supplier markets for RVS, we have set up purchasing offices in India and China to support our European and North American purchasing teams. We have implemented a supplier process for CVS that is now used worldwide. Each supplier selection is presented to a multidisciplinary sourcing board (that includes representatives from various departments such as Purchasing, Research & Development, Quality, Logistics and Sustainability).

In both divisions, a global materials management organization bundles order quantities, enters into framework agreements and standardizes global supplier panels.

For indirect material purchases, Knorr-Bremse implemented a cross-divisional transformation process in 2018. This has resulted in improved data transparency and a new, global selection process that will allow further savings to be made.

LOCATIONS AND DISTRIBUTION OF WORK WITHIN THE GROUP

Knorr-Bremse operates production plants in Europe, North America, South America and the Asia-Pacific region. In recent years, alongside intensive localization efforts, we have expanded our global production and engineering footprint in both divisions through multiple acquisitions and joint ventures. Our products are manufactured all over the world, with a global balance between high-tech countries, such as Western Europe and North America, and best-cost countries such as Eastern Europe, Africa, Asia-Pacific, Latin America and Mexico.

Production at our sites is based on uniform global standards which deliver a high degree of flexibility coupled with a reliable delivery capacity. At the same time, they allow us to ensure a uniformly high standard of quality at each site, for example by deploying the Group-wide Knorr-Bremse Production System (KPS [p. 185]) to manage production. KPS uses a variety of tools and techniques – including key performance indicators, lean management methods, shop floor management and pull principles – that are rolled out by experts and coached by an internal lean training academy.

Control System

Company-specific Early Indicators

In the past, Knorr-Bremse distinguished by identifying changes in the market at an early stage and responding to them very rapidly. In order to control our business, we monitor a range of early indicators. This enables us to implement suitable measures as a timely response to any fluctuations in the economic cycle and changes in demand. For this, we use four types of indicators:

- Key early economic indicators are the money supply, commodity and energy prices, plus procurement manager and business climate indices. Research reports and macroeconomic statistics on, for example, transport volumes, also help to identify economic developments of relevance to us at an early juncture. We also pay close attention to interest rate trends. Business performance in our CVS division clearly correlates with trends in the global economy, while the RVS division is usually less cyclical.
- More specific indicators for estimating future potential business include our customers' production and sales plans, along with statistics and order intake forecasts. We also keep track of analysts' expectations for publicly traded companies in the rail and commercial vehicles sector.
- The third early indicator are actual invitations to tender issued by our customers. We collect information about this in our database, along with an appraisal of our acquisition opportunities.
- The fourth group of indicators comprises the order book and incoming orders for both divisions. Since many orders have a long lead time, both of these indicators are useful to estimate capacity utilization and revenues over the next few quarters.

External Influencing Factors

The most important external factor influencing our rail vehicles business is order book trends among our customers – the companies that actually build the vehicles. In addition, the size and average age of our installed base are primary factors in the development of our aftermarket business. The "World Rail Market" study by Roland Berger and UNIFE predicts an annual average growth rate of around 2.6% for the global rail vehicle market. With respect to the aftermarket developments and the expansion of our scope of supply, this should provide us with opportunities for an annual growth of around 5-6%.

In the CVS division, the most important influencing factor is the truck production rate in units, differentiated by sales region. Here, we are expecting to see a sideways trend over the next few years. In addition, technological developments relating to safety, emissions control and highly automated driving offer attractive potential for structural growth in the form of an ongoing annual increase in content per vehicle of 3-4%, depending on the region. Overall, this represents annual growth opportunities for us in the range of 4-5%.

In certain regions, our business is influenced by government regulations on emissions and safety. In general, more stringent threshold values – for CO_2 for example – are driving the demand for low-emissions vehicle technology.

Exchange rate fluctuations have a moderate impact on revenues and earnings. Because we have set up local development operations in major foreign markets, as well as local production plants and procurement structures, our export requirements are comparatively low, which reduces transaction risks. More significant are the translation effects of converting foreign currency items into euros.

For more details of the Company's performance indicators, see also page 67 in the "Corporate Management Indicators" section.

Research and Development

Our innovation agenda focuses primarily on the four megatrends of urbanization, eco-efficiency, digitization and automated driving. It is geared to delivering customer benefits and adding value, with our development activities focusing on, for example:

- reducing energy consumption, noise and weight;
- minimizing the total cost of ownership (TCO); and
- modernizing and upgrading solutions.

As well as state-of-the-art electronics, hardware and software, we also aim to provide our customers with products that can be adapted to meet changes in regulatory standards and incorporate the very latest advances in engineering methods and tools.

With respect to our research and development activities, we benefit from the potential synergies between our two divisions. Accordingly, our R&D teams work very closely with each other. For large parts of our product portfolio, the underlying technologies can be applied to both segments. These include, for example, driver assistance (adaptive cruise control (ACC), AEBS, ASR [p. 185]), motion control, brake control, hydraulics, wheelend/bogie equipment and compressed air generation. The synergies between the segments translate into a faster time to market and reduced development costs. For instance, we were transferred the technology for both disk brakes and screw compressors from our Rail Vehicle Systems division to our Commercial Vehicle Systems division. Our collision avoidance solution for rail vehicles is based on sensor technology expertise acquired by our Commercial Vehicle Systems division. We also have joint development teams cooperating on condition monitoring and collision avoidance.

At Group level, we invested EUR 363.6 million (representing 5.5% of revenues) in our R&D activities in fiscal 2018. Thereof, EUR 197.1 million (5.7% of associated revenues) was spent in the Rail Vehicle Systems division and EUR 166.6 million (5.3% of associated revenues) in the Commercial Vehicle Systems division. **Table → 2.01**.

Our most important research and development centers are located in close proximity to key customers:

- Munich and Schwieberdingen (Germany);
- Budapest (Hungary);
- Elyria (USA);
- Suzhou (China); and
- Pune (India).

We also cooperate on a range of joint Research & Development projects with customers, universities and technical institutes such as Stuttgart University, Budapest University, the Technical University of Berlin and the Technical University of Munich. We are engaged in partnerships with startups, for example through the Hackathon Techfest in Munich, with the aim of improving access to technology and accelerating our research and development work. In total, our external R&D network consists of over 15 partnerships. We have also entered into partnerships with government bodies; for instance, we are involved in the EU-funded Shift2Rail program. Among other things, partnerships like these enable us to play a part in shaping norms and standards and to anticipate industry trends.

In autumn 2018, Knorr-Bremse Group's innovations and research findings were presented at the industry's foremost trade shows: IAA Commercial Vehicles, InnoTrans and Automechanika.

In our Commercial Vehicle Systems division, our research and development activities in recent years have concentrated on key industry priorities such as road safety, automated driving, reduction of emissions, emobility and connectivity. Thus, our Global Scalable Brake Control (GSBC [p. 185]) and intelligent Hydraulic Steering Assist (iHSA [p. 185]) technologies were developed to create a reliable control network for coordinated longitudinal and lateral control of automated vehicles. Two new disk brake generations were also presented – the SYNACT two-piston brake for towing vehicles and the NEXTT single-piston brake for trailers and for towing vehicles with a low axle load.

In the Rail Vehicle Systems division, our development activities have focused on identifying solutions to increase vehicles' availability and enhance their operational efficiency in order to optimize their life cycle costs. Efforts have centered above all on automated train operation, eco-design and product digitization. Also featured at InnoTrans was the next-generation EP 2002 3.0, suitable for a broader range of applications that includes regional and long-distance transportation. With the new generation of our Knorr-Bremse control valve (KEf), we have fundamentally redesigned our flagship control valve for freight cars, enabling telematics solutions for the digitization of freight transportation by rail. Our innovative iCOM platform bundles a number of functions such as low-wear driving, a driver assistance system, real-time measurement of energy consumption, and diagnostics. Knorr-Bremse subsidiary Kiepe Electric has developed a pioneering in-motion charging (IMC) concept for trolley buses. These buses are battery-powered on roads without overhead contact lines, and their batteries recharge while they are driving on sections equipped with overhead lines.

2.01 KEY R&D INDICATORS

in EUR millions	2018	2017
R&D costs	**363.6**	**358.8**
of which capitalized development costs	48.0	31.8
Depreciation on capitalized development costs	7.5	6.4
R&D employees (Dec. 31)	4,554	3,720

Sustainability

Since 2011, we have been updating our stakeholders on Knorr-Bremse's sustainability activities in our UN Global Compact (UNGC) Progress Report. This report describes the Company's impact on the environment and society in detail, and presents the key indicators, targets and measures used by Knorr-Bremse to manage its sustainability activities.

The report includes the consolidated non-financial statement for the Knorr-Bremse Group in accordance with Sections 315b and 315c in conjunction with Sections 289b to 289e of the German Commercial Code (HGB). The UN Global Compact Report, which contains the non-financial statement, will be published on the Company's website on April 30, 2019, at www.knorr-bremse.com/en/responsibility.

Employees

As at year-end 2018, the Knorr-Bremse Group had a total of 28,452 employees, including temporary staff – up 2.7% on the previous year (2017: 27,705). These figures represent full-time equivalents (FTEs). Excluding temporary staff, the Group employed 25,933 people (2017: 24,925). This increase, driven by the Knorr-Bremse Group's organic growth over the reporting period, was offset by a reduction resulting from the disposal of business activities in the RVS division. As at December 31, 2018, the RVS division employed a total of 15,886 people (2017: 16,051) and the Commercial Vehicle Systems division employed a total of 11,906 people (2017: 11,082). **Chart → 2.02.**

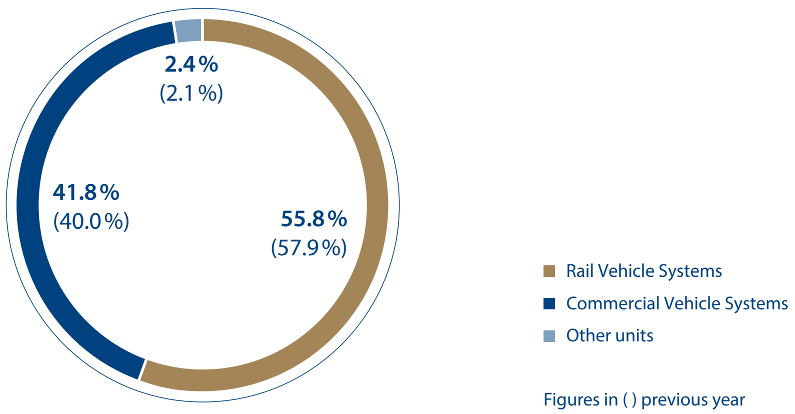
At the end of 2018, Knorr-Bremse had 15,333 employees (14,552 excluding temporary staff) in the Europe/Africa region, compared to 15,782 (14,462 excluding temporary staff) in the previous year. At 53.9%, the percentage of European employees in the workforce was below last year's figure of 57.0%. In Germany, the headcount rose from 5,663 (5,238 excluding temporary staff) to 5,809 (5,485 excluding temporary staff) as at December 31, 2018. Over the year under review, the number of employees in North and South America climbed to 5,815 (5,562 excluding temporary staff) from 5,216 (4,970 excluding temporary staff) in the previous year. Thus, the region's percentage of the workforce rose to 20.4% (2017: 18.8%). In 2018, the headcount in the Asia-Pacific region rose to 7,304 (5,819 excluding temporary staff) by year-end from 6,707 (5,494 temporary staff) in the previous year. Thus, the number of employees in the region as a percentage of the Group's total workforce rose to 25.7%, compared with 24.2% in the previous year. **Chart → 2.03.**

PERSONNEL DEVELOPMENT

In Knorr-Bremse's view, training of employees is essential – both to provide personal and professional development careers for its staff and to provide a solid platform for the Company's ongoing success. The Group aims to foster the development of its employees with targeted development measures specific to their individual needs and areas of specialization.

2.02 HEADCOUNT (INCLUDING LEASED WORKERS) AS AT DECEMBER 31:

in %



The HR process model provides the general framework for our professional development offerings, which aim both to attract and recruit new employees, and to promote and train existing ones.

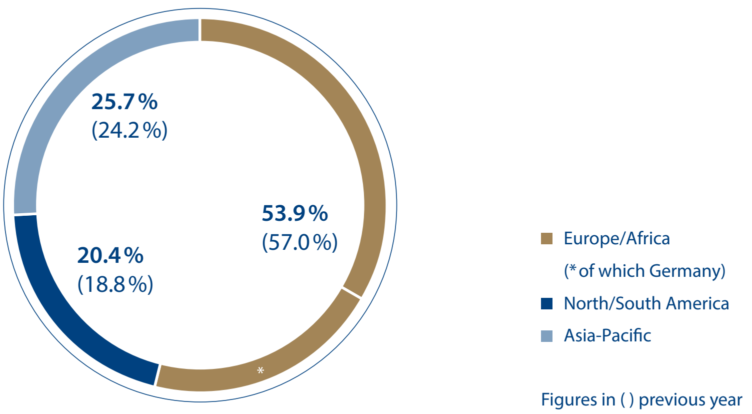
To retain young talents and prospective managers, Knorr-Bremse offers programs such as the Management Evolution Program (MEP) for trainees and career development as part of the International Management Potential Group (IMPG).

APPRENTICESHIPS AT KNORR-BREMSE

Knorr-Bremse offers apprenticeships in occupations forming part of its own operations. At our international sites, Knorr-Bremse offers vocational training in a variety of technical and commercial professions. The most popular training courses include industrial mechanics, machining technology, electronics, mechatronics and IT. As at December 31, 2018, 207 young people (2017: 248) had completed an apprenticeship at Knorr-Bremse.

2.03 HEADCOUNT (INCLUDING LEASED WORKERS) AS AT DECEMBER 31 BY GROUP COMPANY LOCATION:

in %



FURTHER DETAILS OF CORPORATE GOVERNANCE

Corporate Governance Statement

The Corporate Governance Statement for Knorr-Bremse AG will be published on April 30, 2019, on the corporate website at https://ir.knorr-bremse.com/corporate-governance-en . Further details appear Corporate Governace section starting on page 63.

Takeover-related Disclosures pursuant to Sections 289a (1) and 315a (1) HGB and Explanatory Report pursuant to Section 176 (1) AktG

Composition of Subscribed Capital

The subscribed capital of Knorr-Bremse AG is divided into 161,200,000 bearer shares with full voting rights. The rights and obligations associated with the shares are governed by the German Stock Corporation Act (AktG). As at December 31, 2018, Knorr-Bremse AG did not hold any of its own shares and does not currently do so.

Restrictions on Voting Rights/Transfers and Equivalent Agreements

Under the terms of Knorr-Bremse AG's IPO, KB Holding GmbH entered into a lock-up agreement with the underwriting banks relating to its Knorr-Bremse AG shareholding for a period of six months from the date of the IPO on October 12, 2018. The members of the Executive Board had also agreed to be bound by a six-month lock-up commitment covering any Knorr-Bremse shares they acquired in the course of the IPO. Apart from these commitments, the Executive Board is not aware of any agreements by Knorr-Bremse AG shareholders containing restrictions on the exercise of voting rights or share transfers. There are statutory restrictions on voting rights, for example pursuant to Article 28 sentence 1 WpHG (violation of disclosure obligations), Section 71b AktG (rights associated with own shares) and Section 136 (1) AktG (exclusion of voting rights arising from certain conflicts of interest).

Shareholdings Exceeding 10% of Voting Rights

KB Holding GmbH, Grünwald, holds 70.16% of Knorr-Bremse AG's capital stock. Via TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany, and Stella Vermögensverwaltungs GmbH ("Stella"), Grünwald, Germany, KB Holding GmbH is indirectly controlled by Mr. Heinz Hermann Thiele, who holds the majority of voting rights in Stella. Knorr-Bremse AG has not been notified of any other direct or indirect interests in Knorr-Bremse AG's share capital that exceed 10% of voting rights, nor is it aware of any other such interests.

Shares with Special Rights

There are no Knorr-Bremse AG shares granting special rights.

Control of Voting Rights Where Employees Hold a Capital Interest and Do Not Directly Exercise Their Control Rights

There are no employee shareholdings in which control rights are not directly exercised. Like other shareholders, employees who hold shares in Knorr-Bremse AG exercise their rights of control directly, in accordance with statutory regulations and the Articles of Association.

Provisions for Appointing and Dismissing Members of the Executive Board

The applicable statutory provisions can be found in Sections 84 and 85 AktG, and in Article 31 MitbestG. Knorr-Bremse AG's Articles of Association do not contain any provisions that deviate from the statutory regulations. In addition, Article 8 (1) of the Articles of Association stipulates that the Executive Board shall consist of at least two members, and that the Supervisory Board may appoint one member of the Executive Board as Chair of the Executive Board, and another member of the Executive Board as Deputy Chair.

Provisions for Amending the Articles of Association

The Annual General Meeting passes resolutions on amendments to the Articles of Association. Unless the German Stock Corporation Act (AktG) stipulates otherwise, the resolution shall, in accordance with Article 23 (2) of the Articles of Association, be passed by a simple majority of the votes cast and – to the extent that a majority of the capital represented at the time of the resolution is required – by a simple majority of the share capital represented at the time the resolution is passed. Pursuant to Section 13 (4) AktG, the Supervisory Board is authorized to resolve amendments to the Articles of Association that only affect their wording. Pursuant to Article 6 (5) of the Articles of Association, the same applies to amendments to Article 6 of the Articles of Association, according to the respective utilization of the Authorized Capital 2018 and upon expiry of the authorization period.

Executive Board Powers Relating to the Possibility of Issuing or Repurchasing Shares

The powers of the Executive Board to issue shares are set down in Article 6 of the Articles of Association and in the statutory provisions:

Authorized Capital

Until May 28, 2023, the Executive Board is authorized, with the Supervisory Board's approval, to increase the Company's capital stock on one or more occasions by up to a total of

EUR 40,300,000.00 by issuing up to 40,300,000 new bearer shares against cash and/or non-cash contributions (Authorized Capital 2018). The new shares should be offered to the shareholders for subscription; they may also be taken over by banks or companies within the meaning of Section 186 (5) sentence 1 AktG, along with the obligation to offer them to shareholders for subscription. However, the Executive Board is authorized, with the consent of the Supervisory Board, to exclude shareholders' subscription rights in whole or in part,

- to dispose of fractional amounts under exclusion of subscription rights;
- in the event of capital increases against non-cash contributions;
- in the event of a capital increase against cash contributions pursuant to Section 186 (3) sentence 4 AktG, if the issue price of the new shares is not significantly lower than the market price of the Company's listed shares at the time of the final determination of the issue price, and the exclusion of subscription rights is limited to a maximum of 10% of the Company's existing share capital in total; and
- (a) to the extent necessary to service purchase obligations or purchase rights to Knorr-Bremse shares arising from or in connection with warrant-linked and/or convertible bonds and/or profit participation rights with option and/or conversion rights and/or obligations issued by the Company or Group companies, or (b) to the extent necessary to protect against dilution, in order to grant subscription rights to shares in the Company to holders or creditors of warrant-linked and/or convertible bonds and/or profit participation rights with option and/or conversion rights or obligations (or combinations of these instruments) issued by the Company or Group companies, to the extent that they would be entitled to such rights as shareholders after exercising their option or conversion rights or after fulfilling their option or conversion obligations.

Further details can be found in Article 6 (3) of the Articles of Association.

Conditional Capital

Until May 28, 2023, the Executive Board is authorized, with the Supervisory Board's approval, to issue bearer or registered subordinated or non-subordinated convertible and/or warrant-linked bonds, profit participation rights and/or income bonds (or combinations of these instruments) (hereinafter collectively referred to as bonds) in one or more tranches, or simultaneously in multiple series, in a total nominal amount of up to EUR 1,500,000,000.00, and to grant the holders or creditors of the bonds (hereinafter collectively referred to as the holders) conversion or option rights on a total of up to 16,120,000 no-par bearer shares in the Company with a proportionate amount of the share capital of up to EUR 16,120,000.00 in total, in accordance with the more detailed provisions in the terms and conditions of the bonds (hereinafter conditions of issue). The bonds may be issued against payment in cash and/or as contribution in kind. The conditions of issue may also provide for an option or conversion obligation upon expiry of the term or at an earlier date or on occurrence of a specific event.

Shareholders generally are entitled to a subscription right to the bonds. This subscription right may also be granted in such a way that the bonds are taken over by one or more banks or companies within the meaning of Section 186 (5) sentence 1 AktG selected by the Executive Board, along with the obligation to offer them to shareholders for subscription (indirect subscription right). However, the Executive Board is authorized, with the Supervisory Board's consent, to exclude shareholders' subscription rights,

- to the extent that the bonds carrying conversion or option rights or conversion or option obligations are issued against cash payment, and the Executive Board, after due examination, comes to the conclusion that the issue price of the bonds is not substantially lower than their hypothetical market value calculated using recognized mathematical, and in particular actuarial, methods. The authorization to exclude subscription rights applies to bonds with conversion or option rights or obligations for shares representing a proportionate amount of the share capital that may not exceed 10% of the Company's share capital in total;
- to the extent that the bonds are issued against contribution in kind;
- to the extent necessary to grant the holders or creditors of bonds or warrants previously issued by the Company or Group companies within the meaning of Section 18 AktG a subscription right in the amount to which they would be entitled after exercising their conversion or option rights or fulfilling their conversion or option obligations; and
- in order to remove fractional amounts from the subscription rights.

To grant shares to holders or creditors of convertible or warrant-linked bonds that were issued on the basis of the Executive Board's authorization, the Company's capital stock was conditionally increased by up to EUR 16,120,000.00 by issuing up to 16,120,000 new no-par bearer shares (Conditional Capital 2018). The precise details are governed by Article 7 of the Articles of Association.

Share Buyback

The Company's Executive Board is authorized to repurchase its own shares and sell repurchased shares in the cases provided for in Section 71 AktG. The General Meeting held on May 29, 2018, authorized the Company's Executive Board, pursuant to Section 71 (1) clause 8 AktG, to buy back

Knorr-Bremse AG's own shares up to a total amount of 10% of the capital stock existing at the time this authorization comes into effect or – where this amount is lower – of the capital stock existing at the time this authorization is exercised, up until May 28, 2023. The shares acquired on the basis of this authorization, together with other treasury shares which the Company has already acquired and are already held by or attributable to the Company, should at no time account for more than 10% of the capital stock.

At the Executive Board's discretion, shares may be acquired

- as purchases on the stock exchange;
- through a public purchase offer;
- by sending all shareholders a public invitation to submit sale offers; or
- by granting shareholders rights to tender.

The General Meeting held on May 29, 2018, also authorized the Executive Board to act as follows with treasury shares acquired on the basis of the above or earlier authorizations:

- to sell them on the stock exchange or, subject to the Supervisory Board's approval, by means of a public offer to all shareholders in proportion to their shareholdings;
- with the consent of the Supervisory Board, to offer and transfer them in return for contributions in kind, in particular as (partial) consideration for the direct or indirect acquisition of companies, parts of companies or interests in companies or other assets, including claims against the Company, or for claims to the acquisition of assets or relating to a business combination;
- to use them to service purchase obligations or purchase rights of Knorr-Bremse AG shares arising from or in connection with warrant-linked and/or convertible bonds issued by the Company or Group companies.

Agreements in the Event of a Change of Control Resulting from a Takeover Bid

The principal Knorr-Bremse AG agreements that are subject to a change of control relate to the EUR 500 million Knorr-Bremse AG bond issued on December 8, 2016, which is due to mature in 2021, and the EUR 750 million Knorr-Bremse AG bond issued on June 14, 2018, which will mature in 2025. According to the terms and conditions of these bonds, creditors are entitled to demand repayment of the par value of the bonds by Knorr-Bremse AG in the event of a change of a control if this change of control results in a downgraded rating within 120 days of the implementation of the change of control (change of control period), i.e. if a rating awarded to Knorr-Bremse AG or to either of the bonds is withdrawn or changed from an investment-grade rating to a non-investment-grade rating.

Compensation Agreements in the Event of a Takeover Bid

In the event of a change of control, defined as the acquisition of the majority of voting rights in Knorr-Bremse AG, the members of Knorr-Bremse AG's Executive Board were granted a time-limited option to terminate their contracts in return for a compensatory payment, provided that the change of control materially alters the Company's strategy and thereby materially impairs the position of the Executive Board member(s) concerned, or materially restricts or changes board members' departmental or divisional responsibilities to the detriment of the Executive Board member(s) concerned. In this case, the compensatory payment shall be equivalent to the contractual remuneration for the remaining term of the board member's regular appointment, albeit for a maximum of 24 months. Thus payment falls due upon termination of office and contract.

COMPENSATION REPORT

In line with the recommendations of the German Corporate Governance Code (GCGC) and statutory requirements, the Compensation Report describes the main features of the remuneration system for the Executive Board and Supervisory Board of Knorr-Bremse AG, as well as the remuneration packages for individual members of the Executive and Supervisory Boards.

Executive Board Compensation

Remuneration System

PRINCIPLES AND OBJECTIVES

The Supervisory Board regularly reviews the appropriateness of the Executive Board's remuneration and remuneration system in accordance with statutory requirements and with the recommendations of the GCGC, adjusting them as necessary. The remuneration system consists of a non-performance-related component (base remuneration) plus fringe benefits and a performance-related component with both short-term and long-term elements. The non-performance-related component accounts for 33-40% of the total target income (base remuneration plus short-term and long-term performance-related remuneration).

Performance-related remuneration accounts for 29-33% of the total target income in the case of short-term performance-related remuneration (short-term incentive) and 30-33% of the total target income for long-term performance-related remuneration (long-term incentive).

These figures relate to target remuneration levels as at January 1, 2019. In the 2018 fiscal year, the provisions of the new remuneration system were not yet fully implemented (Chart → 2.04).

Most recently, the remuneration system was further developed as a consequence of Knorr-Bremse AG's IPO in autumn 2018; it now applies to all members of the Executive Board effective January 1, 2019, as at that date at the latest. Where elements of the previous remuneration system were still relevant in the 2018 fiscal year, they are summarized below in the corresponding descriptions of the individual elements in the remuneration system.

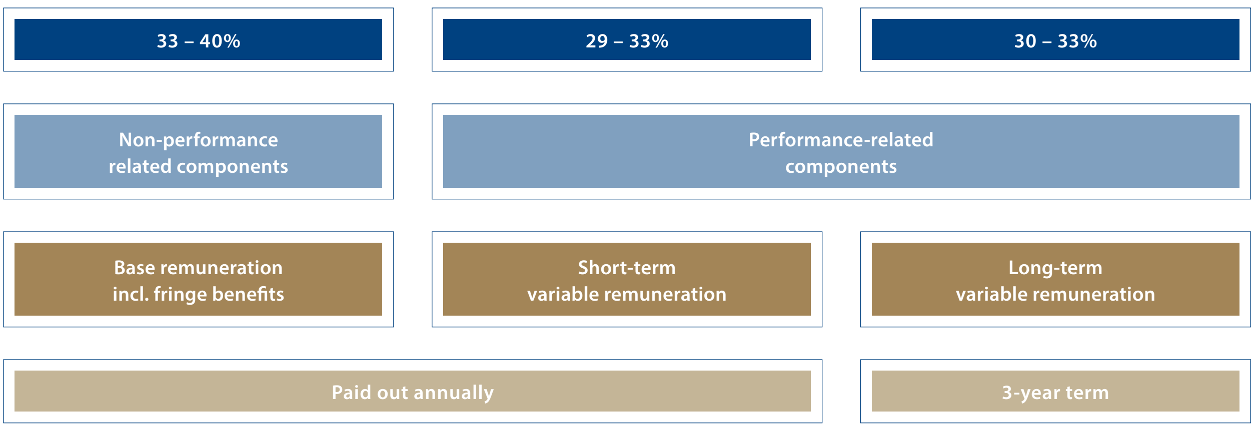
NON-PERFORMANCE-RELATED COMPONENT AND FRINGE BENEFITS

Executive Board members receive a fixed, non-performance-related annual salary (base remuneration), which is paid in 12 equal installments as a monthly salary. Since October 1, 2018, Mr. Deller's annual base remuneration has been EUR 1,500,000 (prior to September 30, 2018: EUR 1,250,000). The annual base remuneration component for the other Executive Board members is EUR 800,000.

For the period from July 1, 2016 to August 31, 2018, Mr. Deller was also paid an additional fixed annual compensation of EUR 350,000 for assuming Executive Board responsibility for Rail Vehicle Systems in the Europe, North and South America, and Asia-Pacific regions.

In addition, Executive Board members are granted fringe benefits, essentially in the form of a company car that can

2.04 REMUNERATION COMPONENTS



also be used privately, accident insurance and subsidized health and long-term care insurance. Furthermore, Executive Board members are covered by a D&O liability insurance policy.

PERFORMANCE-RELATED COMPONENT

The performance-related remuneration component consists of two elements: a short-term incentive and a long-term incentive.

Short-term Performance-related Remuneration

Short-term Incentive

The short-term incentive (STI) is intended to reward performance over the past fiscal year as reflected by the Company's development over the short term. The amount of STI to be paid depends on the achievement of certain financial targets set in advance by the Supervisory Board for the fiscal year in question:

- Since 2018, the key financial targets have been revenues, earnings (profit) before taxes (PbT), net working capital [p. 183] (in each case with a weighting of 30%) and quality (with a weighting of 10%). Financial targets are set by reference to the duties of the Executive Board member – exclusively in relation to the Group as a whole in the case of the CEO and CFO, or 50% in relation to the Group as a whole plus 50% in relation to the division (Rail Vehicle Systems or Commercial Vehicle Systems) for which the Executive Board member is responsible.
- For the 2018 fiscal year, Mr. Deller was subject to the following diviant provision from his existing contract: 50% of his targets consisted of the Group's key financial targets, that is, revenues (20%), earnings before taxes (30%), net working capital [p. 183] (25%) and quality (25%). The other 50% of his targets were based on personal targets agreed with the Chairman of the Supervisory Board, as well as general criteria such as leadership qualities, focus on objectives, assertiveness and personal commitment.
- For the 2018 fiscal year, Dr. Laier was subject to the following diviant provision from his existing contract: Two-thirds of his targets consisted of financial targets and one-third of his targets related to the extent to which he achieved personal targets agreed with the Chairman of the Supervisory Board. The key financial targets were revenues (20%), earnings before taxes (30%), net working capital (25%) and quality (25%), each half-related to the Group as a whole, and half-related to the Commercial Vehicle Systems division.

At the close of the fiscal year, the Supervisory Board determines the actual extent to which targets have been achieved, and the amounts to be paid out as a function of target achievement. The financial targets for fiscal 2018 were agreed and set according to German GAAP (HGB).

The STI target payment is made if 100% of the agreed targets have been achieved.

For Mr. Deller, STI target remuneration for fiscal 2018 was EUR 1,250,000; for Dr. Laier, it was EUR 800,000 (or EUR 600,000 starting in the 2019 fiscal year), and EUR 600,000 for the two other Executive Board members. Starting in the 2019 fiscal year, the STI target payment for the CEO will be raised to EUR 1,500,000.

For the 2018 fiscal year, the STI payout for Mr. Deller and Dr. Laier could vary between a minimum of 80% to a maximum of 120% of the target amount available for achieving targets. This means that the maximum payout for Mr. Deller could be EUR 1,500,000 and for Dr. Laier EUR 960,000.

For Mr. Heuwing and Dr. Wilder, no payment will be made if their target achievement falls below 80%. On the other hand, if their target achievement level reaches or exceeds 135%, 200% of the STI target remuneration will be paid out; this means that the maximum adjusted payout may not exceed EUR 1,200,000. Where target achievement lies between 80% and 135%, STI target achievement levels and bonuses are calculated on a straight-line basis.

Starting in the 2019 fiscal year, the provision applying to Mr. Heuwing and Dr. Wilder shall also apply to Mr. Deller and Dr. Laier. Accordingly, starting in 2019, the maximum amount that can be paid out to Mr. Deller is EUR 3,000,000 and to Dr. Laier EUR 1,200,000.

If an appointment to the Executive Board begins or ends during a fiscal year, the STI entitlement shall be proportional (pro rata temporis) to the Executive Board activity effectively performed during that fiscal year, or to an agreed notice period.

In addition, the Supervisory Board's Executive Committee was empowered, up to and including the 2018 fiscal year, to adopt a resolution conferring a special bonus on Dr. Laier in certain cases, namely if extraordinary performance over the period under review – above and beyond any budgeted or agreed targets – were primarily attributable to Dr. Laier. This decision was entirely at the Executive Committee's discretion. No special bonus was awarded in 2018 or 2017.

IPO Bonus

In the 2018 fiscal year, the award of a one-time special bonus relating to Knorr-Bremse AG's successful initial public offering ("IPO") was agreed with Mr. Deller, Mr. Heuwing and Dr. Laier.

The Supervisory Board specified the amount of the IPO bonus, which may not exceed a fixed annual salary, considering the following criteria:

- the success of the IPO measured in terms of market capitalization (average of the first 60 days of trading after the IPO), taking account of the general market environment after the IPO, and
- individual contributions made to the successful IPO by Mr. Deller, Mr. Heuwing and Dr. Laier.

On February 7, 2019, the Supervisory Board resolved to award special IPO bonuses of EUR 1,350,000 to Mr. Deller, EUR 800,000 to Mr. Heuwing and EUR 720,000 to Dr. Laier.

Because Dr. Wilder joining the Executive Board member on September 1, 2018, his service agreement did not provide for an IPO bonus.

Long-term Incentive

The long-term incentive (LTI) is intended to reward sustained, long-term performance by Executive Board members. Since the 2018 fiscal year, the LTI has been awarded in the form of performance-related remuneration based on a performance cash plan allocated in multi-year tranches. The term of a tranche is three years (the "performance period"). This begins on January 1 of the respective grant year and ends on December 31 of the second year after the grant year. The full amount of the LTI is paid in June of the fiscal year following the performance period.

With the exception of Dr. Laier (a contractual provision provides for an LTI starting in fiscal 2019), all members of the Executive Board are entitled to an LTI for the 2018 fiscal year. Thus the performance period for the 2018 tranche runs from January 1, 2018 to December 31, 2020, and the LTI will be paid out in June 2021.

Performance is measured on the basis of the increase in the Knorr-Bremse Group's Economic Value Added (EVA®) [p. 183] over the performance period. The Economic Value Added is determined by deducting the Knorr-Bremse Group's capital expenditure (defined as operating assets multiplied by weighted average capital costs of 8%) from net operating profit [p. 185] after taxes (defined as EBIT minus taxes). Operating assets are defined as capital employed [p. 183] , i.e. non-current assets + working capital + leasing adjustments.

The relevant figures for the development of EVA® are the EVA® achieved in the second year following the respective grant year, compared with the EVA® achieved in the fiscal year preceding the grant year. The following formula is used for this purpose (example for 2018 tranche):

$$1 + \frac{\text{EVA}^{®}\ 2020 - \text{EVA}^{®}\ 2017}{\text{Absoluter Betrag EVA}^{®}\ 2017}$$

At the start of each performance period, the Supervisory Board defines a target value, a minimum value and a maximum value for the Economic Value Added to be achieved. If necessary, the Supervisory Board also defines non-recurring effects for which adjustments must be made at the end of the performance period.

If the target value is reached, the target achievement level is assumed to be 100%. If the minimum value is reached, the target achievement level is assumed to be 1%; if a value below the minimum value is reached, the target achievement level is assumed to be 0%. If the maximum value is achieved or exceeded, the target achievement level is capped at 200%. Linear interpolation is used to calculate the target achievement level between the minimum value and the target value, and between the target value and the maximum value.

The amount to be paid out is then calculated by multiplying the respective target amount by the respective level of target attainment, capped at 200%.

The LTI target value for the 2018 tranche was EUR 1,500,000 for Mr. Deller, EUR 700,000 for Mr. Heuwing and EUR 600,000 for Dr. Wilder, with Dr. Wilder receiving 4/12 pro rata temporis for the period from September to December 2018 (= EUR 200,000). For Dr. Laier, starting in 2019, the LTI target value is EUR 700,000. The LTI maximum value for the 2018 tranche is EUR 3,000,000 for Mr. Deller, EUR 1,400,000 for Mr. Heuwing and EUR 1,200,000 for Dr. Wilder (4/12 pro rata temporis, so totaling EUR 400,000 for the period from September to December 2018). The LTI maximum value for Dr. Laier is EUR 1,400,000, starting in 2019.

In the event of extraordinary events or developments, such as a business merger, material changes in the shareholder structure, acquisitions or divestments of companies or parts of companies requiring the approval of the Supervisory Board, changes in the legal and/or regulatory environment, high inflation, or significant changes in accounting or measurement policies, the Supervisory Board may, at its reasonable discretion, limit the amount payable or, if the respective Executive Board member would have received a higher amount in the absence of such an event or development, increase the amount payable – again, at its reasonable discretion.

Following the IPO, the plan's terms and conditions for future tranches will be linked to the stock market value. This is planned for the period starting in the 2020 fiscal year.

The target amounts for tranches that extend beyond the regular contractual end of an Executive Board member's appointment are paid out on the regular payout dates in pro-rated installments.

In the event of the appointment's premature termination, any claims associated with tranches that have already been awarded for current performance periods shall lapse without substitute or compensation in the following cases:

- in the event of extraordinary termination by the Company for good cause in accordance with Article 626 para. 1 of the German Civil Code (BGB);
- in the event of termination without notice or extraordinary notice of termination without cause by the Executive Board member; or
- in the event of revocation of the appointment or resignation from office of the Executive Board member for good cause.

In the event of the permanent or long-term disability or death of a plan participant, all tranches awarded under the performance cash plan which have not yet reached the end of their respective performance periods are paid out immediately. The payout corresponds to the cumulative target value of all outstanding tranches.

According to the service contract with Mr. Deller which was in effect until September 30, 2018, the Executive Committee of the Supervisory Board shall, every three years, decide on a special bonus of up to EUR 1,000,000 at its own discretion. Mr. Deller did not receive a special bonus for fiscal 2018.

Maximum Upper Limit (Cap) of Total Remuneration

The maximum upper limit (cap) of the total remuneration that can be awarded for a fiscal year, including fringe benefits, pension contributions and pension service costs, is EUR 8,270,000 for Mr. Deller (starting in 2018), EUR 3,718,000 for Mr. Heuwing and EUR 1,177,000 for Dr. Wilder (pro-rated for 2018). No cap was agreed for Dr. Laier's total remuneration for 2018.

Starting in 2019, the remuneration cap for Dr. Laier will be EUR 3,730,000 and for Dr. Wilder EUR 3,530,000.

As a result of the special IPO bonus, the remuneration cap for the 2018 fiscal year was increased by the maximum amount of the IPO bonus, thus came to EUR 9,770,000 for Mr. Deller and EUR 4,518,000 for Mr. Heuwing.

COMMITMENTS IN THE EVENT OF REGULAR TERMINATION OF SERVICE AGREEMENTS

Pension Commitments

Generally, Executive Board members would receive a company pension in the form of a defined-contribution plan. Under previous contractual terms, the Company still has direct commitments to Executive Board members (in the form of defined-benefit plans).

Mr. Deller earns a vested entitlement per year of service amounting to 2% of his respective basic annual salary (excluding additional remuneration for his Executive Board responsibility for the Rail Vehicle Systems division), but not exceeding 35% of his average fixed annual salary over the last three years prior to the occurrence of the defined event (retirement or invalidity). This applies as long as he actively holds this position in the Company until he reaches the age of 63. His old-age pension is paid from the first day of the month following the end of his 63rd year (fixed age limit). The previous provision (age limit at 65 and early retirement at 63) was adjusted in 2018 as part of the contractual amendment. His period of service is recognized as uninterrupted since May 1, 2009. A disability pension is paid if Mr. Deller leaves the Company before reaching retirement age due to partial or complete incapacity for work within the meaning of Book VI of the German Social Code (SGB VI). Following Mr. Deller's death, 60% of the defined benefits to which Mr. Deller was previously entitled are paid to his spouse for the remainder of her life. In addition, the provision provides for the payment of a monthly orphan's pension until the beneficiary reaches the age of 18 or 25 (where s/he is in continuing education). For fatherless orphans, the monthly orphan's pension is 10% of Mr. Deller's pension entitlement; full orphans receive 20% of Mr. Deller's pension entitlement or most recently paid annuity.

Under his previous service contract, Dr. Laier has a vested pension entitlement upon reaching retirement at the age of 65 in the amount of 2% of his respective basic annual salary per year of service. This entitlement applies per year of service from January 1, 2016 through to December 31, 2018. In the event of Dr. Laier's death, his widow receives his pro-rated fixed salary for a period of six months, after which she is entitled to 60% of the retirement benefits for the entitlement earned up to this point in time. In addition, for each child under 18 years of age, the widow receives further cash benefits amounting to 10% of the acquired entitlement.

To Mr. Heuwing and Dr. Wilder, an annual pension contribution of, at present, EUR 300,000 shall be paid into a reinsured group support fund (defined contribution commitment) with effect from the date on which they took office, and with effect from January 1, 2019, for Dr. Laier.

Should Mr. Heuwing's service agreement be extended, it is envisaged that upon completion of his eighth year of service, his pension contribution will be increased to EUR 400,000.

The pension benefits (lifelong annuity or capital payment) are reinsured by an index-linked life insurance policy. The retirement age is 67. Furthermore, pension benefits are also

2.05 PENSION CONTRIBUTIONS

	Contribution	
in € '000	2017	2018
Ralph Heuwing[1)]	50	300
Dr. Jürgen Wilder[1)]	–	100

[1)] Pro rata temporis for Mr. Heuwing in 2017, pro rata temporis for Dr. Wilder in 2018

payable in the event of occupational disability (monthly occupational disability pension) and death (survivor benefit). This pension entitlement is vested from the outset. For the defined-contribution plans, contributions were made in the 2018 and 2017 fiscal years as shown in Table 2.05. Table → 2.05

Table 2.06 shows the service cost and present value of the pension entitlements acquired to date for the defined-benefit plans. Tab. → 2.06

Compensatory Payment for Non-compete Clause

Under the amended service agreements, Executive Board members are subject to a post-contractual non-compete clause for a period of one year. In return, for the duration of the non-compete clause, the Company shall pay half of the contractual benefits last received (base remuneration, STI, LTI), whereby 1/12 of the variable remuneration actually earned in the most recent fiscal year prior to termination, multiplied by the number of months, shall serve as the basis for calculating the variable components. Any other income shall be deducted from this compensatory payment.

Premature Termination of Service Agreements

When the service agreements were amended, appropriate provisions for premature termination were included:

- Premature termination of an Executive Board appointment and contract by mutual consent: In the event that – with the approval of the Supervisory Board – an Executive Board member's activity as a member of the Company's Executive Board is prematurely terminated by mutual agreement, and consequently that individual's service agreement is also terminated, each Executive Board member is entitled to a severance payment. This entitlement to a severance payment shall be null and void, however, if the premature termination of the appointment was made at the request of the Executive Board member involved, or if the Company had good cause to revoke the appointment or terminate the service agreement without notice, or if the Executive Board member involved is, following the mutually agreed termination of the appointment, subsequently reappointed as a member of the Executive Board.
- Merger, demerger and conversion: In the event that the Company is involved in a merger or demerger as the transferring company, or is converted into another legal form as the result of a change of legal form, the service agreement shall end and each member of the Executive Board shall be entitled to a severance payment.
- Termination of office and contract due to a change of control ("change of control clause"): In the event of a change of control, each Executive Board member may resign from office with a notice period of three months to the end of the month and terminate his/her service agreement if, as a result of the change of control,
  - the Company's strategy is materially altered, and the position of the Executive Board member is thereby materially compromised; or
  - the Executive Board member's departmental or divisional responsibilities are materially restricted or otherwise materially altered to his/her detriment.

The notice of resignation of Executive Board office and of termination of the service agreement must be submitted to the Supervisory Board within nine months of the change of control. In this case, each Executive Board member is entitled to a severance payment.

The amount of the severance payment is limited to the total amount of contractual remuneration (fixed base remuneration plus variable remuneration, i.e. STI and LTI) for the remaining term of the regular appointment, but in any case not exceeding 24 months. The basis for calculating the

2.06 PENSION COMMITMENTS

	Service cost IFRS		Service cost HGB		Projected unit credit IFRS		Projected unit credit HGB	
in € '000	2017	2018	2017	2018	2017	2018	2017	2018
Klaus Deller	805	757	843	872	6,803	8,963	3,500	5,568
Dr. Peter Laier	446	430	303	312	845	995	740	721

variable remuneration is 1/12 of the variable remuneration (STI and LTI) actually earned in the last fiscal year prior to termination of the Executive Board member's appointment, multiplied by the number of months for which the respective Executive Board member is entitled to severance pay. The severance payment falls due as soon as the termination of appointment takes effect.

If an appointment is prematurely revoked by the Supervisory Board, the respective service agreement ends upon expiration of an expiry period pursuant to Article 622 (2) of the German Civil Code (BGB). This expiry period shall be extended to a maximum of 24 months as at the end of the month (at most until the regular renewal of the contract) if the respective Executive Board member is blamelessly dismissed by the Annual General Meeting due to his/her incapacity to conduct business properly or due to a vote of no confidence, or if s/he resigns prematurely, unilaterally and effectively from his/her position on the Executive Board for good cause. For the expiry period, Executive Board members are entitled to base remuneration plus a proportion pro rata temporis of their short-term incentive (STI). Entitlements associated with long-term incentive (LTI) tranches that have already been granted lapse without substitute or compensation.

Other Provisions

Members of the Executive Board are included in a D&O liability insurance policy taken out by the Knorr-Bremse Group. The Knorr-Bremse D&O insurance policy provides for a deductible for Executive Board members in accordance with the requirements of the German Stock Corporation Act (AktG).

Members of the Executive Board did not receive any advances or loans from the Company in either of fiscal years 2018 or 2017. No commitments were made by third parties in respect of Executive Board members' activities as board members.

Executive Board Remuneration in the 2018 Fiscal Year

EXECUTIVE BOARD REMUNERATION ACCORDING TO DRS 17

The total remuneration awarded to Executive Board members and the remuneration paid to individual members of the Executive Board are shown in Tab. → 2.07 in individualized

2.07 EXECUTIVE BOARD REMUNERATION ACCORDING TO DRS 17

	Klaus Deller Chairman of the Executive Board		Ralph Heuwing Finance, Controlling and IT (since Nov. 1, 2017)		Dr. Peter Laier CVS Division		Dr. Jürgen Wilder RVS Division (since Sep. 1, 2018)	
in € '000	2017	2018	2017	2018	2017	2018	2017	2018
Non-performance-related remuneration								
Fixed remuneration	1,825[1),2)]	1,583[2)]	133	800	850[2)]	850[2)]	–	267
Fringe benefits	16	15	68[3)]	318[3)]	23	23	–	138[3)]
Total fixed remuneration	**1,841**	**1,598**	**201**	**1,118**	**873**	**873**	**0**	**405**
Performance-related components								
One-year variable remuneration								
– STI	1,313	1,350	126	720	869	869	–	234
– IPO bonus	–	1,350	–	800	–	720	–	–
	1,313	**2,700**	**126**	**1,520**	**869**	**1,589**	**0**	**234**
Multi-year variable remuneration								
– Special bonus 2015 – 2017	500[4)]	–	–	–	–[5)]	–[5)]	–	–
– LTI tranche 2018[6)]	–	–	–	–	–	–	–	–
	500	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total variable remuneration	**1,813**	**2,700**	**126**	**1,520**	**869**	**1,589**	**–**	**234**
Total remuneration	**3,654**	**4,298**	**327**	**2,638**	**1,742**	**2,462**	**–**	**639**

1) Including an additional payment of €175,000 for the temporary takeover of the Rail division in the second half of 2016
2) In 2018, Mr. Deller was paid €38,000 (2017: €50,000) and Dr. Laier was paid €50,000 (2017: €50,000) for Supervisory Board activities at subsidiaries
3) In 2018, fringe benefits foxr Mr. Heuwing included €300,000 (2017: €50,000) and for Dr. Wilder €100,000 for expenses for defined-contribution plans
4) In 2018, Mr. Deller was granted a discretionary special bonus for fiscal years 2015-2017 by the Supervisory Board
Due to the discretionary nature of the Supervisory Board's decision in July 2018, the previous year's figure was increased accordingly
5) In addition to the STI, Dr. Laier's previous service agreement provided for the possibility of a special bonus to be determined by the Executive Committee of the Supervisory Board
No special bonus was awarded for 2017 or 2018
6) Due to condition precedent, the 2018 tranche has not yet been awarded

form, presented in each case in accordance with German Reporting Standards (DRS) 17. Table → 2.07

The total remuneration (excluding pension commitments) for fiscal 2018 of the members of Knorr-Bremse AG's Executive Board amounted to EUR 10,037,000 (2017: EUR 7,189,000, including Mr. Zwingmann's remuneration). Of this, EUR 3,994,000 (2017: EUR 3,664,000) related to fixed remuneration and EUR 6,043,000 (2017: EUR 3,525,000) to variable remuneration, of which EUR 500,000 related to the multi-year component in 2017.

EXECUTIVE BOARD REMUNERATION IN ACCORDANCE WITH THE GERMAN CORPORATE GOVERNANCE CODE

The remuneration of the individual Executive Board members for the 2018 and 2017 fiscal years is presented below in accordance with the requirements of Section 4.2.5 GCGC. This includes any benefits awarded in the year under review, as well as other income received in the reporting period.

Benefits and Perquisites

Table 2.09 shows the benefits, including fringe benefits, awarded during fiscal years 2018 and 2017 in individualized form. In the case of performance-related remuneration components, the minimum and maximum remuneration achievable in 2018 is shown. Furthermore, the performance-related remuneration is broken down into one-year (STI, IPO bonus) and multi-year (LTI, special bonus) remuneration. Table → 2.09

In contrast to the presentation in accordance with DRS 17, the variable remuneration components are stated at the target value, i.e. where the target attainment level is 100%. In addition, pension expenses, that is, service costs pursuant to IAS 19, must be included in the total remuneration according to GCGC.

OTHER INCOME PAID

Because the remuneration awarded to Executive Board members for a fiscal year is not always accompanied by a

2.08 EXECUTIVE BOARD REMUNERATION – OTHER INCOME PAID IN 2018 IN ACCORDANCE WITH GCGC

	Klaus Deller Chairman of the Executive Board		Ralph Heuwing Finance, Controlling and IT (since Nov. 1, 2017)		Dr. Peter Laier CVS Division		Dr. Jürgen Wilder RVS Division (since Sep. 1, 2018)	
in € '000	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**
Non-performanc-related remuneration								
Fixed remuneration	1,825[1),2)]	1,583[2)]	133	800	850[2)]	850[2)]	–	267
Fringe benefits	16	15	68[3)]	318[3)]	23	23	–	138[3)]
Total fixed remuneration	**1,841**	**1,598**	**201**	**1,118**	**873**	**873**	**0**	**405**
Performance-related components								
One-year variable remuneration								
– STI	1,313	1,350	126	720	869	869	–	234
– IPO-Bonus	–	1,350	–	800	–	720	–	–
	1,313	**2,700**	**126**	**1,520**	**869**	**1,589**	**0**	**234**
Multi-year variable remuneration								
– Special bonus 2015 – 2017	500[4)]	–	–	–	–[5)]	–[5)]	–	–
– LTI tranche 2018	–	–	–	–	–	–	–	–
	500	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total variable remuneration	**1,813**	**2,700**	**126**	**1,520**	**869**	**1,589**	**0**	**234**
Pension expenses	805	757	–	–	446	430	–	–
Total remuneration	**4,459**	**5,055**	**327**	**2,638**	**2,188**	**2,892**	**0**	**639**

1) Including an additional payment of €175,000 for the temporary takeover of the Rail division in the second half of 2016
2) In 2018, Mr. Deller was paid €38,000 (2017: €50,000) and Dr. Laier was paid €50,000 (2017: €50,000) for Supervisory Board activities at subsidiaries
3) In 2018, fringe benefits for Mr. Heuwing included €300,000 (2017: €50,000) and for Dr. Wilder €100,000 for expenses for defined-contribution plans
4) In addition to the STI, Dr. Laier's previous service agreement provided for the possibility of a special bonus to be determined by the Executive Committee of the Supervisory Board. No special bonus was awarded for 2017 or 2018.
5) The IPO bonus can be awarded up to the amount of a basic salary. A target value was not specified. Since the award of a bonus depends on the success of the IPO and the personal contribution of each Executive Board member, it is also not possible to devise an average probability scenario.
6) Under the terms of the old contract, the Supervisory Board agreed a discretionary special bonus (without target value, min. €0, max. €1,000,000) for fiscal years 2015-2017 with Mr. Deller; in 2018, by discretionary decision of the Supervisory Board, the bonus was set at €500,000.

payment in the fiscal year itself, the amount of other income paid to Executive Board members for fiscal 2018 is shown in a separate table in accordance with the relevant GCGC recommendation. Table → 2.08

Here, the non-performance-related component plus one-year performance-related remuneration are stated as income paid in the respective fiscal year. Due to the condition precedent, performance-related multi-year remuneration (LTI) is deemed to have been paid in the fiscal year in which the plan term of the respective tranche ends (e.g. the 2018 tranche will be deemed to have been paid in the 2020 fiscal year). Pension expenses, i.e. service costs in accordance with IAS 19, correspond to the amounts awarded, even though they do not represent actual income in the narrower sense.

TOTAL REMUNERATION OF FORMER MEMBERS OF THE EXECUTIVE BOARD

Total remuneration paid out to former members of the Executive Board and their surviving dependents in the fiscal year came to EUR 2,742,000 (2017: EUR 3,376,000). Pension provisions amounted to EUR 52,555,000 (2017: EUR 51,345,000).

Supervisory Board Compensation

Remuneration System since 2018

Remuneration of Supervisory Board members is governed by Article 18 of Knorr-Bremse AG's Articles of Association. According to the Article, the following annual fixed base remuneration applies: EUR 250,000 for the Chairman of the Supervisory Board, EUR 120,000 for each Deputy Chair of the Supervisory Board, and EUR 80,000 for other members of the Supervisory Board. The Chair of the Executive Committee receives an additional EUR 60,000, each additional member of the Executive Committee is paid EUR 20,000, while the Chair of the Audit Committee is paid EUR 60,000 and each additional member of the Audit Committee receives EUR 20,000. The annual remuneration is paid after the Annual General Meeting, which adopts the annual financial statements for the last fiscal year. Members of the Supervisory Board who have not been members of the Supervisory Board or a Supervisory Board committee for a full fiscal year, or who have not chaired the Supervisory Board or a committee for a full fiscal year, are paid their remuneration pro rata temporis, rounded up to complete months.

The Company reimburses Supervisory Board members for reasonable expenses incurred in the performance of their duties. Value-added tax is reimbursed by the Company where Supervisory Board members are entitled to invoice the Company separately for value-added tax and choose to exercise this right. Supervisory Board members are included in the Company's D&O insurance policy.

There are no pension commitments to members of the Supervisory Board, with the exception of pension commitments associated with employee activities.

Supervisory Board Remuneration to June 2018

Prior to the amendment of Knorr-Bremse AG's Articles of Association in July 2018, Supervisory Board remuneration was determined by the Knorr-Bremse AG General Meeting, most recently at the Annual General Meeting on March 11, 2016, on the basis of which the following remuneration was paid until the Articles of Association were amended in July 2018, i.e. until June 30, 2018: EUR 200,000 p.a. to the Chairman of the Supervisory Board, EUR 60,000 p.a. to each Deputy Chair of the Supervisory Board, and EUR 40,000 p.a. to the other members of the Supervisory Board.

Thus, on the basis of the remuneration system described above, Table 2.10 shows the total remuneration of the executive bodies (plus VAT) paid out in the 2018 and 2017 fiscal years. Any additional remuneration paid to individual members of the Supervisory Board (such as consultancy fees and remuneration associated with Supervisory Board mandates in Group companies) is also stated below under other remuneration. Table → 2.10

Supervisory Board members did not receive any loans from the Company in either fiscal year 2018 or fiscal year 2017.

2.09 EXECUTIVE BOARD INCOME IN ACCORDANCE WITH GCGC

	Klaus Deller Chairman of the Executive Board				Ralph Heuwing Finance, Controlling and IT (since Nov. 1, 2017)			
in € '000	2017	2018	2018 (Min)	2018 (Max)	2017	2018	2018 (Min)	2018 (Max)
Non-performance-related remuneration								
Fixed remuneration	1,825[1),2)]	1,583[2)]	1,583[2)]	1,583[2)]	133	800	800	800
Fringe benefits	16	15	15	15	68[3)]	318[3)]	318[3)]	318[3)]
Total fixed remuneration	**1,841**	**1,598**	**1,598**	**1,598**	**201**	**1,118**	**1,118**	**1,118**
Performance-related components								
One-year variable remuneration								
– STI	1,250	1,250	1,000	1,500	100	600	0	1,200
– IPO bonus[5)]	–	n/a	0	1,500	–	n/a	0	800
	1,250	**1,250**	**1,000**	**3,000**	**100**	**600**	**0**	**2,000**
Multi-year variable remuneration								
– Special bonus 2015–2017	–[6)]	–	–	–	–	–	–	–
– LTI tranche 2018	–	1,500	0	3,000	–	700	0	1,400
	0	**1,500**	**0**	**3,000**	**0**	**700**	**0**	**1,400**
Total variable remuneration	**1,250**	**2,750**	**1,000**	**6,000**	**100**	**1,300**	**0**	**3,400**
Pension expenses	805	757	757	757	–	–	–	–
Total remuneration	**3,896**	**5,105**	**3,355**	**8,355**	**301**	**2,418**	**1,118**	**4,518**

[1)] Including an additional payment of EUR 175,000 for the temporary takeover of the Rail division in the second half of 2016
[2)] In 2018, Mr. Deller was paid EUR 38,000 (2017: EUR 50,000) and Dr. Laier was paid EUR 50,000 (2017: EUR 50,000) for Supervisory Board activities at subsidiaries
[3)] In 2018, fringe benefits for Mr. Heuwing included EUR 300,000 (2017: EUR 50,000) and for Dr. Wilder EUR 100,000 for expenses for defined-contribution plans
[4)] In addition to the STI, Dr. Laier's previous service agreement provided for the possibility of a special bonus to be determined by the Executive Committee of the Supervisory Board. No special bonus was awarded for 2017 or 2018

2.10 SUPERVISORY BOARD REMUNERATION

	Fiscal year 2018			
in € '000 net	Fixed remuneration	Remuneration special executive functions	Total executive remuneration	Other remuneration
Prof. Dr. Klaus Mangold[1)]	83	27	110	
Franz-Josef Birkeneder	90	20	110	
Kathrin Dahnke[2)]	67	40	107	
Michael Jell	60	10	70	25
Dr. Wolfram Mörsdorf	60		60	24
Werner Ratzisberger	60	10	70	
Sebastian Roloff	60		60	
Erich Starkl	60		60	
Julia Thiele-Schürhoff	60		60	24
Wolfgang Tölsner	60		60	112
Georg Weiberg	60		60	80
Günter Wiese	60		60	25
Hans-Georg Härter (bis 31.08.2018)	142	13	155	92
Total Supervisory Board remuneration	**922**	**120**	**1042**	**382**

[1)] Member and Chair of the Supervisory Board, Chair of the Executive Committee and Member of the Audit Committee since September 1, 2018
[2)] Member of the Supervisory Board since May 29, 2018; second Deputy Chair of the Supervisory Board, Chair of the Audit Committee and Member of the Executive Committee since July 12, 2018.

Dr. Peter Laier CVS Division				Dr. Jürgen Wilder RVS Division (since Sep. 1, 2018)			
2017	**2018**	**2018 (Min)**	**2018 (Max)**	**2017**	**2018**	**2018 (Min)**	**2018 (Max)**
850[2]	850[2]	850[2]	850[2]	–	267	267	267
23	23	23	23	–	138[3]	138[3]	138[3]
873	**873**	**873**	**873**	**0**	**405**	**405**	**405**
800	800	640	960	–	200	0	400
	n/a	0	800	–	n/a	–	–
800	**800**	**640**	**1,760**	**0**	**200**	**0**	**400**
–	–[4]	–[4]	–[4]	–	–	–	–
–	–	–	–	–	200	0	400
0	**0**	**0**	**0**	**0**	**200**	**0**	**400**
800	**800**	**640**	**1,760**	**0**	**400**	**0**	**800**
446	430	430	430	–	–	–	–
2,119	**2,103**	**1,943**	**3,063**	**0**	**805**	**405**	**1,205**

[5]) The IPO bonus can be awarded up to the amount of a basic salary. A target value was not specified. Since the award of a bonus depends on the success of the IPO and the personal contribution of each Executive Board member, it is also not possible to devise an average probability scenario.

[6]) Under the terms of the old contract, the Supervisory Board agreed a discretionary special bonus (without target value, min. EUR 0, max. EUR 1,000,000) for fiscal years 2015-2017 with Mr. Deller; in 2018, by discretionary decision of the Supervisory Board, the bonus was set at EUR 500,000.

Fiscal year 2017			
Fixed remuneration	**Remuneration special executive functions**	**Total executive remuneration**	**Other remuneration**
60		60	
40		40	25
40		40	36
40		40	
40		40	
40		40	
40		40	36
40		40	142
40		40	70
40		40	25
200		200	188
620		**620**	**522**

BUSINESS REPORT

General Economic and Industry-related Conditions

Economic Activity and Industry Environment

ECONOMIC GROWTH REMAINS AT LAST YEAR'S LEVELS, BUT THE PICTURE VARIES FROM REGION TO REGION

Despite a politically turbulent year, global gross domestic product (GDP) showed strong growth in 2018 but, according to the IMF organization, reached its peak in 2018. According to expert estimates, global economic growth will decline slightly from 3.7% in 2018 to around 3.5% or 3.6% over the next few years. In many countries, unemployment is well below pre-crisis levels; indeed, labor shortages are making themselves felt and are having an impact on inflation. Trade and investment have slowed down under the impact of higher bilateral tariffs, and many emerging economies are facing capital outflows and currency devaluations. The economic climate has deteriorated, especially in emerging and developing nations. Only in Latin America did the economic climate improve.

The economic climate in other emerging markets (Russia, India, China and South Africa) continued to deteriorate. Russia experienced the strongest downturn in this group. In the developed economies, however, the economic climate remained largely unchanged, although regional development was uneven. While the U.S. economy made another positive leap forward, growth in the European Union showed a marked slowdown. Germany in particular, normally the powerhouse of the EU, felt the negative impact of the disparate situation on global markets. Economic growth slowed perceptibly in 2018.

FINANCIAL MARKETS: CHALLENGING CONDITIONS

2018 was marked by political events with effects that were felt across all asset categories: trade wars, Brexit and the debt crisis in Italy. In Germany, the current yield on fixed-interest bonds reached a high of 0.6% in February, but then progressively declined back to 0.3% by the end of the year despite some positive upticks. The reasons for the downward trend over the course of the year can be found in the uncertainties mentioned above (ongoing economic slowdown in the eurozone, issues surrounding the Italian budget deficit, Brexit and the ongoing – and still unresolved – international trade conflicts). More information on the possible risks associated with a hard Brexit can be found in the Report on Risks, Opportunities and Expected Developments.

Consequently, the stock markets also came under constant pressure in the course of the year. Movements of the EUR/USD exchange rate were also influenced by the many market uncertainties. As a result, the EUR/USD rate fluctuated between 1.12 and 1.25.

RAIL VEHICLE MARKET

Competitive situation and market position

In a highly competitive market environment, Knorr-Bremse is one of the world's leading companies in the key markets for, among other things, braking, entrance and HVAC systems for rail vehicles. Knorr-Bremse is active in the Europe/Africa, North and South America, and Asia-Pacific regions. Our leading position in our traditional European markets provides a strong basis for our future business development. Knorr-Bremse is also well positioned in North America, in both the passenger and freight markets.The market assessments below are based on the Company's own analyses.

The global market for rail vehicles showed a positive development in 2018, exceeding the previous year's level in Europe/Africa, while the Asia-Pacific region – especially China and India – was a strong growht driver in 2018. The North American passenger rail market was a stable, whereas Soth America continued to experience a low-level decline.

Europe/Africa

The market in Europe continued to show a positive development. The market volume in Germany, France and Russia saw marked expansion; the United Kingdom (UK) and Scandinavia stabilized at a high level. While our original equipment (OE) business is showing strong growth, the growth of our RailServices aftermarket business is more moderate.

North America/South America

The passenger market in North America showed remained stable. After the decline in 2017, the freight market stabilized again in 2018. The rail market in South America further declined. The OE market grew significantly faster than the aftermarket.

Asia-Pacific

The Asian rail transportation market showed significant growth, driven in particular by positive developments in China and India. In China, demand for high-speed trains declined slightly, while the mass transit market continued to grow. India invested heavily in expanding its passenger fleets.

Overall, the OE market experienced significant growth. The aftermarket moderate growth. Chart → 2.11

2.11 MARKET DEVELOPMENT 2018

Trends in rail vehicle markets 2018

Source: Own market research of Knorr-Bremse.

Europe

— In total positive market development
— Market expansion in Germany, France, UK and Russia
— Scandinavia at high level

North America/South America

— Passenger market stable
— Freight market stabilizing again after decline in 2017
— Rail market further decline

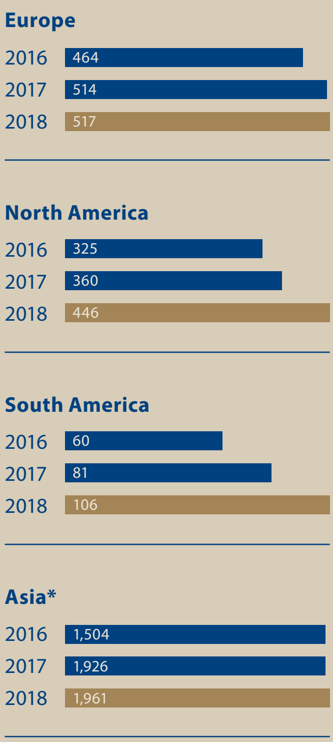
Asia

— Significant growth, in particular in China and India
— High-speed trains declined slightly, mass transit grow
— India invested heavily in passenger fleets

Trends in commercial vehicle markets 2018

Truck Production Rate in 1,000 units

Source: Own market research of Knorr-Bremse.



* CN, JP, IN & KR

COMMERCIAL VEHICLE MARKET

Competitive situation and market position

Knorr-Bremse's product portfolio in the CVS division makes the Company one of the world's leaders. Alongside smaller vendors in this market, Wabco is our principal competitor. In our core regions, North America and Europe, Knorr-Bremse ranks as the market leader for air brake systems. The Company's leading position in highly regulated markets for disk brakes and driver assistance systems forms a solid basis for further potential growth in the Asia-Pacific region. The following market statistics relate to truck production rates in each region as published by various organizations.

The global commercial vehicle market showed positive development across the board in 2018. Truck and trailer business in North and South America continued to pick up speed, while business in Europe and Asia remained very buoyant.

Europe/Africa

In both Eastern and Western Europe, the commercial vehicle market experienced moderate growth in 2018. According to data compiled by Knorr-Bremse, following the strong growth in 2017 (11%), truck production in Europe grew overall by 1% in 2018.

North America/South America

The commercial vehicle market in North America grew by 24% compared with 2017 (truck classes 6-8). This development was characterized by two trends: on the one hand, truck manufacturers are increasingly expanding the standard equipment on their vehicles by adding ever more comprehensive driver assistance systems, while on the other hand, compressed air disk brakes are increasingly replacing drum brakes as standard on all axles.

The crisis in South America came to a definitive end, and thanks to the demand for the replacement of vehicles, truck and bus production rose by 31%.

Asia-Pacific

Following the manufacturing boom in China in 2017, commercial vehicle production fell by 7% in 2018. By contrast, the market in Japan and especially in India showed very positive development. Alongside strong GDP growth in India, rising expenditure on infrastructure and road construction boosted the demand for trucks. Overall, commercial vehicle production in Asia grew by 2%. Chart → 2.11

General Statement by the Executive Board and Achievement of Objectives

The Executive Board of Knorr-Bremse AG is satisfied with the Company's business performance in 2018. Knorr-Bremse has continued its successful expansion, with both divisions showing positive development.

Revenues grew vigorously by 7.5% to a new record level of EUR 6,616 million; our IFRS-based forecast of the quarterly report for Q3/2018 predicted EUR 6,600 to 6,700 million. At comparable exchange rates (actual rates in 2017), revenue growth reached an impressive 10.5%. Both the RVS division (+6.2%) and the CVS division (+9.3%) contributed to revenue growth. Growth was almost exclusively organic and was driven by all regions. As a result of strong OE growth, but also due to the disposal of parts of the business, the aftermarket share of total revenues fell slightly.

The **EBITDA margin** came to 17.8% of revenues, thus well into the predicted range of 17.5-18.5% forecast in the IFRS-based quarterly report for Q3/2018. In absolute terms, EBITDA reached EUR 1,178 million. Adjusted for the EUR 15 million reimbursement of IPO costs by our major shareholder, the EBITDA margin reached 18.0%. The operating EBITDA margin, adjusted for the most recently incurred operating losses of EUR 11 million and sales revenues of EUR 68 million from the disposal of Sydac Pty Ltd. in Asia, Rail Services Ltd. and Kiepe Electric Ltd. in the UK, and Swedtrac Rail Services in Europe, came to 18.4%, up from 18.1% in the previous year.

In our 2017 Management Report, we forecasted target revenues of EUR 6,400 million to EUR 6,600 million for 2018, based on German Commercial Code (German GAAP as set down in HGB). We managed to exceed this target with revenues of EUR 6,711 million (according to HGB). Compared with our 2017 revenues of EUR 6,236 million, this represented a 7.6% increase. The main differences between revenues according to HGB and IFRS result from adjustments due to Over-Time_ Accounting [p. 185] accounting, as well as reporting differences following the introduction of the German Accounting Directive Implementation Act (BilRUG – presented in Section I.2 of the Notes to the consolidated financial statements). Under HGB, the EBITDA margin for 2018 came to 16.5%, thus slightly below the forecast range of 17-19% (according to HGB), primarily due to losses on disposals amounting to EUR 37 million, which under HGB were stated under other operating expenses, but under IFRS appeared in depreciation and amortization. EBITDA grew by 4.4% to EUR 1,107 million, compared with the previous year's figure of EUR 1,060 million (EBITDA margin: 17.0%). Other effects resulting from the transition from HGB to IFRS consisted primarily of the capitalization of development costs amounting to EUR 48 million, which were recognized as expensed under HGB, and conversely, the transfer of IPO costs to the majority shareholder, which were recognized as income under HGB. According to IFRS, the transfer was reported as an addition to capital reserves, with no effect on income. The remaining EUR –2 million is attributable to other transitional effects.

Corporate Management Indicators

As a result of the conversion of Group accounting to from German GAAP rules based on HGB to International Financial Reporting Standards (IFRS), the planning and management of the Group and business units since the 2018 fiscal year are still based on key indicators calculated according to HGB, which will be subseqently converted to IFRS key indicators. Thus, our comparisions with 2017 forecasts are still based on HGB. For the first time, our forecast for 2019 is based on IFRS. The most significant financial performance indicators for Knorr-Bremse are revenues, EBITDA/EBITDA margin, EBT/EBT margin (starting in 2019: EBIT/EBIT margin), net working capital in da' sales, and ROCE. Other key performance indicators, especially at Group level, include incoming orders, order books, and investments as a percentage of revenues. Table → 2.12, 2.13

We also regularly measure non-financial performance indicators. They help us with the management and long-term strategic positioning of the Company. In this case, the number of employees (FTE) is the most important non-financial performance indicator. But non-financial performance indicators are not primarily used to manage the Company. In fact, they enable us to gain more insights into the situation within the Group and make decisions based on this information. A detailed analysis of non-financial factors and performance indicators can be found in the chapter on Sustainability, and in the Knorr-Bremse Group Sustainability Report (published separately).

ROCE shows whether we generate an appropriate return on capital employed, and thus forms the basis for efficient capital allocation. Capital employed covers all assets excluding cash, cash equivalents and financial assets, less non-interest-bearing liabilities. At 36.4%, ROCE in 2018 was within the target range of 35-40%. The slight decline compared with the previous year is due to the slightly higher levels of capital employed.

ROCE (in %) is calculated as follows:

(EBIT/capital employed) x 100

Events of Material Importance to Business Performance

In the 2018 fiscal year, the following major companies were sold, among others:

The "Sydac" disposal group comprised the simulation business in the Rail Vehicle Systems division. The simulation business comprised Sydac Australia, including its subsidiary Sydac UK, as well as other assets related to the simulation business, which were transferred to the newly established company Sydac India prior to the sale. The Sydac disposal group was sold to OKTAL France on July 31, 2018. The sale resulted in a loss of EUR 10.8 million. Of this amount, EUR 5.3 million had already been recognized as an impairment loss in the income statement as at December 31, 2017, presented as depreciation and amortization respectively. In the second quarter of 2018, the assets were written off by recognizing a further impairment of EUR 1.4 million. The write-off was recognized in the income statement as depreciations and amortizations. Finally, following the disposal of the simulation business at the end of July 2018, a loss of EUR 4.1 million was realized and reported as financial result.

The "Blueprint" disposal group comprised the vehicle maintenance business in the Rail Vehicle Systems segment. The vehicle maintenance business bundled in the Blueprint disposal group comprised Kiepe Electric UK Holding Ltd. including Kiepe UK Ltd, Knorr-Bremse RailService UK Ltd. and Swedtrac RailServices AB Sweden.

2.12 MANAGEMENT INDICATORS

	2018	2017
Revenues (€ millions)	6,615.8	6,153.5
EBITDA (€ millions)	1,178.0	1,115.5
EBITDA margin (as % of revenues)	17.8	18.1
EBIT (€ millions)	972.5	904.0
EBIT margin (as % of revenues)	14.7	14.7
EBT (€ millions)	875.5	852.5
EBT-Marge (as % of revenues)	13.2	13.9
ROCE (%)	36.4	37.1
Net working capital in days' sales	46.9	45.8
Employees (Dec. 31, incl. temporary staff)	28,452	27,705

2.13 DIVISIONAL REVENUES AND EBITDA

	2018	2017
Rail Vehicle Systems		
Revenue	3,461.9	3,260.1
EBITDA margin (as % of revenues)	20.0 %	19.6 %
Commercial Vehicle Systems		
Revenue	3,160.1	2,890.6
EBITDA margin (as % of revenues)	16.3 %	17.4 %

2.14 GROUP KEY INDICATORS

in € millions	2018	2017
Incoming orders	7,001.4	6,656.6
Order book	4,562.6	4,177.0
Revenues	6,615.8	6,153.5
EBITDA	1,178.0	1,115.5
EBIT	972.5	904.0
EBT	875.5	852.5
Net income	629.4	587.2
Capital expenditure	308.4[1)]	235.2
Depreciation & amortization & write-offs	205.6	211.5
R&D costs	363.6	358.8
Employees (as at Dec. 31 incl. temporary staff)	28,452	27,705

[1)] in 2018 prior to capital expenditure Federal Mogul (EUR 63.0 million)

As part of the Blueprint disposal group, the Swedish portion of the vehicle maintenance business (Swedtrac RailServices AB Sweden) was sold to the purchaser Stadler Service Sweden AB effectively April 1, 2018, by purchase agreement dated January 12, 2018. The gain of EUR 6.7 million realized on the sale was recognized as financial result.

On August 3, 2018, the remaining UK-based vehicle maintenance business (Kiepe Electric UK Holding Ltd. including Kiepe UK Ltd. and Knorr-Bremse RailServices UK Ltd.) was sold to Mutares Holding-25 AG, Bad Wiessee/Germany. The sale resulted in a loss of EUR 40.6 million. A portion of EUR 20.0 million had already been recognized as an impairment loss in the income statement as at December 31, 2017, as depreciations and amortizations. As at September 30, 2018, an additional impairment loss of EUR 17.8 million was recognized in the income statement as depreciations and amortizations. Finally, upon disposal of the remaining vehicle maintenance business at the end of October 2018, a loss of EUR 2.8 million was realized and reported as the financial result.

Thus, the total loss from the sale of the Blueprint disposal group (including the previously sold Swedish portion of the vehicle maintenance business) amounts to EUR 33.9 million.

Business Performance

The charts and tables in this management report generally show IFRS figures for fiscal years 2017 to 2018. EBITDA is interpreted as earnings before interest, taxes, income from investments in associated and related companies, depreciation and amortization; EBIT stands for earnings before interest, taxes and income from investments in associated and related companies.

In 2018, changes to IFRS had no material impact on the presentation of the Company's business situation. IFRS grants relatively few options, and their utilization only has a minor impact on our net assets, financial position and results of operations. Options exist, for example, for inventories and for property, plant and equipment. With respect to important balance sheet items, existing options are exercised in such a way as to ensure the greatest possible measurement continuity. In 2018, we exercised all options in unchanged form, i.e. precisely as we did in 2017. First, because the utilization of financial reporting options has very little impact on the presentation of our operating results. And second, because it often contravenes our efforts to achieve continuity and traceability across financial periods.

Financial Performance

At EUR 7,001.4 million, **incoming orders** within the Group were 5.2% above the previous year's level (2017: EUR 6,656.6 million), and thus exceeded the EUR 7 billion mark for the first time. This was due to positive market development in both segments. This resulted in an **order book** totaling EUR 4,562.6 million as at December 31, 2018 (2017: EUR 4,177.0 million). **Group revenues** rose by 7.5% in the year under review to a new record high of EUR 6,615.8 million (2017: EUR 6,153.5 million), thereby meeting our forecast

2.15 DIVISIONAL KEY INDICATORS

	Rail Vehicle Systems		Commercial Vehicle Systems	
in EUR millions	2018	2017	2018	2017
Revenues	3,461.9	3,260.1	3,160.1	2,890.6
EBITDA margin in %	20.0	19.6	16.3	17.4
EBIT margin in %	16.9	16.1	13.7	14.6

for 2018 in the IFRS-based quarterly report for Q3/2018 of EUR 6,600 to 6,700 million. Currency-adjusted to actual rates in 2017, revenue growth totaled 10.5%. Table → 2.14

Both divisions contributed to this dynamic revenue growth. The Rail Vehicle Systems division increased revenues by 6.2% over the previous year; the Commercial Vehicle Systems division recorded particularly strong growth of 9.3%. This growth was mainly organic, and was achieved across all regions in which the Group is commercially active. Table → 2.15

Following the strong growth of OE business, but also the disposal of other parts of our business, the aftermarket share of total revenues fell from 35.3% to 33.8% (according to German GAAP (HGB) in each case).

In the **Europe/Africa** region, revenues rose – due to strong OE business in particular – by 6.0% to EUR 3,261.4 million (2017: EUR 3,076.4 million), corresponding to a share of 49% (2017: 50%). In a fast-moving market environment, the **North America** region contributed EUR 1,469.3 million (2017: EUR 1,294.0 million) or 22% (2017: 21%) to Group revenues; this corresponds to an increase of 13.5%. In the **South America** region, revenues rose by 10.7% to EUR 102.7 million (2017: EUR 92.8 million), representing a share of 2% (2017: 2%). In the **Asia-Pacific** region, revenues rose by 5% to EUR 1,782.4 million (2017: EUR 1,690.4 million), representing 27% of Group revenues (2017: 27%). Table → 2.16

As at December 31, 2018, the Group's **order books** rose by 9.2 % to EUR 4,562.6 million (2017: EUR 4,177.0 million). This equates to a forward order book of 8 months (2017: 8 months). The **book-to-bill ratio**, representing the ratio of incoming orders to revenues, came to 1.06 in fiscal 2018 (2017: 1.08), representing a solid basis for future growth.

The **cost of materials** amounted to EUR 3,318.2 million (2017: EUR 3,009.6 million), representing an increase of 10.3% on the previous year and thus slightly higher than revenues. At 50.2%, the **cost of materials ratio** was above the previous year's level (2017: 48.9%), mainly due to stronger OE growth and a shift in the distribution of revenues in favor of the Commercial Vehicle Systems segment. By contrast, the **personnel expenses ratio** was down on the previous year at 22.6% of revenues (2017: 23.4%). This was the result of a 4.0% increase in personnel expenses to EUR 1,497.0 million (2017: EUR 1,438.9 million), which was disproportionately low relative to revenues. **Other operating income and expenses** rose by 6.8% to EUR 705.0 million (2017: EUR 660.1 million).

Research and development (R&D) spending in 2018 rose by another 1.3% to EUR 363.6 million (2017: EUR 358.8 million). Relative to revenues, the R&D ratio remains at a high level of 5.5% (2017: 5.8%).

Despite extraordinary charges, **EBITDA** reached EUR 1,178.0 million in 2018 (2017: EUR 1,115.5 million). If exchange rates had remained unchanged, EBITDA would have ended up 8.3% higher. At 17.8% (2017: 18.1%), the **EBITDA margin** was within the target range of 17.5-18.5%. One factor impacting EBITDA was extraordinary expenses of EUR 15 million for the IPO in October 2018. These were reimbursed by the selling shareholder and recognized in equity as an increase in capital reserves, hence not recognzied in the income statement. Similarly, non-recurring costs incurred for the changeover to IFRS-compliant accounting. In addition, the margin level was affected by a slight decline in the aftermarket share of revenues, as well as increasing cost of materials ratios across both divisions.

The operating EBITDA margin, adjusted for the most recently incurred operating losses of EUR 11 million and sales revenues of EUR 68 million from the disposal of Sydac Pty Ltd. in Asia, Rail Services Ltd. and Kiepe Electric Ltd. in the UK, and Swedtrac Rail Services in Europe, came to 18.4%, up from 18.1% in the previous year.

The **Rail Vehicle Systems** division contributed EUR 693.1 million to EBITDA, corresponding to an EBITDA margin of 20.0% (2017: 19.6%). The **Commercial Vehicle Systems** division achieved an EBITDA of EUR 516.4 million, representing an EBITDA margin of 16.3% (2017: 17.4%). Including consolidation adjustments, an EBITDA of EUR –31.4 million is attributable to the "Other" segment.

The **number of employees** (incl. temporary staff) rose by 747, from 27,705 on December 31, 2017, to 28,452 on December 31, 2018. On average, the Group employed 28,983 people in the 2018 fiscal year (2017: 26,910). The main reason for this increase over the previous year was revenue growth.

The negative **financial result** rose by EUR 45.4 million to EUR 97.0 million (2017: EUR 51.6 million) in 2018. This is primarily due to losses on forward exchange transactions, which were entirely measured at fair value in 2018 and recognized in the income statement. Furthermore, additional expenses were incurred by the issue of a second bond.

2.16 CONSOLIDATED REVENUES BY GROUP COMPANY LOCATION

in € millions	2018	2017
Europe/Africa	3,261.4	3,076.4
North America	1,469.3	1,294.0
South America	102.7	92.8
Asia-Pacific	1,782.4	1,690.4
Total	**6,615.8**	**6,153.5**

This meant that the Knorr-Bremse Group's **earnings before taxes** in 2018 increased by 2.7% to EUR 875.5 million (2017: EUR 852.5 million).

Despite higher pre-tax earnings, **tax expenses** in 2018 fell by 7.2% to EUR 246.1 million (2017: EUR 265.3 million). The reduction in the tax ratio from 31.1% to 28.1% is primarily attributable to the fall in U.S. tax rates.

Totaling EUR 629.4 million (2017: EUR 587.2 million), **earnings after taxes** rose by 7.2% year on year. The positive earnings contributions from increased divisional revenues were negatively impacted by the increased cost of materials ratio, the shift of revenues in favor of OE business, and extraordinary expenses associated with the IPO. At 9.5%, return on sales after taxes remained at the same level as the previous year (2017: 9.5%). After deduction of non-controlling interests, earnings per share rose to EUR 3.68 (2017: EUR 3.32).

Our **proposed dividend** for the 2018 fiscal year comes to EUR 1.75 per share. The distribution ratio of 45% of consolidated net earnings after taxes (2017: 60% plus special dividend) falls within the 40-50% range defined by our dividend policy. Knorr-Bremse AG's remaining unappropriated retained earnings, totaling EUR 91.3 million (2017: EUR 94.1 million), shall be carried forward.

2.17 KEY INDICATORS FOR RAIL VEHICLE SYSTEMS DIVISION

in € millions	2018	2017
Incoming orders	3,798.0	3,535.6
Order book	3,212.4	2,876.3
Revenues	3,461.9	3,260.1
EBITDA	693.1	639.3
EBITDA margin (as % of revenues)	20.0	19.6
EBIT	585.2	523.3
EBIT margin (as % of revenues)	16.9	16.1
Capital expenditure	113.4[1)]	91.7
Depreciation & amortization	107.9	116.0
R&D costs	197.1	207.3
Employees (as at Dec. 31 incl. temporary staff)	15,886	16,051

[1)] in 2018 prior to capital expenditure Federal Mogul (EUR 63.0 million)

2.18 KEY INDICATORS FOR COMMERCIAL VEHICLE SYSTEMS DIVISION

in € millions	2018	2017
Incoming orders	3,207.8	3,122.7
Order book	1,363.7	1,316.1
Revenues	3,160.1	2,890.6
EBITDA	516.4	503.7
EBITDA margin (as % of revenues)	16.3	17.4
EBIT	434.4	421.5
EBIT margin (as % of revenues)	13.7	14.6
Capital expenditure	154.7	120.0
Depreciation & amortization	82.0	82.3
R&D costs	166.6	151.5
Employees (as at Dec. 31 incl. temporary staff)	11,906	11,082

SEGMENT REPORT FOR DIVISIONS

Rail Vehicle Systems division

Incoming orders for the Rail Vehicle Systems division rose by 7.4% year on year from EUR 3,535.6 million to EUR 3,798.0 million. As at December 31, 2018, the order book totaled EUR 3,212.4 million (2017: EUR 2,876.3 million). The increase is primarily attributable to the good order situation in Asia and Europe, where the Company was able to generate a significant increase in demand for braking systems products in particular. Table → 2.17

The Rail Vehicle Systems division increased **revenues** by 6.2% to EUR 3,461.9 million (2017: EUR 3,260.1 million). Adjusted for currency effects, revenues increased by 8.8% year on year. OE business accounted for 60% of revenues (2017: 58%). Due to the increase in OE sales, the aftermarket share (RailServices) fell from 42% in 2017 to 40% of sales revenues (breakdown according to German GAAP – HGB). Adjusted for the effect of disposals, the segment's aftermarket share would have been 39% (2017 adjusted: 40%). This positive sales trend is due above all to the growth of European OE business involving locomotives, mainline urban regional and commuter trains, and metros. Revenues in the Asia-Pacific and North America regions also grew, primarily due to service business in China, passenger railcars in India and freight-related activities in North America.

R&D costs in 2018 came to EUR 197.1 million, representing a moderate decline on the previous year (2017: EUR 207.3 million). This caused the R&D ratio to drop slightly to 5.7% (2017: 6.4%).

At EUR 693.1 million, **EBITDA** for the Rail Vehicle Systems division was 8.4% up on the previous year (2017: EUR 639.3 million). This corresponds to an **EBITDA margin** of 20.0% (2017: 19.6%). Adjusted for revenues and losses from business disposals, this resulted in an operating EBITDA margin of 20.8%.

At EUR 113.4 million (2017: EUR 91.7 million), **capital expenditures** by the Rail Vehicle Systems division focused primarily on replacement and expansion projects at production facilities, as well as site development projects in Munich. At EUR 107.9 million, **depreciation and amortization** in the Rail Vehicle Systems division were slightly down on the previous year (2017: EUR 116.0 million).

As at December 31, 2018, the Rail Vehicle Systems division had 15,886 **employees** (2017: 16,051 employees incl. temporary staff). The reduced year-end headcount is primarily due to disposals.

Commercial Vehicle Systems division

In 2018, the Commercial Vehicle Systems division increased **incoming orders** by 2.7% to EUR 3,207.8 million (2017: EUR 3,122.7 million). Currency-adjusted to actual rates in 2017, incoming orders increased by 6%. Firstly, the rise is due to significantly higher truck production rates compared with the previous year, driven primarily by the North and South America regions. The second contributing factor was the growth in content per vehicle. The **order book** also increased by 3.6% to EUR 1,363.7 million at year-end 2018 (2017: EUR 1,316.1 million), as a result of high customer demand in North America in particular. Table → 2.18

Divisional **revenues** grew by 9.3% to EUR 3,160.1 million (2017: EUR 2,890.6 million). Adjusted by currency effects, revenues were up 12.7% to EUR 3,256.7 million – a significant increase. This was due to growth in all regions, but especially in North America. Higher truck production rates and increased market share in disk brakes resulted in increased revenues from business with large-vehicle OEMs in particular. OE customers accounted for 73.3% of the segment's total revenues, a year-on-year increase of 1.2 percentage points. This meant that the aftermarket share of total revenues (broken down according to German GAAP – HGB) saw a slight decline to 26.7% (2017: 27.9%).

In 2018, **R&D costs** in the Commercial Vehicle Systems division rose to EUR 166.6 million (2017: EUR 151.5 million), due to continuing ADAS/HAD [p. 185] activities, among other reasons. The resulting **R&D ratio** also rose slightly from 5.2% in 2017 to 5.3% in 2018.

EBITDA in the Commercial Vehicle Systems segment rose by 2.5% to EUR 516.4 million in 2018 (2017: EUR 503.7 million). At 16.3%, the EBITDA margin was 1.1 percentage points down on the previous year. The decline in the EBITDA margin was mainly due to the changed sales mix in OE and aftermarket business, which resulted in a higher cost of materials ratio as well as higher personnel expenses due to the build-up of additional personnel involved in R&D. Increased commodity prices and extra charges due to bottlenecks in our supply chains also had an impact on the EBITDA margin.

The Commercial Vehicle Systems division's **EBIT** grew by around 3.1% to EUR 434.4 million in 2018 (2017: EUR 421.5 million). At 13.7%, the EBIT margin was 0.9 percentage points below the previous year's level, and thus followed much the same trajectory as the EBITDA margin.

In 2018, **capital expenditure** by the Commercial Vehicle Systems division increased by EUR 34.7 million year on year to reach EUR 154.7 million (2017: EUR 120.0 million). As in the previous year, major investments were made in the global provision of supplier tools. Furthermore, we invested – for example – in expanding the German plant in Aldersbach to include a goods handling center, and in assembly lines for the new NexTT disk brake. Compared with the previous year, **depreciation and amortization** in the Commercial Vehicles Systems division remained almost unchanged at EUR 82.0 million (2017: EUR 82.3 million).

As at December 31, 2018, the Commercial Vehicle Systems division had 11,906 **employees** (2017: 11,082), that is, 824 more employees (+7.4%) than as of December 31, 2017. Alongside the revenue-driven increase, we recruited additional employees in China as part of the development of our compressor business, and also expanded our Chinese R&D capacities.

Financial Position (Financial Development)

FINANCIAL AND LIQUIDITY MANAGEMENT

Our centralized financial and liquidity management system aims to fulfill two key objectives: the optimization of earnings and costs, and the reduction of financial risks. In addition, it creates transparency concerning the Group's financing and liquidity requirements. In our liquidity management, we adhere to the principle of always maintaining sufficient liquid funds to be able to meet our payment obligations at all times, while also being in a position to act whenever M&A opportunities arise.

Our most important source of finance is cash flow from operating activities. As a rule, external funds are raised by Knorr-Bremse AG – or, where required by financial law, by our respective holding companies in Asia and North America – and made available to Group companies as required. Liquidity management is also the responsibility of Knorr-Bremse AG and our respective holding companies in Asia and North America. Among other things, Knorr-Bremse AG organizes a cash pooling system p. 183] that – as far as legally possible – combines all the Group's cash and cash equivalents. Companies in countries with legal restrictions on the movement of capital (such as China, India and Brazil) finance themselves largely from local resources.

2.19 FINANCIAL LIABILITIES (DEC. 31)

in € millions	Dec. 31, 2018	Dec. 31, 2017
Derivatives	(27,157)	(7,308)
Bank loans	(229,819)	(230,567)
Bonds and debt instruments	(1,247,521)	(497,390)
Liabilities resulting from options on minority interests	(379,616)	(379,616)
Purchase price liabilities	(38,000)	–
Lease liabilities	(33,277)	(35,977)
Other financial liabilities	(217,063)	(158,843)
	(2,172,452)	**(1,309,701)**
thereof:		
Current	(642,895)	(570,955)
Non-current	(1,529,557)	(738,746)

The investment of excess liquidity is governed by a Financial Asset Management policy and is the responsibility of the Corporate Finance & Treasury department. Our partners are exclusively banks and financial service providers with at least an investment-grade rating. At EUR 1,756.0 million, cash and cash equivalents at year-end 2018 were up 9.7% on the previous year's figure of EUR 1,600.0 million. This meant that their share of total assets amounted to 28.0% versus 27.9% on the previous year's reporting date.

By applying systematic net working capital management, including liquidity-optimizing instruments such as a Supplier Early Payment Program [p. 183] (SEPP) and factoring [p. 183], we strengthen our internal financing power and funds tied up in working capital. This benefits key indicators such as our balance sheet structure and ROCE. Information on our utilization of financial instruments can be found in the Risk Report, in the section entitled "Currency, Interest Rate, Liquidity, Commodity Price and Credit Risks, and Financial Instruments for Minimizing Risks".

2.20 ABBREVIATED CASH FLOW STATEMENT

in € millions	2018	2017
Net income (including earnings share of minority interests)	629,435	587,220
Adjustments for		
Depreciation on intangible assets and property, plant and equipment	205,570	211,479
Reversal of impairment on inventories	23,408	(8,823)
Reversal of impairment on trade accounts receivable	13,691	(902)
(Profit)/loss on sale of property, plant and equipment	18,934	(645)
Other non-cash expenses and income	(74,128)	38,567
Interest result	34,251	14,765
Investment income	(865)	579
Income tax expense	246,070	251,687
Income tax payments	(234,292)	(254,389)
Changes of		
inventories, trade accounts receivable and other assets which cannot be allocated to investment or financing activities	(245,307)	(201,556)
Trade accounts payable and other assets which cannot be allocated to investment or financing activities	21,962	87,230
Provisions	86,796	(45,326)
Cash flow from ongoing operating activities	**725,526**	**679,886**
Cash flow from investing activities	**(304,013)**	**(279,833)**
Cash flow from financing activities	**(286,173)**	**(460,067)**
Cash flow changes	**135,341**	**(60,014)**
Change in cash funds resulting from exchange rate and valuation-related movements	3,279	(72,147)
Change in cash funds resulting from changes to the group structure	1,246	-
Net increase/decrease in cash and cash equivalents	**139,866**	**(132,161)**
Free cash flow (cash flow from ongoing operating activities less cash capital expenditure)	**401,835**	**450,001**

KNORR-BREMSE GROUP'S FINANCING STRUCTURE

Following the issue of a EUR 500 million corporate bond in September 2016, we issued a EUR 750 million bond with an annual coupon of 1.125% and a 7-year term in June 2018. Rating agency Moody's has given this bond an A2 rating. The bond is being used to finance the Knorr-Bremse Group's growth while simultaneously optimizing our financing structure between equity and debt. The existing Debt Issuance Program (DIP) expired in September 2018 and was not renewed. Table → 2.19

CASH FLOW

Cash Flow from Operating Activities

Cash inflow from operating activities in 2018 showed a moderate year-on-year increase by EUR 45.6 million to EUR 725.5 million. In line with the increased result for the period, which was up by EUR 42.2 million to EUR 629.4 million, largely as a result of the 7.5% increase in revenues year on year, trade receivables were also up by EUR 89.5 million on the previous year. In addition, inventories in 2018 rose by EUR 87.5 million to EUR 836.3 million. Table → 2.20

Overall, net working capital increased by EUR 79.9 million to EUR 861.9 million (2017: EUR 782.0 million). As a result, the commitment period in day's sales rose by 1.1 days to 46.9 days (2017: 45.8 days).

Cash Flow from Investment Activities

In the 2018 fiscal year, the cash outflow from investment activities rose by EUR 24.2 million. This was due in particular to the EUR 48.5 million increase in investments in intangible assets (primarily due to the acquisition from Federal-Mogul of know-how and technology in the development and production of friction materials) to EUR 93.7 million, and the EUR 45.3 million increase in investments in property, plant and equipment to EUR 230.0 million. In addition, there was a cash outflow of EUR 13.7 million from the disposal of consolidated companies in the year under review. This was offset by a EUR 93.3 million decline in the cash outflow for the acquisition of consolidated companies to EUR 3.2 million.

Cash Flow from Financing Activities

In the 2018 fiscal year, the cash outflow from financing activities in fiscal year 2018 came to EUR 286.2 million, representing a EUR 173.9 million decrease on the previous year. A fixed-interest bond of EUR 750 million was issued in 2018, resulting in a cash inflow of EUR 744.4 million. In addition, net inflows from factoring over the reporting period amounted to 2.8 million, down EUR 10.8 million on the previous year (2017). Furthermore, IPO costs of EUR 14.9 million were reimbursed by the majority shareholder in the year under review; after deduction of taxes, EUR 10.0 million of this amount is recognized as a contirbution to capital reserves.

The cash outflow from financing activities in 2018 was largely the result of dividends paid out to shareholders and minority interests, totaling EUR 898.4 million. Furthermore, with effect from April 20, 2018, all non-voting preference shares held in Knorr Brake Holding Corporation, Delaware, USA, by Ursus Vermögensverwaltungs GmbH, Grünwald, Germany, were repurchased by Knorr Brake Holding Corporation for a purchase price of USD 159.6 million, resulting in a cash outflow of EUR 130.6 million in the year under review.

Free Cash Flow

Free cash flow [p. 183] in 2018 amounted to EUR 401.8 million, EUR 48.2 million down on the previous year (EUR 450.0 million). This decline is due to increasing investment activities (including the payment of a first tranche of EUR 25.0 million on the purchase price to Federal Mogul).

LIQUIDITY

The increase in cash and cash equivalents to EUR 1,718.7 million (2017: EUR 1,578.8 million) was primarily the result of the positive net cash inflow from operating activities (EUR 725.5 million), the cash outflow from investment activities (EUR –304.0 million) and the cash outflow from financing activities (EUR –286.2 million). Net financial cash decreased from EUR 836 million in the previous year to EUR 250.2 million in 2018. Table → 2.21

2.21 CASH FUNDS (DEC. 31)

in € millions	2018	2017
Cash and cash equivalents Jan. 1	1,578.8	1,711.0
Cash flow from operating activities	725.5	679.9
Cash flow from investing activities	(304.0)	(279.8)
Cash flow from financing activities	(286.2)	(460.1)
Other	4.6	(72.1)
Cash and cash equivalents Dec. 31	1,718.7	1,578.8

2.22 BALANCE SHEET RATIOS

in € millions	2018	2017
Net financial cash (Dec. 31)	250.2	836.1
Net debt to EBITDA	<0	<0
Gearing (Dec. 31)	<0	<0
Net working capital (NWC) (Dec. 31)	861.9	782.0
Net working capital in days' sales	46.9	45.8
Turnover time – inventories	7.9	8.2
Receivables/days' sales outstanding	67.3	67.2
Equity ratio (Dec. 31)	25.7	34.8
Total assets (Dec. 31)	6,262.2	5,727.4

2.23 EQUITY

in € millions	2018	2017
Subscribed capital	161.2	67.6
Other equity	1,340.7	1,780.2
Shareholders' equity	1,501.9	1,847.8
Non-controlling interests	105.2	148.0
Total equity	**1,607.1**	**1,995.7**

The ratio of net net financial cash to equity is 15.6% (2017: 41.9%). This is primarily due to the special dividend of EUR 500.2 million paid out in 2018. The Group has access to approved credit facilities totaling EUR 2,070.7 million (thereof EUR 100 million in loans from the European Investment Bank and EUR 150 million in medium-term facilities), of which EUR 1,360.8 million had not been utilized as at the end of the fiscal year. Interest rates on liabilities conform with prevailing market terms, according to maturity.

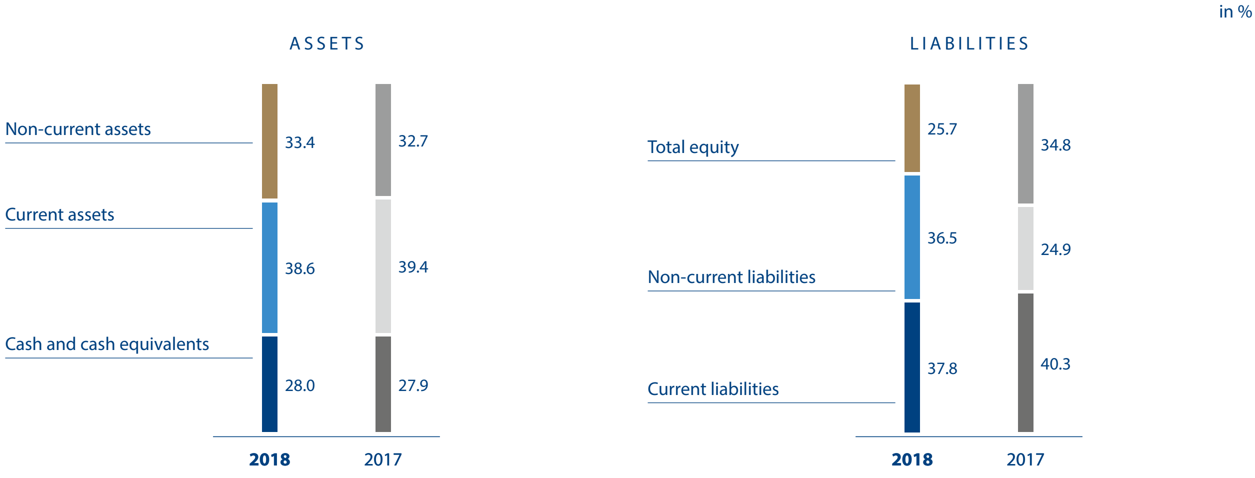
At year-end 2018, the undiscounted maximum level of liability for credit/loan guarantees and performance guarantees/bonds for third-party services totaled EUR 18.7 million (2017: EUR 27.0 million). Future payment obligations from non-terminable operating leases amounted to EUR 242.3 million (2017: EUR 182.4 million). Other financial obligations still outstanding include investment projects (EUR 31.0 million), obligations from major repair and maintenance work (EUR 3.6 million) and other obligations (EUR 29.5 million) (see also Sections H.7 and H.8 of the Notes to the consolidated financial statements).

With our ability to generate cash flows from operating activities, our cash and cash equivalents, undrawn credit facilities, and the credit ratings we were given at year-end, we believe that we have sufficient flexibility to cover our capital requirements. We also believe that our operating net working capital is sufficient to meet our actual needs.

Rating

Two external rating agencies, Standard & Poor's and Moody's, have been rating the Knorr-Bremse Group's economic standing since 2000. The rating was investment grade from the outset, and has steadily improved over the years. In fiscal 2018, both rating agencies re-confirmed the Knorr-Bremse Group's 2016 rating of "A" and "A2" respectively, with a "stable" outlook. Both rating agencies acknowledged the continuing stable quality of the Group's earnings, the continuity of the Group's management performance, and the strengthening of the Group's competitive position through significant investments in research and development in particular. They also

2.24 ASSET AND CAPITAL STRUCTURE



underscored the Knorr-Bremse Group's substantial growth through acquisitions and the establishment of joint ventures.

The current ratings place Knorr-Bremse among the world's top-ranking automotive, commercial vehicle and rail vehicle suppliers.

ASSETS AND CAPITAL STRUCTURE

The Group's **total assets** rose by 9.3% to EUR 6,262.2 million (2017: EUR 5,727.4 million). At year-end 2018, committed assets represented 94.7% of sales. Table → 2.22

Net working capital, defined as the sum of inventories, trade receivables and contractual assets (2017: receivables from construction contracts) less trade payables and contractual liabilities (2017: liabilities from construction contracts and advance payments received), stood at EUR 861.9 million at year-end (2017: EUR 782.0 million). Measured in terms of days' sales, this corresponds to a commitment of 46.9 days (2017: 45.8 days).

The **equity ratio** fell by 9.1 percentage points, from 34.8% to 25.7%, as a result of the dividend payments and the balance sheet extension resulting from the introduction of IFRS 15. Table → 2.23, Chart → 2.24

CAPITAL EXPENDITURE

The Knorr-Bremse Group's capital expenditure in fixed and intangible assets reflects the Group's growth and innovation priorities. **Capital expenditure** reached EUR 308.4 million in fiscal 2018 and thus represented 4.7% of revenues (2017: 3.8%). This does not include our strategic capital expenditure in the acquisition of know-how from Federal Mogul (at a purchase price of EUR 63.0 million), which represents an M&A-related asset addition. The Rail Vehicle Systems division invested in expanding capacity, in buildings, and in equipment upgrades for improving productivity. As well as investing in supplier tools, capital expenditure by the Commercial Vehicle Systems division focused in particular on new product generations and equipment upgrades. The Group also invested in additional IT projects. Table → 2.25

2.25 CAPITAL EXPENDITURE, DEPRECIATION AND AMORTIZATION

in € millions	2018	2017
Capital expenditure property, plant and equipment	235.4	190.0
Capital expenditure intangible assets	73.1 [1]	45.2
Depreciation, amortization & write-offs	205.6	211.5

[1]) In 2018 prior to capital expenditure Federal Mogul investment (EUR 63,0 million)

The main priorities here were expenditure on machinery and equipment associated with the introduction of new product generations, and on the expansion of capacity in high-growth business segments and locations, as well as global IT projects. The Group also made regular investments in equipment upgrades, including supplier tools.

SUPPLEMENTARY REPORT

In December 2018, we acquired the commercial vehicle steering systems division of Hitachi Automotive Systems, Ltd. in Japan and Thailand, thereby achieving a further milestone on the way to providing system solutions for driver assistance and highly automated driving. The division is Japan's leading manufacturer of power steering components. The acquisition will be completed on March 29, 2019, at a purchase price of EUR 165 million.

Effective February 1, 2019, Knorr-Bremse Systeme für Nutzfahrzeuge GmbH acquired a 50% interest in Sentient IP AB, Gothenburg, Sweden from Sentient AB, Gothenburg, Sweden. The total purchase price at the time of the transaction is estimated at EUR 15.0 million, and includes a fixed purchase price component plus variable purchase price components that depend on the company's future development. The fixed purchase price component, totaling EUR 4.7 million, was paid at the time of the transaction. On the basis of this strategic investment, Knorr-Bremse can now implement further development of Sentient AB's software and IP rights in our steering business.

Effective March 14, 2019, Knorr-Bremse also acquired a 21.3% stake in Israeli startup company RailVision, Ra'anana, Israel, as part of a strategic investment. RailVision develops obstacle detection systems for rail vehicles based on video and infrared technology; these represent an important technology for the implementation of automated driving functions. Knorr-Bremse is thus taking the next step toward providing system solutions for automated rail travel.

On March 5, 2019, Deutsche Börse resolved to admit Knorr-Bremse to the MDAX in accordance with the fast-entry rules. In another milestone for Knorr-Bremse and its shareholders, Knorr-Bremse joined the index on March 18, 2019, further enhancing the Group's visibility on the capital market.

Effective March 15, 2019, Knorr-Bremse's U.S. subsidiary New York Air Brake LLC (NYAB) took over Snyder Equipment Company, Inc., based in Nixa, Missouri, USA. The Company is an industry-leading manufacturer of refueling systems and service equipment for locomotives, and is also a well-established remanufacturer of locomotive components.

Further details are available in Section H.2 of the Notes to the consolidated financial statements.

REPORT ON RISKS, OPPORTUNITIES AND EXPECTED DEVELOPMENTS

Report on Risks and Opportunities

Risk Management System

PRINCIPLES AND OBJECTIVES

As an international corporate group with a global presence, Knorr-Bremse encounters both risks and opportunities in the course of its entrepreneurial activities. The goal of risk management is to identify risks across the Group and minimize their potential consequences on the Group's anticipated financial performance and position. Similarly, the system should identify and leverage opportunities to generate a lasting increase in stakeholder value. The focus is on early, systematic identification and analysis of potential risks and opportunities in order to provide sufficient scope for effective risk management, including the timely introduction of suitable countermeasures. The basis for this is a transparent, systematic risk reporting system that covers all business processes.

In all our business activities, we always carefully evaluate opportunities and risks. For this reason, Knorr-Bremse encourages all employees to proactively report risks, and requires them to deal with risks in a responsible manner. In addition to regular reporting periods, there is also an internal ad-hoc reporting process so that risks of major significance can be identified as early as possible and managed as rapidly as possible.

The risk management system established within the Group is subject to continuous development and improvement. In 2017, this meant that the system was comprehensively revised to satisfy the latest requirements, including the introduction of IFRS-compliant accounting. It remained essentially unchanged in 2018.

ORGANIZATION AND PROCESS

Our risk management structures and procedures are aligned with our overall organizational structure and anchored in a corporate policy that includes clear definitions of responsibilities and reporting structures. Our analysis of potential risks takes place quarterly in the form of a worldwide bottom-up risk inventory covering all Group companies. Sites report possible risks in quantified form to regional managers, who in turn pass them on to divisional managers. An essential component of regular risk reporting is a summary risk report. This is presented to the Knorr-Bremse Group's Executive Board on a quarterly basis and explained at the relevant Executive Board meeting. The Supervisory Board takes an in-depth look at the risk report on a regular annual basis, or on an ad-hoc basis when required.

The identified risks are assigned to one of 14 specific risk categories that are aligned with the Company's value chain. In all, the risk management process comprises six stages, from identification to evaluation, mitigation and aggregation, through to reporting and monitoring. The identified risks are evaluated in terms of their impact on earnings and probability of occurrence. The priority is to present the risk portfolio transparently, including the appraisal of effective risk limitation measures. The risk managers provide quantitative and qualitative assessments of these measures in their reports. Possible measures include the avoidance, reduction, transfer or acceptance of the respective risk.

As part of this process, risk mitigation measures are considered with the aim of reducing any potential losses, resulting in a net risk value before probability of occurrence. Factoring in the probability of occurrence allows us to quantify each risk's potential impact on earnings. This is classified as follows, according to the risk's materiality to the Group:

- Very low (≤ EUR 5 million)
- Low (> EUR 5 million to ≤ EUR 15 million)
- Medium (> EUR 15 million to ≤ EUR 40 million)
- High (> EUR 40 million)

In response to this potential impact on earnings and to comply with accounting regulations for risk provisioning, appropriate provisions or value adjustments should be made in the annual financial statements. In the subsequent risk aggregation phase, the individual risks are aggregated based on identity of cause and allowing for possible interdependence. Furthermore, in consultation with the divisions and those responsible for risk management, the Risk Management function performs a plausibility check on the net risk calculation and validates compliance with guidelines.

In addition to the quantified risks described above, risk management also assesses qualitative, abstract and strategic risks.

RISK REPORTING

The Executive Board provides the Supervisory Board and the relevant committees with regular, timely and comprehensive updates on all risks and opportunities of relevance to the Group. Examining and monitoring the risk management process is the task of the Internal Audit function. Thus, Knorr-Bremse has in place a modern, globally valid reporting and control system that enables it to implement efficient and effective risk monitoring and management.

KEY FEATURES OF THE INTERNAL CONTROL SYSTEM (ICS) FOR THE ACCOUNTING PROCESS:

With our internal control system (ICS), we pursue the objective of complying with relevant legal requirements and applicable Group guidelines, safeguarding the effectiveness and profitability of our business activities, and ensuring the accuracy and reliability of our internal and external accounting procedures. The ICS encompasses the entirety of all the principles, procedures and measures which senior management has implemented within the Company for the purpose of handling risks systematically and transparently.

The ICS is based on certain fundamental principles, including the cross-checking (dual-control) principle and the separation-of-functions principle. Group companies are responsible for complying with existing standardized Group-wide rules and country-specific regulations, and for documenting the internal controls they use to ensure reliable and appropriate financial reporting.

Here, Corporate Controlling plays a supporting and coordinating role; the documentation of risks and controls is filed centrally by Corporate Controlling. The Internal Audit function verifies the existence and effectiveness of the documented processes during its independent audits. Corporate Controlling reports to the Executive Board on the control system's effectiveness. The Executive Board provides the Supervisory Board with a detailed breakdown of ICS and Internal Audit results on a regular, annual basis.

The most important instruments, control and hedging routines in the accounting process are:

- Knorr-Bremse AG's accounting guideline defines the accounting process in the individual companies and within the Group. The guideline covers all relevant IFRS rules and is regularly updated by the Group Accounting function.
- All accounting processes are subject to multi-level validation in the form of spot checks, plausibility checks and other controls by the operating companies, the segments, and the Corporate Controlling, Group Accounting and Internal Audit functions. The controls relate to various areas, such as the reliability and adequacy of IT systems, the completeness and accuracy of financial reporting, and the completeness of provisions.

- The fundamental ICS principles – the dual-control principle, the separation-of-functions principle – apply in particular to the commercial processes that trigger entries in the consolidation system. For example, depending on the amounts involved, orders or invoices may have to be signed off by divisional management, senior management or the Executive Board. The process from ordering through to payment is secured by separating the functions of employees in Purchasing and Accounting.
- Access authorizations control access to the consolidation system; this is reserved for a selected group of employees in Group Accounting. Data that is entered for Group companies is checked in a multi-level process. First, it is validated by the Group company itself, then by the relevant segment's Controlling function, and finally by Group Accounting.

To ensure that financial statements are prepared correctly, we carefully consider significant regulations and innovations of relevance to accounting and reporting. Particular emphasis is placed on the accounting treatment of construction contracts based on the over-time/percentage-of-completion method; the allocation of purchase prices during business mergers; impairment testing of goodwill; and the reliability of qualitative and predictive statements in the management report.

The breakdown in Table → 2.26 shows the respective net risk (after allowing for probability – before provisioning) to the Group per risk category.

Compared to the previous year, the risk portfolio showed material changes in the Market & Customers, Production, IT Systems & IT Security, and Finance & Treasury categories, as well as the Other category. The upgrade from low to high of the overall risk in the Market & Customers category is primarily due to a potential market slowdown in cyclical commercial vehicle business resulting from weaker than expected economic growth. In the event of an associated decline in truck production rates, there would also be a decline in the volume of, and thus earnings from, our OE business. The upgrade of the Production risk category from very low to medium is the result of the increased risk of potential termination of supply contracts with major suppliers and the associated possibility of temporary production downtime. Due to the cross-industry rise in, for example, cyberattacks and fraudulent emails, especially in the context of ongoing digitization, the IT Systems & IT Security risk category was upgraded from very low to medium. On the other hand, net risk in the Finance & Treasury category was reduced from high to low, partly due to a decline in unhedged foreign currency holdings. The Other risks category was also downgraded from high to low, mainly in connection with building renovation work completed in 2018.

The Knorr-Bremse Group's individual risk categories are explained in more detail below:

STRATEGIC RISKS

As a technology leader in the rail vehicle and commercial vehicle sectors, we are exposed to the efforts of both established competitors and new market players to gain market

2.26 KNORR-BREMSE GROUP – RISK CATEGORIES

	Net risk			
	Very low (≤ €5 mill.)	Low (> €5 mill. to ≤ €15 mill.)	Medium (> €15 mill. to ≤ €40 mill.)	High (> €40 mill.)
Strategy	■			
Legal & Regulatory			■	
Research & Development	■			
Purchasing	■			
Market & Customers				■
Logistics	■			
Production			■	
Quality & Product Liability				■
HR	■			
Finance & Treasury			■	
M&A		■		
Project Management		■		
IT Systems & IT Security			■	
Other		■		

share at our expense, such as the planned acquisition of American competitor Wabco by German enterprise ZF Friedrichshafen. We counter these risks with a sustainable innovation strategy and intense cultivation of our customer relationships, so that we can continue to provide the best possible response to what our customers need from our products and services in terms of technology, quality and pricing. Alongside the continuous further development of our existing product portfolio, we focus in particular on averting the risks of unsuccessful or delayed entries into new, promising product areas. Among the measures we take for this purpose are the timely identification, subsequent evaluation and efficient implementation of development projects for opening up new product areas. In particular, we should highlight the current megatrends of urbanization, eco-efficiency, digitization and automated driving. As a systems supplier, we are determined to continue offering our customers the greatest possible benefits in all these fields in the future. Even so, risks may arise from strategic decisions as a result of portfolio adjustments or changes such as those that took place in the 2018 reporting year. These may take the form of restructuring costs, value adjustments or similar risks, for example in the event of relocations or closures.

LEGAL AND REGULATORY RISKS

Our worldwide presence means that Knorr-Bremse is exposed to a wide variety of different legal systems. Current and potential future changes to these legal systems give rise, among other things, to risks associated with fiscal, competition, patent, environmental, labor and contract law. To avoid or minimize litigation and any potential financial exposure, strategic risks or damage to our image that might result, we rely on our Compliance Management function and Tax department, as well as the legal reviews and assessments carried out by our Legal department. For complex issues, we also seek the support of external specialist lawyers. In Compliance Management, the Company-wide Code of Conduct sets binding rules of conduct for all employees, who are trained with the help of mandatory e-learning courses rolled out worldwide. A web-based whistleblower system with predefined investigative processes helps us to identify and sanction any violations. To counter the potential damage to our business resulting from imitations and product piracy, the Company relies on the Patent department's intensive observation of our markets, as well as close collaboration with the authorities when necessary. In this risk category, we should highlight ongoing proceedings by the Department of Justice (DoJ), as well as our dispute with Robert Bosch GmbH concerning the exercise of a **put option** **[p. 183]** on the latter's shares in KB SfN GmbH and KB Japan. Further details on the latter proceedings can be found in Section H.9 of the Notes to the consolidated financial statements.

In addition, possible risks may arise from changes to legal regulations, such as breaches of the EU General Data Protection Regulation (GDPR) or changes to employee rights or the hiring out of employees. The impact of a possible Brexit was not considered to be material at the time the financial statements were prepared. Our assessment includes the possibility of additional operating costs as a result of customs duties, freight, or organizational changes, as well as the possible impact on our UK companies of exchange rate effects due to a devaluation of the GBP against the EUR. Interdivisional Brexit teams were formed and measures were formulated, such as alternative logistics concepts, stockpiling and organizational adjustments. In 2018, sales revenues from our UK companies totaled 5% of Group revenues. It is not possible to reliably determine potential indirect effects, such as a market slowdown in the UK as well as in the European Union, and consequently they have not been taken into account.

RISKS ASSOCIATED WITH RESEARCH AND DEVELOPMENT

Product development and product optimization processes are both generally associated with a range of risks. In particular, these include time-to-market delays, as well as deviations from product quality requirements, e.g. in respect of approval procedures. Furthermore, it is important to exclude potential infringements of intellectual property (IP) rights. In addition, costs may deviate from the original budget, especially in the case of long-term projects. Our response to these challenges is a global, highly qualified team of R&D employees, cutting-edge R&D facilities, and efficient and effective processes and workflows. As well as our state-of-the-art Technology Center at our head office in Munich, equipped with the latest measuring stations and test rigs, we should also mention our R&D Centers in Schwieberdingen (Germany), Budapest (Hungary) and Pune (India), and in Elyria, Ohio (USA).

RISKS ASSOCIATED WITH PURCHASING

Potential risks in the procurement process include in particular late deliveries, quality defects and rising supplier prices that cannot always be passed on to customers, or can only be passed on after a delay. In addition, there is the risk of possible supplier insolvencies, although experience has shown this to be low, as we prioritize the high quality of our suppliers both during the selection procedure and as part of our permanent monitoring program. Furthermore, we have selected multiple suppliers for almost all strategically relevant product components in order to reduce our dependency on individual suppliers as far as possible. We conclude framework agreements with our suppliers in order to minimize supply risks. We also bundle our procurement volume in order to obtain more advantageous purchasing terms.

MARKET AND CUSTOMER RISKS

Even after drawing up a detailed sales budget that fully reflects market expectations for a given fiscal year, unexpected market developments in particular, but also individual customer risks, can result in deviations from revenue targets and the associated earnings targets. With respect to markets, our Commercial Vehicle Systems division's business is the main concern, because it is generally more sensitive to cyclical changes. Here, any decline in vehicle production usually has a direct impact on revenues from the division's original equipment (OE) business. Irrespective of order trends, customer pressure on prices may also have a negative impact on margins. In the Rail Vehicle Systems division, where project business plays a more important role, we focus not just on market movements, but also on possible strategic and operational project delays. Thanks to the Group's broad global base, we can often compensate regional or segment-related market developments in particular.

LOGISTICAL RISKS

Material risks affecting logistics include possible delays on deliveries by suppliers to Knorr-Bremse, and also in the company's own supply chain through to end-customers. Such delays may result in production delays or downtime, which may in turn cause bottlenecks in deliveries to our customers. We counteract these risks by means of an integrated planning process that is closely coordinated with our production and delivery schedules. Optimized warehouse management also enables us to achieve a balance between availability on the one hand and cost-efficient inventory assets on the other. Even so, special freight (e.g. air freight) and other measures were required in 2018 in order to eliminate delivery bottlenecks, and these were associated with higher logistics costs.

PRODUCTION-RELATED RISKS

In production, bottlenecks can occur as a result of insufficient manpower or insufficient production capacity – also caused by machine downtime – in particular. Risks may also arise in connection with the termination of supply contracts with major suppliers. We counteract these risks first, by means of coordinated production planning and contractual covenants, and second, by relying on state-of-the-art production facilities and regular maintenance, and by investing in replacement equipment as required in order to avoid equipment obsolescence. Integrated quality controls enable us to identify and remedy quality defects at an early stage in order to avoid rejects, waste and reworking. Our globally standardized manufacturing concept, the Knorr-Bremse Production System (KPS), ensures that all our production sites meet our high quality standards. Comprehensive occupational safety and environmental protection standards have also been defined within the Group.

RISKS ASSOCIATED WITH QUALITY AND PRODUCT LIABILITY

The primary objective of quality management is to ensure that we always fulfil our customers' requirements. As a manufacturer of safety-relevant products, we give quality an especially high priority, and it is profoundly embedded in our corporate values. If, in individual cases, and despite our comprehensive quality assurance measures, we should supply products to our customers that might not meet the expected quality standards, there is a risk of incurring additional costs associated with the rectification of defects or warranty claims by our customers. In such cases, we work closely with our customers to find and implement prompt solutions. Our overall exposure to quality and product liability risks is offset by extensive provisions which already almost entirely cover these risks (risk category after provisions: very low).

RISKS ASSOCIATED WITH HUMAN RESOURCES (HR)

By comparison with Western Europe, employee turnover in other regions is significantly higher. We respond to this by offering attractive remuneration systems, workplace conditions and professional development opportunities. We are addressing the shortage of skilled workers with our own management development program, so we can recruit young, talented, capable employees and retain them in the Company over the long term. Nevertheless, the departure of highly qualified employees can result in a loss of expertise. In addition to in-house training courses, we also focus on targeted marketing in universities, and on work-study programs. Another risk relates to the level of pension and retirement benefit obligations, which can result in additional expenses. However, these are relatively minor by comparison with our total assets, and have already been partially outsourced to external pension funds.

RISKS ASSOCIATED WITH FINANCE AND TREASURY

Currency, interest rate and liquidity risks are described in detail in Section H.1 of the Notes to the consolidated financial statements. Further information on this risk category can be found below under "Risk Report on the Use of Financial Instruments".

RISKS ASSOCIATED WITH MERGERS AND ACQUISITIONS (M&A)

Risks can arise from strategic and operational issues during both the M&A process and the post-merger integration phase. Such risks include, among other things, a possibly incorrect valuation from a financial perspective, which we seek to prevent by conducting extensive due diligence. Other risks include higher than expected integration and onboarding costs, as well as delays during the integration process. For these, we have made provisions as appropriate (risk category after provisions: very low). To reduce these risks, we involve employees in key positions in the integration process at an early stage. This makes it easier to ensure effective integration with our corporate culture, working conditions, systems and processes.

RISKS ASSOCIATED WITH PROJECT MANAGEMENT

In the Rail Vehicle Systems division in particular, specific risks related to customer projects may arise due to the division's reliance on project-related business. Above all, such risks include adherence to the specified cost framework, schedule and agreed product specifications. Thus, for example, failure to deliver on time or provide specified product features may result in rectification costs and, in certain cases, contractual compensation payments. For these, we have made provisions as appropriate (risk category after provisions: very low). To avoid such risks, we rely on effective project management, fine-grained monitoring and intensive interaction with our customers.

RISKS ASSOCIATED WITH IT SYSTEMS AND IT SECURITY

Insufficient system stability and inadequate data availability represent fundamental IT risks. During period of intensified cyberattacks in particular, we protect ourselves through our Company-wide IT organization and up-to-date security systems, which include antivirus software and firewalls. In addition, we regularly raise our employees' awareness of fraudulent emails and the best ways to deal with such emails. Redundant data centers in Europe, the USA and Asia protect us against possible data loss. Further risks may also arise in connection with software licenses. Overall, we consider IT-related risks to be high in the event of an attack, but otherwise as representing overall a moderate, industry-standard risk when assessed against the usual probabilities.

OTHER RISKS

The Other Risks category includes all those risks that do not fall into one of the above-mentioned categories. These include, for example, possible reputational damage, or financial losses caused by fraudulent activities (both internal and external), which we currently rate as low.

Risk Report on the Use of Financial Instruments

CURRENCY, INTEREST RATE, LIQUIDITY, COMMODITY PRICE AND CREDIT RISKS, AND FINANCIAL INSTRUMENTS FOR MINIMIZING RISKS

As a result of its international activities and of volatile movements on the world's financial markets, the Knorr-Bremse Group is exposed to various financial risks, especially market risks, liquidity risks and credit risks. Company policy aims to limit these risks through systematic financial management. To do so, the Group uses a number of financial instruments, such as e.g. forward exchange transactions, currency options, and various forms of swaps, including currency swaps. Derivative financial instruments are used exclusively to hedge existing positions (hedged items) against interest rate and exchange rate exposure (corresponding to market risk).

HEDGING OF FOREIGN CURRENCY RISKS

Forward exchange transactions and currency options are exclusively used to hedge the currency risks on selected assets and anticipated cash flows within the Knorr-Bremse Group. The objective of hedging transactions performed by Knorr-Bremse AG is to reduce risks arising from exchange rate fluctuations. At year-end 2018, their nominal value totaled EUR 1,059.8 million. In principle, we enter into a separate hedging transaction for each separate major project. All financial derivatives and their hedged items are regularly monitored and measured. In this context, the effectiveness of hedging relationships is also monitored, and the hedges are adjusted under certain circumstances.

The translation risks associated with conversions into euros increased in 2018 due to the relative weakness of euro movements compared with other currencies of relevance to the Group. However, the high level of local manufacturing and local supply within the respective currency zones established by the Group's geographical diversification in recent years minimized our transactional exposure. **Hedge accounting** **[p. 183]** was not applied in the 2018 fiscal year.

HEDGING OF INTEREST RATE RISKS

We pursue a conservative interest rate and financing strategy with three core elements: long-term interest rate and financing security, matching maturities and a ban on speculation.

Our financial debt consists primarily of the bonds issued in 2016 and 2018. Our Group financing is exposed to limited interest rate risks. Nor is the risk of interest rate fluctuations arising from operational activities of any significant importance to the Knorr-Bremse Group at present, as the Group's geographical diversification in recent years has established a high level of local manufacturing and local supply within the respective regions. Our interest rate risk management covers all interest-bearing and interest-sensitive balance sheet items. Regular interest rate analyses allow us to identify risks at an early stage. Corporate Treasury is primarily responsible for debt financing, financial investment and interest rate hedging; exceptions above a certain size must be approved by the Chief Financial Officer.

Our pension risks are manageable. At EUR 307.5 million, pension accruals at the end of the year were slightly below the previous year's level (2017: EUR 310.2 million), thus at 4.9% (2017: 5.4%) of total assets.

HEDGING OF LIQUIDITY RISKS

Our liquidity requirements are largely covered by our operating cash flow. Cash and cash equivalents, as well as existing credit facilities, ensure that we can meet our payment obligations at all times. As a result of cash pooling in each of our respective currency zones, we can utilize individual companies' liquidity surpluses for other Group subsidiaries, to the extent permitted by national capital transfer regulations. This avoids recourse to loans and the associated interest expenses.

CREDIT RISKS

Credit risks arise from deposits with banks, operating trade receivables from customers, and contractual assets. With respect to banks and lending institutions, the risk relates to counterparty default. With respect to customers, it relates to the late or partial settlement or non-settlement of receivables without compensation, or outright default. The book value of the financial assets reported in the consolidated financial statements represents the maximum risk of default. Banks and customers are regularly monitored. Decisions on financial transactions are made on the basis of this monitoring. Contracts for derivative financial instruments and financial transactions are only concluded with financial institutions with high credit ratings, to keep the counterparty default risk as low as possible. Commercial transactions are always exposed to some risk of a possible loss in value due to defaulting by business partners such as banks, suppliers or customers.

There was no material concentration of default risk with respect to a given counterparty or clearly identifiable group of counterparties. As at the reporting date, there were no material agreements in place that would limit the maximum risk of default.

HEDGING OF COMMODITY PRICE RISKS

Commodity price risks exist whenever raw materials required in the production process (especially metals) can only be purchased at higher costs due to fluctuating market prices, and there is no possibility of offsetting these higher costs by adjusting prices to customers at the sales transaction stage. When analyzing commodity price risks, our calculations include both the planned purchases of raw materials – or of components containing raw materials – and the corresponding sales contracts. The resulting risk position, representing our exposure, is continuously monitored and hedged on a case-by-case basis using commodity swaps. Hedge accounting is not applied in this case.

FINANCING RISKS

Knorr-Bremse's financing situation is comfortable and reflects the Company's excellent credit standing and solid balance sheet structure. As at December 31, 2018, Knorr-Bremse had approved credit facilities of EUR 2,070.7 million in place, of which around 65.7% were still undrawn, as well as two bonds totaling EUR 1,250 million and maturing in 2021 and 2025 respectively. Neither our credit facilities with banks nor the bonds we have issued include any **financial covenants** **[p. 183]**.

HEDGING OF INVESTMENT RISKS

Our investment guideline governs the handling of investment risks. Among other things, it defines approved asset classes and creditworthiness requirements. We do not hold any government bonds, consequently there are no associated repayment or impairment risks.

RATING

See Financial Position (Financial Development) in the Liquidity section.

More information on the management of financial risks can also be found in Section H.1 of the Notes to the consolidated financial statements.

Opportunity Management System

Knorr-Bremse's opportunity management system is unchanged from the previous year, and follows the same processes as the risk management system. Alongside regular management reviews, opportunities are also reported in the quarterly report on risks and opportunities. Here it should be considered that opportunities may always be associated with risks, which are carefully weighed up in all circumstances.

As part of the stringent implementation of Knorr-Bremse's growth strategy, we continuously monitor current and future markets in order to identify and evaluate potential global opportunities at an early stage. To do this, we stay in close contact with our customers and suppliers so that we can pinpoint future trends along with their resulting market demands. Furthermore, we conduct regular benchmark analyses both against our direct competitors and against peer groups of subcontractors in the rail and commercial vehicle sectors. As well as the Executive Board and Corporate Development function, the divisions' specialist departments are also responsible for identifying potential opportunities to adapt existing products to future customer requirements or supplement them with new types of products. Knorr-Bremse makes above-average investments in new technologies in order to further extend the Company's technology and market leadership, safeguard our existing sales markets, and open up new sales markets. In addition to internal growth opportunities, we also exploit external opportunities by undertaking targeted acquisitions and setting up joint-venture companies.

Operational opportunities are discussed in regular reviews at divisional level, taking account of specific regional circumstances. Knorr-Bremse is constantly working to optimize cost management and streamline process efficiency to further enhance the competitiveness of the Company's products and services.

Synergies Between Divisions

Furthermore, strategic opportunities are pursued at Group level. Here, both the Executive Board and senior management are constantly examining the long-term trends that are important to future corporate development and planning, along with the potential opportunities associated with these trends.

Our presence in two related market segments – rail vehicles and commercial vehicles – offers numerous synergies in this respect. As our product offerings across the two divisions are based on similar core technologies, joint development projects enable the transfer of know-how, intellectual property and experience. In addition, systems for rail vehicles and systems for commercial vehicles often use similar components and materials. Examples of such synergistic areas include materials science for friction materials, or disk brake technology. Future development work in both product areas will benefit from shared experience in, for example, the use of sensors in environment recognition systems.

Megatrends

The following megatrends listed below represent important strategic opportunities for Knorr-Bremse:

URBANIZATION

Growing population numbers and increasing urbanization are opening up opportunities for our rail and commercial vehicle systems business as the demand for faster, safer and more reliable modes of transportation continues to grow.

ECO-EFFICIENCY

Electrification and other energy-efficient, environment-friendly solutions are the results of a rising demand for energy combined with growing public awareness of the importance of energy efficiency, as well as a surge in government energy initiatives such as stricter emission regulations. From our perspective, electric vehicles offer considerable potential for low-emission mobility solutions in major cities; such vehicles include light rail vehicles, city buses and eco-friendly delivery vans.

DIGITIZATION

Digitization is driving forward the connectivity of systems and subsystems for rail and commercial vehicles; this in turn is enabling real-time data analysis and predictive maintenance for improving life cycle costs. Artificial intelligence is used to develop new product generations and create tomorrow's customer solutions. Other consequences of digitization include the automated control of trains, condition-based maintenance of rail vehicles, and monitoring tools and telematics solutions for commercial vehicles.

AUTOMATED DRIVING

Automated driving may bring about huge changes in the rail and commercial vehicle industries, depending on the speed of adaptation to regulatory challenges, the development of safe and reliable technical solutions, and customer acceptance of and willingness to pay for such solutions. Because of this growing trend, new solutions are being developed, with particular focus on driver assistance functions that aim to reduce accidents, transportation costs and emission levels.

The above-mentioned megatrends are resulting in industry-specific growth opportunities for systems destined for both rail vehicles and commercial vehicles.

General Statement on the Risks and Opportunities Situation

Analysis of the Group-wide risk profile has revealed that no identifiable risks exist that could threaten the survival of the Company.

Report on Expected Developments

Global Economy: Growth Expected to Slow

In 2019 and 2020, it is likely that the global economy will continue to be affected by political and economic uncertainties. The IMF is expecting GDP to grow by 3.5% or 3.6%, compared with 3.7% in 2018. The U.S. growth rate is expected to decline from 2.9% to 2.5% in 2019, due to the weakening of tax incentives, as well as the temporary hike of the key interest rate versus the neutral market interest rate. At the same time, domestic and import demand is expected to remain strong, causing the U.S. current account deficit to widen even further. Even in China, the world's second largest economy, the growth curve is expected to flatten further in 2019, from 6.6% to 6.2%. Significant factors affecting China's economic development include high levels of debt in the financial sector and ongoing structural changes in the country's economy as it shifts away from export-driven mass production toward a higher proportion of service-related activity and stronger domestic demand. The still simmering risk of further escalation in the trade war will impact both the U.S. and Chinese economies.

With respect to Europe, expert economists expect that economic growth will either continue at the relatively high level of around 2.0% achieved in 2018 or weaken very slightly. Even so, the debt situation in Italy, political risks in France and

2.27 OUTLOOK FOR THE GROUP

		2019 target	2018
Most significant performance indicators			
Revenues	€ mill.	6,800 – 7,000	6,616
EBITDA margin (as % of revenues)	%	18 – 19	17.8
EBIT margin (as % of revenues)	%	15 – 16	14.7
ROCE	%	35 – 40	36.4
Net working capital in days' sales	days	44 – 49	46.9
Employees (FTEs as at Dec. 31)		29,000 – 30,000	28,452
Other key performance indicators			
Incoming orders	€ mill.	6,800 – 7,100	7,001
Order book (Dec. 31)	€ mill.	4,500 – 4,700	4,563
Capital expenditure[1]/revenues	%	4 – 5	4.7

[1]) Capital expenditure in property, plant and equipment and intangible assets (before acquisitions)

2.28 OUTLOOK FOR THE DIVISIONS

		2019 target	2018
Rail Vehicle Systems			
Revenue	€ mill.	3,600 – 3,700	3,462
EBITDA margin (as % of revenue)	%	20 – 21	20.0
Commercial Vehicle Systems			
Revenue	€ mill.	3,150 – 3,300	3,160
EBITDA margin (as % of revenue)	%	15.5 – 17	16.3

other countries, and the continuing major uncertainty surrounding Brexit, all represent a substantial risk to growth. In Germany, GDP is expected to decline slightly in 2019, from 1.5% to 1.3%.

Growth in Brazil is expected to accelerate, whereas Russia is expected to experience a sideways trend; predictions suggest that India will once again post strong growth of 7.5%.

Clearly, economic conditions have an impact on Knorr-Bremse's performance. This impact is more pronounced on the Commercial Vehicle Systems division; thanks to public-sector investment budgets and the higher proportion of aftermarket business, the Rail Vehicle Systems division is significantly less dependent on cyclical vagaries.

Global Rail Vehicle Market

In the longer term, rising demand from European and Asian rail transport operators is likely to become a major driver, mainly due to the passenger business.

Following very high levels of new business in previous years, the UK market will weaken over the next few years, but this will be offset by market developments in other European countries such as Germany, France, and also Russia.

Knorr-Bremse expects to see stable, generally positive development across the North American market as a whole. The passenger market is expected to weaken in 2019 as major projects come to an end, but will increase again in subsequent years as new large projects come online. Knorr-Bremse is anticipating sustained growth in the freight market, compensating for the short-term decline in the passenger market.

The Asia-Pacific region is expected to see moderate growth in new business, with India as the main growth driver. China will continue to be the largest procurement market. The aftermarket will be strongly influenced by the ongoing growth of China's rail vehicle fleets.

These market assessments are based on the Company's own analyses.

Global Commercial Vehicle Production

Knorr-Bremse expects global commercial vehicle production to decline by 8% in 2019, primarily due to a slowdown in the Chinese market. However, the picture differs from region to region.

Thanks to the good economic situation in North and South America, Knorr-Bremse expects commercial vehicle production in the region to increase slightly by 4% to around 575,000 units in the current year.

The economy in Western Europe, on the other hand, is expected to experience a mild slowdown. Consequently, the production forecast for 2019 is down slightly by 1% to around 510,000 units.

The economic situation and, more specifically, commercial vehicle production in Russia are stabilizing compared with 2018. As a result, commercial vehicle production is expected to increase by 8% to around 75,000 units.

In Asia, after the boom over the last two years (especially in China and India), Knorr-Bremse expects to see a significant slowdown in production rates. The market is likely to decline by 14% to around 1,684,000 units.

These market statistics relate to truck production rates in each region as published by various organizations.

Revenues and Profitability

Our outlook assumes that the global economy does not develop worse than shown above, that there will be no economic upheavals, and that the general political situation will remain stable. The possible impacts of macroeconomic developments such as trade wars, Brexit or a debt crisis in Italy are not directly included in the forecasts. In view of the growing cyclical risks, this assumption may turn out to be too optimistic. Furthermore, the following forecasts are based on the continuation of business operations as at December 31, 2018, and do not yet take account of the possible impact of acquisitions (like Hitachi Automotive Systems, Sentient AB, RailVision and Snyder Equipment Company Inc.) or structural initiatives. If necessary, we will adjust our forecasts in the next quarterly report.

In the coming years, we are aiming for organic revenue growth averaging around 4.5%-5.5% p.a. starting from the 2017 baseline. From today's perspective, we anticipate revenues of between EUR 6,800 and 7,000 million in 2019, without taking account of any currency effects, acquisitions or disposals in the current fiscal year. This should mean that revenues are higher than in 2018, although the divested businesses still contributed EUR 68.5 million to revenues in the first 10 months of 2018. We base our targets for this positive revenue development on the full order books in both divisions, the steady rise of demand in the rail vehicle market, and the increasing content per vehicle in the commercial vehicle market. In addition, we expect to see an increase in aftermarket business.

Based on the prospective revenues, we expect an EBITDA margin of 18%-19% and an EBIT margin of 15%-16%. Once again, **ROCE** **[p. 183]** in 2019 is expected to remain in the target range of 35%-40%. When assessing these profitability indicators, it is important to remember that they do not include the effects of the new IFRS 16. We predict that our EBITDA margin and EBIT margin will benefit from this changeover by gaining 70 basis points and 10 basis points respectively. IFRS 16 will have a negative impact of around 300 basis points on ROCE as a result of the associated balance sheet extension. In addition, our margin expectations do not include any possible restructuring measures or acquisitions.

We forecast net working capital for 2019 at 44-49 days' sales.

Employees

The number of employees should increase slightly by the end of 2019, linked to the development of revenues. As a proportion of the total workforce, the number of employees working in emerging markets should see a further increase.

Other Performance Indicators

We expect incoming orders in 2019 to total between EUR 6,800 and 7,100 million. By year-end 2019, we expect our order book to total between EUR 4,500 and 4,700 million.

The proposed dividend for 2018 (EUR 1.75 per share) will result in a distribution ratio of 45%. We are aiming for a distribution ratio for the current fiscal year's dividend in the range of 40%-50% of the Group's after-tax earnings. This also reflects our long practised strategy of retaining sufficient funds within the company to be able to make important investments in the future.

We anticipate an capital expenditure ratio of 4%-5% of revenues (before acquisitions and any effects from the changeover to IFRS 16 in 2019). The main priorities of our investment activity will include, among others, investments in expanding our North American production sites in Huntington, Indiana, and Bowling Green, Kentucky, as well as our production site in Palwal, India, and investments in buildings on our Munich site. Further details of investments appear in Section B2 of the Notes to the consolidated financial statements.

Divisions

In 2019, the Rail Vehicle Systems division expects revenues of between EUR 3,600 and 3,700 million. We have set a target range of 20%-21% for the EBITDA margin.

The Commercial Vehicle Systems division anticipates revenues of EUR 3,150 to 3,300 million in 2019. We have set a target range of 15.5%-17% for the EBITDA margin.

Executive Board's Statement Summarizing Expected Developments

Our planning for 2019 is based on the assumption that the global economy will continue to grow more or less as strongly as it did in 2018, and that the global rail vehicle market will grow by around 2.6%. According to our estimates, global production of commercial vehicles will decline by 8% in 2019, mainly due to a slowdown in the Chinese market. Based on order-book trends, we assume that content per vehicle will continue to grow in 2019.

Revenues are expected to increase in 2019; our target range is EUR 6,800 to 7,000 million. Our EBITDA margin should reach 18%-19% (before effects from the transition to IFRS 16), the EBIT margin 15%-16% and ROCE 35%-40%. For the net working capital we expect 44-49 in days´ sales and the number of employees should be in a range of 29,000 to 30,000.

Based on the growth we are planning over the next few years, adjustments for the business activities of divested units, and the growing importance of our aftermarket business, we are expecting the EBITDA margin to increase to at least 19.5%-20.0% by 2021/22. Among the most significant challenges lying ahead of us are the imperatives to maintain our innovation leadership, react rapidly to changing market circumstances, and improve continuously our cost position. With this in mind, we are developing our competencies, investing accordingly and adapting our organization as appropriate. By doing so, we are safeguarding Knorr-Bremse's market leadership in the future. We have the financial resources to further develop the Company by making acquisitions. The increase in free cash flow [p. 183] anticipated in 2019 will give us additional room for maneuver. Potential acquisition targets include providers of technologies that complement our core business.

KNORR-BREMSE AG (HGB)

The annual financial statements of Knorr-Bremse AG comply with the provisions of German GAAP (according to the German Commercial Code – HGB), whereas the consolidated financial statements have been prepared in compliance with IFRS. As the parent company of the Group, Knorr-Bremse AG performs the role of service provider and holding company, as well as operational management functions. The Company's commercial development depends primarily on the business performance of the operating Group companies. The economic environment in which Knorr-Bremse AG operates essentially corresponds to that of the Group as described in the Business Report starting on page 64, under "Macroeconomic and Industry-specific Conditions".

Income from investments is regarded as the most significant performance indicator. This includes income from investments, income from profit transfer agreements and expenses from loss transfers.

As at year-end 2018, Knorr-Bremse had 103 (2017: 95) employees.

Net Assets, Financial Position and Results of Operations

Along with interests in affiliated companies, Knorr-Bremse AG's balance sheet largely reflects receivables from and payables to Group companies. These are centrally administered, partly within the framework of the cash-pooling process managed by Knorr-Bremse AG.

Total assets of Knorr-Bremse AG amounted to EUR 2,424.9 million (2017: EUR 2,211.0 million). Equity fell from EUR 1,019.2 million in 2017 to EUR 551.7 million in 2018, mainly through the distribution of a special dividend of EUR 500.2 million.

In 2018, as expected, a dip in income from investments in associated and related companies resulted in lower earnings before taxes of EUR 395.8 million (2017: EUR 644.7 million). Income from investments came to EUR 480.9 million, compared with the previous year's EUR 733.8 million. Income from investments in North America rose sharply in 2018, whereas special dividends were waived in other regions.

Knorr-Bremse AG acts as an in-house bank for its subsidiaries around the world. This includes handling the central hedging of market price risks. The subsidiaries contract their hedging transactions with Knorr-Bremse AG, which in turn hedges part or all of the residual net risk for the Group with external banks. With the aid of the global process standardization and process transparency achieved through Knorr Excellence, Knorr-Bremse AG is able to efficiently manage its own business and that of its associated and related companies. The overall development of Knorr-Bremse AG was positive.

Appropriation of Retained Net Earnings

Knorr-Bremse AG posted retained net profit of EUR 373.4 million in fiscal 2018 (2017: EUR 944.3 million). The Annual General Meeting will be asked to approve the proposal that an amount of EUR 282.1 million from this net profit should be used to pay a dividend of EUR 1.75 per dividend-bearing share (161,200,000 shares). The balance should be carried forward to new account.

Relationship with Affiliated Companies

In the view of the Executive Board, Knorr-Bremse AG constitutes a company directly dependent on KB Holding GmbH, Grünwald, Germany, within the meaning of Section 312 of the German Stock Corporation Act (AktG), which directly holds more than half of the share capital of Knorr-Bremse AG. The Executive Board understands that the shares in KB Holding are held by TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, the majority of whose shares are in turn held by Stella Vermögensverwaltungs GmbH, Grünwald. The Company is therefore indirectly dependent on TIB and Stella pursuant to Section 17 in conjunction with Section 16 (4) AktG. To the Executive Board's knowledge, the majority of Stella's shares have been held by Mr. Heinz Hermann Thiele, Munich, Germany, since July 2017. The Executive Board therefore assumes that, through the intermediary of the respective majority shareholdings in KB Holding, TIB, and Stella, the Company is indirectly dependent on Mr. Thiele. Consequently, the companies dependent upon the Company pursuant to Section 17 AktG are also dependent upon Mr. Thiele.

Pursuant to Section 312 AktG, the Executive Board has drawn up a Report on Relations with Affiliated Companies which includes the following statement by the Executive Board:

"We declare that in the legal transactions and measures shown in the Report on Relations with Affiliated Companies, according to the circumstances known to us at the time at which the said legal transactions took place or measures were taken or refrained from, in each case Knorr-Bremse AG received appropriate consideration for the legal transactions and was not placed at a disadvantage as a result of measures taken or refrained from." The report was verified by the Auditors and received their unqualified opinion.

Risks and Opportunities

Knorr-Bremse AG participates in the risks and opportunities of its subsidiaries; the degree of participation depends on the respective shareholding. For more details, please refer to the "Report on Risks, Opportunities and Expected Developments" section starting on page 76. Furthermore, the liability relationships existing between Knorr-Bremse AG and its subsidiaries may result in exposure to risks.

Expected Developments

Knorr-Bremse AG's future business development is closely linked with the Group's ongoing operating performance. The Report on Risks, Opportunities and Expected Developments (starting on page 76) provides more details of our prospects and plans for our operating activities.

In 2019, Knorr-Bremse AG anticipates significantly lower income from investments. This will not, however, affect our future ability to pay dividends. Based on the assumptions made for the Group, Knorr-Bremse AG's net assets, financial position and results of operations can be expected to remain stable.

Munich, March 28, 2019

Knorr-Bremse AG

The Executive Board

KLAUS DELLER RALPH HEUWING DR. PETER LAIER DR. JÜRGEN WILDER

03

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated statement of income

of Knorr-Bremse AG, for the period from 01. January to 31. December 2018

3.01 CONSOLIDATED STATEMENT OF INCOME

in TEUR	Notes	2018	2017
Revenues	E.1.	6,615,800	6,153,543
Changes in inventories of unfinished/finished products	E.2.	34,424	38,754
Other own work capitalized	E.2.	48,047	31,768
Total operating performance		**6,698,271**	**6,224,065**
Other operating income	E.3.	66,233	81,171
Cost of materials	E.4.	(3,318,227)	(3,009,595)
Personnel expenses	E.5.	(1,496,981)	(1,438,871)
Other operating expenses	E.6.	(771,254)	(741,261)
Earnings before interest, tax, depreciation and amortization (EBITDA)		**1,178,042**	**1,115,510**
Depreciation and amortization	E.7.	(205,570)	(211,479)
Earnings before interests and taxes (EBIT)		**972,472**	**904,031**
Interest income	E.8.	20,128	24,036
Interest expenses	E.8.	(54,379)	(38,801)
Other financial result	E.8.	(62,715)	(36,797)
Income before taxes		**875,506**	**852,469**
Taxes on income	E.9.	(246,070)	(265,248)
Net income		**629,435**	**587,220**
Thereof attributable to:			
Profit (loss) attributable to non-controlling interests		36,644	51,716
Profit (loss) attributable to the shareholders of Knorr-Bremse AG		592,792	535,504
		629,435	**587,220**
Earnings per share in Euro	E.10.		
undiluted		3.68	3.32
diluted		3.68	3.32

Consolidated statement of comprehensive income

of Knorr-Bremse AG, for the period from 01. January to 31. December 2018

3.02 CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

in TEUR	Notes	2018	2017
Net income		**629,435**	**587,220**
Actuarial gains and losses	F.10.1.	4,571	15,647
Equity instruments recognized directly in equity	F.14.3.	(9,596)	(22,629)
Deferred taxes	E.9.5.	1,760	(1,188)
Items that will not be reclassified in the statement of income		**(3,264)**	**(8,171)**
Currency translation differences		(7,838)	(119,136)
Items that may be reclassified to profit or loss		**(7,838)**	**(119,136)**
Other comprehensive income after taxes		**(11,102)**	**(127,307)**
Comprehensive income		**618,333**	**459,914**
Total comprehensive income attributable to non-controlling interests		31,158	43,110
Total comprehensive income attributable to the shareholders of Knorr-Bremse AG		587,175	416,804

Consolidated balance sheet

of Knorr-Bremse AG, as of 31. Dezember 2018

3.03 AKTIVA

in TEUR	Notes	2018	2017
Assets			
Intangible assets and goodwill	F.1., F.2.	643,159	540,495
Property, plant and equipment	F.3.	1,167,184	1,116,398
Investments accounted for using the equity method		1,873	1,950
Other financial assets	F.4.	74,990	93,102
Other assets	F.5.	38,167	11,539
Employee benefits	F.10.	28,373	21,625
Deferred tax assets	E.9.	138,101	85,009
Non-current assets		**2,091,847**	**1,870,117**
Inventories	F.6.	836,326	748,823
Trade accounts receivables	F.5.	1,237,381	1,147,879
Other financial assets	F.4.	24,260	12,518
Other assets	F.5.	123,433	132,118
Receivables from construction contracts		–	116,171
Contract assets	B.1., E.1.	99,284	–
Income tax receivables	F.15.	93,650	67,637
Cash and cash equivalents	F.7.	1,756,033	1,600,033
Assets held for sale and disposal groups	F.8.	–	32,116
Current assets		**4,170,367**	**3,857,295**
Total assets		**6,262,213**	**5,727,412**

3.04 PASSIVA

in TEUR	Notes	2018	2017
Equity			
Subscribed capital	F.9.1.	161,200	67,600
Capital reserves	F.9.2.	13,884	1,310
Retained earnings	F.9.3.	39,924	106,956
Other components of equity		(161,024)	(166,407)
Profit carried forward		855,127	1,302,834
Profit attributable to the shareholders of Knorr-Bremse AG		592,792	535,504
Equity attributable to the shareholders of Knorr-Bremse AG		**1,501,902**	**1,847,798**
Equity attributable to non-controlling interests		105,208	147,951
thereof share of non-controlling interests in net income		36,644	51,716
Equity		**1,607,110**	**1,995,748**
Liabilities			
Provisions for pensions and similar obligations	F.10.	307,547	310,234
Provisions for other employee benefits	F.10.	24,511	28,433
Other provisions	F.11.	243,578	234,147
Financial liabilities	F.13.	1,529,557	738,746
Other liabilities	F.12.	4,741	17,346
Income tax liabilities	F.15.	92,599	71,704
Deferred tax liabilities	E.9.	82,603	27,262
Non-current liabilities		**2,285,136**	**1,427,873**
Provisions for other employee benefits	F.10.	11,612	15,206
Other provisions	F.11.	233,213	231,714
Trade accounts payable	F.12.	995,945	894,119
Financial liabilities	F.13.	642,895	570,955
Other liabilities	F.12.	133,303	269,382
Liabilities from construction contracts		–	230,750
Contractual assets	B.1., E.1.	315,122	–
Income tax liabilities	F.15.	37,877	53,141
Liabilities directly associated with assets held for sale	F.8.	–	38,524
Current liabilities		**2,369,968**	**2,303,791**
Liabilities		**4,655,103**	**3,731,664**
Total equity and liabilities		**6,262,213**	**5,727,412**

Consolidated statement of cash flows

of Knorr-Bremse AG, for the periode from 01. January to 31. December 2018

3.05 CONSOLIDATED STATEMENT OF CASH FLOWS

in TEUR	Notes	2018	2017
Net income (including earnings share of minority interests)		629,435	587,220
Adjustments for			
Depreciation on intangible assets and property, plant and equipment		205,570	211,479
Reversal of impairment on inventories		23,408	(8,823)
Reversal of impairment on trade accounts receivable		13,691	(902)
Profit (loss) on sale of property, plant and equipment		18,934	(645)
Other non-cash expenses and income		(74,128)	38,567
Interest income		34,251	14,765
Investment result		(865)	579
Income tax expense		246,070	251,687
Income tax payments		(234,292)	(254,389)
Changes of			
inventories, trade accounts receivable and other assets, which cannot be allocated to investment or financing activities		(245,307)	(201,556)
Trade accounts payable trade as well as other assets which cannot be allocated to investment or financing activities		21,962	87,230
Provisions		86,796	(45,326)
Cash flow from ongoing operating activities	**G.1.**	**725,526**	**679,886**
Proceeds from the sale of intangible assets		–	–
Disbursements for investments in intangible assets		(93,658)	(45,200)
Proceeds from the sale of property, plant and equipment		29,059	19,269
Disbursements for investments in property, plant and equipment		(230,033)	(184,685)
Proceeds from financial investments and from the sale of investments		499	28,326
Disbursements from the sale of consolidated companies and other business units		(13,679)	–
Disbursements for financial investments		–	(8,701)
Disbursements for the acquisition of consolidated companies and other business units		(3,200)	(96,513)
Interest received		16,206	16,717
Disbursements for investments in plan assets (pensions)		(9,206)	(9,047)
Cash flow from investing activities	**G.2.**	**(304,013)**	**(279,833)**

in TEUR	Notes	2018	2017
Proceeds from equity contributions by minority shareholders		–	151
Proceeds from borrowings		757,800	2,983
Disbursements from the repayment of borrowings		(8,663)	(18,272)
Disbursements for finance lease liabilities		(5,332)	(5,332)
Interest paid		(18,617)	(20,152)
Dividends paid to parent company shareholders		(871,289)	(385,073)
Dividends paid to minority shareholders		(27,125)	(48,017)
Net proceeds from factoring		2,818	13,645
Payments for the repurchase of non-controlling shares		(130,615)	–
Deposits from shareholder contributions		14,850	–
Cash flow from financing activities	**G.3.**	**(286,173)**	**(460,067)**
Cash flow changes		**135,341**	**(60,014)**
Change in cash funds resulting from exchange rate and valuation-related movements		3,279	(72,147)
Change in cash funds resulting from changes to the group structure		1,246	–
Net increase/decrease in cash and cash equivalents		**139,866**	**(132,161)**
Cash and cash equivalents at the beginning of the period		1,578,829	1,710,991
Cash and cash equivalents at the end of the period	**G.4.**	**1,718,695**	**1,578,829**
Cash and cash equivalents are comprised as follows:			
Cash and cash equivalents		1,756,033	1,600,033
Short-term marketable securities		51	51
Short-term bank debt (less than 3 months)		(37,389)	(21,255)

Consolidated statement of changes in equity

of Knorr-Bremse AG, as of 31. Dezember 2018

3.06 GROUP – STATEMENT OF CHANGES IN EQUITY

in TEUR	Notes	Subscribed capital	Capital reserves	Retained earnings	Group earnings
As at December 31, 2017		**67,600**	**1,310**	**106,956**	**1,838,338**
Initial application of IFRS 15				8,749	
As at January 1, 2018		**67,600**	**1,310**	**115,705**	**1,838,338**
Dividend payment					(871,289
Net income					**592,792**
Other comprehensive income after taxes					
Comprehensive income		**–**	**–**	**–**	**592,792**
Capital increase from retained earnings		93,600		(93,600)	
Deposits by shareholders			10,047		
Allocation to retained earnings				103,418	(103,418)
Purchase of minority shares				(85,599)	
Equity-settled share-based payment			2,533		
Other changes			(6)		(8,505)
As at December 31, 2018	**F.9.**	**161,200**	**13,884**	**39,924**	**1,447,918**
As at January 1, 2017		**67,600**	**1,860**	**94,856**	**1,703,990**
Dividend payment					(385,073)
Net income					535,504
Other comprehensive income after taxes					
Comprehensive income		–	–	–	535,504
Allocation to retained earnings				12,100	(12,100)
Equity-settled share-based payment			(550)		
Realized losses from financial assets measured at fair value through OCI					(7,228)
Other changes					3,245
As at December 31, 2017	**F.9.**	**67,600**	**1,310**	**106,956**	**1,838,338**

Other components of equity					
Currency translation	Equity instruments recognized directly in equity	Actuarial gains and losses)	Equity attributable to the shareholders of Knorr-Bremse AG	Equity attributable to non-controlling interests	Total equity
(97,864)	**(14,075)**	**(54,468)**	**1,847,798**	**147,951**	**1,995,748**
			8,749		8,749
(97,864)	**(14,075)**	**(54,468)**	**1,856,547**	**147,951**	**2,004,498**
			(871,289)	(27,125)	(898,414)
			592,792	**36,644**	**629,435**
(2,335)	(9,596)	6,314	(5,617)	(5,485)	(11,102)
(2,335)	**(9,596)**	**6,314**	**587,175**	**31,158**	**618,333**
			–		–
			10,047		10,047
11,000		444	(74,155)	(56,460)	(130,615)
			2,533		2,533
		(444)	(8,955)	9,684	729
(89,198)	**(23,672)**	**(48,154)**	**1,501,902**	**105,208**	**1,607,110**
12,585	**1,326**	**(68,845)**	**1,813,372**	**152,575**	**1,965,946**
			(385,073)	(48,017)	(433,090)
			535,504	51,716	587,220
(110,449)	(22,629)	14,377	(118,701)	(8,606)	(127,307)
(110,449)	(22,629)	14,377	416,804	43,110	459,914
			–		–
			(550)		(550)
	7,228		–		–
			3,245	283	3,528
(97,864)	**(14,075)**	**(54,468)**	**1,847,798**	**147,951**	**1,995,748**

Notes to the consolidated financial statements

of Knorr-Bremse AG

A. BASIS OF PREPARATION

A.1. About the Company

Knorr-Bremse AG ("Company") is a joint stock company domiciled in Germany. The Company's registered office and headquarters are located in Moosacher Str. 80, 80809, Munich, Germany. The Company is registered in the City of Munich commercial register under HRB 42031. The consolidated financial statements include the Company and its subsidiaries (jointly referred to as the "Group" or "Knorr-Bremse"). The Group is a global manufacturer of brake systems for rail and commercial vehicles. The Rail Vehicle Systems Divison also includes the product fields of platform screen doors, entry systems, power supply systems, driver assistance systems, air-conditioning systems, control systems, friction material, windscreen wipers, simulators and control components. The product portfolio of the Commercial Vehicles Systems Division also includes driver assistance systems, steering systems, torsional vibration dampers and solutions relating to the drive train and transmission controls to improve efficiency and save fuel.

A.2. Accounting principles

The Company's consolidated financial statements were prepared in accordance with the International Financial Reporting Standards (IFRS), as they are adopted in the European Union (EU), as well as the supplementary provisions of Chapter 315 (1) of the German Commercial Code (HGB in the version of July 10, 2018). All mandatory standards applicable on the reporting date were implemented. IFRS 9 Financial Instruments were applied ahead of schedule in the previous year. The consolidated statement of income is prepared based on the total cost method.

A.3. Measurement bases

The Group consistently applied the following accounting methods to all periods presented in these consolidated financial statements.

The consolidated financial statements were prepared according to historical purchase and production costs with the exception of the following balance sheet items with different measurement bases on the respective reporting dates. Table → 3.07

A.4. Functional and presentation currency

The consolidated financial statements are presented in euro, the Company's functional currency. All financial information presented in euro is rounded to thousands of euros (TEUR), unless otherwise indicated. This may result in rounding differences.

A.5. Use of discretionary decisions and estimates

The preparation of the consolidated financial statements require a certain amount of discretionary decisions, estimates and assumptions by the management board, which affect the application of the accounting methods and the stated amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

3.07 MEASUREMENT BASES

Asset	Method
Derivative financial instruments	Fair value
Non-derivative financial instruments, measured at fair value through profit or loss	Fair value
Non-derivative financial instruments, measured at fair value through OCI	Fair value
Contingent consideration in a business combination	Fair value
Net debt (asset) from defined benefit plans	Present value of the defined benefit obligation less the fair value of the plan assets

Estimates and underlying assumptions are constantly reviewed. Revisions of estimates are reported prospectively.

Discretionary decisions on the application of accounting methods primarily influence the amounts reported in the consolidated financial statements during the consolidation (Chapter C.1. et seq.).

Material effects on the consolidated financial statements as a result of assumptions and estimation uncertainty particularly occur in the measurement of defined benefit obligations (Chapter D.14. and F.10.), impairment tests (Chapter D.17. and D.18.) and the recognition and measurement of other accrued liabilities with respect to litigation and warranties (Chapter D.15. and F.11.). The measurement of the warranty provisions is based on estimates regarding expected warranty claims. An important factor affecting these estimates are the expected number of future warranty claims to be incurred. In this regard, there is a significant estimation uncertainty resulting from the large range of numbers of potential warranty claims.

The consolidated financial statements were approved for publication by the management board on March 28,2019.

B. ACCOUNTING STANDARDS

B.1. First application of, as well as early adoption of financial reporting standards issued by the IASB

These consolidated financial statements are prepared by the Group in accordance with the IFRS regulations. All IFRS accounting standards mandatorily applicable in the European Union as of December 31, 2018 are applied. The following accounting policies of significance for the Group are applied for the first time: Table → 3.08

The Group applied IFRS 15 for the first time in fiscal year 2018. IFRS 15 includes comprehensive regulations to determine, whether, to which extent, for which performance obligations and at what time revenue has to be recognized. IFRS 15 replaces the prior regulations on recognition of revenue according to IAS 18 Revenue, IAS 11 Construction Contracts and IFRIC 13 Customer loyalty programs.

IFRS 15 is initially applied according to the modified retrospective method in accordance with IFRS 15.C_3(b), according to which the effect of the initial application has been recognized accumulated as of January 1, 2018. Hence, the previous year's figures were not adjusted as of 1/1/2017 and December 31, 2017. Accordingly, in the consolidated financial statements of December 31, 2018 notes in accordance with IFRS 15 are not included for the comparative period 2017.

B.1.1. Significant changes due to the initial application of IFRS 15

1. There has been no significant effect with respect to the determination of revenue regarding the initial application. There was an effect on equity of TEUR 231 as of January 1, 2018 with regard to the recognition of significant financing components.
2. The balance sheet items contract assets and contract liabilities had been designated as receivables or liabilities from construction contracts until December 31, 2017. Differences in measurement between receivables and liabilities from construction contracts on the one hand and contract assets and contract liabilities on the other hand result primarily from the recognition of provisions for onerous contracts. Based on IAS 11, these were included in the valuation of the balance sheet item for the respective construction contracts (amount of offsetted loss as of January 1, 2018: TEUR 20,774). Under IFRS 15 together

3.08 FINANCIAL REPORTING PRONOUNCEMENTS ISSUED BY THE IASB AND APPLIED FOR THE FIRST TIME

Standard	New or revised standards and interpretations	Date of mandatory application EU
IFRS 15	Revenue from contracts with customers	January 1, 2018
IFRS 15	Changes to IFRS 15: Clarification of selected topics	January 1, 2018

with IAS 37 the provisions for onerous contracts are recognized separately.

3. So-called nomination fees paid to customers in the Commercial Vehicle Systems segment are recognized as other assets and amortized against revenue over the term of series production. Before the application of IFRS 15 the nomination fees were recognized directly as expense.
4. Engineering costs to prepare for series production in the Commercial Vehicle Systems segment are recognized as costs of fulfil a contract under IFRS 15.95. Capitalized amounts are written off against changes in inventory at the start of series production over the term of series production. The corresponding costs were recognized under IAS 11/IAS 18 and are also recognized under IFRS 15 in the corresponding cost categories of consolidated statement of income. Compensation payments from customers for such costs are recognized as contract liabilities according to IFRS 15 and amortized against revenue over the term of series production. These amounts were recognized directly as other operating income before the application of IFRS 15.

IMPACT ON EQUITY OF THE INITIAL APPLICATION OF IFRS 15

The following overview summarizes the effect of the initial application of IFRS 15 on equity as of January 1, 2018: Table → 3.09

The impact is recognized as of January 1, 2018 as an adjustment to retained earnings.

IMPACT OF THE INITIAL APPLICATION ON BALANCE SHEET AND STATEMENT OF INCOME ITEMS AS OF DECEMBER 31, 2018

The following table shows the impact of the initial application of IFRS 15 as of December 31, 2018 on the balance sheet and the statement of income. There were no significant effects on the statement of cash flows.

(A) IMPACT ON THE BALANCE SHEET Table → 3.10

EXPLANATIONS TO ASSETS

The effect on **non-current other assets** (TEUR –27,512) is comprises

1. Capitalization of nomination fees: TEUR –15,147 Based on IAS 11/IAS 18, the nomination fees were not capitalized, but recognized directly as other operating expenses.
2. Capitalization of costs to fulfil a contract: TEUR –12,365. The costs to fulfil a contract were not capitalized based on IAS 11/IAS 18. Respective costs were recognized under IAS 11/IAS 18 and are also recognized under IFRS 15 in the relevant cost categories of the statement of income. Under IFRS 15, an asset is recognized against changes in ventories if the relevant requirements are met.

Impact on **inventories** (TEUR –6,181) and **trade receivables** (TEUR 2,233) is based on the accounting of contracts according to the point-in-time recognition of revenue. Under IFRS 15, this results in a recognition of unfinished products and the derecognition trade receivables. Under IAS 11, these contracts would have been accounted for using the percentage-of-completion method. This would have resulted in presenting trade receivables and contract assets (under IAS 11: receivables from construction contracts). In addition, this would have resulted in a reduction of contract liabilities in the amount of TEUR 4,614.

Impact on **contract assets** is composed as follows:

1. Measurement of contract assets without considering the offsetting with losses: TEUR –7,694
2. Recognition of contract assets for contracts according to over-time recognition of revenue: TEUR 1,867
3. Measurement of contract assets by applying the impairment principles of IFRS 9: TEUR 304

Total: TEUR –5,523

1. Under the application of IFRS 15, Knorr-Bremse recognizes any losses from onerous contracts accounted for using the over-time method separately according to IAS 37 as a provision on the liabilities side. Under IAS 11, such losses were included in the measurement of the net position receivables or liabilities from construction contracts. Therefore, the

3.09 EFFECT ON EQUITY CAITAL OF THE INITIAL APPLICATION OF IFRS 15

in TEUR	
Capitalization of paid nomination fees	6,500
Capitalization of costs to fulfil a contract	7,177
Recognition of a contract liability for compensation payments regarding costs to fulfil a contract	(2,296)
Impact from recognizing of a significant financing component	(231)
Tax impact	(2,401)
Impact of the initial application as of January 1, 2018	**8,749**

contract assets as of December 31, 2018 turned out higher by TEUR 7,694.

2. The impact of TEUR 1,867 results from the point-in-time recognition of revenue from existing contracts under IFRS 15 which would have been classified as construction contracts under IAS 11. Therefore, according to IFRS 15 unfinished goods are recognized instead of receivables from construction contracts.
3. Under IFRS 15, contract assets are subject to the impairment rules in accordance with IFRS 9. As of December 31, 2018, this resulted in an impairment of TEUR 304. This measurement was not applied under IAS 11.

EXPLANATIONS TO LIABILITIES

The impact on **other non-current and current provisions** (TEUR –16,240 and TEUR –5,711, total: TEUR - 21,951) relates to the separate presentation of provisions for onerous contracts with respect to contracts presented according to the over-time-accounting. Under IAS 11, such losses were included in the measurement of the net position of receivables or liabilities from construction contracts. Therefore, the other provisions under IFRS 15 in connection with IAS 37 as of December 31, 2018 higher by TEUR 21,951 (total effect from current and non-current provisions).

The impact on **current and non-current other liabilities** is as follows: Table → 3.11

1. Under IFRS 15, **advance payments received** are generally recognized under contract liabilities or recognized in the net item "Contract assets/liabilities" for contracts presented according to over-time-accounting. Under IAS 11/IAS 18, advance payments received were recognized net only for construction contracts in the net position receivables/liabilities from construction contracts. Other prepayments received were presented separately as other liabilities. Under IAS 11/IAS 18, therefore other liabilities would turn out higher by TEUR 75,846.

3.10 BALANCE SHEET

in TEUR	Amounts, reported as of Dec. 31, 2018	Effects of initial application	Amounts without application of IFRS 15
Assets			
Non-current assets	**2,091,847**	**(27,512)**	**2,064,334**
Thereof other assets	38,167	(27,512)	10,654
Current assets	**4,170,367**	**(9,524)**	**4,160,843**
Thereof inventories	836,326	(6,181)	830,145
Thereof trade accounts receivable	1,237,381	2,233	1,239,614
Thereof other assets	123,433	(53)	123,380
Thereof contract assets	99,284	(5,523)	93,761
Balance sheet total	**6,262,213**	**(37,036)**	**6,225,177**
Equity	**1,607,110**	**(14,479)**	**1,592,631**
Thereof retained earnings, adjustment effects as of January 1, 2018	39,924	(8,749)	31,175
Thereof annual net profit	629,435	(5,730)	623,705
Liabilities			
Non-current liabilities	**2,285,136**	**(21,061)**	**2,264,075**
Thereof other provisions	243,578	(16,240)	227,338
Thereof liabilities from deferred taxes	82,603	(4,821)	77,782
Current liabilities	**2,369,968**	**(1,496)**	**2,368,472**
Thereof other provisions	233,213	(5,711)	227,502
Thereof financial liabilities	642,895	(29,617)	613,278
Thereof other liabilities	133,303	105,463	238,766
Thereof contract liabilities	315,122	(71,631)	243,491
Total liabilities	**4,655,103**	**(22,557)**	**4,632,546**
Balance sheet total	**6,262,213**	**(37,036)**	**6,225,177**

2. **The repayment obligations due to the agreement of volume bonuses** are classified as refund liabilities under IFRS 15 and presented as the financial liabilities. If IFRS 15 did not apply, these liabilities would have been recognized as other current liabilities. Under IAS 11/IAS 18 other liabilities would therefore be higher by TEUR 29,617.

The impact to the **liabilities from deferred taxes** considers the effects of the application of IFRS 15 in relation to deferred tax assets/liabilities. If IFRS 15 did not apply, the liabilities from deferred taxes would have been TEUR 4,821 lower.

Due to the recognition of repayment obligations for volume bonuses, **financial liabilities** turn out higher by TEUR 29,617 under IAS 11/IAS 18.

The effect on **contract liabilities** (TEUR −71,631) consists of the following:

1. Presentation of advance payments received: TEUR −75,846 (see explanation on other liabilities).
2. Offsetting with losses in projects accounted for using the over-time method: TEUR 14,257
   Under IFRS 15, Knorr-Bremse recognizes any onerous losses from contracts accounted for using the over-time-method separately according to IAS 37 as provisions on the liabilities side. Under IAS 11, such losses were included in the measurement of the net position receivables or liabilities from construction contracts. Therefore, contract liabilities as of December 31, 2018 turn out higher by TEUR 14,257.
3. Presentation of projects accounted for at a point-in-time-method instead of using the percentage-of-completion-method: TEUR −4,614. (See explanations on inventories and trade receivables.)
4. Presentation of compensation payments for costs to fulfil a contract: TEUR −3,988.
   Compensation payments from customers for costs to fulfil a contract recognized as assets are recognized as contract liabilities under IFRS 15 and only presented as revenue at the start of series production. Under IAS 11/IAS 18, such payments were recognized directly as other operating income.
5. Significant financing components: TEUR −1,440.
   Under IFRS 15, revenue also includes effects from significant financing components. This has an impact on revenue, interest expenses and the measurement of contract assets/liabilities. Under IAS 11/IAS 18, such an effect was not taken into consideration. Contractual liabilities therefore would turn out lower by TEUR 1,440 lower without applying IFRS 15.

(B) EFFECTS ON THE STATEMENT OF INCOME

The composition of the effect on **revenue** of TEUR 1,695 is shown in Table → 3.12 and explained as follows:

1. TEUR 8,714 relate to the presentation of contracts as point-in-time under IFRS 15, which would have been presented under IAS 11 as construction contracts applying the percentage of completion method. Accordingly, revenue in 2018 would have been TEUR 8,714 higher under IAS 11.
2. The recognition of compensation payments of TEUR −3,886 from customers on the Commercial Vehicle Systems segment for developments costs not recognized as costs to fulfil had a counter-effect.
3. Another counter-effect in the amount of TEUR −3,052 resulted from the the presentation of the change in transaction price related provisions. If IFRS 15 did not apply, revenue would turn out lower by TEUR 6,938.
4. The effect from including significant financing components in revenue (TEUR −81) also has a counter effect.

The impact on **changes in inventories of finished goods and work in progress** (TEUR −11,369) is composed of:

3.11 EFFECT ON CURRENT AND NON-CURRENT OTHER LIABILITIES

Facts	Effect on current other liabilities	Recognition under IFRS 15
in TEUR		
(1) Advance payments received	75,846	Contract liabilities
(2) Refund liabilities due to agreed volume bonuses	29,617	Current Financial liabilities
Total	**105,463**	

1. Recognition of contracts applying the point-in-time method according to FRS 15 instead of the percentage of completion method under IAS 11: TEUR –6,181
2. Capitalization of costs to fulfil a contract under IFRS 15: TEUR –5,188

The impact on **other operating income** of TEUR 9,469 is composed as follows:

1. Deferral of compensation payments for costs of fulfil a contract in the Commercial Vehicle Systems segment: Under IFRS 15, these are initially recognized as contract liabilities and only presented as revenue in the statement of income with the start of series production. If IFRS 15 did not apply, TEUR 1,692 would have been recognized as other operating income in 2018.
2. Compensation payments from customers in the Commercial Vehicle Systems segment for developments not associated with capitalized costs to fulfil a contract: TEUR 3,886.
3. Presentation of the release of transaction price related provisions: TEUR 3,891.

The **other operating expenses** would have been TEUR 9,235 higher under IAS 11/IAS 18. The effect is comprised as follows:

1. Presentation of so-called nomination fees: TEUR –8,700. Under IFRS 15, these payments to customers are capitalized and offset against revenue at the start of series production.
2. Presentation of additions to transaction price related provisions: TEUR –839. Under IFRS 15, these expenses were offset against revenue. If IFRS 15 did not apply, they would have resulted in an increase in other operating expenses.
3. The effect resulting from the impairment of contract assets (TEUR 304) has a counter effect on other operating expenses.

The impact on **interest expenses** is based on the consideration of significant financing components as part of the contract revenue under IFRS 15. In 2018, this resulted in additional interest expenses of TEUR 1,290.

Without application of IFRS 15, and without this effect, there would have been TEUR 2,420 lower **tax expenses** from deferred taxes.

Overall, the **net income** in the reporting period 2018 would have been TEUR 5,730 lower without application of IFRS 15.

3.12 STATEMENT OF INCOME

in TEUR	Amounts, reported As of 12/31/2018	Effect of initial application	Amounts without application of IFRS 15
Revenues	6,615,800	1,695	6,617,495
Changes in inventories of unfinished/finished products	34,424	(11,369)	23,055
Other own work capitalized	48,047	–	48,047
Total operating performance	**6,698,271**	**(9,647)**	**6,688,597**
Other operating income	66,233	9,469	75,702
Cost of materials	(3,318,227)	–	(3,318,227)
Personnel expenses	(1,496,981	–	(1,496,981)
Other operating expenses	(771,254)	(9,235)	(780,489)
Earnings before interest, tax, depreciation and amortization (EBITA)	**1,178,042**	**(9,440)**	**1,168,602**
Depreciation and amortization	(205,570)	–	(205,570)
Earnings before interests and taxes (EBIT)	**972,472**	**(9,440)**	**963,032**
Interest income	20,128	–	20,128
Interest expenses	(54,379)	1,290	(53,089)
Other financial result	(62,715)	–	(62,715)
Income before taxes	**875,506**	**(8,150)**	**867,356**
Taxes on income	(246,070)	2,420	(243,650)
Net income	**629,435**	**(5,730)**	**623,705**

B.1.2. Other changes

The following new or amended standards have no or no material effects on the consolidated financial statement.

- Changes to IFRS 4: Application of the IFRS 9 with IFRS insurance agreements
- Changes to IAS 40: Transfer of investment property
- Changes to IFRS 2: Classification and measurement of share-based Payments
- IFRIC 22: Foreign Currency Transactions and Advance Consideration
- Annual improvements 2014 – 2016: Changes to IFRS 1 and IAS 28

B.2. Standards issued by the IASB, which have not yet been applied

The following table presents the standards issued by the IASB, of significance for the Group, which have not yet been applied. Table → 3.13

B.2.1. IFRS 16 Leases

IFRS 16 was published in January 2016 and replaces 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. IFRS 16 establishes the principles for the recognition, valuation, presentation and statement of leases and obligates the lessee to present all leases and associated contractual rights and obligations in the balance sheet, similar to accounting of finance leases in accordance with IAS 17. The standard includes two exceptions for lessee lease agreements for "low value" assets (such as PCs) and short-term lease agreements (e.g. lease agreements with a term of 12 months or less).

At the start of a lease, a lessee enters a liability for leasing liabilities and a right of use to the leased asset into the balance sheet for the future; this corresponds to the present value of the future leasing payments plus directly attributable costs and is amortized over the term of use. The lessee is obligated to present the interest expenses for the leasing liability and the depreciation expenses separately.

The lessee is also obligated to reevaluate the lease if certain events occur (such as a change in the term of the lease, change in the future leasing payments due to a change in the index or a rate used to determine these payments). The lessee will generally recognize the amount of the revaluation for the leasing liability as an adjustment to the capitalized right of use for the leased object.

The Knorr-Bremse Group will apply IFRS 16 according to the modified retrospective approach as of January 1, 2019. Lease agreements previously classified in the Knorr-Bremse Group as operating leasing are primarily affected by the initial application. Applying the simplification according to IFRS 16.C3(b), the Knorr-Bremse Group will not apply the standard to contracts previously not classified as leases under IAS 17 and IFRIC 4.

Short-term lease agreements with a term of less than 12 months (and without a purchase option) and lease agreements for which the asset on which the lease agreement is based is of low value are not entered into the balance sheet according to IFRS 16, as per the elective right of IFRS 16.5. In addition, Knorr-Bremse applies the simplified transitional provision according to IFRS 16.C10(c)(ii) and does not enter leases with a term that ends within 12 months after the initial application into the balance sheet according to IFRS 16. In the 2019 fiscal year, these leases will contribute to the expenses for short-term leases with around 6 million EUR. Under the initial application of IFRS 16 for operating leasing contracts, the right of use for the leased asset is valuated at the amount of the leasing liability; the interest rate at the time of initial application is applied (IFRS 16.C8(b)(i)). The comparative information for the 2018 fiscal year will not be adjusted in the 2019 consolidated financial statements according to IFRS 16.C7.

Over the 2018 fiscal year, the Knorr-Bremse Group has analyzed the effects of the initial application of IFRS 16 in a Group-wide

3.13 FINANCIAL REPORTING PRONOUNCEMENTS ISSUED BY THE IASB AND NOT YET ADOPTED

Standard	New or revised standards and interpretations	Date of mandatory application EU
IFRS 16	Leases	1/1/2019
IAS 19	Changes to IAS 19: Plan changes, reductions or settlements	1/1/2019*

*Adoption by the EU still outstanding. Adoption by the EU before the initial application date is expected.

project. The following categories of leases were identified: Real estate, vehicles, forklifts, technical equipment and machinery and other leased assets. The analysis completed shows a probable recognition of rights of use and leasing liabilities of around EUR 255 to 265 million EUR in the consolidated financial statements of January 1, 2019. Due to the changed presentation of operate-lease expenses as depreciation on rights of use and interest expenses from leasing liabilities, a roughly EUR 45 to 50 million better EBITDA and a roughly EUR 3 to 6 milion better EBIT are expected for the 2019 fiscal year.

B.2.2. Changes to IAS 19

According to the amendment to IAS 19, if a defined benefit plan is amended, reduced or settled, the current service cost and the net interest for the remaining fiscal year must be recalculated using the current actuarial assumptions previously used to revalue the net liability (asset). The changes must initially be applied in the first reporting period of a fiscal year starting on or after January 1, 2019, whereby early application is permitted.

The Group is currently assessing the potential impact of the changes on its consolidated financial statements. The Group currently does not expect any material impact. EBITDA in 2019 will increase by approximately EUR 5-6 million due to the changes in disclosure.

B.2.3. Other changes

In addition to the standards presented above, the IASB also has also issued additional standards, interpretations and changes to standards or interpretations which are also not required to be applied at present and must still be included in EU law ("endorsement") to be applied. Currently, the Group does not assume that applying these standards, interpretations and changes will have a significant effect on the presentation of the financial statements.

- Changes to IFRS 9: Early repayment arrangement with negative compensation payment
- IFRIC 23: Uncertainty over Income Tax Treatments
- 2015 – 2017 cycle: Changes to IAS 12, IAS 23, IFRS 3 and IFRS 11
- Changes to IFRS 3: Definition of business operation
- Changes to IAS 1 and IAS 8: Definition of materiality
- Changes to IAS 28: Long-term investments in associated companies and joint ventures
- Changes to the former framework concept
- IFRS 17: Insurance contracts
- Changes to IFRS 10 and IAS 28 Sale or transfer of assets between the investor and an associate or joint venture
- IFRS 14: Regulatory deferrals and accruals

C. CONSOLIDATION

C.1. Principles of consolidation

The consolidated financial statements include the financial statements of the Company and all material affiliated companies. Subsidiaries controlled by the Group are fully consolidated. The Group controls a company, if it is exposed to fluctuating returns or is entitled to these returns and has the ability to influence these returns using its power of control over the company. The financial statements of subsidiaries are contained in the consolidated financial statements from the date on which the control starts and up to the date on which the control ends.

The Group recognizes business combinations based on the acquisition method. As part of the capital consolidation, the acquisition costs of the acquired shares are offset against the equity of the subsidiaries assigned to the Group. The acquired, identifiable net assets and the consideration transferred are basically recognized at fair value. A positive difference that arises between the acquisition costs of the acquired shares and the identifiable net assets upon initial consolidation is recognized as goodwill. Each goodwill is reviewed annually for impairment. A negative difference is reported directly in profit and loss.

The consideration transferred does not contain any amounts associated with the fulfillment of previously existing relationships. Such amounts are fundamentally reported in profit and loss.

Any conditional obligation to provide consideration is reported at the fair value at the time of acquisition. If the contingent consideration is classified as equity, it is not reassessed and a settlement is recognized in equity. Otherwise, other contingent considerations are assessed at fair value on each reporting date and subsequent changes to the fair value of the contingent considerations are reported in profit and loss.

Non-controlling interests are recognized with their corresponding share of the identifiable net assets of the acquired company at the date of acquisition.

Associated companies are companies in which the Group has significant influence, but no control or joint control in relation to finance and business policy. A joint venture is an agreement over which the Group exercises joint control, whereby the Group has rights to the net assets of the agreement rather than rights to its assets and obligations for its liabilities.

Shares in associated companies and joint ventures are reported based on the equity method. They are initially recognized at the acquisition costs, which also include transaction costs. After the initial recognition, the consolidated financial statements contain the Group's share in the comprehensive income, less distributions received, of the investments reported based on the equity method up to the date on which the significant influence or joint control ends.

All intragroup receivables and payables as well as expenses and income are eliminated within the scope of the debt consolidation as well as the consolidation of expense and income. Unrealized gains from transactions with companies that are recognized based on the equity method are derecognized against the investment in the amount of the Group's interest in the associated company. Unrealized losses are eliminated in the same manner as unrealized gains, but only if there is no indication of an impairment.

C.2. Foreign currency translation

Foreign currency receivables and payables of the companies included in the consolidated financial statements are reported at the spot exchange rate on the date of the transaction. These items are translated at the spot rate on the reporting date.

Annual financial statements of consolidated group companies prepared in a foreign currency are translated using the modified reporting date method. Accordingly, assets and liabilities from foreign group companies are translated at the spot rate on the reporting date, while income and expenses from foreign group companies are translated at the average rate for the respective fiscal year. The resulting currency translation differences are reported in other comprehensive income and recognized in the line item currency translation if the currency translation difference is not assigned to the non-controlling interests.

The exchange rates on which the foreign currency translation is based, which have a material effect on the consolidated financial statements are listed below: Table → 3.14

C.3. Changes to the Group

C.3.1. Additions to the consolidated companies

With regard to the accounting methods for business combinations, we refer to the information under Chapter C.1.

The following companies were included in the Group of consolidated companies for the first time in the 2018 fiscal year for materiality reasons:

- Freios Bre Coahuila, S.A. de C.V., Cd. Acuña, Coah/Mexico
- Knorr-Bremse Systems for Rail Vehicles Enterprise Management (Beijing) Co., Ltd., Beijing/China
- Dyno-Inno Test Center for Brake Equipment (Suzhou) Ltd., Suzhou/China

In 2018 Bendix Servicios de Mexico SA de CV, Tapodaca Nuevo Leon/Mexiko was founded and a 16.67% investment in Shenzhen SF Trailernet Technology Co. , Ltd., Shenzhen/China was acquired.

3.14 CURRENCY EXCHANGE RATES

		December 31, 2018		December 31, 2017	
		Spot rate	Average rate	Spot rate	Average rate
USA	USD	0.87336	0.84673	0.83382	0.88097
China	CNY	0.12698	0.12811	0.12813	0.13058
Hungary	HUF	0.00312	0.00314	0.00322	0.00323
Czech Republic	CZK	0.03887	0.03899	0.03916	0.03805
United Kingdom	GBP	1.11791	1.13036	1.12710	1.14078
India	INR	0.01254	0.01240	0.01305	0.01356
Japan	JPY	0.00795	0.00767	0.00741	0.00786
Hong Kong	HKD	0.11151	0.10803	0.10670	0.11303
South Africa	ZAR	0.06076	0.06405	0.06754	0.06679
Brazil	BRL	0.22502	0.23218	0.25171	0.27549

C.3.2. Divestments – disposals of consolidated companies

In the 2018 fiscal year, the following companies/ investments were combined, liquidated or sold:

- Sydac Pty Ltd., Granville/Australia
- Sydac Ltd., Manchester/United Kingdom
- Sydac Simulation Technologies India Private Ltd., Pune/India
- Swedtrac RailService AB Solna/Sweden
- Knorr-Bremse RailServices (UK) Ltd., Melksham, Wiltshire/United Kingdom
- Kiepe Electric Ltd., Birmingham/United Kingdom
- Kiepe Electric UK Ltd., Birmingham/United Kingdom
- tedrive Steering Systems Inc., Wixom/USA
- IGE-CZ s.r.o. Brno/Czech Republic
- Megalith Grundstücksverwaltungsgesellschaft mbH & Co. Vermietungs KG, Mainz/Germany

SYDAC

The "Sydac" disposal Group includes the simulation business in the Rail Vehicle Systems segment. The simulation Company included Sydac Australia, including the subsidiary Company Sydac UK and other assets belonging to the simulation Company that were transferred to the newly founded Company Sydac India before the sale. The "Sydac" disposal Group was sold to OKTAL France on July 31, 2018. The sale resulted in a loss of TEUR 10,802. Of this, TEUR 5,322 was already recognized as affecting the net operating result as a depreciation of assets as of September 30, 2017. During the second quarter of 2018, the assets were fully amortized through another impairment of TEUR 1,353. The depreciation was recognized as affecting the net operating result under amortizations. Then, after the disposal of simulation business at the end of July 2018, a loss of TEUR 4,127 was realized and presented as financial result.

BLUEPRINT

The "Blueprint" disposal Group includes the vehicle maintenance business in the Rail Vehicle Systems. The vehicle maintenance business bundled in the "Blueprint" disposal Group comprised the companies Kiepe Electric UK Holding Ltd. including Kiepe UK Ltd, Knorr-Bremse RailService UK Ltd. and Swedtrac RailService AB Sweden.

The Swedish part of the vehicle maintenance business (Swedtrac RailService AB Sweden) as part of the Blueprint disposal Group was sold to the purchaser Stadler Service Sweden AB on January 12, 2018, effectively on April 1, 2018. The profits generated from the sale of TEUR 6,677 were recognized as financial result.

On August 3, 2018, the remaining vehicle maintenance business headquartered in the United Kingdom (Kiepe Electric UK Holding Ltd. including Kiepe UK Ltd. and Knorr-Bremse RailService UK Ltd.) was sold to Mutares Holding-25 AG, Bad Wiessee/Germany. The disposal resulted in a loss of TEUR 40,600. Of this loss, TEUR 19,997 were already recognized under the amortizations as an impairment as of 31 December 2017 as affecting the net operating result. On September 30, 2018, an additional impairment of TEUR 17,787 was recognized as affecting the net operating result in the form of amortizations. Then, after the disposal of the remaining vehicle maintenance business at the end of October 2018, a loss of TEUR 2,816 was realized and presented as financial result.

The total loss from the sale of the "Blueprint" disposal Group (including the previously sold Swedish part of the vehicle maintenance business) therefore was TEUR 33,923.

C.3.3. Changes of company names

The following companies were renamed in fiscal year 2018:

- Knorr-Bremse Raylı Sistemler Sanayi ve Ticaret Limited Şirketi, Ankara/Turkey (formerly: Knorr-Bremse Raylı Sistemler Turkey Sanayi ve Ticaret Limited Şirketi, Ankara/Turkey

C.4. Composition of the Group

For details on the Group of consolidated companies, refer to the list of shareholdings under H.13. Table → 3.96, Table → 3.15

C.5. Significant non-controlling interests

Table → 3.16

In April 2018, Knorr Brake Holding Corporation, Delaware, (KB US Holding) purchased the minority share of Ursus Vermögensverwaltung GmbH, Grünwald/Germany in Knorr Brake Holding Corporation in the amount of 10.71 % of the outstanding capital in the form of 600 shares. (See Chapter H.5.6.).

The Group holds a 50% interest in Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing (Beijing) Co., Ltd., Daxing/China (Knorr-Bremse CARS). Knorr-Bremse has a controlling interest in this company due to the possibility of obtaining a majority interest in the relevant bodies. This company is therefore fully consolidated in accordance with IFRS 10.

The following summarized financial information is presented for Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing, prepared in accordance with IFRS and modified for differences in the Group's accounting policies. This is information before eliminations, which is carried out with other group companies.

The remaining non-controlling interests are not significant, individually or in total. Table → 3.17

MINORITY INTERESTS PUT OPTION

Knorr-Bremse holds only 80% of the shares in both Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and Knorr-Bremse Commercial Vehicle Systems Japan Ltd. The remaining 20% is

3.15 COMPOSITION OF THE GROUP

	2018	2018	2017	2017
Number of fully-consolidated subsidiaries	Domestic	International	Domestic	International
Status January 1	28	118	27	116
Additions	–	1	1	6
Disposals	–	(7)	–	(4)
Reclassifications	(1)	3	–	–
Status December 31	27	115	28	118
Number of associated companies	Domestic	International	Domestic	International
Status January 1	2	2	2	2
Additions	–	–	–	–
Disposals	–	–	–	–
Reclassifications	–	(1)	–	–
Status December 31	2	1	2	2
Non-consolidated subsidiaries	Domestic	International	Domestic	International
Status January 1	2	16	1	8
Additions	–	–	1	8
Disposals	–	(2)	–	–
Reclassifications	–	(3)	–	–
Status December 31	2	11	2	16
Investments	Domestic	International	Domestic	International
Status January 1	4	2	4	3
Additions	–	1	–	–
Disposals	(3)	(1)	–	(1)
Reclassifications	1	1	–	–
Status December 31	2	3	4	2

held by the minority shareholder Robert Bosch GmbH. A **put option** [P. 185] for the minority shareholder and a call option for the company were agreed for this 20%.

If the put option is exercised lawfully, the Group cannot avoid bidding for the remaining shares. In addition, the Group has no direct control over a possible transaction triggering the put option, since this can also be a company acquisition at a higher corporate level.

The Group therefore accounts for the put option in accordance with IFRS using the Anticipated Acquisition Method. Accordingly, in IFRS, a liability is recognized at amortized cost of the put option and minority interests are presented as if they were attributable to the Group. Changes in the fair value of the put option are recognized as income or expense.

3.16 NON-CONTROLLING INTERESTS

Name	Registered Office/ Country of foundation	Ownership shares constituting non-controlling interests	
in %		12/31/2018	12/31/2017
Knorr Brake Holding Corporation	Watertown, New York/USA	0	10.7
Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing (Beijing) Co., Ltd.	Daxing/China	50.0	50.0

3.17 KNORR BREMSE CARS

in TEUR	2018	2017
Revenues	170,978	191,568
Profit	34,018	37,736
Profit attributable to non-controlling interests	17,009	18,868
Other income	5,240	(4,519)
Comprehensive income	39,258	33,217
Total comprehensive income attributable to non-controlling interests	19,629	16,608
	12/31/2018	12/31/2017
Current assets	131,144	149,059
Non-current assets	15,171	5,248
Current liabilities	(84,745)	(81,929)
Non-current liabilities	(265)	(5,331)
Net assets	61,306	67,047
Net assets attributable to non-controlling interests	30,653	33,523
	2018	2017
Cash flows from ongoing operating activities	14,466	34,120
Cash flows from investing activities	581	614
Cash flows from financing activities	(44,005)	(39,566)
Net increase in cash and cash equivalents	(28,958)	(4,831)
	2018	2017
Dividends paid during the year to non-controlling interests	19,601	19,783

D. NOTES TO THE ACCOUNTING AND MEASUREMENT METHODS

D.1. Revenue

D.1.1. Revenue recognition until 2017

Revenue is reported as soon as the significant risks and opportunities associated with the ownership are transferred to the buyer, the receipt of payment is probable, the associated costs and possible returns can be reliably estimated, no further right over the goods exist, and the revenue amount can be reliably calculated. Revenue is reported less returns, price reductions, and quantity discounts. Revenue is measured at the contractually agreed price.

RAIL VEHICLES SYSTEMS DIVISION

The Rail Vehicle Systems Division operates the original equipment business as a project business. The aftermarket business involves the sale of spare parts as well as the implementation of the project business.

The original equipment project business is based on individual project contracts. The Company's services primarily involve the delivery of brake, door, and air-conditioning systems for rail vehicles. The contracts provide for a delivery of different numbers of identical trains.

The project business in the aftermarket concerns the general overhaul of entire trains for the brake, door and air conditioning systems sectors.

The project business generally consists in production orders pursuant to IAS 11. The revenue is calculated using the percentage-of-completion (PoC) method. The progress is measured based on the cost-to-cost method. The revenue is calculated based on the accrued manufacturing costs of the orders plus the attributable profit according to the degree of completion achieved at the reporting date. Contract revenue is measured at the fair value of the payment received or outstanding payment. Anticipated losses from production orders are fully recognized at the time of their detection in profit and loss.

The spare parts business in the aftermarket segment is regulated in separate contracts. Revenue from the spare parts business are recognized at the time the spare parts are delivered to the customers.

COMMERCIAL VEHICLE SYSTEMS DIVISION

The Commercial Vehicle Systems Division sells complete and subsystems of a braking system for commercial vehicles. This relates to business in the original equipment market as well as the aftermarket sector, in which large quantities of various products are dispatched to customers on a daily basis. Framework agreements exist with the original equipment and aftermarket customers, which regulate the prices for a high number of the products. Production is just in time. The significant risks and rewards are transferred upon delivery of the goods. Revenue in the Commercial Vehicle Systems segment is recognized at the time of delivery of the goods.

D.1.2. Revenue recognition from 2018 onwards

Knorr-Bremse generates revenue from contracts with customers in the two segments Rail Vehicle Systems and Commercial Vehicle Systems. Revenue is recognized in accordance with IFRS 15 when the customer would obtain control over the goods and services which Knorr-Bremse is obligated to perform and provide. Control is either transferred at a point-in-time or over a period of time.

RAIL VEHICLE SYSTEMS DIVISION

In the Rail Vehicle Systems segment, the timing of revenue recognition is based on, whether the contract represents a project or not. Most OE business is project business. Projects in the aftermarket area are fairly rare.

The majority of the project business relates to contracts for design, production and delivery of braking systems with a precisely defined function for a certain number of trains or locomotives. There are projects with similar structures for door systems and air conditioning systems. In projects, the entire scope of services represents one performance obligation. This is primarily because the engineering services form the framework for the systems of all trains or locomotives to be outfitted with hardware in the specific project. Therefore, there is a very high level of dependency between the engineering of the system and the hardware, as well as the production, delivery and commissioning of the system. Therefore, Knorr-Bremse performs a high percentage of integration services for each single train or each single locomotive for a project. In addition, this integration service applies to all systems to be outfitted in a specific project: all of them must meet exactly the same functionality.

When assessing revenue recognition over-time, Knorr-Bremse applies the regulation of IFRS 15.35(c) for project agreements. There is no alternative use for Knorr-Bremse for systems installed in the trains or locomotives; since simply for ractical reasons it is not possible to use customer and vehicle specific systems which have been installed and operated in some other application. Therefore, revenue from project business is recognized over time if Knorr-Bremse has a right to "compensation for services performed up to a certain time" over the entire term of the project. This assessment is based on an assessment of the respective contract with the customer. In particular, the question here is whether the customer has the right to terminate the contract without requiring any failure on Knorr-Bremse's part to perform. If there is no such right of termination, Knorr-Bremse has a right to satisfy the contract. In this case, the requirement of "compensation for services performed up to a certain time" is fulfilled. If there are statutory termination rights without any failure by Knorr-Bremse, the assumption is that there is also a right to compensation including a margin share for services performed. If the contract grants a termination right to the customer without any failure by Knorr-Bremse, the question is whether Knorr-Bremse would have a right in such cases to compensation of costs incurred up until such a termination becomes effective, including a margin share. Only if such right is confirmed the criterion of "compensation for services performed up to a certain time" is met and revenue is recognized over time. The percentage-of-completion-method is used to recognize revenue over time. Progress is determined by using the cost-to-cost method. The costs incurred are compared to the planned costs for each project. This determines the stage of progress and the revenue to be recognized up to a periode end date. By applying this method, the engineering input and hardware delivery performed by Knorr-Bremse are reflected properly in revenue across the entire term of a project, since it is applied independent of invoicing or payment dates. Estimates are required in particular when determining planned costs and are dependent on the range of delivery and performance. The amount of revenue is determined based on the contractually agreed prices for the contractually stipulated quantity of systems. These are fixed prices, possibly supplemented by price escalation clauses. The effects of price escalation clauses are taken into consideration if it is possible to reliably assess requirements for such clauses to become effective.

Knorr-Bremse is generally entitled to invoice all hardware deliveries in projects. Customers make advance payments, however these are low based on the ongoing invoices for delivered hardware components. Therefore, there are generally no significant financing components. Engineering work required after the contract is concluded, but before the start of hardware production and delivery and the production and delivery of hardware generally result in the recognition of contract assets. The partially agreed compensation payments for one-time engineering services, invoices for delivered hardware and customer advance payments have a counter effect. These payments and invoices result in contract liabilities depending on their amount and degree of progress.

The revenue from other business in the segment are generally the result of short-term services and deliveries, and primarily for replacement part deliveries in the aftermarket segment. Each of these deliveries and services represents a separate performance obligation. Revenue for such services is recognized at the time of delivery. The amount of revenue is determined based on the contractually agreed prices.

In the Rail Vehicle System segment, the average payment term is 40 days.

In general, there is a warranty assuring freedom from defects and over the term determined by law.

COMMERCIAL VEHICLE SYSTEMS DIVISION

In the Commercial Vehicle Systems segment, revenue in OE and aftermarket business is generated from the series production of components for braking systems and other sub-systems. Ordering is primarily based on electronic processes in which an ordered quantity only becomes binding at the start of the so-called frozen zone. The frozen zone is a certain number of days before the notified delivery deadline. Each delivery represents a separate performance obligation according to IFRS 15. Revenue is recognized upon transfer of control. The amount of revenue is determined based on the prices set forth in framework agreements or individual contracts. The average payment term is 41 days.

Payments of nomination fees from Knorr-Bremse to customers are capitalized and amortized against revenue over the term of series delivery. The development work required for the start of series production is generally based on framework agreements without binding order of quantities and may last up to several years. If future series delivery is at least highly likely to occur based on such framework agreements and costs are covered, these development costs are capitalized as costs to fulfil the anticipated series production and written off at the start of series production over the projected term. The depreciation is recognized in changes in inventory. Compensation payments by customers during the development phase are recognized as contract liabilities and amortized against revenue with the start of series production over the term of series production.

Frequently, there are agreements on volume bonuses for series delivery, which Knorr-Bremse must reimburse to the customer depending on the defined delivery quantities for one year. The delivery quantity for the completed period is used to allocate and measure the reimbursement obligations according to the contractually defined quantity corridors. These reimbursement obligations are recognized as a decrease in revenue and recorded as a liability in the balance sheet.

In general, there is a warranty assuring freedom from defects and over the term determined by law.

D.2. Government grants

Government grants are recognized, if adequate certainty exists that the conditions associated with the grant will be met and the grants will be provided.

These can be divided into grants for assets and performance-related grants.

IAS 20.23 provides for an accounting option.

Grants for assets must either be deducted from the book value of the corresponding asset or reported as deferred income, which must be released to income over the useful life of the asset. The Company deducts grants for assets from the carrying amount of the asset.

According to IAS 20.29, a right to choose between accounting in the other operating income or the offsetting of the corresponding expense with the income from the grants exists for performance-related grants. The Company exercises the first option.

D.3. Earnings before interests and taxes (EBIT)

The operating income is the result from the Group's main activity as well as other income and expenses from business activities. The earnings before interests and taxes (EBIT) do not include interest income and interest expense, as well as the other financial result, and taxes on income.

D.4. EBITDA

EBITDA corresponds to earnings before depreciation and amortization and impairment as reported in the statement of income.

D.5. Net working capital

Net working capital corresponds to inventories, trade accounts receivable and contract assets (prior year: receivables from construction contracts) less trade accounts payable and contract liabilities (prior year: liabilities from construction contracts and advance payments received) (see Chapter B.1.).

D.6. Financial income and financing expenses

Interest income and expenses are recognized in profit or loss based on the effective interest method. Dividend income is recognized in profit or loss at the time at which the Group's legal entitlement to payment arises.

D.7. Borrowing costs

Borrowing costs are capitalized if they are directly attributable to the acquisition or production of a qualifying asset for which a longer period of time is required to bring it to its intended usable or saleable condition. All other borrowing costs are expensed as incurred. The Group did not capitalize any borrowing costs in the reporting periods.

D.8. Income taxes

Current taxes are the expected tax debt or tax claim in relation to the taxable income or tax loss for the fiscal year based on the tax rates that apply on the reporting date, or which will be in place shortly, as well as all adjustments to the tax debt in previous years. The expected tax debt or tax claim reflects the amount that represents the best estimate under consideration of tax uncertainties, where applicable. Current tax debts also include all tax debts, which arise as a result of dividends.

Current tax claims and liabilities are only netted under certain conditions.

Deferred taxes are recognized with regard to temporary differences between the book values of the assets and liabilities for group accounting purposes and the amounts used for tax purposes. Deferred taxes are not recognized for:

- temporary differences in the event of the initial reporting of assets or debts for a transaction, which does not relate to a business combination and which does not influence the accounting earnings before taxes or the taxable earnings
- temporary differences in connection with shares in subsidiaries, associates and jointly controlled entities, if the Group is able to manage the timing of the reversal of the temporary differences and it is likely that they will not be reversed in the foreseeable future
- taxable temporary differences in the event of the initial reporting of goodwill.

A deferred tax claim is recognized for unused tax losses, unused tax credits and deductible temporary differences to the extent that it is likely that future taxable earnings will be available for which they can be used. Future taxable profits are determined on the basis of the individual business plans of the subsidiaries, taking into account the reversal of temporary differences. Unrecognized deferred tax claims are reassessed on every reporting date and recognized in the amount likely to be permitted by the realization of future taxable earnings.

Deferred tax liabilities are additionally recognized for temporary differences arising from future dividend distributions of a subsidiary (outside basis differences).

Deferred tax claims are reviewed on every reporting date and reduced to the extent to which it is no longer likely that the associated tax benefit will be realized; write-ups are reported, if the probability of future taxable earnings improves.

Unrecognized deferred tax claims are reassessed on every reporting date and recognized in the amount likely to be permitted by the realization of future taxable earnings.

Deferred taxes are measured based on the tax rates, which are expected to be applied to temporary differences, as soon as they reverse, namely, using tax rates that apply or have been announced on the reporting date.

The measurement of deferred taxes reflects the tax consequences that arise from the Group's expectation with regard to the manner of recognition of the book values of its assets and the settlement of its debts as at the reporting date.

Deferred tax claims and deferred tax debts are netted if certain conditions are met.

D.9. Intangible assets

Intangible assets, which were not acquired as part of a business combination, with a determinable useful life, are recognized at the acquisition or production costs less cumulative depreciation and amortization and cumulative impairments.

The goodwill resulting from a business combination is recognized with the acquisition costs, less any necessary impairment.

Expenditure for research activities is recognized in profit or loss in the period in which it arises.

Development projects are capitalized at acquisition or production costs, including development-related overheads, if the development costs can be reliably measured, the product or process is technically and commercially appropriate, a future commercial benefit is probable, and the Group intends and has adequate resources to complete the development and use or sell the asset.

Development projects are measured at the acquisition or production costs, less cumulative amortization and cumulative impairment expenses.

Intangible assets with a determinable useful life are subject to linear and amortization over their estimated useful lives. The amortization is fundamentally recognized in profit and loss. Goodwill as well as intangible assets without a determinable useful life are not subject to regular and amortization. All capitalized intangible assets, with the exception of goodwill, have a limited useful life.

The estimated useful lives amount to:

- Licenses and acquired rights: 1 – 20 years
- Brand and customer relationships: 3 – 20 years
- Internally generated intangible assets: 3 – 10 years

Amortization methods, useful lives, and residual values are reviewed on every reporting date and adjusted where necessary.

Goodwill is tested annually for impairment.

Please refer to Chapter D.18. for information on the fair value of non-financial assets.

D.10. Property, plant and equipment

Property, plant and equipment (PPE) are measured at acquisition or production costs, less cumulative depreciation and cumulative impairment expenses.

Depreciation and amortization is calculated on a scheduled, linear basis over the estimated useful life. Depreciation is fundamentally recognized in profit and loss.

If indications of an impairment of individual items of PPE exist, and the recoverable amount is lower than the book value, an impairment test is performed for this asset. The recoverable amount is the higher of the fair value less the costs of sale and the useful value. If the recoverable amount is below the book value, the difference is recognized in profit and loss and the basis for the regular depreciation is reassessed.

Assets held under finance leases, for which there is no adequate certainty that ownership will transfer to the Group at the end of the lease, are depreciated over the shorter of the term of the lease or the useful life.

Land is not subject to regular depreciation.

The estimated useful lives for the current year and comparison years PPE amount to:

- Buildings: 3 – 50 years
- Technical equipment and machinery: 3 – 25 years
- Other equipment, plant and office equipment: 1 – 25 years

Depreciation methods, useful lives, and residual values are reviewed on every reporting date and adjusted where necessary.

D.11. Leases

For every significant agreement, the Group checks whether the agreement is or contains a lease.

For agreements that contain a lease, the Group separates the payments required from this type of agreement and other remuneration into those for the lease and those for other items based on their relative fair value.

If, as part of a lease relating to PPE, all of the fundamental risks and opportunities are transferred to the Group, the lease is classified as a financing lease. If, for a finance lease, the Group cannot reliably separate the payments into those for the lease and those for other items, an asset and a debt are recognized based on the fair value of the underlying asset. The debt is subsequently reduced by applying the Group's incremental borrowing rate, if payments have occurred and the financing costs added to the debt have been reported. The leasing object is initially recognized at the lower of the fair value and the present value of the minimum lease payments. The subsequent measurement takes place in accordance with the accounting methods applicable for this asset. The minimum lease payments made as part of financing leases are divided into financing expense and the repayment portion of the residual debt. The distribution of the financing expense across the term of the lease is based on a constant interest rate for the remaining residual debt.

Other leases are classified as operating leases. The corresponding assets are not reported in the Group's balance sheet.

The payments made as part of operating leases are recognized in profit and loss on a linear basis over the term of the lease. If leasing incentives are agreed, these are recognized over the term of the lease as part of the total leasing expense.

For leases with regard to a plant, a property, and/or a building, which legally exist in the form of a lease (sale and leaseback transaction), but not economically, any sales proceeds that exceed the book value are accrued and reported in profit and loss over the term of the lease.

D.12. Inventories

Inventories are essentially valued at the lower of the acquisition or production costs and the net realizable value. Unfinished and finished products include manufacturing costs that can be attributed directly to the production process as well as an adequate share of production overheads. Production-related administration costs are also capitalized.

The net realizable value is calculated based on the proceeds that can be realized on the market in the normal course of business, less the costs for manufacturing the product and sales costs.

D.13. Assets held for sale or disposal groups

Non-current assets held for sale or disposal groups are classified as "Assets held for sale and discontinued operations", if it is highly probable that the associated book value will largely be realized by a sale transaction and not by continued utilization.

Non-current assets, respectively non-current and current assets included in disposal groups, are recognized at their book value or the lower fair value less costs of disposal. Intangible assets and PPE are no longer subject to regular depreciation and amortization, and any associated company recognized using the equity method is no longer recognized using the equity method as soon as it is classified as held for sale or held for distribution.

D.14. Employee benefits

The Group recognizes defined contribution as well as defined benefit plans.

Obligations for contributions to defined contribution plans are reported as an expense once the associated work performance has been provided. From group perspective those obligations are of subordinated importance. Prepaid benefits are reported as an asset if a right to the reimbursement or reduction of future payments exists. Under the company pension scheme, pension commitments are provided with employees waiving their right to cash compensation.

The Group's net obligation with regard to defined benefit plans is calculated separately for every plan in that the future benefits, which the employees earned in the current period and earlier periods, are estimated. This amount is discounted and the fair value of any plan asset is deducted from this amount.

The calculation of defined benefit obligations is based on actuarial reports on the basis of the projected unit credit method.

Revaluations of net debt from defined benefit plans are reported directly in the other comprehensive income. The revaluation includes actuarial profits and losses, the income from plan assets (not including interest) and the impact of any asset cap (not including interest).

D.15. Other provisions

Provisions are recognized for legal or constructive obligations in relation to third parties, which are caused by events from the past, which are likely to lead to the outflow of resources and their amount can be reliably estimated. The maturity and/or amount of provisions are uncertain.

The amount of provisions is calculated based on the best estimate of the amount of the expected outflow of resources. If the provisions are expected to be utilized within the normal business cycle, they are classified as short-term. Long-term provisions with a term of more than one year are discounted on the reporting date using the corresponding interest rates.

WARRANTIES:

Provisions for warranty obligations are established for the expected warranty obligations from the sale of products and services. The national law on sales contracts and individual agreements are taken into account. The provisions are based on the best estimates with regard to the fulfillment of the obligations in consideration of empirical values for claims from the past. They also include provisions for claims already raised by customers.

RESTRUCTURING MEASURES:

An accrued liability for restructuring measures is reported as soon as the Group has approved a detailed and formal restructuring plan, and the restructuring measures have either started or have been publicly announced by the affected parties. Future operating losses are not taken into account.

CONTRACT ACCRUALS:

Contract accruals are established for existing contracts based on the imminent obligation excess of unavoidable costs over proceeds. The accrued liability is valued at the present value of the expected excess obligation from the continuation of the contract. Before an accrued liability is established for an onerous contract, the Group reports a value reduction on the assets associated with this contract.

SUNDRY OTHER PROVISIONS:

Sundry other provisions are recognized as of the closing date at the present value of the required settlement amount based on reasonable judgment.

PROVISIONS FOR TAXES:

The Group reports all risks and obligations arising from tax matters under tax liabilities.

D.16. Financial instruments

In accordance with IAS 32.11, all contracts, which lead to a financial asset for a company and to a financial debt or equity instrument for another company, are considered financial instruments. Financial instruments are initially recognized at fair value on the trading day, taking into account attributable transaction prices.

Classification of financial instruments:

FINANCIAL ASSETS FROM DEBT INSTRUMENTS

Financial assets are classified in the following measurement categories: "at amortized cost", "at fair value through equity", and "at fair value through profit and loss". A classification into the three categories takes place based on the Group's business model for managing the financial assets as well as the characteristics of the contractual payment flows of the assessed financial assets.

The "at amortized cost" category contains all financial assets whose business model is associated with the aim of collecting the contractually agreed payment flows (business model: "hold"). Likewise, the contractual terms and conditions of the financial asset must be such that cash flows occur at fixed dates that exclusively represent repayments and interest payments on the outstanding capital amount (SPPI – criterion "cash flow condition").

Measurement at fair value not recognized in profit or loss is to be applied to financial assets with the aim of realizing cash flows both through the receipt of contractual payments and through sale ("holding and selling" business model). At the same time, the contractual conditions of the financial asset must also be structured so that payment flows, which exclusively represent principal and interest payments on the outstanding nominal amount, are generated on defined dates (criterion: cash flow condition).

Financial assets at fair value through profit or loss are those that are either held for trading or managed on the basis of their fair value or whose cash flows are maximized through sales. If financial instruments are classified at fair value through equity, transaction costs are reported in profit and loss directly in the period in which they arise. This relates to a residual category, which contains all financial assets that cannot be assigned to the "hold" or "hold and sell" business model (business model: "trade/other"), as well as assets for which the SPPI criterion does not result in a positive decision. Financial assets for which the "fair value option" is exercised for the initial recognition are also classified as "at fair value through profit and loss".

Financial assets in the "at amortized cost" category particularly include trade accounts receivable (not including factoring), cash and cash equivalents and other receivables.

Cash equivalents are short-term, extremely liquid financial investments, which can be converted to cash at any time, and which are only subject to insignificant risks of changes in value.

Financial assets in the category "at fair value through equity" existed in the Group in the form of trade accounts receivable for which factoring with disposals is applied.

Financial assets in the category "at fair value through profit or loss" take the form of freestanding derivatives and equity investments. Financial assets that fall under the "fair value option" do not exist.

Reclassifications between the measurement categories did not occur between 2015 and 2017.

FINANCIAL LIABILITIES

Financial liabilities are classified in the "at amortized cost" category. The Knorr-Bremse Group only recognizes financial liabilities from derivatives with negative fair values at fair value. If the "fair value option" is exercised for the initial recognition, they are classified as "at fair value through profit and loss". There are no financial liabilities which fall under "fair value option".

Financial liabilities in the category "at amortized cost" are mainly bonds issued, liabilities to banks and trade payables.

Financial liabilities in the category "at fair value through profit or loss" in the Group are exclusively freestanding derivatives with a negative market value.

EQUITY INSTRUMENTS

Equity instruments under IFRS 9 are essentially classified at fair value through profit and loss. For the initial recognition of a financial investment in an equity instrument, which is held as a long-term strategic investment, rather than for trading purposes, IFRS 9 provides for an irrevocable option to report the changes to fair value in the other operating income ("FVOCI option"). In this case, the classification takes place in the "at fair value through equity" category. In one case, an equity investment was classified as "at fair value through equity" at initial recognition. Dividends are recognized in the statement of income. Furthermore, the fair value changes recognized in equity are not reclassified to the statement of income upon disposal of the equity instrument.

The fair value corresponds to the prices quoted on an active market, where applicable. If such a market does not exist, the fair value is calculated based on measurement models using current market parameters.

DERECOGNITIONS AND MODIFICATIONS

Financial assets are derecognized, if the contractual rights to payments, which arise from the instrument, expire or, alternatively, the financial assets are transferred with all material risks and opportunities. Financial liabilities are derecognized, if the contractual obligations are settled, canceled, or expire. In the event of adjustments to loan conditions or extensions of terms, the Group validates whether this involves substantial modifications within the meaning of IFRS 9. The assessment as to whether a modification is substantial is made on basis of qualitative and quantitative criteria, the criteria used by the Group for financial assets correspond to the criteria for financial liabilities. If there is a substantial modification, the existing financial instrument is derecognized and the substantially modified financial instrument is rebooked. If there is a non-substantial modification, the book value of the financial instrument is adjusted through profit or loss.

DERIVATIVE FINANCIAL INSTRUMENTS

Within the Group, financial derivatives must be recognized as financial assets or financial liabilities at fair value, irrespective of the purpose. The fair value of derivatives is calculated by discounting the future payment flows at the market interest rate and using other established actuarial methods, such as option price models. Derivatives are recognized on the trading day. The fair value of unconditional derivatives is zero at initial recognition under market conditions. Options are initially recognized at fair value (equal to the premium paid or received). Counterparty-specific credit risks are taken into account as part of the measurement of financial derivatives.

The Group uses financial derivatives in the form of forward exchange transactions and foreign exchange options, interest rate swaps, cross-currency interest rate swaps, as well as commodity derivatives to hedge against currency, interest rate and commodity risks. While currency risks primarily arise due to sales in foreign currencies, interest rate risks are predominantly caused by variable-rate liabilities, while commodity price risks arise as a result of the procurement of metals in the production process. Hedge accounting is not applied to derivative financial instruments held to economically hedge market price risks.

IMPAIRMENTS

IFRS 9 requires expected losses to be reported for all assets within the scope of the impairment provisions. The loss reported as well as the interest collected are calculated based on the assignment of the instrument to the categories listed below.

According to the general impairment model ("general approach"), the change in value is determined based on the following three levels:

Level 1: All relevant instruments are initially assigned to level 1. The present value of the expected losses from possible default events within the next twelve months ("12-month expected credit loss") after the reporting date must be reported and recognized as an expense. Interest is recognized on the basis of the gross book value. Consequently, the effective interest method is applied on the basis of the book value before risk provisioning is taken into account.

Level 2: This includes all instruments, which have undergone a significant increase in the default risk since their initial reporting. The monitoring for a significant Increase in the default risk as of the closing date is carried out in connection with a screening process of the relevant changes in ratings, respectively CDS spreads, of the business partner. Generally, a significant increase in the default risk is assumed in the event of an amount overdue in excess of 30 days. If the business partner for the financial instruments is showing an investment-grade rating, an assessment of a significant increase in the credit risk is not made. The impairment corresponds to the present value of the expected losses from possible default events over the remaining term of the instrument ("lifetime expected credit loss"). The interest is reported analogous to level 1.

Level 3: If, in addition to an increased risk of default, there is objective evidence of an impairment of an instrument, the impairment is also measured based on the present value of the expected losses from possible default events over the remaining term. The reporting of the interest in the following periods must be adjusted so that the interest income is calculated based on the net book value and therefore based on the book value after taking account of the loan loss provision.

At each balance sheet date, the Group tests whether there is objective evidence of impairment for financial instruments carried at "acquisition costs" or "at fair value through equity". Criteria for impairment include default or default of debtors, indications of imminent insolvency or the disappearance of an active market for a security due to financial difficulties.

A default event exists when it is considered probable that a debtor cannot or will not be able to meet his payment obligations or meet them in full. Where a default event exists, the gross carrying amounts of the financial assets (fully or partially) are written off so that the gross carrying amount after write-off represents the expected recoverable amount. In addition, a default event is assumed in the event of significant payment delays. For financial instruments within the scope of the "general approach", a default event is assumed in connection with an amount overdue by more than 90 days.

For the Group, in particular, cash and cash equivalents are subject to the impairment requirements in accordance with the "general approach".

For trade accounts receivable and leasing receivables, IFRS 9 provides for a simplified approach to impairment ("simplified approach") under which an impairment in the amount of the expected losses must be reported over the remaining term for all instruments, irrespective of the credit quality. Consequently, no distinction is made for these financial instruments between allocations to level 1 or level 2 of the impairment model under IFRS 9. A transfer to level 3 takes place if there is objective evidence of impairment. With respect to trade accounts receivable, a default event is assumed in the case that there are delays in payment in excess of 12 months. A default also exists if it considered probable that a debtor cannot meet or cannot entirely meet its payment obligations.

Trade accounts receivable of business partners are divided into three groups:

Group 1: the probability of default can be determined using the public issuer rating

Group 2: the probability of default can be determined via an information agency

Group 3: Benchmark default probability

Rating and default probability data are updated annually.

For the Group, in particular, trade accounts receivable are subject to the impairment requirements in accordance with the "simplified approach".

Leasing receivables as well as any financial guarantees or loan commitments, which would fall under the impairment provisions, did not exist for the Company.

D.17. Fair value – financial instruments (financial assets)

Measurement of fair value:
In the Knorr-Bremse Group, financial instruments classified as "at fair value through profit or loss" and "at fair value through equity" (in particular derivatives and equity instruments) are measured at fair value. In addition, the fair value of financial instruments that are not measured at fair value is disclosed in the notes to the consolidated financial statements.

The fair value is the price that would be received in an orderly transaction between market participants on the assessment date for the sale of an asset or that would be paid for the transfer of a liability. When measuring the fair value, it is assumed that the transaction is concluded on the principal market for the asset or liability, or on the most favorable market for the asset or liability, if no principal market is available.

The Group must have access to the principal market or to the most favorable market. The fair value of an asset or liability is measured based on the assumptions, which the market participants would use as a basis for the pricing in their best commercial interest.

The Group uses measurement techniques that are appropriate under the circumstances and for which adequate data to measure the fair value is available. In this respect, the use of material input factors which can be observed must be as high as possible, while the use of input factors that cannot be observed must be kept to a minimum.

All financial assets and liabilities measured at fair value or whose fair value is disclosed in the notes are classified in the fair value hierarchies described below based on the input parameter of the lowest level, which is material for the overall measurement at fair value.

Level 1: (Unadjusted) prices listed in active markets

Level 2: Assessment methods in which key market parameters for assessment can be observed directly or indirectly

Level 3: Assessment methods in which significant parameters for valuation are not observable on the market

The assessment procedures and the input parameters used are reviewed regularly. The aim of the reviews is to use observable input factors in determining fair value as far as possible. Rearrangements in the hierarchy level are made at the end of the period in which the change occurred.

D.18. Fair value – non-financial assets

The book values of the Group's non-financial assets are reviewed on every reporting date in order to determine whether there is any indication of an impairment. If this is the case, the recoverable amount of the asset is estimated. Goodwill is reviewed annually for impairment.

To check whether an impairment exists, assets are combined into the smallest group of assets, which generate cash inflows from continued use, which are largely independent of the cash inflows of other assets or cash-generating units (CGUs). Goodwill that was acquired as part of a business combination is assigned to one or more groups of CGUs from which a benefit from the use of the synergies of the business combination is expected.

The recoverable amount of an asset or a CGU is the higher of the amounts from the value in use and the fair value less costs to sell. When assessing the value in use, the estimated future cash flows are discounted to their present value, whereby a weighted average cost of capital (WACC) before tax is used, which reflects the current market valuations of the interest effect and the specific risks of an asset or a CGU.

An impairment expense is reported if the book value of an asset or a CGU exceeds its recoverable amount.

Impairment expenses are reported in profit and loss.

An impairment expense with regard to the goodwill would not be reversed. For other assets, an impairment expense is only reversed to the extent that the book value of the asset does not exceed the book value that would have been calculated, less the depreciation or amortization, if no impairment expense had been reported.

D.19. Share-based payment

The Group applies IFRS 2 "Shared-based payments" exclusively in its South African subsidiary, Knorr-Bremse S.A. (Pty.) Ltd, Kempton Park/South Africa, refers to its share-based payment transactions due to local legal requirements in the context of "Black Economic Empowerment". According to IFRS 2, plans, which lead to share-based payments, must be treated as equity-settled transactions, if the premiums paid relate to equity instruments of the receiving Company or the receiving Company has no obligation to perform a settlement. In the case of equity-settled share-based payments, beneficiary remuneration in accordance with IFRS 2 must be recognized as an expense and a corresponding increase in the capital reserve. Since in the case of share-based payment transactions in connection with the "Black Economic Empowerment", these do not deal with compensation granted to employees but rather to external beneficiaries, the presentation of the related expenses is made in other operating expenses. In the case of equity-settled share-based payments, the fair value is measured at the grant date and reported as an expense over the vesting period. The Group's share-based payments are exclusively equity-settled.

E. NOTES TO THE CONSOLIDATED STATEMENT OF INCOME

E.1. Revenue

REVENUES BY SEGMENTS

The following table shows revenue by segment. Table → 3.18

DISAGGREGATION OF REVENUE AND RECONCILIATION TO SEGMENT REVENUE

The Table → 3.19 disaggregates revenue of the Group in 2018 by region and timing and reconciles these to revenues of the segment reporting. Due to the cumulative retrospective initial application of IFRS 15 as of January 1, 2018, no figures are provided for previous years. Table → 3.20

The reconciliation impact from IFRS to revenue according to segment reporting totals TEUR 113,970. Thereof, TEUR 84,523 resulted from the Rail Vehicle Systems segment and TEUR 23,279 from the Commercial Vehicle Systems segment. Another TEUR 6,168 resulted from "Other segments and consolidation".

The impact is comprised as follows:

REVENUE OF THE REPORTING PERIOD FOR PERFORMANCE OBLIGATIONS SATISFIED IN PREVIOUS PERIODS

The revenue of the period 2018 includes TEUR 14,156 from performance obligations fulfilled in the prior years.

TRANSACTION PRICE ALLOCATED TO THE REMAINING PERFORMANCE OBLIGATIONS

The transaction price allocated to the remaining performance obligations amounts to TEUR 2,553.373 as of December 31, 2018. This relates to the project business for the Rail Vehicle Systems segment and includes only customer contracts with an original contractual term of over one year. The projects have an average term of 4 years. As of December 31, 2018, contracts from project business will last through the year 2030.

3.18 REVENUES BY SEGMENTS

in TEUR	Rail Vehicle Systems		Rail Vehicle Systems		Other Segments and consolidation		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
Total	3,461,855	3,260,118	3,160,113	2,890,622	(6,168)	2,804	6,615,800	6,153,543

There are no customer contracts in the systems for Commercial Vehicle Systems segment with an original contractual term of over one year.

INFORMATION ON CONTRACT BALANCES IN CONNECTION WITH IFRS 15

a) Contract assets and contract liabilities

The contract assets and liabilities were presented as the receivables and payables from production orders in the consolidated financial statements as of December 31, 2017. The initial application of IFRS 15 resulted in a change in item designations.

The contract assets and contract liabilities primarily relate to the presentation of project business in the Rail Vehicle Systems segment according to the method of revenue recognition over a period of time.

According to this method, contract assets result from services performed, insofar as these are not settled through invoices.

3.19 CLASSIFICATION OF REVENUE AND RECONCILIATION WITH SEGMENT REVENUES

			IFRS revenue			Reconciliation to segment revenue			Revenue according to segment reporting
in TEUR	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total
1. Disaggregation									
a) Region (by registered offices of the Group Companies)									
Europe/Africa	1,750,513	1,517,067	3,267,581	83,836	10,577	94,413	1,834,349	1,527,644	3,361,994
North America	404,775	1,064,502	1,469,277	(1,201)	9,449	8,247	403,573	1,073,951	1,477,524
South America	25,899	76,776	102,675	161	1,708	1,869	26,060	78,484	104,544
Asia-Pacific	1,280,668	501,767	1,782,435	1,727	1,545	3,272	1,282,396	503,312	1,785,708
	3,461,855	**3,160,113**	**6,621,968**	**84,523**	**23,279**	**107,801**	**3,546,378**	**3,183,392**	**6,729,770**
b) Type of time recording									
Recording over a period	1,348,413	–	1,348,413	(1,348,413)	–	(1,348,413)	–	–	–
Recording at a specific time	2,113,442	3,160,113	5,273,555	1,432,936	23,279	1,456,214	3,546,378	3,183,392	6,729,770
	3,461,855	**3,160,113**	**6,621,968**	**84,523**	**23,279**	**107,801**	**3,546,378**	**3,183,392**	**6,729,770**
2. Remaining segments and consolidation			**(6,168)**			**6,168**			**–**
3. Total	**3,461,855**	**3,160,113**	**6,615,800**	**84,523**	**23,279**	**113,970**	**3,546,378**	**3,183,392**	**6,729,770**

3.20 RECONCILIATION EFFECT OF IFRS ON REVENUES ACCORDING TO SEGMENT REPORTING

in TEUR	Rail Vehicle Systems	Commercial Vehicle Systems	Other Segments and consolidation	Total
Elimination of the effect of the over-time-recognition of revenue	63,101	–	5,000	68,101
Presentation of rental income and other revenues due to the application of BilRuG for the measurement of segment revenue	26,233	55,346	78,891	160,470
Presentation of addition and liquidation of transaction price related provisions:	(1,402)	(12,223)	–	(13,625)
Presentation of prototype earnings	(2,291)	(8,189)	–	(10,480)
Revenues of further segments and other effects	(1,118)	(11,655)	(77,723)	(90,496)
Total	**84,523**	**23,279**	**6,168**	**113,970**

Advance payments from customers have a counter effect. Depending on the relationship between the degree of progress in the specific project, invoices and advance payments, therefore, there may be either contract assets or liabilities. The impairment under IFRS 9 on contract assets was TEUR 304 as of December 31, 2018.

For contracts with revenue not recognized over a time period, advance payments are also recognized as contract liabilities if the relevant performance obligations have not yet been fulfilled. In addition, compensation payments for development costs before series production are recognized as contract liabilities. Last-mentioned only refers to the Commercial Vehicle Systems segment as of December 31, 2018.

The Table → 3.21 shows the effects in the reconciliation from the final balance of contract assets and liabilities as at December 31, 2017 to December 31, 2018.

The balances and reconciliation effects of contract assets and liabilities relate mainly to project business in the Rail Vehicle Systems segment.

The effects of the first-time application of IFRS 15 are as follows: Table → 3.22

Revenue of the reporting period, which were included in the opening balance of contract liabilities as of January 1, 2018, amounted to TEUR 178,056.

b) Other assets

The other assets include TEUR 15,200 (non-current: TEUR 15,147, current: TEUR 53) so-called nomination fees from the Commercial Vehicle Systems segment. The capitalized amounts will be written off against revenue from the start of series production and over the term of series production. No amortization was recognized in 2018.

The other non-current assets include costs to fulfil a contract of TEUR 12,365. These relate to engineering costs in the Commercial Vehicle Systems segment before series production. These will be written off against changes in inventory with the start of series production and over the term of series production. No amortization was recognized in 2018.

3.21 EFFECTS IN THE RECONCILIATION FROM THE FINAL BALANCE OF CONTRACT ASSETS AND CONTRACT LIABILITIES AS AT 12/31/2017 TO 12/31/2018

in TEUR	Contractual assets	Contractual liabilities
As of 12/31/2017	**116,171**	**230,750**
Initial application IFRS15	8,828	(8,056)
As of 1/1/2018	**124,999**	**222,694**
Increase in contract liabilities from invoice and effects from changes in advance payments		1,292,845
Transfer of the opening balance for contract assets to trade receivables through invoices	(117,229)	
Change as a result of the recognition of revenue	89,950	(1,202,717)
Other	1,564	2,299
Closing balance as of December 31, 2018	**99,284**	**315,122**

3.22 EFFECTS OF THE FIRST-TIME APPLICATION OF IFRS 15

in TEUR	Contract assets	Contract liabilities	Corresponding item on 1/1/2018	Amount in corresponding item
Presentation of onerous contracts	8,828	(10,582)	Other provisions	19,410
Recognition of a significant financing component	–	230	Retained earnings	230
Deferral of compensation payments for cost to fulfil	–	2,296	Retained earnings	2,296
Total	**8,828**	**(8,056)**		

E.2. Change in inventory and other own work capitalized

The change in inventory reflects the change in finished and unfinished products. The development of finished and unfinished products is covered in Chapter F.6. Inventories. Table → 3.23

The other own work capitalized results from the capitalization of development projects.

3.23 CHANGE IN INVENTORY AND OTHER OWN WORK CAPITALIZED

in TEUR	2018	2017
Change in inventory of finished and unfinished products	34,424	38,754
Other own work capitalized	48,047	31,768

E.3. Other operating income Table → 3.24

Other operating income consists mainly of income from other services, earnings from insurance compensation and compensation payments and income from government grants. Other services mainly relate to development and testing services to third parties.

As a result of the analysis under IFRS 15, income from the disposal of prototype sales was presented as income for the first time in the 2018 fiscal year.

3.24 OTHER OPERATING INCOME

in TEUR	2018	2017
Income from other services	13,890	13,534
Insurance compensation and compensation payments	9,232	2,073
Income from government grants	6,507	4,434
Rental income	6,250	5,140
Income from the disposal of land and buildings	3,228	7,737
Proceeds from the disposal of prototypes and scrap sales	2,468	14,535
Proceeds from the disposal of intangible and other tangible assets	1,613	1,016
Income from the reimbursement of advisory services	–	3,347
Other income	23,045	29,354
	66,233	**81,171**

E.4. Cost of materials Table → 3.25

The cost of materials is comprised of the expenditure on materials, supplies, and purchased goods as well as on services purchased. The costs of materials increased moderately stronger at 10.3% in comparison to the increase in revenues of 7.5%, due to higher costs of materials, additional expenses for shortfalls in the supply chain and a stronger relative revenues growth in the Commercial Vehicle Systems segment.

Therefore, the cost of materials ratio as a percentage of sales revenues increased to 50.2% in 2018, in comparison to 48.9% in 2017.

In the reporting period, inventories in the amount of TEUR 3,073,037 (2017: TEUR 2,779,759) were recognized as expenses.

Please refer to Chapter F.6 for more information on the changes to inventories.

3.25 COST OF MATERIALS

in TEUR	2018	2017
Expenses for raw materials, consumables and supplies and for purchased goods	(3,073,037)	(2,779,759)
Expenses for purchased services	(245,190)	(229,836)
	(3,318,227)	**(3,009,595)**

E.5. Personnel expenses Table → 3.26

The personnel expenses primarily include wages and salaries, as well as social security contributions.

3.26 PERSONNEL EXPENSES

in TEUR	2018	2017
Wages and salaries	(1,154,969)	(1,084,128)
Social security contributions	(219,789)	(212,101)
Expenses for personnel leasing	(108,101)	(116,260)
Termination benefits	(4,163)	(16,051)
Expenses in connection with defined benefit plans	(9,958)	(10,331)
	(1,496,981)	**(1,438,871)**

The increase in wages and salaries by approximately +6.5% in 2018 (2017: +12.0%) was based on an increase in the average number of employees by 7.7% from 26,910 (2017) to 28,983 (2018). The increase resulted in particular from hiring of new employees in the personnel-intensive service business, as well as in the research and development.

Personnel adjustment measures due to severance payments that did not result from restructuring measures affected personnel expenses in fiscal year 2018 with TEUR 3,163 as compared to TEUR 16,051 in 2017.

3.27 OTHER OPERATING EXPENSES

in TEUR	2018	2017
Order-related expenses	(152,135)	(110,652)
Legal, consulting and audit costs	(113,128)	(92,374)
Personnel expenses	(110,345)	(99,139)
Other services	(98,691)	(70,143)
Maintenance expenses	(98,842)	(104,745)
Rents and leases	(53,869)	(85,090)
External research and development costs	(40,644)	(38,229)
Other taxes	(23,921)	(19,712)
Administrative expenses	(25,593)	(30,225)
Losses from the disposal of land and buildings	(8,254)	(4,783)
Donations	(3,010)	(3,976)
Other expenses	(42,823)	(82,192)
	(771,254)	**(741,261)**

3.28 DEPRECIATION AND AMORTIZATION

in TEUR	2018	2017
Depreciation and amortization of intangible assets	**(40,866)**	**(43,353)**
regular depreciation and amortization of intangible assets	(40,866)	(43,353)
Depreciation and amortization of property, plant and equipment	**(145,564)**	**(142,758)**
thereof regular depreciation and amortization of property, plant and equipment	(145,564)	(142,758)
Depreciation and amortization on disposal groups	**(19,140)**	**(25,368)**
	(205,570)	**(211,479)**

E.6. Other operating expenses Table → 3.27

The order-related expenses primarily were due to increased warranty expenses, freight costs and commissions and the increase in legal, consulting and audit costs are caused by the preparation of the IPO and the sale of companies in 2018.

Other services include services such as logistics, security and building services and cleaning. Other expenses primarily consist of communication and administration costs. Moreover, the fees for societies, associations and chambers, insurance costs as well as costs for marketing are included in other expenses.

The decrease in rental and leasing expenses is due to the reversal of a provision formed in the previous year for impending losses from rental relationships.

E.7. Depreciation and amortization

Depreciation and amortization is comprised as follows: Table → 3.28

Depreciation and amortization decreased by 2.8% in 2018 and by TEUR 5,909 from TEUR 211,479 to TEUR 205,570.

No impairment losses on goodwill or depreciation and amortization of intangible assets were necessary in the reporting years.

The write-downs of disposal groups in 2018 in the amount of TEUR 19,140 (2017: TEUR 25,368) related to the Company disposals of Blueprint and Sydac (see Chapter C.3.2).

E.8. Financial result Table → 3.29

The foreign currency results of financial Instruments carried at amortized cost (AC) mainly result from the currency translation differences of trade receivables and payables as well as cash and cash equivalents at the closing rate; these foreign currency results are netted.

The currency results from financial instruments recognized at fair value through profit or loss (FVTPL) result from the realized results from currency derivatives and the valuation effects from existing currency derivatives. The reduction from the previous year resulted primarily from a loss in valuation of currency derivatives of 31 December 2018 of TEUR 30,317.

In 2018, the share of profit and loss of companies accounted for using the equity method arise mainly from the share in the results of the Alltrucks Group and Knorr-Bremse DETC Commercial Vehicle Braking System (Shivan) Co., Ltd. (see Chapter H.13).

Interest income and expenses from financial instruments measured at fair value (FVTPL) are attributable to the fair value measurement of the interest rate swaps. Interest income and expense from financial instruments (AC) carried at amortized cost represent the total interest expense and income of these assets and liabilities determined using the effective interest method.

For further information on interest income and interest expenses from defined benefit plans, please refer to Chapter F.10. Employee benefits

3.29 FINANCIAL RESULT

in TEUR	2018	2017
Interest income from financial instruments, thereof	3,048	6,605
a) Financial instruments (AC)	2,391	5,333
b) Financial instruments (FVTPL)	657	1,272
Interest income from defined benefit plans	6,228	5,965
Other	10,851	11,466
Interest income	**20,128**	**24,036**
Interest expenses from financial investments, thereof	(11,815)	(16,264)
a) Financial instruments (AC)	(11,815)	(16,264)
Interest expenses from defined benefit plans	(11,451)	(11,222)
Compounding of provisions	(6,712)	(4,922)
Other	(24,401)	(6,393)
Interest expenses	**(54,379)**	**(38,801)**
Currency translation differences, thereof	43,977	67,348
a) Financial instruments (FVOCI)	–	680
b) Financial instruments (FVTPL)	43,977	66,667
Income from disposals of financial instruments	–	1,400
Other	1,266	374
Other financial income	**45,243**	**69,122**
Currency translation differences, thereof	(102,865)	(89,997)
a) Financial instruments (AC)	(23,713)	(26,904)
b) Financial instruments (FVOCI)	(60)	(540)
c) Financial instruments (FVTPL)	(79,092)	(62,552)
Losses from disposal of financial instruments	(235)	(1,930)
Expenses from the revaluation of financial instruments (FVTPL)	(1,266)	(567)
Share of profits and losses of companies accounted for using the equity method, after taxes	(3,591)	(953)
Expenses resulting from options on minority interests	–	(12,472)
Other	–	–
Other financial expenses	**(107,957)**	**(105,919)**
Other financial result from other financial income and other financial expenses	**(62,715)**	**(36,797)**
Financial result	**(96,966)**	**(51,562)**

The development of the provisions is dealt with in Chapter F.11 Other Provisions.

E.9. Taxes on income

E.9.1. Taxes reported in profit and loss Table → 3.30

The tax expenses include current and deferred taxes. Current and deferred taxes are reported in profit and loss, except for the extent to which they are associated with a business combination or with items reported directly in equity or in the other operating income.

The actual tax expense of prior years mainly relates to prior-year additions to income tax liabilities for the years not yet concluded by the tax audit.

E.9.2. Taxes reported in other comprehensive income Table → 3.31

E.9.3. Taxes reported directly in equity

In 2017, no taxes were reported directly in equity. Table → 3.32

E.9.4. Reconciliation of the effective tax rate

The difference between the effective and expected tax expenses in both fiscal years results mainly from lower local

3.30 TAXES REPORTED IN PROFIT AND LOSS

in TEUR	2018	2017
Current year	(231,754)	(251,322)
Previous years	(15,725)	(365)
Current tax expense	**(247,480)**	**(251,687)**
Recognition /reversal of temporary differences current year	939	(18,836)
Temporary differences from previous years	–	4,208
Tax losses/credits	471	1,067
Deferred tax income (prior year: deferred tax expense)	**1,410**	**(13,561)**
Tax expenses	**(246,070)**	**(265,248)**

3.31 TAXES REPORTED IN OTHER COMPREHENSIVE INCOME

in TEUR	Before tax	Deferred tax sets (–)/ liabilities (+)	After tax
			12/31/2018
Revaluation of net debt from defined benefit plans	117,609	(21,414)	96,195
Revaluation of net debt from pension plan assets	(47,947)	(93)	(48,040)
Currency translation differences	89,198	–	89,198
Revaluation of equity instruments	23,672	–	23,672
Total	**182,532**	**(21,507)**	**161,024**
			12/31/2017
Revaluation of net debt from defined benefit plans	125,354	(21,859)	103,496
Revaluation of net debt from pension plan assets	(51,139)	2,111	(49,028)
Currency translation differences	97,865	–	97,865
Revaluation of equity instruments	14,075	–	14,075
Total	**186,155**	**(19,748)**	**166,407**

tax rates compared to the hypothetical tax rate at group level. In particular, the reduction in tax rates in the USA from 35% to 21%, effective as of January 1, 2018, has a positive effect. Additional significant effects are the deviations due to permanent effects from tax adjustments (non-deductible operating expenses in conjunction with investments) and the non-recognition of losses of the current year not classified as being of value and additions to income tax liabilities for the years not yet audited by the tax authorities. Table → 3.33

E.9.5. Change in deferred taxes

The allocation and development of deferred tax positions shows a steadily decreasing asset surplus. The changes in other comprehensive income relate to pension obligations; changes in tax rates and effects from the previous year are reported under "Other". Table → 3.34

E.9.6. Unrecognized deferred tax assets

Deferred tax assets were not reported with regard to the following items, as it is not likely that taxable income, against which the Company can settle deferred tax assets, will be available in the future. Table → 3.35

The non-recognized tax loss carry-forwards expire as follows: Table → 3.36

E.9.7. Additional disclosures

As of December 31, 2018, the Group's parent company recorded deferred tax liabilities of TEUR 6,061 (2017: TEUR 8,251) for temporary differences on future dividend payments (outside basis differences). No other deferred tax liabilities in connection with temporary differences (outside basis differences) in the amount of TEUR 98,557 (2017:

3.32 TAXES REPORTED IN OTHER OPERATING INCOME

in TEUR	Before tax	Deferred tax sets (–)/ liabilities (+)	After tax
			2018
Reimbursement payments by the main shareholder into capital reserves	14,850	(4,803)	10,047
Total	**14,850**	**(4,803)**	**10,047**

3.33 RECONCILIATION OF THE EFFECTIVE TAX RATE

	12/31/2018		12/31/2017	
	%	Tsd. €	%	Tsd. €
Earnings before taxes		875.506		852.469
Expected taxes	32,3	282.788	32,8	279.610
Differences between the local and hypothetical tax rate at the top level	(10,7)	(93.928)	(7,3)	(62.572)
Changes to the tax rate	(0,2)	(1.546)	0,5	4.640
Effect from at-equity investments	0,0	(168)	0,0	(77)
Effects from permanent differences due to different accounting under the IFRS and tax return	(0,3)	(2.763)	(0,3)	(2.166)
Increase in tax due to non-tax deductible expenses	4,7	41.271	3,7	31.419
Tax-exempt income	(0,9)	(7.487)	(2,7)	(23.354)
Non-recognition of losses in the current year	1,9	16.716	6,6	56.336
Utilization of loss carry-forwards on which no deferred taxes were recognized.	(0,8)	(7.414)	(0,9)	(7.393)
Initial recognition/adjustment of deferred taxes on temporary differences	0,0	(68)	(0,2)	(1.428)
Tax from previous year	1,8	15.725	(0,5)	(3.843)
Other	0,3	2.945	(0,7)	(5.925)
Effective taxes	**28,1**	**246.070**	**31,1**	**265.248**

TEUR 12,619) in connection with investments in subsidiaries, associated companies or jointly controlled companies were reported as of the reporting date.

The Group is of the opinion that the income tax liabilities formed are adequate for the years where the tax audit is not closed in consideration of all available information, including the interpretation of tax law and previous experience.

E.10. Earnings per share

EBITDA of the Group increases by 5.6% in 2018 and by TEUR 62,532 from TEUR 1,115,510 to TEUR 1,178,042.

Due to reductions in amortizations, earnings before interests and taxes (EBIT) of the Group increased somewhat more by 7.6% in 2018 and by TEUR 68,441 from TEUR 904,031 to TEUR 972,472.

The Group's net income also follows this trend and increased in 2018 by 7.2% or TEUR 42,215 from TEUR 587,220 to TEUR 629,435.

3.34 CHANGE IN DEFERRED TAXES IN THE BALANCE SHEET DURING THE YEAR

						As at 12/31		
in TEUR	Net as at 1/1	In profit/loss	In other income	Other	Net Currency translation differences	Net	Deferred tax assets	Deferred tax liabilities
								2018 fiscal year
Intangible assets	(28,566)	(23,185)	–	(1,558)	(907)	(54,215)	5,526	(59,741)
Property, plant and equipment	(45,200)	4,667	–	(6,963)	(355)	(47,851)	1,049	(48,900)
Investments	(2,217)	2,261	–	(8,942)	(1,070)	(9,967)	3,161	(13,128)
Inventories	22,879	(4,080)	–	4,929	236	23,964	51,996	(28,032)
Other assets	(58,965)	22,553	–	7,374	357	(28,681)	15,572	(44,253)
Tax loss carry-forwards	14,816	471	–	(4,362)	(379)	10,546	10,546	–
Pension obligations	44,000	(11,355)	1,760	3,323	10	37,739	46,702	(8,963)
Other provisions	59,539	8,276	–	(4,940)	(119)	62,756	62,756	–
Liabilities	51,459	1,803	–	3,643	4,304	61,208	70,695	(9,487)
Tax assets (liabilities) before netting	**57,746**	**1,410**	**1,760**	**(7,495)**	**2,077**	**55,500**	**268,002**	**(212,504)**
Netting of taxes							(129,901)	129,901
Net tax assets (liabilities)	**57,746**	**1,410**	**1,760**	**(7,495)**	**2,077**	**55,500**	**138,101**	**(82,604)**
								2017 fiscal year
Intangible assets	(13.326)	(8.116)	–	(5.572)	(1.551)	(28.566)	25.224	(53.789)
Property, plant and equipment	(40.241)	(7.448)	–	2.782	(293)	(45.200)	2.338	(47.538)
Investments	(29.548)	14.318	–	10.217	2.796	(2.217)	2.323	(4.539)
Inventories	16.720	2.877	–	223	3.058	22.878	35.359	(12.481)
Other assets	(48.538)	(1.859)	–	(1.899)	(6.670)	(58.965)	1.216	(60.181)
Tax loss carry-forwards	13.599	1.067	–	–	150	14.816	14.816	–
Pension obligations	64.622	(9.157)	(1.188)	(3.305)	(6.972)	44.000	49.558	(5.558)
Other provisions	66.067	1.283	–	(4.957)	(2.854)	59.539	59.539	–
Liabilities	60.307	(2.135)	–	(1.880)	(4.832)	51.459	76.830	(25.371)
Tax assets (liabilities) before netting	**89.662**	**(9.170)**	**(1.188)**	**(4.391)**	**(17.166)**	**57.746**	**267.204**	**(209.458)**
Netting of taxes							(182.195)	182.195
Net tax assets (liabilities)	**89.662**	**(9.170)**	**(1.188)**	**(4.391)**	**(17.166)**	**57.746**	**85.009**	**(27.262)**

Basic earnings per share are calculated in accordance with IAS 33 from the earnings attributable to Knorr-Bremse Aktiengesellschaft shareholders and the weighted average number of shares outstanding during the year. Table → 3.37

The number of shares at the end of 2017 was 2,600,000. As a result of a share split and a capital increase from corporate funds in 2018, the number of shares changed as follows. Table → 3.38

As a result of the share split and the capital increase from corporate funds, earnings per share are calculated on the basis of a retrospective adjustment to the number of shares. The number of shares in circulation thus amounts to 161,200,000 and also corresponds to the weighted average.

Diluted earnings per share correspond to basic earnings per share.

For further information on the share split and capital increase, see Chapter F.9.1. Subscribed capital

3.35 UNRECOGNIZED DEFERRED TAX ASSETS

	12/31/2018		12/31/2017	
in TEUR	Gross	Tax effect	Tax effect	Tax effect
from deductible temporary differences	9,866	3,187	10,335	3,390
from tax losses	95,269	30,772	107,762	35,346
	105,135	**33,959**	**118,097**	**38,736**

3.36 NON-CAPITALIZED TAX LOSS CARRY-FORWARDS

	12/31/2018		12/31/2017	
in TEUR		Expiration date		Expiration date
Expirable	15,041	1–10 years	14,109	1–10 years
Non-expirable	80,228	–	93,653	–
	95,269		**107,762**	

3.37 EARNINGS PER SHARE

in TEUR	2018	2017
Earnings after taxes from continuing operations (attributable to Knorr-Bremse shareholders) (in TEUR)	592,792	535,504
Weighted average of shares outstanding (in thous. pieces)	161,200	161,200
Earnings per share in EUR (undiluted)	3.68	3.32
Earnings per share in EUR (diluted)	3.68	3.32

3.38 CHANGE IN NUMBER OF SHARES

	in thous. pcs	Nominal amount in TEUR	Subscribed capital in TEUR
Shares as of 1/1/2018	2,600	26.00	67,600
Share split (reduction of par value to EUR 1) June 21, 2018	67,600	1.00	67,600
Capital increase from corporate funds, 6/21/2018	93,600	1.00	93,600
Shares as of 12/31/2018	161,200	1.00	161,200

F. NOTES TO THE CONSOLIDATED STATEMENTS OF BALANCE SHEET

F.1. Intangible assets Table → 3.39

3.39 INTANGIBLE ASSETS

in TEUR	Goodwill	Licenses and acquired rights	Brands and customer relations	Internally generated intangible assets	Advance payments on intangible assets and assets under construction	Other assets	Total
Acquisition and production costs							
As at January 1, 2017	**286,053**	**336,109**	**59,836**	**90,485**	**2,850**	**22,725**	**798,057**
Currency translation differences	(16,890)	(20,446)	(6,189)	(2,721)	58	(1,364)	(47,551)
Additions	–	9,591	–	30,788	4,821	–	45,200
Disposals	–	(7,418)	–	(630)	(173)	(7,890)	(16,111)
Acquisitions classifying as business combinations	30,575	2,656	44,413	–	–	7,162	84,805
Reclassifications	–	(1,445)	–	–	(2,420)	–	(3,865)
As at December 31, 2017	**299,737**	**319,047**	**98,060**	**117,921**	**5,136**	**20,633**	**860,535**
As at January 1, 2018	**299,737**	**319,047**	**98,060**	**117,921**	**5,136**	**20,633**	**860,535**
Currency translation differences	4,702	8,223	541	1,371	24	344	15,204
Additions	–	13,362	–	43,075	79,633	–	136,070
Disposals	–	(4,602)	–	–	–	(339)	(4,941)
Acquisitions classifying as business combinations	1,454	–	–	–	–	–	1,454
Reclassifications	–	802	–	–	(692)	–	110
As at December 31, 2018	**305,892**	**336,833**	**98,601**	**162,366**	**84,101**	**20,638**	**1,008,431**
Accumulated depreciation and amortization and impairment expenses							
As at January 1, 2017		**(275,635)**	**(16,606)**	**(16,335)**	**63**	**(5,071)**	**(313,584)**
Currency translation differences	–	17,725	1,167	619	–	426	19,937
Additions	–	(15,148)	(13,645)	(10,369)	–	(4,191)	(43,353)
Disposals	–	7,559	–	128	–	7,985	15,672
Reclassifications	–	1,289	–	–	–	–	1,289
As December 31, 2017	**–**	**(264,211)**	**(29,084)**	**(25,957)**	**63**	**(850)**	**(320,039)**
As at January 1, 2018	**–**	**(264,211)**	**(29,084)**	**(25,957)**	**63**	**(850)**	**(320,039)**
Currency translation differences	–	(5,740)	(639)	(527)	–	(117)	(7,023)
Additions	–	(17,245)	(11,864)	(7,459)	–	(4,298)	(40,866)
Disposals	–	2,657	–	–	–	–	2,657
As at December 31, 2018	**–**	**(284,539)**	**(41,586)**	**(33,942)**	**63**	**(5,266)**	**(365,271)**
Book value as at December 31, 2017	**299,737**	**54,836**	**68,976**	**91,965**	**5,198**	**19,783**	**540,495**
Book value as at December 31, 2018	**305,892**	**52,294**	**57,015**	**128,424**	**84,163**	**15,372**	**643,159**

The increase in goodwill in this fiscal year resulted primarily from positive currency effects.

Additions to intangible assets increased in 2018 by +200.8% or by TEUR 90,870 from TEUR 45,200 to TEUR 136,070.

The intangible assets internally generated relate to the finished and unfinished capitalized costs of the Group's development activities. Development costs are capitalized if the requirements defined in IAS 38 are met. These are subject to straight-line depreciation over the respective useful life. Additions in the fiscal year were TEUR 43,075. Thereof, TEUR 26,761 resulted from the Rail Vehicle Systems area, and TEUR 16,314 from the Commercial Vehicle Systems area.

Intangible assets of TEUR 63,000 were purchased as part of acquisition of rail friction know-how from Federal Mogul in August 2018, primarily technology and know-how amounting to TEUR 57,178.

The know-how is used to develop an intangible asset under construction.

The purchase price was allocated based on fair values of the identifiable intangible assets. The fair value of the licenses was determined based on the Relief-from-Royalty-Method. The fair value of the know-how was determined based on the Capitalized Earnings Method, taking into account as significant parameters future revenue, WACC, license fee, useful life and the relevant tax rate of the acquiring company.

The purchase price will be paid in four installments. The first installment of TEUR 25,000 was paid in the fiscal year. The remaining TEUR 38,000 are included in the financial liabilities. (See Chapter F13 Financial liabilities).

As long as know-how is not ready for use, an impairment test is performed as at December 31 of the relevant fiscal year.

The Group uses the total cost method in determining period results. Hence, expenditures assigned to the function research and development which were recognized as expense cannot be directly determined. The research and development costs recognized in the statement of income as expense are retroactively determined on a simplified basis as presented in the following table: Table → 3.40

F.2. Goodwill

According to IFRS, goodwill essentially has an unlimited useful life. Goodwill is divided between the Group's cash-generating units and the value is assessed annually.

The segments Rail Vehicle Systems and Commercial Vehicle Systems are defined as groups of cash-generating units.

For the purpose of impairment testing, the following goodwill is allocated to the groups of cash-generating units of the Group as follows: Table → 3.41

3.40 RESEARCH AND DEVELOPMENT COSTS RECOGNIZED IN EXPENSES

in TEUR	2018	2017
Research and development expenses according to HGB	(363,637)	(358,827)
Other own work capitalized	48,047	31,768
Revenues-related expenditures for research and development	260,043	291,751
	(55,547)	**(35,308)**

3.41 GOODWILL

in TEUR	12/31/2018	12/31/2017
Rail Vehicle Systems	184,538	181,521
Commercial Vehicle Systems	121,354	118,216
	305,892	**299,737**

The determination of the recoverable amount for the respective group of cash-generating units is based in each case on the fair value less the costs of disposal, which was estimated by discounted future cash flows of the cash-generating units. The measurements at fair value were classified as fair values in level 3 based on the input factors of the valuation technique used (see Chapter A.5.).

The calculation is based on cash flow forecasts, which are based on planning for a period of five years.

Knorr-Bremse uses a post-tax discount rate

The cash flow forecasts contained specific estimates for each group of cash-generating units for three years, a subsequent rough planning period of two years and a sustainable growth rate for the period thereafter.

The discount rate used was the historical weighted average cost of capital (WACC) after corporate taxes calculated on the basis of a group of peer companies.

The key assumptions used in estimating the recoverable amount are set out below:

The sales growth rates forecast in the detailed planning stage are based on a consolidation of detailed bottom-up plans of the significant legal entities included in cash-generating units and take into account past order data as well as industry-specific market information from external sources. In the rough planning period, the sales growth rates are determined with a view to the longer-term growth rates obtained from external sources.

The EBITDA margins forecast in the detailed planning stage take past experience and current data from the respective order backlogs into account. Average EBITDA margins extrapolated from the past are used in the rough planning period.

The Table → 3.42 shows the discount rates and growth rates used to extrapolate the cash flow forecasts in determining the recoverable amount of the cash-generating units.

The sustainable growth rate was calculated based on the estimate of long-term inflation expectations by the management board and is based on the assumptions that a market participant would make.

Knorr-Bremse reviews the book value of goodwill at the end of each fiscal year for impairment.

The impairments tests did not indicate any need for impairment.

F.3. Property, plant and equipment

Table → 3.43

Additions to PPE increased in 2018 by 23.9% or TEUR 45,347 from TEUR 190,017 to TEUR 235,364.

In the previous fiscal year, PPE with a total book value of TEUR 11,358 was reclassified as assets held for sale which were disposed of in the 2018 fiscal year (see Chapter C.3.2).

In addition, investments were made in the Rail Vehicle Systems Division in capacity expansions, buildings and replacement investments to increase productivity. In addition to investments in supplier tools, the primary investments in the Commercial Vehicle Systems area were in new product generations and replacement investments.

Other changes to PPE resulted from business sales. Please refer to Chapter C.3.2.

The PPE item is subject to annual scheduled depreciation and amortization. As in the previous year, there were no

3.42 GROUPS OF CASH-FLOW-GENERATING UNITS (CGU GROUP)

in %	12/31/2018	12/31/2017
CGU Group Rail Vehicle Systems		
Weighted average cost of capital (WACC)	8.2	8.2
Sustainable growth rate	1.0	1.0
CGU Group Commercial Vehicle Systems		
Weighted average cost of capital (WACC)	8.6	8.4
Sustainable growth rate	1.0	1.0

3.43 PROPERTY, PLANT AND EQUIPMENT

in TEUR	Land, land rights and buildings, including buildings on land owned by others	Technical equipment and machinery	Other equipment, factory and office equipment	Advance payments and plant under construction	Total
Acquisition and production costs					
As at January 1, 2017	**603,626**	**809,167**	**697,779**	**129,531**	**2,240,102**
Currency translation differences	(16,135)	(31,276)	(38,724)	(7,451)	(93,586)
Additions	29,531	49,701	43,029	67,755	190,017
Disposals	(17,194)	(25,976)	(50,597)	(12,584)	(106,350)
Acquisitions classifying as business combinations	18,702	2,426	17,321	571	39,021
Reclassification in assets held for sale	(2,611)	(3,661)	(25,271)	–	(31,543)
Reclassifications	3,554	45,373	16,315	(61,376)	3,865
As at December 31, 2017	**619,473**	**845,754**	**659,852**	**116,446**	**2,241,526**
As at January 1, 2018	**619,473**	**845,754**	**659,852**	**116,446**	**2,241,526**
Currency translation differences	(2,308)	(4,838)	3,712	405	(3,030)
Additions	20,459	44,219	52,508	118,178	235,364
Disposals	(31,677)	(16,996)	(32,553)	(3,737)	(84,963)
Reclassifications	5,122	27,634	21,944	(54,810)	(110)
As at December 31, 2018	**611,069**	**895,774**	**705,464**	**176,482**	**2,388,788**
Accumulated depreciation and amortization and impairment expenses					
As at January 1, 2017	**(173,883)**	**(466,097)**	**(494,259)**	**(6,451)**	**(1,140,690)**
Currency translation differences	4,276	17,500	28,356	176	50,308
Additions	(17,944)	(63,361)	(61,274)	(180)	(142,758)
Disposals	13,334	21,443	50,502	3,836	89,115
Reclassification in assets held for sale	415	1,218	18,552	–	20,185
Reclassifications	11	10,020	(11,320)	–	(1,289)
As at December 31, 2017	**(173,791)**	**(479,276)**	**(469,443)**	**(2,619)**	**(1,125,128)**
As at January 1, 2018	**(173,791)**	**(479,276)**	**(469,443)**	**(2,619)**	**(1,125,128)**
Currency translation differences	(19)	2,767	(4,090)	87	(1,255)
Additions	(17,939)	(57,497)	(69,873)	(256)	(145,564)
Disposals	17,635	13,450	19,258	–	50,343
As at December 31, 2018	**(174,114)**	**(520,555)**	**(524,148)**	**(2,787)**	**(1,221,604)**
Book value as at December 31, 2017	**445,683**	**366,478**	**190,410**	**113,828**	**1,116,398**
Book value as at December 31, 2018	**436,955**	**375,219**	**181,316**	**173,694**	**1,167,184**

unplanned impairments (see Chapter E.7. Depreciation and amortization). Table → 3.28

As of December 31, 2018, as in the previous year, properties in the property leasing companies K&D Progetto, MORCAR and Sanctor are encumbered by land charges. The charge regarding K&D Progetto amounts to TEUR 13,450 (2017: TEUR 13,450), and the land charge regarding MORCAR is TEUR 55,000 (2017: TEUR 55,000) and the land charge for Sanctor is TEUR 28,924 (2017: TEUR 28,924).

The carrying amounts of the land and buildings, as well as the values of the land charges, have developed as follows: Table → 3.44

F.4. Other financial assets Table → 3.45

The other financial assets for the fiscal year mainly include deposits amounting to TEUR 10,833 and creditors with debit balances of TEUR 4,234.

3.44 VALUES

in TEUR	2018 Carrying amount	2018 Value land charge	2017 Carrying amount	2017 Value land charge
K&D Progetto	8,304	8,304	8,828	8,829
MORCAR	48,995	42,468	50,089	43,821
Sanctor	25,363	27,391	26,195	27,396
	82,662	**78,163**	**85,112**	**80,046**

3.45 OTHER FINANCIAL ASSETS

in TEUR	12/31/2018	12/31/2017
Derivatives	8,102	17,401
Equity instruments	39,814	56,467
Purchase price receivables from disposal of land	28,335	27,735
Other financial assets	22,998	4,017
	99,250	**105,620**
Current	24,260	12,518
Non-current	74,990	93,102

3.46 TRADE ACCOUNTS RECEIVABLE AND OTHER ASSETS

in TEUR	12/31/2018	12/31/2017
Accounts receivable due from associated and related companies and parties	35,677	54,531
Trade accounts receivable	1,201,704,	1,093,348
Current	1,237,381	1,147,879
Non-current	–	–

F.5. Trade accounts receivable and other assets Table → 3.46, Table → 3.47

Trade accounts receivable increased in the reporting period by 11.7% or TEUR 89,502 from TEUR 1,147,879 to TEUR 1,237,381.

The increase in trade accounts receivable is mainly due to an increase in sales. Changes in impairments under IFRS 9 and a breakdown of trade accounts receivable by industry can be found in Chapter F.14.2. Table → 3.67, Table → 3.68

F.6. Inventories Table → 3.48

Inventories amounted to TEUR 836,326 as of December 31, 2018. Compared to the end of 2017 with inventories of TEUR 748,823, this represents an increase of TEUR 87,503 or 11.7%. The reason for this is the growth in sales and the addressing of potential supply bottlenecks, as a result of which raw materials and supplies in particular increased by TEUR 67,690.

F.7. Cash and cash equivalents Table → 3.49

Cash and cash equivalents include cash and demand deposits at credit institutions as well as highly liquid assets in differ-

3.47 OTHER CURRENT AND NON-CURRENT ASSETS

in TEUR	12/31/2018	12/31/2017
Non-current		
Nomination costs	15,147	–
Costs to fulfil a contract	12,365	–
Prepaid expenses	6,341	1,474
Tax receivables	4,097	4,906
Other	217	5,159
Other non-current assets	**38,167**	**11,539**
Current		
Receivables from other taxes	63,057	58,935
Deferred assets	34,263	27,115
Advance payments	2,988	5,817
Advance payments to third parties	2,221	3,754
Advanced on wages	1,319	1,114
Advance on travel expenses	288	170
Other	19,298	35,211
Other non-current assets	**123,433**	**132,118**
Other assets	**161,600**	**143,657**

3.48 INVENTORIES

in TEUR	Materials and supplies	Unfinished goods	Finished goods	Merchandise	Goods in transit	Advance payments	Total
Gross inventory as at Dec. 31, 2017	**389,808**	**107,397**	**121,439**	**99,642**	**63,893**	**45,765**	**827,946**
Depreciation and amortization of net realizable value	(44,479)	(4,752)	(19,759)	(8,140)	–	–	(77,130)
Currency translation differences	(1,438)	(417)	(442)	305	–	–	(1,993)
As at Dec. 31, 2017	**343,891**	**102,228**	**101,238**	**91,807**	**63,893**	**45,765**	**748,823**
Gross inventory as at Dec. 31, 2018	**457,377**	**129,204**	**142,931**	**102,511**	**60,330**	**31,703**	**924,056**
Depreciation and amortization of net realizable value	(45,875)	(11,532)	(23,014)	(7,350)	(1)	–	(87,772)
Currency translation differences	79	(79)	(52)	93	–	–	42
As at Dec. 31, 2018	**411,581**	**117,593**	**119,865**	**95,254**	**60,329**	**31,703**	**836,326**

3.49 CASH AND CASH EQUIVALENTS

in TEUR	12/31/2018	12/31/2017
Cash and cash equivalents	**1,756,033**	**1,600,033**

ent currencies that can be converted to cash quickly. On all reporting period dates, there were no cash and cash equivalents in the categories "at fair value through profit and loss" and "recognition of valuation change in other results."

The cash and cash equivalents are measured at acquisition cost and adapted by an adjustment for the probability of default in relation to the banks ("expected credit loss") based on a public issuer rating for core and principal commercial banks. For the small percentage of liquid funds outside the core and principal banks, these balances are adjusted based on the average values of the probabilities of default of the core and principal commercial banks. Further information on the rating is provided in Chapter H.1.4 Credit risks.

F.8. Assets held for sale or disposal groups Table → 3.50

The two disposal groups classified as held for sale as of December 31, 2017, "Sydac" and "Blueprint", were sold in the 2018 fiscal year. For further information, please refer to Chapter C.3.2.

In December 2017, the management board decided to dispose of logistics assets not required for operations additionally. The sale took place on February 9, 2018.

F.9. Equity

F.9.1. Subscribed capital

At the end of 2017, the share capital of Knorr Bremse AG was TEUR 67,600 and was divided into 2,600,000 fully voting bearer shares with a par value of EUR 26.00 each and fully paid up.

At the Extraordinary Shareholders' Meeting on May 29, 2018, the following changes to equity were resolved, which were entered in the Commercial Register on June 21, 2018 and thereby became effective:

3.50 ASSETS OR DISPOSAL GROUPS HELD FOR SALE

in TEUR	12/31/2018	12/31/2017
Assets from disposal Groups	–	28,624
Assets held for sale	–	3,492
Total	**–**	**32,116**
Liabilities related to assets from disposal Groups	–	38,524

The capital stock of Knorr-Bremse AG has been restructured. Accordingly, one share with a par value of EUR 26.00 each will be replaced by 26 shares with a par value of EUR 1.00 each (total of 67,600,000 no-par value shares. The voting rights for the shares were adjusted accordingly.

In addition, the share capital was increased by way of a capital increase from Company funds according to Sections 207 et seqq. AktG from TEUR 67,600 by TEUR 93,600 to TEUR 161,200. The capital increase was completed by issuing 93,600,000 new no-par value bearer shares. To create the retained earnings necessary for the capital increase, the resolution on the appropriation of profits enacted by the shareholder's meeting on March 14 2018 for the 2017 fiscal year was modified such that, from the net profit presented as of December 31, 2017, the amount of EUR 94,057,789.26 carried forward to a new account was allocated fully to other retained earnings. The other revenue reserves increased as a result were then withdrawn in the amount of TEUR 93,600 for the purpose of increasing the capital from corporate funds.

The new shares carry dividend rights as of January 1, 2018.

In addition, the Extraordinary Shareholders' Meeting on May 29, 2018 resolved the following changes, which were entered in the Commercial Register on July 10, 2018:

Authorized capital 2018 was created. The management board was authorized, with the approval of the Supervisory Board, to increase the capital stock of the Company on one or more occasions in the period up to May 28, 2023 by up to TEUR 40,300,300 by issuing up to 40,300,000 new bearer shares against cash and/or non-cash contributions (Authorized Capital 2018). The new shares are generally to be offered directly or indirectly to the shareholders for subscription. The management board is, however, entitled, under certain circumstances, to completely or partially exclude the subscription right with the consent of the Supervisory Board.

Furthermore, subject to the approval of the Supervisory Board, the management board was authorized until May 28, 2023 to issue convertible bonds and/or bonds with warrants, profit participation rights and/or income bonds (or combinations of these instruments) possibly excluding the subscription right to create conditional capital (Conditional Capital 2018). To this end, the capital stock of Knorr-Bremse AG is conditionally increased by up to TEUR 16,120,120 by issuing up to 16,120,000 new bearer shares (Conditional Capital 2018). The conditional capital increase is only to be implemented to the extent that conversion or option rights are exercised.

On October 12, 2018, Knorr-Bremse AG celebrated its debut on the stock market with the start of trading for its shares on the regular market (prime standard) on the Frankfurt Stock Exchange. A total of 48,360 no-par value bearer shares from the holdings of KB Holding GmbH were sold to investors, representing in a free float of approx. 29.84% after an almost complete exercise of the greenshoe option. The shares were sold at a price of 80 EUR per share, corresponding to a market capitalization of approx. EUR 12.9 billion at the time of the initial public offering.

All earnings from the initial public offering were attributed to KB Holding GmbH.

Stella Vermögensverwaltungs-GmbH, Grünwald/Germany, TIB Vermögens- und Beteiligungsholding GmbH, Grünwald/Germany, and KB Holding GmbH, Grünwald/Germany, have informed the Company that they hold a majority interest in the Company, either directly or indirectly. To the knowledge of the management board, the majority of shares in Stella are held by Mr. Heinz Hermann Thiele as of July 6, 2017.

F.9.2. Capital reserves

The Company's capital reserves as at December 31, 2018 amount to TEUR 13,884 (December 31, 2017: TEUR 1,310).

An amount of TEUR 1,707 was transferred as of January 1, 2014 to capital reserves as part of a share-based payment with compensation through equity instruments in connection with the issue of shares in two "Black Empowerment Companies". In 2017 changes were made to the shareholding structure and, in the start of the 2018 fiscal year. Shares were bought back and re-issued in the form of ordinary shares to one of the Black Empowerment companies. The capital reserves increased by this amount as of December 31, 2018 to TEUR 2,533. (See Chapter H.12.).

In addition, in the 2018 fiscal year cost reimbursements from the main shareholder amounting to TEUR 10,047 after tax were transferred to capital reserves.

3.51 RETAINED EARNINGS

in TEUR	12/31/2018	12/31/2017
Legal reserves	15,967	6,607
Other retained earnings	23,957	100,349
Total	**39,924**	**106,956**

F.9.3. Retained earnings

Retained earnings contain the legal reserve as well as the accumulated earnings of the companies included in the consolidated financial statements, if they have not been distributed. Table → 3.51

F.9.4. Other equity components

Other equity components contain the changes in equity with no effect on profit and loss. This includes currency translation differences as a result of the translation of annual financial statements of foreign businesses, changes in the measurement of financial assets whose changes in valuation are optionally recognized OC, the actuarial gains and losses from the measurement of benefits to employees reported in the fiscal year, as well as taxes recognized directly in equity.

F.9.5. Takeover disclosures required by law pursuant to Section 289a (1) HGB and Section 315a (1) HGB

A) PARTICIPATION IN CAPITAL EXCEEDING 10 % OF VOTING RIGHTS

On the basis of the voting rights notifications received by the Company in accordance with the provisions of the German Securities Trading Act (WpHG), there is a participation in the capital of the Company that exceeds 10% of the voting rights. KB Holding GmbH, Grünwald, Germany, holds 70.16% of the voting rights in Knorr-Bremse AG. Pursuant to Section 34 (1) WpHG, these voting rights are attributable to TIB Vermögens- und beteiligungsholding GmbH, Grünwald, Germany, Stella Vermögensverwaltung GmbH, Grünwald, Germany, and Heinz Hermann Thiele, Munich, Germany. Table → 3.52

3.52 VOTING RIGHTS NOTIFICATION

Party obligated to disclose	Date of reaching, exceeding or falling below the thresholds	Threshold value reached	Disclosure obligations and/or additions pursuant to attributions pursuant to WpHG	New share of voting rights in %	New share of voting rights absolute
Mr. Heinz Hermann Thiele, Germany	10/24/2018	50% exceeded	Section 34 WpHG	70.16	113,097,851

[1]) The aforementioned provisions of the WpHG refer to the version applicable at the time of publication of the voting rights an-nouncement.

B) NOTIFICATIONS IN ACCORDANCE WITH THE GERMAN SECURITIES TRADING ACT:

Pursuant to Section 160 (1) No. 8 of the German Stock Corporation Act (AktG), information must be provided on the existence of equity interests notified to Knorr-Bremse AG pursuant to Section 20 (1) and (3) of the German Stock Corporation Act (AktG) or pursuant to Section 33 (1) or (2) of the German Securities Trading Act (WpHG).

The German Securities Trading Act requires investors whose share of voting rights in listed companies reaches certain thresholds to make a disclosure. The following reportable investments were notified to Knorr-Bremse AG in writing in the 2018 fiscal year as of the balance sheet date; the information relates in each case to the most recent notification made to Knorr-Bremse AG by a reportable entity. All disclosures made by Knorr-Bremse AG regarding equity investments in the year under review and beyond can be found on the company's website (https://ir.knorr-bremse.com): **Table → 3.52**

The voting rights in Knorr-Bremse AG held by KB Holding GmbH are attributable to TIB Vermögens- und Beteiligungsholding GmbH, Stella Vermögensverwaltungs GmbH and Mr. Heinz Hermann Thiele in accordance with Section 34 (1) Sentence 1 No. 1 of the German Securities Trading Act (WpHG).

F.9.6. Dividends

In the fiscal year, Knorr-Bremse AG declared and paid the dividends summarized in the **Table → 3.53**:

The dividends relate in all cases to the prior year. For the 2017 fiscal year, in the 2018 fiscal year a dividend of 327 EUR per bearer share was declared and therefore paid in the total amount of TEUR 850,200.

Due to the recognition of the Bosch option (described in Chapter C.5.) based on the anticipated acquisition method, in addition to bearer shares distributed dividends to minorities of TEUR 21,089 were presented as dividends paid to shareholders. In total, therefore, the Group recognizes dividend distributions to shareholders of the Group amounting to TEUR 871,289.

3.53 DIVIDENDS

in TEUR	2018	2017
327 EUR per bearer share (2017: 140 EUR)	**850,200**	**364,000**

The Management Board of Knorr-Bremse AG will suggest that the Supervisory Board distribute a total dividend of TEUR 282,100 for the past fiscal year. This corresponds to a dividend per share of EUR 1.75.

F.9.7. Capital management

The Group's objective is to maintain a strong capital base and ensure the sustainable development of the Company.

To this end, the Group prepares short-term and long-term liquidity planning. Short-term liquidity planning covers a three-month planning horizon with precise expected cash flows including currency changes. Long-term liquidity planning is carried out twice a year with a planning horizon of three years.

To manage free cash flow, the Group has established a net working capital management and investment process. Demand-oriented investments, which serve to maintain and further develop the Company, are made within the annual target of around 3% to 5% of annual sales. The goal of 40 to 50 days sales outstanding for net working capital is achieved by closely monitoring the divisions' working capital positions and liquidity management programs such as factoring and the Supplier Early Payment Program.

In addition, Knorr-Bremse makes targeted use of retained earnings to maintain a stable equity ratio. In future, the Group plans to distribute between 40% and 50% of consolidated net income as dividends and to retain the remaining profit. This serves to strengthen the equity ratio with a target figure of between 20% and 30%. The Group defines the equity ratio as the ratio of equity to total assets.

F.10. Employee benefits Table → 3.54

In various countries, Knorr-Bremse makes pension commitments to its employees based on defined benefit plans, the benefits of which depend either on the employee's pensionable remuneration or contain other guarantees. Pension commitments are measured based on actuarial principles using the projected unit credit method. The pension plan accruals reported in the balance sheet correspond to the present value of the defined benefit obligation in consideration of future salary and pension increases as at the reporting date, less the fair value of the plan assets. An excess of plan assets beyond the present value of the defined benefit obligation is limited to the present value of the benefit attributable to the Company, from the reimbursement of contributions or the reduction of future contribution payments.

The defined benefit plans in Germany and United Kingdom represent the majority of the total gross obligation at approximately 85%. Pension obligations from defined benefit pension schemes also exist in France, India, Italy, Japan, Mexico, Austria, Sweden, Switzerland, South Korea, Turkey and the USA. In Germany, United Kingdom, Japan, South Korea, Austria (in some cases), and the USA, the benefits are granted on a voluntary basis, while, in the other countries, the benefits are based on statutory regulations.

GERMANY

Employees benefits are granted from pension schemes for which the benefits in old age, in the event of disability or death are calculated depending on the period of employment, the salary at the time of commencement of the annuity, and the relevant assessment ceiling in the statutory pension insurance scheme (BBG), as well as a defined benchmark figure. The benefits are paid in the form of a pension. The plan was closed to new admissions with effect from January 1, 2003. Plan participants primarily include beneficiaries. Moreover, individual plans also exist, especially amongst managers, which were concluded on an individual contractual basis.

The obligations in Germany are largely completely unfunded, which means that no plan assets exist, which are solely intended to meet pension commitments – with the exception of one company for which a pledged reinsurance policy exists.

3.54 EMPLOYEES BENEFITS

in TEUR	12/31/2018	12/31/2017
Assets from employee benefits	**28,373**	**21,625**
	(307,547)	(310,234)
Provisions for pensions	(36,123)	(43,639)
Other personnel related provisions		
Provisions for employee benefits	**(343,670)**	**(353,873)**
Non-current	(332,058)	(338,667)
Current	(11,612)	(15,206)

In Germany, the interest rate risk as well as the life expectancy of the plant participants play a major role as part of a risk consideration, as the benefits are primarily paid in the form of an annuity. However, the risk was reduced by closing the pension plan to new admissions.

UNITED KINGDOM

In the United Kingdom, the employees and managers benefit from defined benefit plans, which are closed to new admissions; in addition, existing plan participants are no longer entitled to any increase in entitlements, with the exception of a few special cases for which the benefits continue to increase together with the salary. At the time, the plan was introduced on a voluntary basis. The plan provides for benefits upon retirement and death, which depend on the salary and period of employment up to the closure of the plan in 2012. Payment essentially occurs in the form of an annuity, whereby part of the benefit can also be paid out as a one-off capital payment at the request of the plan participant.

In the United Kingdom, a board of trustees, which is comprised of Company and employee representatives, is responsible for asset management. The investment strategy targets long-term value additions with a low volatility.

The pension schemes in the United Kingdom are exposed to the interest rate risk, due to the payment as a lifelong pension, as well as the risk of a higher life expectancy than assumed so that the pensions will have to be paid out for longer than planned. However, the risks were limited by closing the pension plan. Moreover, an investment risk also exists, in that the plan assets may not develop as expected and that the plan assets may therefore only be able to partially offset changes to the scope of obligations.

Please refer to Section E.5. with regard to expenses in connection with defined benefit pension plans.

F.10.1. Change in net debt Table → 3.55

F.10.2. Plan assets

Some of pension obligations are secured by assets that correspond to the definition of plan assets in accordance with IAS 19. For these pension obligations, the net debt is reported from the defined benefit obligation and the fair value of the plan assets.

For plans with a positive excess of the fair value of plan assets over the present value of the related obligation, the resulting asset is tested for impairment and, if necessary, limited to the present value of the economic benefits that the Group can derive from refunds or reductions in future contributions.

The plan assets primarily contain debt securities, equity instruments, and qualifying insurance policies, which are largely held by long-term, external carriers (funds). Plan assets are mainly held in the United Kingdom and Switzerland.

In order to reduce asset and liability risks (Asset-Liability-Matching, ALM), Knorr-Bremse has developed a risk minimization program in cooperation with trustees. The investment strategy is transferred to a qualified actuary who implements the investment strategy in relation to the pension plans and carries out the investment strategy.

The assets controlled as part of this transfer are allocated to a "Growth" or "Liability Hedging" portfolio. The allocation ratio is agreed at regular intervals.

The "Growth" portfolio comprises a combination of equities, fixed-income securities and other available funds that are available in the manager's portfolio. The fund manager determines the investment mix.

3.55 CHANGE IN NET DEBT

	Defined benefit obligation		Fair value of plan asset		Net debt (net assets) from defined benefit plans	
in TEUR	2018	2017	2018	2017	2018	2017
As at January 1	**(545,122)**	**(548,323)**	**256,513**	**245,468**	**(288,609)**	**(302,855)**
Current service costs	(9,298)	(10,031)	–	–	(9,298)	(10,031)
Past service costs	(660)	(301)	–	–	(660)	(301)
Interest income			6,228	5,965	6,228	5,965
Interest expense	(11,451)	(11,222)	–	–	(11,451)	(11,222)
Net cash flow	12,910	7,342	(3,948)	1,447	8,962	8,789
Remeasurements	9,267	10,763	(4,696)	4,884	4,571	15,647
a) Return on plan assets	–	–	(4,696)	4,884	(4,696)	4,884
b) Actuarial gains/losses (change in demographic assumptions)	1,121	1,182	–	–	1,121	1,182
c) Actuarial gains/losses (change in financial assumptions)	11,237	13,073	–	–	11,237	13,073
d) Effect of experience adjustments	(3,090)	(3,493)	–	–	(3,090)	(3,493)
Effect of changes in foreign exchange rates	(2,305)	11,771	743	(10,517)	(1,562)	1,253
Employer contributions	12,644	12,345	–	–	12,644	12,345
Participant contributions	(856)	(846)	856	846	–	–
Increase/decrease due to effect of business combinations/divestitures	1,117	(16,620)	(1,117)	8,419	–	(8,200)
As at 12/31	**(533,754)**	**(545,122)**	**254,579**	**256,513**	**(279,174)**	**(288,609)**
thereof						
Germany	(253,439)	(254,955)	1,603	1,575	(251,837)	(253,380)
United Kingdom	(180,565)	(193,742)	208,938	215,145	28,372	21,403
Other countries	(99,749)	(96,425)	44,039	39,793	(55,709)	(56,632)

The liability hedging portfolio comprises LDI funds (Liability Driven Investment), fixed-income securities, index-linked funds and other available funds that are available in the manager's portfolio. The fund manager determines the investment mix.

The objectives of the risk minimization strategy are to minimize the risk from the pension plans by increasing the allocation of assets to the liability hedging portfolio. Such reallocation must take place if agreed key figures are exceeded in order to make it possible to align assets with liabilities.

The pension obligations in Switzerland are largely covered by legally independent pension schemes. Any return of funds to the employer is precluded. The contracts meet the requirements for qualifying insurance policies pursuant to IAS 19.8.

The plan assets include: Table → 3.56

Debt securities included government bonds, which are essentially linked to an inflation index, and government bonds with a savings target, which is achieved through interest payments.

F.10.3. Actuarial assumptions

The following lists the key actuarial assumptions (in the form of weighted averages in %) used on the reporting date. Table → 3.57

The most important defined benefit plans exist in Germany and the United Kingdom. The biometric basis for valuating these obligations in Germany as of this fiscal year is the generation-dependent guideline tables RT 2018 G from Prof. Klaus Heubeck, published by HEUBECK AG on July 20, 2018. These tables are based on the newest statistics of the statutory pension insurance and the Federal Statistical Office and therefore reflect the most recent developments in probabilities of life expectancy, disability, marriage and fluctuation. Since the average life expectancy has continued to rise (albeit more slowly than in the past), the pension obligations for domestic companies increased slightly. The change in pension obligations resulting from the initial application of the new guideline tables has therefore been recognized in the other results.

3.56 PLAN ASSETS

in TEUR	12/31/2018	12/31/2017
Cash and cash equivalents	240	1,866
Equity instruments	36,797	39,496
Debt instruments	137,780	139,622
Real estate		–
Assets held by insurance companies	40,522	36,425
Other	39,240	39,105
Fair value of plan assets	**254,579**	**256,513**
thereof		
United Kingdom	208,938	215,145
Other countries	45,641	41,368
Return on plan assets (including interest income)	**1,532**	**10,849**
thereof		
United Kingdom	450	8,599
Other countries	1,082	2,250

3.57 ACTUARIAL ASSUMPTIONS

in %	12/31/2018	12/31/2017
Defined benefit obligation		
Discount rate	2.31	2.15
Salary increase	3.09	3.06
Pension increases	2.02	1.97

In the United Kingdom, the mortality tables with projection CMI 2014 are used as the biometric basis.

Age-dependent turnover tables are also taken into account.

F.10.4. Future cash flows

In the following fiscal year 2019, employer payments into the plan assets are expected to amount to TEUR 2,684. As of December 31, 2018, average annual benefit payments from pension plans in the amount of TEUR 29,757 (2017: TEUR 21,360) were expected.

As of December 31, 2018, the weighted average term of the defined benefit obligation was 16.41 years (2017: 16.19 years).

F.10.5. Sensitivity analysis

The following sensitivity analysis presents the effects of reasonable changes of individual factors on the defined benefit obligation as at the reporting date. Table → 3.58

Although the analysis does not take account of the complete distribution of the expected cash flows according to the plan, it provides an approximate value of the sensitivity of the presented assumptions.

F.11. Other provisions Table → 3.59

The provisions for warranty obligations cover obligations from cases that have already occurred as well as future obligations that are based on empirical values. The latter are essentially directly related to the development and structure of revenue. The provisions are based on estimates from historical warranty data for similar products and services. For the long-term components, outflows are expected within the next two to five years.

3.58 SENSITIVITY ANALYSIS

in TEUR	12/31/2018 Increase	12/31/2018 Decrease	12/31/2017 Increase	12/31/2017 Decrease
Present value of defined benefit obligation				
Change in discount rate 0.5%	(37,958)	47,097	(42,914)	45,021
Change in salary increase rate 0.5%%	5,917	(6,904)	4,553	(7,655)
Change in future pension increases 0.5%	26,762	(27,274)	25,998	(24,490)

3.59 OTHER PROVISIONS

in TEUR	Warranty provisions	Contractual provisions	Other provisions	Total
As at January 1, 2017	**366,861**	**12,453**	**93,911**	**473,225**
Currency translation differences	(13,464)	(69)	10	(13,524)
Additions	256,078	33,369	63,157	352,604
Disposals	(1,095)	–	18	(1,077)
Utilization	(227,778)	(7,143)	(50,352)	(285,273)
Reversals	(48,402)	(7,146)	(9,468)	(65,016)
Compounding	3,782	10	1,130	4,922
As at December 31, 2017	**335,981**	**31,475**	**98,406**	**465,862**
thereof current	189,396	9,480	32,839	231,714
thereof non-current	146,585	21,995	65,568	234,148
As at December 31, 2017	**335,981**	**31,475**	**98,406**	**465,862**
Initial application of IFRS 15	–	19,410	–	19,410
As at January 1, 2018	**335,981**	**50,885**	**98,406**	**485,272**
Currency translation differences	(487)	(248)	(256)	(991)
Additions	173,574	21,945	43,962	239,481
Utilizations	(136,360)	(21,313)	(35,029)	(192,701)
Reversals	(36,622)	(18,711)	(5,648)	(60,981)
Compounding	4,843	825	1,044	6,712
As at December 31, 2018	**340,928**	**33,383**	**102,480**	**476,791**
thereof current	182,966	8,251	41,996	233,213
thereof non-current	157,962	25,132	60,484	243,578

Contractual provisions include contingency reserves from pending transactions of TEUR 28,284 (2017: TEUR 26,218) and provisions based on agreed contractual penalties of TEUR 5,099 (2017: TEUR 5,257). The contingency reserves from pending transactions were lower due to the liquidation of provisions for impending losses from certain leasing relationships. The increase in contingency reserves through the initial application of IFRS 15 (see Chapter B.1.) had a counter-effect. The contract terms range from 2–14 years.

Other provisions related to individual identifiable risks and obligations, especially environmental protection obligations and process risks.

Expenses of TEUR 6,712 (2017: TEUR 4,922) were recognized in the statement of income from compounding provisions.

F.12. Trade accounts payable and other liabilities Table → 3.60, Table → 3.61

Trade accounts payable increased in the reporting year by 11.4% or TEUR 101,826 from TEUR 894,119 to TEUR 995,945. The primary cause was the significant increase in revenue, One component of this were liabilities from outstanding invoices in 2018.

During the introduction of IFRS 15, prepayments received from 2018 are presented in contract liabilities (see Chapter B.1).

Other liabilities are valued as described in Chapter D.16.

F.13. Financial liabilities Table → 3.62

During the 2017 fiscal year, the existing debt issuance program from 2016 was extended for another year with a total volume of EUR 1.5 billion. This opened up the possibility for the Group to issue additional bonds with a total volume of up to EUR 1 billion on the Euro MTF exchange in Luxembourg in 2018 on the basis of standardized documentation. The program expired in September 2018 and was not extended again.

3.60 TRADE ACCOUNTS PAYABLE

in TEUR	12/31/2018	12/31/2017
Trade accounts payable	(995,945)	(894,119)
Current	(995,945)	(894,119)
Non-current	–	–

3.61 OTHER LIABILITIES

in TEUR	12/31/2018	12/31/2017
Advance payments received	–	(14,454)
Deferred income	(3,478)	–
Other	(1,263)	(2,892)
Non-current	**(4,741)**	**(17,346)**
Advance payments received	–	(91,536)
Liabilities from other taxes	(45,197)	(44,831)
Outstanding invoices	–	(33,817)
Deferred income	(21,377)	(19,077)
Social security liabilities	(17,946)	(16,023)
Other	(48,784)	(64,098)
Current	**(133,303)**	**(269,382)**
Other liabilities	**(138,044)**	**(286,729)**

3.62 FINANCIAL LIABILITIES

in TEUR	12/31/2018	12/31/2017
Derivatives	(27,157)	(7,308)
Bank loans	(229,819)	(230,567)
Bonds and debt instruments	(1,247,521)	(497,390)
Liabilities from options for minority interests	(379,616)	(379,616)
Purchase price liabilities	(38,000)	–
Lease liabilities	(33,277)	(35,977)
Other financial liabilities	(217,063)	(158,843)
	(2,172,452)	**(1,309,701)**
Current	(642,895)	(570,955)
Non-current	(1,529,557)	(738,746)

3.63 RECONCILIATION OF MOVEMENTS OF LIABILITIES TO CASH FLOWS ARISING FROM FINANCING ACTIVITIES

				Liabilities	Derivatives Financial-instruments (Assets)/ Liabilities
in TEUR	Liabilities towards credit institutions	Bonds and debt instruments	Liabilities from options on minority interests	Leasing liabilities	Interest swap liabilities
As of January 1, 2018	**230,567**	**497,390**	**379,616**	**35,977**	**6,233**
Change in cash flow from financing activities					
Proceeds from the equity contributions by minority shareholders	–	–	–	–	–
Payments for the buyback of non-controlling shares without transfer of control	–	–	–	–	–
Proceeds from borrowings	13,412	744,388	–	–	–
Disbursements from the repayment of borrowings	(8,663)	–	–	–	–
Disbursements for finance lease liabilities	–	–	–	(5,332)	–
Interest paid	(14,478)	(2,500)	–	(1,639)	–
Dividends paid to parent Company shareholders	–	–	–	–	–
Dividends paid to minority shareholders	–	–	–	–	–
Net proceeds from factoring	2,818	–	–	–	–
Deposits from shareholder contributions					
Cash flow from financing activities	**(6,911)**	**741,888**	**–**	**(6,971)**	**–**
Changes arising from obtaining or losing control of subsidiaries or other businesses	**–**	**–**	**–**	**(242)**	**–**
Effects in foreign exchange rates	**(8,315)**	**–**	**–**	**478**	**–**
Other changes related to liabilities					
Other non-cash expenses and income	–	–	–	–	–
Interest income	–	–	–	–	(657)
Interest expenses	14,478	8,243	–	1,639	–
New finance leases	–	–	–	2,396	–
Total other changes, related to liabilities	**14,478**	**8,243**	**–**	**4,036**	**(657)**
Total other changes, related to equity					
Balance as of December 31, 2018	**229,819**	**1,247,521**	**379,616**	**33,277**	**5,575**

On June 14, 2018, another corporate bond with a volume of EUR 750 million and a fixed interest coupon of 1.125% p.a. with a term of seven years was issued. The new bond is rated 'A2' by Moody's. With a denomination of TEUR 1, the security is designed for both private and institutional investors. The new corporate bond was listed with the EURO MTF Luxembourg Stock Exchange.

The acquisition of rail friction know-how from Federal Mogul has resulted in a purchase price liability of TEUR 38,000, which is to be paid in three installments by December 2021 (cf. Chapter F.1). The first installment will be due in August 2020 and will amount to TEUR 15,000, the second installment of TEUR 20,00 will be due in August 2021 and the final installment of TEUR 3,000 will be due in December 2021. Table → 3.63

				Equity	
Currency translation	Revaluations from defined pension benefits (IAS 19)	Capital reserves	Retained earnings	Non-controlling shares	Total
(97,864)	**(54,469)**	**1,310**	**106,956**	**147,951**	**1,253,667**
–	–		–	–	–
11,000	444		(85,599)	(56,460)	(130,615)
–	–		–	–	757,800
–	–		–	–	(8,663)
–	–		–	–	(5,332)
–	–		–	–	(18,617)
–	–		(871,289)	–	(871,289)
–	–		–	(27,125)	(27,125)
–	–		–	–	2,818
		14,850			14,850
11,000	**444**	**14,850**	**(956,888)**	**(83,585)**	**(286,173)**
–	–		–	–	**(242)**
–	–		–	–	**(7,838)**
–	–		–	–	
–	–		–	–	(657)
–	–		–	–	24,360
–	–		–	–	2,396
					26,099
(2,335)	**5,870**	**(2,276)**	**889,856**	**40,843**	**931,957**
(89,198)	**(48,154)**	**13,884**	**39,924**	**105,208**	**1,917,471**

3.64 INFORMATION IN ACCORDANCE WITH IFRS 9

				12/31/2018
in TEUR	Book value			
Category	FVTPL	FVOCI	At amortized cost	Total
Financial assets	**17,670**	**45,698**	**3,029,295**	**3,092,663**
Derivative financial instruments	8,102	–	–	8,102
Equity instruments	9,568	30,245	–	39,813
Securities and debt instruments	–	15,453	1,221,929	1,237,382
Trade receivables*	–	–	28,335	28,335
Receivables due from banks and insurance companies	–	–	22,998	22,998
Other financial receivables	–	–	1,756,033	1,756,033
Financial liabilities	**(27,157)**	**–**	**(3,141,241)**	**(3,168,398)**
Derivative financial instruments	(27,157)	–	–	(27,157)
Bank loanss	–	–	(229,819)	(229,819)
Liabilities resulting from options for minority interests	–	–	(379,616)	(379,616)
Bonds and debt instruments	–	–	(1,247,521)	(1,247,521)
Lease liabilities	–	–	(33,277)	(33,277)
Other financial liabilities*	–	–	(38,000)	(38,000)
Trade accounts payable	–	–	(217,063)	(217,063)
Financial liabilities*	–	–	(995,945)	(995,945)

				12/31/2017
in TEUR	Book value			
Category	FVTPL	FVOCI	At continued acquisition costs	Total
Financial assets	**34,026**	**46,084**	**2,773,422**	**2,853,532**
Derivative financial instruments	17,401	–	–	17,401
Equity instruments	16,625	39,842	–	56,467
Receivables*	–	–	2	2
Purchase price receivables from sale of land*	–	6,242	1,141,637	1,147,879
Other financial receivables	–	–	27,735	27,735
Cash and cash equivalents*	–	–	4,015	4,015
	–	–	1,600,033	1,600,033
Financial liabilities	**(7,308)**	**–**	**(2,196,512)**	**(2,203,820)**
Derivative financial instruments	(7,308)	–	–	(7,308)
Bank loans	–	–	(230,567)	(230,567)
Liabilities resulting from options for minority interests	–	–	(379,616)	(379,616)
Bonds and debt instruments	–	–	(497,390)	(497,390)
Lease liabilities	–	–	(35,977)	(35,977)
Other financial liabilities*	–	–	(158,843)	(158,843)
Trade accounts payable*	–	–	(894,119)	(894,119)

*without information on fair value based on the fact that net book value approximately equals fair value

Fair value			
Level 1	Level 2	Level 3	Total
33,872	**8,102**	**5,941**	**47,915**
–	8,102	–	8,102
33,872	–	5,941	39,813
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
(1,258,418)	**(297,367)**	**(379,616)**	**(1,935,401)**
–	(27,157)	–	(27,157)
–	(230,546)	–	(230,546)
–	–	(379,616)	(379,616)
(1,258,418)	–	–	(1,258,418)
–	(39,664)	–	(39,664)
–	–	–	–
–	–	–	–
–	–	–	–

Fair value			
Level 1	Level 2	Level 3	Total
46,765	**17,401**	**9,702**	**73,868**
–	17,401	–	17,401
46,765	–	9,702	56,467
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
(505,700)	**(289,371)**	**(379,616)**	**(1,174,687)**
–	(7,308)	–	(7,308)
–	(237,895)	–	(237,895)
–	–	(379,616)	(379,616)
(505,700)	–	–	(505,700)
–	(44,168)	–	(44,168)
–	–	–	–
–	–	–	–

F.14. Financial instruments

F.14.1. Financial instruments

The Table → 3.64 presents the non-netted book values and the fair values of the financial assets and liabilities as well as the categorization of the individual items. For the classification (hierarchy levels) of the fair value pursuant to IFRS 13, please refer to the Chapter on the accounting and measurement methods.

The market value of financial derivatives is the price at which a party would take over the rights and/or obligations from another party. The market values are calculated based on the market information available at the reporting date using recognized measurement methods:

Forward exchange contracts and interest rate hedging contracts are valued on the basis of reference rates, taking forward premiums and discounts into account. Net present value calculations are performed using yield curves.

Commodity contracts are valued on the basis of quoted prices on active stock exchanges.

Options are measured using recognized option pricing models (incl. Black-Scholes). The bank valuation as at the reporting date is used for structured products. The valuation reflects the Bank's assessment of the value of the financial instrument concerned under prevailing market conditions and is derived either from the mid-market price or, if expressed as bid and ask prices, from the indicative price at which the Bank would have terminated and bought back or repurchased and sold the financial instrument at the close of business or at another time agreed with Knorr-Bremse at the relevant financial center on the valuation date indicated above.

In addition, default risks are taken into account when measuring financial derivatives at fair value ("credit value adjustments"). The calculation basis for the probabilities of default are the credit default spreads per counterparty and for the Company.

The Group measures long-term receivables/loans based on parameters such as interest rates, certain country-specific risk factors, creditworthiness of the individual customers, and the risk characteristics of the financed project.

The fair values of the Group's interest-bearing loans are calculated using the **discounted cash flow method [p. 185]**. This is based on a discount rate, which reflects the issuer's borrowing rate at the end of the reporting period. In line with Knorr-Bremse's rating, the Company's own default risk was classified as low over the entire period.

The financial liability from a put option on minority interests gives minority shareholders the option of tendering their shares to Knorr-Bremse if contractually defined conditions are met. These are carried at amortized cost in accordance with IFRS 9. The fair value stated is based on unobservable input parameters and is therefore assigned to level three of the fair value hierarchy.

3.65 GLOBAL OFFSETTING ASSETS

in TEUR	12/31/2018	12/31/2017
Financial assets		
Gross values in the balance sheet	8,102	17,401
Potential netting capability	3,556	1,472
Net value	4,546	15,928
Financial liabilities		
Gross values in the balance sheet	(27,157)	(7,308)
Potential netting capability	(3,556)	(1,472)
Net value	(23,642)	(5,836)

3.66 FACTORING

in TEUR	2018	2017
Book value of transferred receivables (factoring without balance sheet disposal)	204,644	205,816
Transaction price	(1,373)	(1,439)
Book value of transferred receivables (factoring without balance sheet disposal)	26,004	23,186
Transaction price	(351)	(253)
Book value of liabilities from factoring without balance sheet disposal	26,004	23,186

The determination of the purchase price is defined in the contract and is calculated using a multiplier method based on the results of the Knorr-Bremse companies. The multiplier is defined in the contract and only changes if reference multiples are subject to strong changes. The resulting variables have a direct influence on the fair value of the liability. Historical EBIT figures of the relevant Knorr-Bremse companies were used as result figures.

The equity instruments include non-consolidated companies, thereof and Freios Bre Coahuila, S.A. de C.V., cd. Acuna, Coah/Mexico, was consolidated for the first time in the fiscal year. The Kiepe Corporation, Canada, will be included in the annual financial statement at acquisition costs of TEUR 1,914. The Company has not yet begun any significant business activities, and consists primarily of purchased properties and machines, thus the fair value corresponds to the acquisition cost. There are no significant effects on the asset, financial performance and position of the Group. The other equity instruments valuated at fair value level 3 are considered both individually and in total as insignificant to the asset, financial and earnings situation of the Group, thus no further information is provided for them as well.

OFFSETTING Table → 3.65

The table "Offsetting financial assets and financial liabilities" shows the extent to which financial assets and financial liabilities were offset in the balance sheet as well as the possible effects from the offsetting of instruments, which are subject to a legally enforceable global netting agreement or a similar agreement.

Derivative trading is subject to a global netting agreement. However, the German framework agreement and the ISDA agreements do not meet the criteria for an offsetting obligation in the Group balance sheet. The right to offset is only enforceable in the event of future events (e.g. the insolvency of one of the contracting parties).

Offsetting financial assets and financial liabilities:

FACTORING Table → 3.66

The Group participates in a receivables sales program, in which trade accounts receivable are sold to a financial services provider. Through these measures, the Group pursues the goal to improve the liquidity situation, especially in relation to customers with extended payment terms. At Knorr-Bremse, a distinction is made between factoring with a disposal on the balance sheet and without a disposal in the balance sheet.

In the case of factoring with disposal, essentially all opportunities and risks associated with ownership of the financial asset are transferred to the financial service providers. The intention is to hold the non-transferred receivables in a portfolio until final payment and to collect the contractual cash flows. The business model for these receivables is therefore classified as hold and sell and recognized at fair value with no effect on income.

In the case of factoring without disposal in the balance sheet, this is also transferred to the financial service providers. The Knorr-Bremse Group bears the credit risk until the receivable has been settled, so that not all opportunities and receivables are essentially transferred. These receivables are not derecognized and the corresponding portfolios are reported in the "Hold" category and are carried at "amortized cost". Since factoring is carried out without disposal from the balance sheet until the customer settles its liabilities with the financial services provider by agreed payment dates, the credit risk remains with Knorr-Bremse (see Chapter H.1.4.).

Due to the short term, the fair value of the receivables sold roughly corresponds to the book value of the receivables prior to the transfer.

The notes on the financial result (Chapter E.8) provide information on the net gains and net losses from financial instruments by measurement categories.

F.14.2. Impairments Table → 3.67, Table → 3.68

The Table → 3.67 shows the impairment losses recognized in accordance with IFRS 9 due to credit risks for debt instruments that are measured at amortized cost and at fair value with no effect on income.

The customers were divided into various categories. The calculated probabilities of default of the respective customer groups estimate the creditworthiness and the ability to meet commitments from receivables within the next 12 months.

For the 1st group, the adjustment takes place according to the public rating (S&P/Moody's or the implied rating according to the Thomson Reuters valuation model) and the associated probability of default on the respective cut-off dates.

For the 2nd group, the probability of default is determined by a credit agency.

For the 3rd group, an average probability of default is determined on the basis of a comparison group with similar risk parameters.

F.14.3. Equity instruments

The Company holds various investments in third companies as well as non-consolidated investments in affiliated/associated companies. These equity participations are essentially reported at fair value.

3.67 FINANCIAL INSTRUMENTS IN IMPAIRMENT SCOPE

in TEUR	Impairment 12/31/2017	Net change	Derecognition	Impairment 12/31/2018
2018 fiscal year				
Cash and cash equivalents	20	78	–	98
Trade accounts receivable (AC) and contract assets	4,100	(1,582)	(181)	2,337

3.68 BREAKDOWN OF ACCOUNTS RECEIVABLE TRADE AND CONTRACT ASSETS BY

in TEUR	Systems for Rail Vehicles	Commercial Vehicle Systems	Other	Total
12/31/2017 Trade receivables	714,136	433,729	14	1,147,879
12/31/2018 Trade receivables and Contract assets	845,380	490,959	326	1,336,665
Trade receivables	99,284	–	–	99,284
Forderungen Lieferungen und Leistungen	746,096	490,959	326	1,237,381

Since 2016, the Company holds an investment in Haldex AB, which is of a long-term strategic nature. The Company exercises a voting right for this investment and assigns it to the "at fair value through equity" category. For this investment, changes to the fair value are reported in the reserve for adjustments in other results. No OCI release or OCI recycling will occur for these adjustments in future. In 2018 no shares in Haldex AB were sold. A loss of TEUR 9,596 (2017: TEUR 7,228) was realized via and recognized in the OCI with no effect on the profit.

Knorr-Bremse received dividends, amounting to TEUR 240 (2017: TEUR 0) from the aforementioned instrument in the reporting period.

The Table → 3.69 shows the changes in equity:

3.69 CHANGES IN EQUITY

	Fair value	
in TEUR	12/31/2018	12/31/2017
Investments at FVOCI		
HALDEX AB	30,245	39,842

	Income / expense	
in TEUR	12/31/2018	12/31/2017
Adjustment*		
HALDEX AB	(9,596)	(22,629)

*Reported in the OCI with no effect on income.

F.15. Income taxes Table → 3.70

The table below shows income tax assets and liabilities broken down into non-current and current.

The current income tax receivables of TEUR 93,650 relate to receivables from the current years 2017 and 2018; the increase is mainly due to the outstanding tax assessment of the German tax group. Non-current income tax liabilities represent tax risks from current and future tax audits. Current income tax liabilities relate to the current 2018 tax calculation.

3.70 INCOME TAXES

in TEUR	12/31/2018	12/31/2017
Income tax receivables	93,650	67,637
thereof current	93,650	67,637
Income tax liabilities	130,476	124,845
thereof non-current	92,599	71,704
thereof current	37,877	53,141

G. NOTES TO THE CASH FLOW STATEMENT

The Group's statements of cash flows show the origin and use of cash flows and the net increase/decrease in cash and cash equivalents, and are prepared in compliance with IAS 7 (Statement of Cash Flows).

A distinction is made between cash flows from operating activities and from investment and financing activities. The cash flows from operating activities are derived indirectly based on the annual net profit. By contrast, the cash flows from investment and financing activities are determined based on payments.

Interest expenses, grants and subsidies received, other investment income, as well as tax payments are reported in operating activities.

G.1. Cash flow from operating activities

The cash flow from operating activities is calculated by adjusting the result for the period before taxes (including the earnings share of minority interests) by non-cash variables, especially by depreciation and amortization and appreciation on intangible assets and property, plant and equipment, adjustments on inventories and accounts receivable trade, profits and losses from the disposal of assets, and interest expenses, and supplementing it with other changes to short-term assets, liabilities not related to investment and financing activities, as well as accruals. After taking account of the interest expenses and tax payments as well as the grants and subsidies received and other investment income, this results in a cash inflow from operating activities.

The cash inflow from operating activities increased in 2018 compared to the previous year by TEUR 45,640 to TEUR 725,526. Against the background of an increase in period results by TEUR 42,215 to TEUR 629,435, primarily due to an increase in revenue by 8% over the previous year, trade receivables also increased against the previous year by TEUR 89,502. Inventory stock also increased in the reporting year by TEUR 87,503 to TEUR 836,326.

Changes in trade accounts payable and other liabilities which are not attributable to investing or financing activities increased by TEUR 21,962. The trade accounts payable increased by TEUR 101,826 to TEUR 995,945 in the reporting period compared to the previous year. In contrast, other liabilities decreased by TEUR 148,685 to TEUR 138,044. The decrease of other liabilities resulted from the reduction of tax liabilities due to payments and a decline in the effective tax rate of the Group. In additon, the change in trade accounts payable as well as other liabilities which are not attributable to investing or financing activities was impacted by the portion of the purchase price of TEUR 38,000 still payable to Federal Mogul for the acquisition of know-how relating to the development and production of friction materials.

The loss from the sale of financial assets of TEUR 18,934 also includes losses from the sale of consolidated companies and other business units in the amount of TEUR 11,615.

The other non-cash expenses and income from the reporting year in the amount of TEUR 74,128 in particular include unrealized profits and losses and effects on the cash holdings from foreign currency listings.

The net working capital increased in the reporting year by TEUR 79,909 from TEUR 782,014 to TEUR 861,923.

G.2. Cash flow from investing activities

The cash outflow from investing activities results from the cash outflow for investments in intangible assets, property, plant and equipment, financial assets and for the acquisition of consolidated companies and the cash inflow from the disposal of intangible assets, property, plant and equipment and financial assets.

Interest received and cash outflows from investments in plan assets for pensions are also reported in investment activities.

In the event of changes to the group of consolidated companies by selling or buying companies, the purchase price paid (not including acquired debt) is reported as cash flow from investment activities.

In the 2018 fiscal year, the cash outflow from investment activities increased by TEUR 24,180. This resulted primarily from the increase of investments in intangible assets by TEUR 48,458 to TEUR 93,658 and increase of investments in tangible assets by TEUR 45,348 to TEUR 230,033. In additon, there was a cash outflow from disposal of consolidated companies by TEUR 13,679 in the reporting period. On the other hand, the cash outflow for the acquisition of consolidated companies decreased by TEUR 93,313 to TEUR 3,200. Furthermore, there was a cash inflow from financial investments in the amount of TEUR 499 (previous year: cash inflow in particular from the sale of financial investments in the amount of TEUR 28,326.

The cash inflow from financial investments in the reporting year results from dividends received in the amount of TEUR 499. The outflow of funds from the sale of consolidated companies amounting to TEUR 13,679 includes not only the inflow of the purchase price of TEUR 6,261 for the sold Swedtrac RailService AB Solna/Sweden (Blueprint North) as part of the overall disposal Group Blueprint as well as the cash and cash equivalents for the Blueprint (TEUR 17,317) and Sydac (TEUR 2,624) disposal Groups disposed of during the sale.

The disposal groups included the following assets and liabilities as of the time of disposal: Table → 3.71, Table → 3.72

The cash outflow for the purchase of consolidated companies in the amount of TEUR 3,200 relates to a partial payment of a contingent considerations for Vossloh Kiepe GmbH, purchased in 2017.

The cause of the increase in investments in intangible assets and in property, plant, and equipment are the growth and innovation priorities in the Group

Investments focused on strategic investments in the acquisition of know-how and technology for the development and manufacturing of friction materials in railway and industrial areas of Federal Mogul. In addition, investments were made in the Rail Vehicle Systems Division in capacity expansions, buildings and replacement investments using improved productivity. In addition to investments in supplier tools, the primary investments in the Commercial Vehicle Systems area were in new product generations and replacement investments. Furthermore, investments were made in other IT projects in the Group.

3.71 BLUEPRINT

in TEUR	
Property, plant and equipment	1,307
Inventories	697
Other financial assets	491
Trade accounts receivable and other assets	5,215
Income tax assets	340
Total assets	**8,049**
Provisions for pensions	145
Other provisions	590
Other financial liabilities	242
Trade accounts payable and other liabilities	27,503
Total liabilities	**28,480**

3.72 SYDAC

in TEUR	
Property, plant and equipment	–
Inventories	–
Other financial assets	–
Trade accounts receivable and other assets	–
Income tax assets	–
Total assets	**–**
Provisions for pensions	1,202
Other liabilities	943
Trade accounts payable and other liabilities	533
Total liabilities	**2,678**

G.3. Cash flow from financing activities

The cash flow from financing activities is calculated from the balance of paid shareholder dividends, proceeds and disbursements from issued bonds, proceeds from equity contributions, established bank debt, and loans and their repayment and interest payments, as well as disbursements for the repayment of finance lease obligations. In addition, proceeds from factoring arrangements with right of recourse and disbursements for resulting liabilities are presented in the cash inflow from financing activities. The cash inflows from proceeds due to the settlement of the receivables underlying the factoring are shown in cash flows from operating activities.

In the 2018 fiscal year, there was a cash outflow from financing activities in the amount of TEUR 286,173, which represents a TEUR 173,894 lower cash outflow compared to the previous year.

On June 7, 2018, a fixed-interest euro-denominated bond of TEUR 750,000 was issued, which led to a cash inflow of TEUR 44,388. In addition, the net proceeds from non-financial factoring arrangements in the reporting year were TEUR 2,818, and, with TEUR 10,827 were therefore below those of the previous year. Furthermore, in the reporting year IPO costs were reimbursed by the main shareholder of TEUR 14,850 and were presented in the capital reserves as deposits after deducting taxes with an amount of TEUR 10,047.

The cash outflow from financing activities in 2018 resulted mainly from dividends paid to shareholders and minority shareholders amounting to TEUR 898,414 In addition, effectively April 20, 2018, all non-voting preference shares held by Ursus Vermögensverwaltungs GmbH, Grünwald, Germany (associated company) in the subsidiary Knorr Brake Holding Corporation, Delaware, USA, were repurchased by Knorr Brake Holding Corporation for a purchase price of TUSD 159,600, leading to a cash outflow of TEUR 130,615 in the reporting year.

The accounting of the Bosch Put-Option according to the so-called "Anticipated Acquisition Method" (imputed acquisition) within the cash flow from investing activities results in the dividends paid falling under the dividends paid to shareholders of the parent Company in the amount of TEUR 21,089.

G.4. Composition of the cash funds

Table → 3.73

In the reporting year, the development of the individual cash flows, after adjustment for effects caused by exchange rates of TEUR 3,279 and effects resulting from changes to the consolidated Group of entities of TEUR 1,246 in the Group resulted in an increase in funds by TEUR 139,865 to TEUR 1,718,695.

The cash funds reported in the statement of cash flows include the cash and cash equivalents reported under F.9. as well as short-term marketable securities and bank debt from overdraft facilities with maturities of up to three months, which must be paid upon request at any time.

The cash funds are comprised as follows on the cut-off dates:

3.73 FINANCIAL FUNDS AT END OF PERIOD

in TEUR	12/31/2018	12/31/2017
Cash and cash equivalents	1,756,033	1,600,033
Short-term securities available for sale	51	51
Short-term liabilities to banks (less than 3 months)	(37,389)	(21,255)
	1,718,695	**1,578,829**

H. OTHER INFORMATION

H.1. Managing of financial risks

As a result of its global operating activities, the Group is exposed to various financial risks, especially market risks, credit risks, and liquidity risks. The Group-wide risk management is focused on the unpredictable nature of developments on the financial markets and aims to minimize the potential negative effects on the Group's financial situation. The objective of the company policy is to limit risks through systematic financial management. To do so, the Group specifically uses financial derivatives to hedge against market risks.

The central Group Finance Department is responsible for risk management in accordance with the guidelines adopted by the management board. It identifies, assesses, and hedges financial risks in close cooperation with the Group's operating units. The management board provides guidelines for risk management as well as fixed principles for certain risk areas.

H.1.1. Currency risks

Currency risks arise from future transactions involving both the purchase of intermediate products and the sale of end products. Receivables and liabilities recognized in the balance sheet as well as highly probable expected cash flows in foreign currencies are examined. Risk positions also arise in a minor role from financing in foreign currencies.

The objective of the Group's hedging transactions is to reduce the risks from exchange rate fluctuations. For this purpose, currency exposure is centralized and the aggregated position is hedged with external banks using forward exchange transactions and options. The terms are based on the terms of the underlying transactions, whereby the planning and hedging horizon generally extends over three years. Currency futures and option transactions are exclusively entered into to hedge existing and future foreign currency receivables and payables from the purchase and sale of goods, as well as to eliminate the currency risk for financing transactions. Hedge accounting is not applied here.

In place of the sensitivity analysis, for the 2018 consolidated financial statements we are using the value at risk as the primary risk measure to determine the risk potential for currency risks based on management reporting. It indicates the maximum loss that is not likely to be exceeded within a certain time period (12 months) with a certain probability (95%). Both the recognized and planned exposures and hedging transactions are included in the analysis. The calculated value at risk is TEUR 17,785.Table → 3.74

If the exchange rates (USD, HUF, CZK) were to rise or fall by 10% against the EUR, this would have the following effect on the result: Table → 3.75

The sensitivity analysis includes both the reported and the planned exposures as well as the hedging transactions.

Exposures to other currencies exist, which however do not have a material effect on earnings.

3.74 CURRENCY EXPOSURE

			12/31/2017
in TEUR	USD	HUF	CZK
Operative exposure	169,386	(120,801)	(82,077)
Derivates	(122,000)	76,250	37,000

3.75 EFFECT ON THE RESULT

		12/31/2017
	+10%	–10%
USD	(4,308)	7,051
HUF	4,050	(4,950)
CZK	4,098	(5,009)

H.1.2. Interest rate risks

Interest rate risks arise as a result of market-related fluctuations in the interest rates. They affect the level of the Group's interest expenses. These arise in the Knorr-Bremse Group from variable-interest financial obligations. Interest rate risks are aggregated at headquarters and hedges are made at individual case level, taking into account the hedging period and nominal volume of the risk position.

To hedge the variable components of obligations under a leasing agreement, the Group has two interest rate swaps with a nominal volume of TEUR 31,203 in its portfolio for which hedge accounting is not applied.

The interest rate risk position, which includes variable-interest credit balances and liabilities, is shown below on the respective reporting date: Table → 3.76

The following list shows the sensitivity of the Group earnings to a change in interest rates (by a rise of 100 basis points and a fall of 25 basis points) based on the impact on variable-rate loans and balances as well as on the present value of interest rate derivatives. Table → 3.77

H.1.3. Commodity price risks

Commodity price risks arise from the fact that raw materials (especially metals) required in the production process can only be procured at higher costs due to fluctuating market prices, without a full price adjustment in sales transactions. The planned purchases of raw materials or components with raw material contents as well as the corresponding sales contracts are taken into account for the analysis of the commodity price risk. The risk position determined in this way, the so-called exposure, is continuously monitored and hedged on a case-by-case basis using commodity swaps. Hedge accounting is not applied here.

The volume of the underlying transactions is calculated from the highly probable need for commodities over a rolling 2-year planning period. The Table → 3.78 lists the quantities of commodity exposures on the purchasing side for hedging them. The remaining open position can essentially be passed on the sales side.

The Table → 3.79 shows the sensitivity of group earnings to commodity prices (10% increase/decrease in the market price):

3.76 INTEREST RATE EXPOSURE

in TEUR	12/31/2018	12/31/2017
Fixed-interest financial debt	1,413,066	674,633
Variable-interest financial debt	66,753	57,804
Leasing liabilities	33,277	35,977
Interest rate derivatives	31,203	35,522

3.77 EFFECT ON EARNINGS

	12/31/2018		12/31/2017	
in TEUR	+100 Bp	–25 Bp	+100 Bp	–25 Bp
Variable-interest financial debt	(668)	167	(578)	145
Interest rate derivatives	1,596	(399)	1,910	(477)
Total	**928**	**(232)**	**1,332**	**(333)**

3.78 COMMODITY EXPOSURE

in metric tonnes	12/31/2018	12/31/2017
Aluminium	6,441	5,167

3.79 EFFECT ON EARNINGS

	12/31/2018		12/31/2017	
in TEUR	+10%	–10%	+10%	–10%
Aluminium	(1,051)	1,051	(1,167)	1,167
Derivatives	–	–	–	–
	(1,051)	**1,051**	**(1,167)**	**1,167**

H.1.4. Credit risks

Credit risks arise from investments with banks, operating trade receivables from customers as well as contract assets. On the credit institutions' side, the risk relates to counterparty default. On the customer side on late, partial, or lacking payments of receivables without compensation and non-payment.

The book value of the financial assets reported in the consolidated financial statements represents the maximum default risk. Regular monitoring is carried out both on the bank side and on the customer side. Decisions on financial transactions are made on the basis of this monitoring. Contracts on financial derivatives and financial transactions are only concluded with financial institutions with high credit ratings in order to keep the counterparty default risk as low as possible.

In principle, commercial transactions are exposed to the risk of a possible loss of value due to the defaulting of business partners, such as banks, suppliers, and customers.

SCREENING PROCESS FOR BANKS

The monitoring of core banks, including their rating and CDS development, as well as the diversification of the Group's business activities and investments, takes place on a quarterly basis. Compliance with the regulations in the guideline on the management of banking relationships is also reviewed at the same time. This specifies that no more than 40% of total deposits may be held by an individual bank and that business relationships may essentially only be maintained with banks with an investment grade rating. Financial investments are fine-tuned and adjusted as required on this basis. As a result, the assumption of low credit risk is supported by the investment guidelines only for investment-grade rated banks through regular controls.

IMPAIRMENT OF DEPOSITS

All of the Company's deposits are held in the business accounts of a small number of selected banks, most of which belong to the group of core and principal commercial banks used by the Group. A public issuer rating is provided by established rating agencies for all core and principal commercial banks. For the Impairment of these cash holdings, the probability of default is calculated according to the rating scale. The rating indicators and probabilities of occurrence are updated annually. Table → 3.80

SCREENING PROCESS FOR CUSTOMERS AND SUPPLIERS

When establishing new business relationships, public sources, such as credit agencies, are used to obtain an economic business evaluation and credit opinion in advance. During the business relationship, a regular monitoring process occurs via the automated, system-based analyses of customer and supplier portfolios. This takes into account the probabilities of occurrence and sales volumes. While suppliers are monitored as a group, major customers are reviewed on an individual basis. There was no significant concentration of default risk with respect to individual counterparties.

Impairment of receivables The credit rating structure of the Company's receivables portfolio is illustrated below. Table → 3.81

As at the reporting date, there were no material agreements that limit the maximum default risk. No significant collateral was received in the period under review. The shift in the value of the creditworthiness structure is based on the one hand on the change in the key customer structure itself and on the other hand on a change in the number of key customers.

According to the sales analysis of the customer structure, the 30 largest customers per division together account for the majority of total sales. This group therefore also accounts for the largest amount of total receivables. The assessment and calculation of the probabilities of default for the receivables of this group of customers takes place on a detailed individual basis via the public issuer rating, if available from rating agencies or credit agencies.

3.80 RATINGS

in TEUR	12/31/2018	12/31/2017
AAA to A-	681,572	1,030,081
A- to BBB-	641,212	233,602
Not allocated,- but within the investment grade range	433,249	336,350
	1,756,033	**1,600,033**

3.81 CREDIT STRUCTURE FOR TRADE ACCOUNTS RECEIVABLE AND CONTRACT ASSETS

in TEUR	12/31/2018	12/31/2017
Top customers AAA to A-	437,877	272,999
Top customersA- to BBB-	244,901	161,397
Top customersBelow BBB-	245,106	107,471
Other receivables without a rating allocation on an individual basis	408,781	606,012
	1,336,665	**1,147,879**

Due to the group-wide country structure of the major customers, the country risk is also taken into account by their individual assessment via the issuer rating or credit agencies. The data on the rating and probability of default, as well as the identification of the 30 largest customers per division is updated annually. For unrated customers, the probability of default is assessed on the basis of the benchmark spread determined for all remaining customers.

There was no material concentration of a default risk with regard to a business partner or a clearly distinguishable group of business partners. As at the reporting date, there were no material agreements that limit the maximum default risk.

H.1.5. Liquidity risks

Liquidity risks exist in that funds required to satisfy payment obligations cannot be procured on time.

Within the Knorr-Bremse Group, liquidity risks arise from payment obligations arising from operating transactions or financing obligations. The management of liquidity within the Group is intended to ensure that sufficient cash and cash equivalents are always available to meet payment obligations at maturity under both normal and tense conditions without incurring unacceptable losses or damaging the reputation of the Group. Liquidity requirements from business activities over the next three months are determined on a rolling weekly basis and differentiated by currency in short-term liquidity planning. This planning takes into account the more precise expected cash flows.

As part of the medium-term planning, which takes place twice a year and has a planning horizon of three years, the liquidity requirement is determined on the basis of the forecasted cash flows. This process allows appropriate actions to be taken at an early stage in case of changes to the financing requirements.

The Group has sufficient cash and cash equivalents available to meet its payment obligations. In addition, there are credit, overdraft and guarantee lines in the total amount of EUR 2,070.7 million (thereof EUR 150 million are medium-term credit facilities). The Luxembourg stock exchange approved an increase in the existing debt issuance program of the Company on December 21, 2017 to a total of EUR 1,500 million with a program term through 09/30/2018. The program was not extended in 2018. This is a documentation platform for issuing bonds and other debt instruments. On June 14, 2018, the Company issued another Company bond with a volume of EUR 750 million, which matures in 2025 on this basis.

The following shows the remaining contractual maturities of the financial liabilities as at December 31, 2018, including the estimated interest payments. This relates to undiscounted gross amounts, including estimated interest payments. Table → 3.82

H.2. Events after the reporting date

PURCHASE OF A 50% SHARE IN SENTIENT IP AB

Effective as of February 1, 2019, Knorr-Bremse Systeme für Nutzfahrzeuge GmbH purchased a 50% share in Sentient IP AB, Göteborg, Sweden from Sentient AB, Göteborg Sweden. The total purchase price at the time of the transaction was estimated at 15 million EUR, including a fixed purchase price repayment and variable purchase price repayments depending on the future development of the business. The fixed purchase price portion of TEUR 4,667 was already paid at the time of the transaction. Based on this strategic investment, Knorr-Bremse can now implement the further development of software and IP rights contributed by Sentient AB in its steering business.

PURCHASE OF A MINORITY SHARE IN RAILVISION, RA’ANANA

Effective as of March 14, 2019, Knorr-Bremse purchased a share of 21.3% in the Israeli start-up Company RailVision, Ra’anana, Israel as part of a strategic investment of TEUR 8,734. RailVision develops video and infrared technology based systems for obstacle detection for rail vehicles, which is an important technology for implementing automated driving functions.

ACQUISITION OF THE SNYDER EQUIPMENT COMPANY

Effective as of March 15, 2019 NEW YORK AIR BRAKE LLC (NYAB) acquired all of the assets and part of the liabilities of Snyder Equipment Company, Inc. USA for a purchase price of TEUR 16,205. Snyder, headquartered in Nixa, Missouri, is an industry-leading manufacturer of refueling systems and servicing equipment for locomotives, and also works in industrial remanufacturing of locomotive components. Its activities are concentrated on the aftermarket business.

ACQUISITION OF HITACHI AUTOMOTIVE SYSTEMS, LTD.

Due to the provision of approval under antitrust law, the takeover of the Japanese company Hitachi Automotive Systems Ltd will expectedly be completed on March 29, 2019. The purchase price for the Company, which works in the field of steering Commercial Vehicle Systems, is projected to be EUR 165 million, which generates a goodwill of likely EUR 50–60 million. Through this investment, Knorr-Bremse will expand its portfolio of steering systems and system solutions in the assisted driving and highly automated driving areas. In addition, the Group is ensuring better access to the Japanese and Southeast Asian markets.

H.3. Number of employees Table → 3.83

H.4. Auditor fees

The audit fee of KPMG AG WPG primarily relates to audits of the company and group financial statements of Knorr-Bremse AG as well as various audits of its subsidiaries' company financial statements, including statutory scope extensions. Additionally, as part of the audits, three project-related IT-audits were performed.

Other attestation services relate to the issuance of a comfort letter and legally prescribed or contractually agreed audits such as EMIR-Audit pursuant to Section 20 WpHG, audits related to the use of public funding, revenue confirmations and other contractually agreed attestation services.

3.82 AVERAGE NUMBER OF EMPLOYEES

Number	2018	2017
Wage earners	15,513	13,920
thereof leased personnel	2,726	2,469
Salaried employees	13,270	12,792
thereof leased personnel	350	432
Trainees	199	198
	28,983	**26,910**

3.83 AUDITOR FEES

in TEUR	2018	2017
Audit services	5,513	1,963
Other attestation services	1,507	120
Other consultation services	5,790	11,353
	12,810	**13,436**

3.84 MATURITIES

in TEUR	Book value	Contractually agreed cash flows	Up to 1 year	1 to 5 years	Over 5 years
					2018 fiscal year
Derivative financial instruments	(27,157)	(27,157)	(14,716)	(6,866)	(5,575)
Bank loans	(229,819)	(240,031)	(49,970)	(157,612)	(32,450)
Liabilities resulting from options on minority interests	(379,616)	(379,616)	(379,616)	–	–
Bonds and debt instruments	(1,247,521)	(1,321,349)	(15,727)	(538,748)	(766,874)
Purchase price liabilities	(38,000)	(38,000)	–	(38,000)	–
Lease liabilities	(33,277)	(41,949)	(6,494)	(18,235)	(17,220)
Other financial liabilities	(217,063)	(217,063)	(200,146)	(10,742)	(6,175)
Trade account payables	(995,945)	(995,945)	(995,945)	–	–
	(3,168,398)	**(3,261,110)**	**(1,662,613)**	**(770,203)**	**(828,294)**
					2017 fiscal year
Derivative financial instruments	(7,308)	(7,308)	(994)	(82)	(6,233)
Bank loans	(230,567)	(240,722)	(46,142)	(175,582)	(18,998)
Liabilities resulting from options on minority interests	(379,616)	(379,616)	(379,616)	–	–
Bonds and debt instruments	(497,390)	(510,000)	(2,500)	(507,500)	–
Lease liabilities	(35,977)	(45,640)	(6,680)	(19,360)	(19,601)
Other financial liabilities	(158,843)	(158,843)	(150,611)	(8,232)	–
Trade account payables	(894,119)	(894,119)	(894,119)	–	–
	(2,203,820)	**(2,236,248)**	**(1,480,662)**	**(710,755)**	**(44,832)**

Other services relate to additional audit procedures in conjunction with the IFRS-conversion as well as advisory- and training services in Corporate Governance matters in preparation for the IPO and in combination with forensic investigations. Table → 3.84

H.5. Relationships with related parties

Related parties within the meaning of IAS 24 are natural persons or companies that can be influenced by Knorr-Bremse AG that can exert an influence on Knorr-Bremse AG or that are under the influence of another related party of Knorr-Bremse AG. Transactions with related parties were conducted at arm's length.

H.5.1. Parent company and ultimate parent entity

The Group is directly controlled by KB Holding GmbH, Grünwald, Germany (hereinafter "KB Holding"), which holds 70.16% of the shares of the Group. 5% of the shares previously held by Ursus Vermögensverwaltungs GmbH, Grünwald/ Germany (hereinafter "Ursus") were transferred to KB Holding effective as of 10/24/2018.

The shares in KB Holding are held by TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany (hereinafter "TIB"), of which Stella Vermögensverwaltungs GmbH, Grünwald, Germany (hereinafter "Stella") in turn holds a majority interest. Stella is the ultimate parent Company.

The ultimate parent entity of the Group is Mr. Heinz Hermann Thiele.

H.5.2. Related parties

All related parties that can be controlled by the Group or over which the Group can exercise significant influence are listed in the Notes under H.13. List of shareholdings.

Balances and transactions between Knorr-Bremse AG and its subsidiaries included in the consolidated financial statements that are related parties have been eliminated in the course of consolidation and are not explained in these notes.

In addition to the companies included in the consolidated financial statements, in the course of its normal business activities the Group also has relationships with other non-consolidated companies and associates and joint ventures that are considered to be related parties within the meaning of IAS 24.

H.5.3. Remuneration of key management personnel

Management in key positions consists of the management board and the Supervisory Board. The remuneration of members of management in key positions includes: Table → 3.85

The remuneration of the members of the management board included salaries, benefits in kind and contributions in defined benefit and defined contribution plans for post-employment benefits. The post-employment benefits related to past service costs for pension provisions and expenses for defined contribution plans for board members active in the fiscal year.

The other long-term benefits due include expenses from the management board LTI. The Board members received approval in 2018 to receive between 0% and 200% of the

3.85 REMUNERATION OF KEY MANAGEMENT PERSONNEL

in TEUR	2018	2017
Compensation of the executive board		
Short-term compensation	9,550	7,001
Post-employment benefits	1,587	1,693
Other long-term benefits	800	-
	11,937	**8,694**
Compensation for the Members of the supervisory board		
Short-term compensation	1,042	620
	1,042	**620**
Total	**12,979**	**9,314**
Thereof short-term compensation	**10,592**	**7,621**

respective target value as long-term variable remuneration. The payout is based on the Economic Value Added (EVA) generated by the KB Group in the 2020 fiscal year, compared with the EVA in the 2017 fiscal year. The claim to LTI generally only exists if the individual is still appointed or if the appointment was ended for certain, established reasons.

TOTAL REMUNERATION OF THE SUPERVISORY BOARD AND THE MANAGEMENT BOARD IN ACCORDANCE WITH SECTION 314 (1) NO. 6 IN CONNECTION WITH SECTION 315E (1) HGB

The total remuneration of the members of the Supervisory Board in 2018 amounted to TEUR 1,042 (2017: TEUR 620). The total remuneration of the management board in 2018 was TEUR 10.037 according to DRS 17 (2017: TEUR 7,189).

Past members of the management board and their surviving dependents were awarded total compensation of TEUR 2,742 in the fiscal year (2017: TEUR 3,376). The pension provisions were TEUR 52,555 TEUR (2017: TEUR 51,345).

3.86 SALE OF GOODS AND SERVICES

in TEUR	2018	2017
Sale of goods and services		
Parent company (recharge of consulting costs)	–	3,179
Companies under joint control or significant influence by the Company (various services)	–	167
Associated companies	86,469	72,152
Ultimate parent entity (various services)	990	1,168
Other related companies and persons	8,491	7,415
	95,950	**84,081**

3.87 PURCHASE OF GOODS AND SERVICES

in TEUR	2018	2017
Purchase of goods and services		
Associated companies	10,744	3,792
Member of Management in key positions	470	659
Ultimate parent entity (consulting services)	3,012	1,861
Ultimate parent entity (rents)	2,427	2,308
Other related companies and persons (rents)	960	825
Other related companies and persons (goods and services)	1,000	–
	18,613	**9,445**

H.5.4. Sale of goods and services Table → 3.86

The sale of goods and services to related parties comprises legal transactions within and outside the scope of normal delivery and service relationships. Services to the ultimate parent entity in the amount of TEUR 757 (previous year TEUR 996) related to reimbursed expenses.

H.5.5. Purchase of goods and services Table → 3.87

The purchase of goods and services comprised legal transactions within the framework of and outside normal delivery and service relationships.

Goods and services (including rents) were purchased from related parties at arm's length conditions.

Consulting services obtained from the supreme controlling party related in particular to advising the management board on current matters and supporting and maintaining important customer relationships.

Consulting services were provided and compensated under the existing consulting agreement with Knorr-Bremse AG, last amended on August 31, 2018, as well as a consulting agreement concluded as of April 1, 2018 with the Knorr Brake Holding Corporation, USA.

H.5.6. Miscellaneous business transactions Table → 3.88

In September 2018, Black River Logistics Company LLC, an indirect subsidiary of KB AG, sold non-operating logistics assets to Stella at a purchase price of TEUR 13,193 (TUSD 15,000). The purchase price is based on a market analysis by an independent external expert.

In April 2018, Knorr Brake Holding Corporation, Delaware, (KB US Holding) purchased Ursus's majority share Knorr Brake Holding Corporation in the amount of 10.71 % of the outstanding capital in the form of 600 shares (Series A Preferred Stock) with a nominal value of $ 0.01 per share. The purchase price of TEUR 130.615 (TUSD 159,600) is based on an assessment by an independent external expert.

H.5.7. Open balances and transactions with related parties, persons and management Table → 3.89

Receivables from related parties result from trade receivables and from the sale of land. This includes TEUR 3,275 of other assets (prepaid expenses) for consulting services that are yet to be performed.

The receivables are unsecured and are settled in cash. No guarantees have been given or obtained. No impairment losses were recognized for unrecoverable or doubtful receivables from related parties in the current fiscal year or previous fiscal years.

The liabilities to associated companies and the ultimate parent entity result from deliveries and services. Liabilities to affiliated companies relate to a holding in a silent partnership. Liabilities to management in key positions consist of compensation for consulting services and for supervisory board positions in group companies. The liabilities are interest-free.

3.88 MISCELLANEOUS BUSINESS TRANSACTIONS

in TEUR	2018	2017
Disposal of land and other assets to		
Related companies	13,193	29,520
Ultimate parent entity	457	5,135
	13,650	**34,655**
Payments into capital reserves (takeover of IPO costs) by		
Parent Company (KB Holding)	14,850	–
Donations to		
Related companies (Knorr-Bremse Global Care e. V.)	1,793	1,503
	1,793	**1,503**
Dividends to		
Parent Company (KB Holding)	807,690	345,800
Minority shareholders (Ursus)	42,510	26,205
Ultimate parent entity	1,214	1,214
	851,414	**373,219**
Further business transactions		
Purchase of shares (preferred shares) KB US Holding	130,615	–
Acquisition of shares in Vossloh Kiepe	–	73,619
	130,615	**73,619**

3.89 OPEN BALANCES AND TRANSACTIONS WITH RELATED PARTIES, PERSONS AND MANAGEMENT

in TEUR	12/31/2018	12/31/2017
Receivables to		
Associated companies	29,341	30,078
Parent Company (KB Holding)	–	3,179
Minority shareholders (Ursus)	–	167
Related companies	22,196	20,558
Ultimate parent entity	3,327	549
Members of the Management in key positions	23	–
	54,887	**54,531**
Liabilities to		
Associated companies	1,140	1,218
Related companies	6,754	6,488
Members of the Management in key positions	383	520
	8,277	**8,226**

H.6. Executive bodies

H.6.1. Management board of Knorr-Bremse AG

Klaus Deller, chairman of the board

- Responsible for the Rail Vehicle Systems Division (until August 31, 2018), Human Resources, Development and Communication
- Chairman of the Supervisory Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Munich

Ralph Heuwing

- Member of the management board since November 1, 2017, responsible for the Finance, Controlling and IT departments since January 1, 2018. Responsible for Finance, Controlling, Legal, Investor Relations, Internal Audit and IT.
- Chairman of the Executive Board of Knorr Brake Holding Corporation, Watertown
- Member of the Supervisory Board of Management Capital Holding, Munich
- Member of the Board of Directors of Ivoclar Vivadent AG, Schaan until June 2018
- Member of the Supervisory Board of Ringmetall AG, Munich

Dr. Peter Laier

- Responsible for the Commercial Vehicle Systems Division.
- Chairman of the Supervisory Board of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Munich

Dr. Jürgen Wilder (since September 1, 2018)

- Responsible for the Rail Vehicle Systems Division.
- Chairman of the Board of Management of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH

H.6.2. Supervisory board of Knorr-Bremse AG

Heinz Hermann Thiele, Munich, Germany

- Honorary chairman
- Entrepreneur

Dr. Klaus Mangold, Stuttgart, Germany (since September 1, 2018)

- Chairman of the Supervisory Board
- Independent contractor

Hans-Georg Härter, Munich, Germany (until August 31, 2018)

- Chairman of the supervisory board
- former Chairman of ZF Friedrichshafen AG (retired)

Franz-Josef Birkeneder*, Aldersbach, Germany

- 1st Deputy Chairman of the Supervisory Board
- Plant manager Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Aldersbach location

Kathrin Dahnke, Bielefeld, Germany

- Member of the Supervisory Board since May 29, 2018
- Additional Deputy to the Chair of the Supervisory Board since July 12, 2018
- Member of the management board of Wilh. Werhahn KG

Michael Jell*, Munich, Germany

- Full time Chair of the Works Council of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Knorr-Bremse AG
- KB Media GmbH

Dr. Wolfram Mörsdorf, Essen, Germany

- Retired member of the management board of ThyssenKrupp AG

Werner Ratzisberger*, Aldersbach, Germany

- Project Engineer for mechanical processing/surfaces,
- Knorr-Bremse Systeme für Nutzfahrzeuge GmbH

Sebastian Roloff*, Munich, Germany (until March 31, 2019)

- Attorney at IG Metall, Munich office

Erich Starkl*, Passau, Germany

- 2nd Authorized Representative of IG Metall trade union, Passau office

Julia Thiele-Schürhoff, Munich, Germany

- Chairman of the management board of Knorr-Bremse Global Care e.V.

Wolfgang Tölsner, Uetersen, Germany

- Management Consultant

Georg Weiberg, Stuttgart, Germany

- Retired Head of Development Daimler Trucks

Günter Wiese*, Berlin, Germany

- Full time Works Council of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Berlin plant

The external mandates of the members of the Supervisory Board can be found at https://www.knorr-bremse.com/de/unternehmen/management

* Arbeitnehmervertreter

H.7. Other financial commitments

Table → 3.90

The Company's other financial obligations are primarily comprised of lease agreements. The Company predominantly holds leasing contracts for commercial and production buildings. In addition, lease agreements exist for company cars and fork lifts. No special termination or extension options exist in the lease agreements. Further information on operating leases and finance leases is provided in Chapter H.11.

Operating leases enable alternative financing to borrowed capital from banks, whereby the lease agreements are not reflected in the balance sheet, as they are assigned to the lessor. The leasing instalments are taken into account in the statement of income as operating expenses.

The increase in leasing agreements between 2017 and 2018, in particular with terms of 1-5 years, is due to new lease agreements concluded for land and buildings in Russia, Japan and Italy.

The other liabilities item includes loan commitments and bank guarantees.

H.8. Contingent liabilities Table → 3.91

Contingent liabilities lead to possible obligations, which cannot be influenced due to the occurrence of potential future events. The amount of these obligations can also not be adequately calculated.

The Company's contingent liabilities involve guarantees and warranties. Guarantees are issued for outstanding bank bonds, performance warranties for banks, as well as a rent guarantees for commercial/factory buildings. In particular, the amount of the rent guarantee is significant at TEUR 1,900 (2017: TEUR 2,600). The associated probability of occurrence were considered to be low in 2018 due to the ongoing stable business development of the borrower.

There are guarantees in Hungary for customer contracts for products.

3.90 OTHER FINANCIAL OBLIGATIONS

in TEUR	Up to 1 year	1 to 5 years	Over 5 years	Total
12/31/2018				
Rent and lease obligations	42,221	123,159	76,957	242,337
Investment projects	19,379	11,618	–	30,998
Major repairs/maintenance work	3,133	495	–	3,628
Other obligations	25,062	4,473	–	29,535
	89,796	**139,744**	**76,957**	**306,498**
12/31/2017				
Rent and lease obligations	36,896	81,207	64,328	182,431
Investment projects	11,890	825	–	12,715
Other obligations	16,773	859	–	17,632
	65,559	**82,891**	**64,328**	**212,778**

3.91 CONTINGENT LIABILITIES

in TEUR	2018	2017
Guarantees	18,353	23,226
Warranties	356	1,451
Other	–	2,352
	18,709	**27,028**

H.9. Legal risks

BOSCH ARBITRATION PROCEDURE

In a letter dated June 21, 2018, Robert Bosch GmbH declared it was exercising its put option related to its minority share in Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and initiated arbitration proceedings with the arbitration notice of September 17, 2018 with the goal of enforcement this put option. The arbitration proceedings are still in an early stage. The decision is expected in several months at the earliest.

At the beginning of April 2019, we expect Robert Bosch GmbH to expand its lawsuit by claims for damages aimed at the full distribution of the balance sheet profit of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH. In our opinion, Bosch will not be able to enforce this claim.

INVESTIGATIONS BY THE U.S. DEPARTMENT OF JUSTICE

On April 3, 2018, the U.S. Department of Justice, Antitrust Division (DOJ) announced that it reached an agreement with Knorr-Bremse AG and Westinghouse Air Brake Technologies Corporation ("Wabtec") on allegations of a non-legal agreement not to poach employees.

Following the agreement reached with the DOJ, employees filed lawsuits against Knorr-Bremse AG, Wabtec and its subsidiaries. The aim of the class action lawsuits is to compensate employees for reduced payment on the basis of the alleged agreement between the parties above not to poach employees.

Due to the early stage of the class action lawsuits, it is not possible to determine a reliable amount for a provision for potential claims. For this reason, no provisions were formed as of Monday, December 31, 2018.

ADMINISTRATIVE ACTION IN BRAZIL AGAINST KNORR-BREMSE SISTEMAS AGAINST VEÍCULOS COMERCIAIS BRASIL LTDA.

On September 27, 2016, the Brazilian antitrust authorities initiated administrative proceedings against the Group company Knorr-Bremse Sistemas for Veículos Comerciais Brasil Ltda., Itupeva/Brazil ("KBB") and several of its competitors in Brazil. The allegations against KBB are limited to an allegedly unlawful exchange of information and do not involve antitrust behaviour. As the investigations are still at an early stage, no reliable statement can be made at this time about the probability of success or the possible consequences of an adverse outcome of the administrative proceedings.

PRELIMINARY PROCEEDINGS AGAINST MICROELETTRICA SCIENTIFICA S.P.A.

The Italian law enforcement authorities sent notification in their letter of March 19, 2019 that the preliminary proceedings against Microelettrica Scientifica S.p.A., Buccinasco/Italy ("Microelettrica"), prior members of the administrative board of Microelettrica and a member of the management of three Russian group companies in conjunction with commission payments to an agent due to deliveries to a Russian customer is concluded, and that a complaint will be filed against Microelettrica due to an alleged violation of internal regulations to avoid corrupt activities by the aforementioned individuals.

Since the court proceedings have not yet been opened, and since Knorr-Bremse is of the opinion, that Microelettrica took suitable preventative measures against corruption and therefore fulfilled Italian law, no provision was formed as of December 31, 2018.

H.10. Government grants

Government grants include grants for structural support and business development as well as funding for research and development projects.

Grants for assets in the 2018 fiscal year amounted to TEUR 1,850 (2017: TEUR 1,697).

Performance-related grants in 2018 amounted to TEUR 5,310 (2017: TEUR 3,568) and were recognized in income. The increase in the 2018 fiscal year was due primarily to newly added grants from the research, development and innovation fund to Hungarian subsidiaries. Performance-related grants are essentially reported in other operating income.

H.11. Leases

The Company is a lessee in finance lease agreements as well as in operating lease agreements.

H.11.1. Finance leases Table → 3.92

The net book value of assets as a result of finance leases as at Monday, December 31, 2018 is provided below. The Company essentially concluded finance leases for land and commercial/production buildings with a term of 10 to 20 years. A significant portion of these land and buildings is owned by Knorr-Bremse GmbH/Austria, Knorr-Bremse Systemes Ferroviaires France S.A./France, Knorr-Bremse Commercial Vehicle Japan Ltd, Knorr-Bremse Systeme für Nutzfahrzeuge GmbH/

Germany and Knorr-Bremse Rail Systems Ltd/United Kingdom.

In the 2018 fiscal year, there was an overall reduction in net book value from finance leases by 12.6% to TEUR 28,036 (2017: TEUR 32,063). This reduction was due primarily to the disposal from Company sales.

The Table → 3.93 shows the reconciliation of the total future minimum lease payments at their present value on the reporting date.

The total future minimum lease payments primarily result from the obligations from finance leases for land and commercial/production buildings of Knorr-Bremse GmbH/Austria, Knorr-Bremse Systemes Ferroviaires France S.A./France, Knorr-Bremse Commercial Vehicle Systems Japan Ltd., Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and Knorr-Bremse Rail Systems/United Kingdom. As at the cut-off date of December 31, 2018, the minimum lease payments for land and buildings amount to TEUR 22,489. The reduction was primarily due to the expiration of an agreement in a Czech subsidiary. No atypical termination or extension options exist.

The Group did not conclude any new sale and lease-back transaction in 2018. An existing sale and lease-back relationship, in place since 2009, is classified as a finance lease and is shown in the table.

3.92 FINANCE LEASES

in TEUR	12/31/2018	12/31/2017
Land and buildings	22,489	26,871
Technical equipment and machinery	924	1,273
Other assets	4,623	3,919
Assets	**28,036**	**32,063**
	2018	**2017**
Depreciation and amortization	3,930	4,159
Interest expenses	1,639	1,507
Expenses	**5,569**	**5,665**
Contingent rents reported as expense	289	43

H.11.2. Operating lease relationships Table → 3.94, Table → 3.95

As at December 31 2018, the following future minimum lease payments were outstanding within the scope of non-terminable leases.

The Group leases a number of production buildings and plants within the scope of long-term operating leases. Another material part of the minimum lease payments arises from operating leases for forklift trucks and Company cars, which generally have a term of 3 to 5 years. The increase in outstanding minimum lease payments in 2018, particularly

3.93 FINANCE LEASES – RECONCILIATION OF THE SUM OF FUTURE MINIMUM LEASE PAYMENTS AT THE PRESENT VALUE

in TEUR	Up to 1 year	1 to 5 years	Over 5 years	Total
				December 31, 2018
Minimum lease payments as at the reporting date	6,494	18,235	17,220	41,949
./. included interest	1,387	4,014	3,270	8,672
Present value of the minimum lease payment	5,107	14,221	13,950	33,277
Future minimum lease payments, whose receipt is expected based on non-terminable subleases	–	–	–	–
				December 31. 2017
Minimum lease payments as at the reporting date	6,577	19,136	19,601	45,314
./. included interest	1,245	4,187	3,905	9,338
Present value of the minimum lease payment	5,332	14,949	15,696	35,976
Future minimum lease payments, whose receipt is expected based on non-terminable subleases	–	–	–	–

3.94 OPERATING LEASING

in TEUR	Up to 1 year	Between 1 and 5 years	Over 5 years	Total
December 31, 2018				
Outstanding minimum lease payments	42,221	123,159	76,957	242,337
Outstanding minimum lease payments from subletting (non-terminable)	–	–	–	–
December 31, 2017				
Outstanding minimum lease payments	36,896	81,207	64,328	182,430
Outstanding minimum lease payments from subletting (non-terminable)	389	360	–	749

3.95 INCOME AND EXPENSES

	2018		2017	
in TEUR	Income	Expenses	Income	Expenses
Minimum lease payments	262	47,463	38	41,142
Contingent rents	–	17	–	2,390
Subletting payments	–	105	–	–
	262	**47,585**	**38**	**43,531**

for terms between 1 and 5 years, is due to the fact that the effect of newly concluded leases is more than offset by expiring, non-extended agreements. No atypical termination or extension options exist.

H.12. Share-based payments

Shares in two "Black Empowerment Entities" were issued in South Africa in 2009. This relates to share-based payments within the meaning of IFRS 2, which must be classified as transactions with equity settlement.

Knorr-Bremse (South Africa) (Pty) Ltd has fully financed the issuance of its treasury stock. The financing should be paid by collecting dividends on these shares. The rights transferred to the "Black Empowerment Entities" were measured at fair value. In the event that this exceeds the fair value of the payments received and the other assets, the difference is reported as an expense.

As no financial contributions were to be made by the shareholders of the "Black Empowerment Entities", the costs and the issued equity instrument were equal.

The fair value was calculated as follows:

- The Black-Scholes model was used to calculate the costs with regard to the option pricing model in accordance with IFRS 2.
- The option has a term of twelve years.
- The cash value represents 25% of the discounted cash flow of the Company's equity assessment as at January 1, 2009.
- The exercise price on the expiry date.
- The risk-free interest rate was assumed to be 8.9%.
- A volatility of 30% was assumed based on an analysis of the sector in which the company operates.
- A dividend yield of 5.5% was assumed based on prudent dividend forecasts and corporate growth of 10% per annum.

On this basis, the equity effect of the share-based payment as of January 1, 2014 amounted to TEUR 1,707.

Changes were made to the shareholder structure in fiscal year 2017 and in the beginning of the 2018 fiscal year. Shares in two Black Empowerment companies were repurchased and re-issued in the form of ordinary shares to one of the Black Empowerment companies. Due to the ordinary shares issued in early 2018 without financial contributions, Knorr-Bremse recognized other operating expenses and a corresponding increase in capital reserves according to IFRS 2 in the amount of TEUR 2,533.

H.13. List of shareholdings

The Table → 3.96 shows the list of shareholdings in accordance with Section 313 (2) HGB:

3.96 LIST OF SHAREHOLDINGS

1. Consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
Albatros GmbH, Munich/Germany	100	TEUR	18	(3)	19
Aldona Seals Ltd., Peterlee/Great Britain	100	TEUR	1,447	336	1,718
Alpha Process Controls (International) Ltd., Peterlee/Great Britain	100	TEUR	440	(164)	713
Anchor Brake Shoe Company LLC, West Chicago, Illinois/USA	100	TEUR	11,626	2,316	15,329
APS electronic AG, Niederbuchsiten/Switzerland	100	TEUR	918	(787)	4,545
BCVS Canadian Holdings LLC, Anjou, Québec/Canada[2)]	100	TEUR	0	0	0
BCVS Mexican Holdings LLC, Cd Acuña, Coah/Mexico[2)]	100	TEUR	0	0	0
Bendix Commercial Vehicle Systems LLC, Elyria, Ohio/USA	100	TEUR	550,428	112,926	745,501
Bendix CVS Canada Inc., Anjou, Québec/Canada[2)]	100	TEUR	0	0	0
Bendix CVS de Mexico SA de CV, Cd Acuna, Coah/Mexico[2)]	100	TEUR	0	0	0
Bendix Servicios de Mexico S.A. de C.V., Tapodaca Nuevo Leon/Mexico[2), 5)]	100	TEUR	0	0	0
Bendix Spicer Foundation Brake Canada, Inc., Kingston, Ontario/Canada[3)]	100	TEUR	0	0	0
Bendix Spicer Foundation Brake LLC, Elyria, Ohio/USA	80	TEUR	80,342	30,053	155,029
Black River Logistics Company LLC, Watertown, New York/USA	100	TEUR	11,843	(4,627)	14,039
BSFB Holdings, Inc., Elyria, Ohio/USA[3)]	100	TEUR	0	0	0
Casram Rail S.p.A., Crimido/Italy	100	TEUR	1,342	762	2,257
Comet Fans S.r.l., Solaro, Milan/Italy	100	TEUR	5,551	1,491	9,689
Distribuidora Bendix CVS (de) Mexico SA de CV, Cd Acuña, Coah/Mexico[2)]	100	TEUR	0	0	0
Dr. techn. Josef Zelisko Ges.m.b.H., Mödling/Austria[1)]	100	TEUR	6,738	(371)	31,759
Dyno-Inno Test Center for Brake Equipment (Suzhou) Ltd., Suzhou/China[5)]	100	TEUR	220	(227)	652
Freios Bre Coahuila, S.A. de C.V., Cd. Acuña, Coah/Mexico[5)]	100	TEUR	6,525	(2)	6,525
G.T. Group Ltd., Peterlee/Great Britain	100	TEUR	14,671	(2,188)	17,702
GT Emission Systems Ltd., Peterlee/Great Britain	100	TEUR	25,223	4,850	36,453
GT Project Engineering Ltd., Consett/Great Britain	100	TEUR	439	255	1,750
Guangdong Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co., Ltd., Jiangmen, Guangdong/China[7)]	49	TEUR	11,333	5,311	59,510
Hasse & Wrede CVS Dalian, China Ltd., Dalian/China	70	TEUR	15,797	6,587	32,529
Hasse & Wrede GmbH, Berlin/Germany[1)]	100	TEUR	9,574	595	28,879
Heine Resistors GmbH, Dresden/Germany	100	TEUR	5,198	556	6,149
Icer Rail S.L., Pamplona/Spain	100	TEUR	18,632	9,084	37,017
IFE-CR a.s., Brünn/Czech Republic	100	TEUR	23,271	3,211	59,933
IFE North America LLC, Westminster, Maryland/USA	100	TEUR	5,557	1,069	13,143
IFE-Tebel Technologies B.V., Leeuwarden/Netherlands	100	TEUR	19,995	1,265	23,116
IFE-VICTALL Railway Vehicle Door Systems (Qingdao) Co., Ltd., Qingdao/China	59	TEUR	23,362	3,152	73,419
Kalmar Tågkompetens AB, Kalmar/Sweden	100	TEUR	469	116	814
KB Gamma Beteiligungs GmbH, Munich/Germany	100	TEUR	21	0	21
KB Lambda Beteiligungs GmbH, Munich/Germany	100	TEUR	26	0	26
KB Media GmbH Marketing und Werbung, Munich/Germany[1)]	100	TEUR	11	50	4,279
KB Omikron Beteiligungs GmbH, Munich/Germany	100	TEUR	23	(1)	23
KB Sigma Beteiligungs GmbH, Munich/Germany	100	TEUR	26	0	26

1. Consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
K&D PROGETTO S.r.l., Bolzano/Italy[8)]	20	TEUR	79	3	8,665
Kiepe Electric Ges. m. b. H., Vienna/Austria	100	TEUR	13,686	(673)	27,471
Kiepe Electric GmbH, Düsseldorf/Germany[1)]	100	TEUR	50,761	(4,799)	221,689
Kiepe Electric Inc., Alpharetta/USA	100	TEUR	6,501	2,338	12,286
Knorr Brake Company LLC., Westminster, Maryland/USA	100	TEUR	53,236	9,779	97,735
Knorr Brake Corporation Canada Holdings Ltd., Montreal, Québec/Canada	100	TEUR	30	(193)	5,909
Knorr Brake Holding Corporation, Watertown, New York/USA	100	TEUR	(303,529)	(11,326)	372,432
Knorr Brake Ltd., Kingston, Ontario/Canada	100	TEUR	7,727	221	8,363
Knorr Brake Realty, LLC, Westminster, Maryland/USA	100	TEUR	3,073	(69)	15,406
Knorr Brake Truck Systems Company, Watertown, New York/USA	100	TEUR	78,149	0	170,846
Knorr-Amabhiliki (Pty.) Ltd., Kempton Park/South Africa [9)]	100	TEUR	6	17	6
Knorr-Bremse 1520 OOO, Burashevskoe/Russia	100	TEUR	(9,829)	(6,116)	29,088
Knorr-Bremse / Nankou Air Supply Unit (Beijing) Co., Ltd., Nankou/China	55	TEUR	12,658	5,657	28,188
Knorr-Bremse Asia Pacific (Holding) Limited, Hong Kong/China	100	TEUR	102,743	146,599	748,504
Knorr-Bremse Australia Pty. Ltd., Granville/Australia	100	TEUR	14,477	(4,445)	47,317
Knorr-Bremse Benelux B.V.B.A., Heist-op-den-Berg/Belgium	100	TEUR	1,534	286	5,827
Knorr-Bremse Beteiligungsgesellschaft mbH, Munich/Germany[1)]	100	TEUR	26	0	26
Knorr-Bremse Braking Systems for Commercial Vehicles (Dalian) Co. Ltd., Dalian/China	100	TEUR	38,072	15,622	90,903
Knorr-Bremse Brasil (Holding) Administração e Participação Ltda., Itupeva/Brazil	100	TEUR	30,585	5,113	40,635
Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing (Beijing) Co., Ltd., Daxing/China	50	TEUR	61,306	34,018	146,315
Knorr-Bremse Commercial Vehicle Systems Japan Ltd., Tokyo/Japan	80	TEUR	39,862	9,626	140,438
Knorr-Bremse Commercial Vehicle Systems (Shanghai) Co., Ltd., Shanghai/China	100	TEUR	10,065	690	26,297
Knorr-Bremse DETC Commercial Vehicle Braking Technology Co., Ltd., Shiyan/China	51	TEUR	20,731	5,973	53,969
Knorr-Bremse España, S.A.,Getafe/Spain	100	TEUR	42,496	4,279	136,824
Knorr-Bremse Fékrendszerek Kft., Kecskemét/Hungary	100	TEUR	57,989	12,273	101,710
Knorr-Bremse Ges.m.b.H., Mödling/Austria	100	TEUR	55,429	44,710	163,375
Knorr-Bremse Ibérica S.L., San Fernando de Henares/Spain	100	TEUR	5,487	756	11,900
Knorr-Bremse India Pvt. Ltd., Faridabad/India	100	TEUR	117,580	45,200	163,651
Knorr-Bremse Investment GmbH, Munich/Germany[1)]	100	TEUR	1,001	0	1,003
Knorr-Bremse KAMA Systems for Commercial Vehicles OOO, Naberezhnye Chelny/Russia	50	TEUR	13,445	2,127	16,021
Knorr-Bremse Nordic Rail Services AB, Lund/Sweden	100	TEUR	3,359	(4,836)	13,317
Knorr-Bremse Pensionsgesellschaft mbH, Munich/Germany	100	TEUR	24	0	24
Knorr-Bremse Polska SfN Sp. z o.o., Warsaw/Poland	100	TEUR	1,170	386	1,298
Knorr-Bremse Powertech Corporation USA, Atlanta/USA	100	TEUR	97	(2,040)	12,356
Knorr-Bremse Powertech GmbH, Berlin/Germany[1)]	100	TEUR	(10,420)	(2,033)	73,080
Knorr-Bremse Powertech Verwaltungs GmbH, Holzkirchen/Germany	100	TEUR	75	5	77
Knorr-Bremse Powertech GmbH & Co. KG, Holzkirchen/Germany	100	TEUR	(15,532)	(3,600)	11,838
Knorr-Bremse Rail Systems CIS Holding OOO, Moscow/Russia	100	TEUR	14,948	2,988	15,241
Knorr-Bremse Rail Systems Italia S.r.l., Campi Bisenzio/Italy	100	TEUR	40,338	10,024	86,956
Knorr-Bremse Commercial Vehicle Systems Japan Ltd., Tokyo/Japan	94	TEUR	22,157	5,781	36,455
Knorr-Bremse Commercial Vehicle Systems Japan Ltd., Tokyo/Japan	100	TEUR	4,414	328	7,913
Knorr-Bremse Rail Systems OOO, Moscow/Russia	100	TEUR	12,274	8,278	25,160
Knorr-Bremse Rail Systems Schweiz AG, Niederhasli/Switzerland	100	TEUR	13,666	1,828	16,107
Knorr-Bremse Rail Systems (UK) Ltd., Melksham, Wiltshire/Great Britain	100	TEUR	23,553	9,911	108,617
Knorr-Bremse Railway Technologies (Shanghai) Co., Ltd., Shanghai/China	100	TEUR	(6,699)	(871)	5,252
Knorr-Bremse Raylı Sistemler Sanayi ve Ticaret Limited Şirketi, Ankara/Turkey	100	TEUR	1,189	744	1,589
Knorr-Bremse S.A. Holding Company (UK) Ltd., Melksham/Great Britain	100	TEUR	6,278	0	6,278
Knorr-Bremse S.A. (Pty.) Ltd., Kempton Park/South Africa	75	TEUR	13,565	1,368	31,218
Knorr-Bremse S.R.L., Bucharest/Romania	100	TEUR	273	11	525
Knorr-Bremse Services Europe s.r.o., Stráž nad Nisou/Czech Republic	100	TEUR	(6,397)	(2,415)	1,330

1. Consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
Knorr-Bremse Services GmbH Munich/Germany[1]	100	TEUR	12,475	253	69,498
Knorr-Bremse Sistemas para Veículos Comerciais Brasil Ltda., Itupeva/Brazil	100	TEUR	21,541	3,869	38,988
Knorr-Bremse Sistemas para Veículos Ferroviários Ltda., Itupeva/Brazil	100	TEUR	12,463	4,089	18,337
Knorr-Bremse Sistemi per Autoveicoli Commerciali S.p.A., Arcore/Italy	100	TEUR	9,162	800	18,375
Knorr-Bremse Steering Systems GmbH, Wülfrath/Germany	100	TEUR	25,912	(569)	50,337
Knorr-Bremse System för Tunga Fordon AB, Malmö/Sweden	100	TEUR	1,612	955	1,852
Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Munich/Germany	80	TEUR	367,409	85,514	720,987
Knorr-Bremse Systeme für Nutzfahrzeuge Pensionsgesellschaft mbH, Munich/Germany	100	TEUR	24	0	24
Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Munich/Germany[1]	100	TEUR	127,978	13,628	917,299
Knorr-Bremse Systeme für Schienenfahrzeuge Ibero Holding GmbH, Munich/Germany[1]	100	TEUR	47,307	0	54,324
Knorr-Bremse Systemes Ferroviaires S.A., Tinqueux/France	100	TEUR	14,517	2,937	36,228
Knorr-Bremse Systèmes pour Véhicules Utilitaires France S.A.S., Lisieux/France	100	TEUR	54,999	20,132	100,750
Knorr-Bremse Systems for Commercial Vehicles India Pvt. Ltd., Pune/India	100	TEUR	1,165	(532)	31,141
Knorr-Bremse Systems for Commercial Vehicles (Chongqing) Ltd., Chongqing/China	66	TEUR	14,362	3,177	43,015
Knorr-Bremse Systems for Commercial Vehicles OOO, Moscow/Russia	100	TEUR	5,213	1,330	9,809
Knorr-Bremse Systems for Commercial Vehicles Ltd., Bristol/Great Britain	100	TEUR	37,195	4,612	51,966
Knorr-Bremse Systems for Rail Vehicles Enterprise Management (Beijing) Co., Ltd., Beijing/China[5]	100	TEUR	(394)	(398)	131
Knorr-Bremse Systems for Rail Vehicles Kazakhstan LLP, Astana/Republic of Kazakhstan	100	TEUR	130	13	154
Knorr-Bremse Systems for Rail Vehicles (Suzhou) Co., Ltd., Suzhou/China	100	TEUR	196,339	119,627	435,550
Knorr-Bremse Systemy Kolejowe Polska Sp. z o.o., Krakow/Poland	100	TEUR	13,946	2,834	21,188
Knorr-Bremse Systémy pro užitková vozidla ČR s.r.o.,Stráž nad Nisou/Czech Republic	100	TEUR	31,797	7,978	68,670
Knorr-Bremse Technology Center India Private Limited, Pune/India	100	TEUR	4,543	1,655	8,914
Knorr-Bremse Ticari Arac Fren Sistemieri Limited Sirketi, Istanbul/Turkey	100	TEUR	807	394	950
Knorr-Bremse US Beteiligungs GmbH, Munich/Germany[1]	100	TEUR	50	0	51
Knorr-Bremse US Investment GmbH, Munich/Germany[1]	100	TEUR	25	0	25
Knorr-Bremse Vasúti Jármű Rendszerek Hungária Kft., Budapest/Hungary	100	TEUR	136,626	19,384	209,673
Knorr-Bremse Verwaltungsgesellschaft mbH, Munich/Germany	100	TEUR	26	(2)	26
Merak Jinxin Air Conditioning Systems (Wuxi) Co., Ltd., Wuxi/China	51	TEUR	13,459	2,858	62,481
Merak Knorr Climatización S.A., Buenos Aires/Argentina	100	TEUR	34	(38)	254
Merak North America LLC, Westminster, Maryland/USA	100	TEUR	(4,835)	(2,162)	16,646
Microelettrica do Brasil Comercialização e Importação de Produtos Eletromecânicos Ltda.,Barueri, São Paulo/Brazil	100	TEUR	(367)	(99)	1,079
Microelettrica Heine (Suzhou) Co., Ltd., Suzhou/China	100	TEUR	8,983	2,001	14,103
Microelettrica Power (Pty.) Ltd., Johannesburg/South Africa	74	TEUR	1,230	45	5,791
Microelettrica Scientifica (Pty.) Ltd., Johannesburg/South Africa	100	TEUR	3,116	(97)	4,286
Microelettrica Scientifica S.p.A., Buccinasco/Italy	100	TEUR	34,203	9,393	64,131
Microelettrica USA LLC, Randolph, New Jersey/USA	100	TEUR	4,801	1,062	5,978
MORCAR Grundstücksgesellschaft mbH & Co. oHG, Munich/Germany (unl. liab. shar. is Knorr-Bremse Beteiligungsgesellschaft mbH, Munich/Germany)[7), 8),]	5	TEUR	6,082	1,442	50,491
MST Electroteknik Sanayi ve Ticaret Limited Şirketi, Şerifali, Istanbul/Turkey	100	TEUR	365	902	406
M.S. Resistances S.A.S., Saint Chamond/France	51	TEUR	3,091	395	5,063
New York Air Brake LLC, Watertown, New York/USA	100	TEUR	214,500	37,929	280,648
Sanctor Grundstücks-Vermietunggesellschaft mbH & Co. Objekt Mahrzahn KG, Düsseldorf/Germany (unres. liab. shar. is Knorr-Bremse AG, Munich/Germany, the majority voting right is held by SABIS Grundstücks-Vermietungsgesellschaft mbH, Düsseldorf/Germany) [8)]	99	TEUR	(3,508)	(167)	27,126
Selectron Systems AG, Lyss/Switzerland	100	TEUR	29,717	8,088	51,345
Selectron Systems Pvt. Ltd., Gurgaon/India[4]	100	TEUR	0	0	0
Selectron Systems (Beijing) Co., Ltd., Beijing/China[4),]	100	TEUR	0	0	0

1. Consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
Semicondutor Solutions (Pty.) Ltd., Pretoria/South Africa	60	TEUR	782	(41)	1,588
Sigma Air Conditioning Pty. Ltd., Granville/Australia	100	TEUR	6,585	(859)	30,934
Sigma Transit Systems Pty. Ltd., Granville/Australia	100	TEUR	12,028	0	12,028
Skach Ges.m.b.H., Mödling/Austria[1]	100	TEUR	76	(9)	1,301
STE Schwingungs-Technik GmbH, Klieken/Germany	100	TEUR	(2,012)	119	27
Technologies Lanka Inc., La Pocatière, Québec/Canada	100	TEUR	10,399	3,718	14,434
tedrive Yönlendirme Sistemleri Sanayi ve Tic.Ltd.Şti. , Istanbul/Turkey	100	TEUR	2,664	751	7,679
Unicupler GmbH, Niederurnen/Switzerland	100	TEUR	2,696	(76)	2,983
Zelisko Elektrik Sanayi ve Ticaret Limited Şirketi, Istanbul/Turkey	100	TEUR	1,227	28	1,670

2. Associated companies valued using the equity method	Share of capital in %	Currency and unit	Equity	Income	Total assets
Alltrucks GmbH & Co. KG, Munich/Germany[6), 8), 9)]	33.3	TEUR	1,043	(2,742)	1,985
Alltrucks Verwaltungs GmbH, Munich/Germany[6), 8), 9)]	33.3	TEUR	33	1	37
Knorr-Bremse DETC Commercial Vehicle Braking Systems (Shiyan) Co., Ltd., Shiyan/China[6), 9)]	49	TEUR	2,722	631	29,832

3. Non-consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
Di-Pro LLC., Fresno, California/USA	100	TEUR	0	0	0
EKA DOOEL, Skopje/Macedonia[9)]	100	TEUR	532	57	819
Foro Verwaltungs GmbH & Co. KG, Munich/Germany[8), 9)]	100	TEUR	6	0	6
Heiterblick Projektgesellschaft mbH, Leipzig/Germany[8), 9)]	49	TEUR	25	0	40,036
KB Investment UK Ltd., Chippenham/Great Britain[8), 9)]	100	TEUR	0	36,693	24,796
Kiepe Electric Corporation, Vancouver/Canada[8), 9)]	100	TEUR	960	471	1,568
Kiepe Electric d.o.o., Niš/Serbia[8), 9)]	100	TEUR	(66)	(79)	15
Kiepe Electric (Pty) Ltd. South Africa, Woodstock/South Africa[8), 9)]	100	TEUR	0	0	0
Kiepe Electric S.r.l., Cernusco sul Navigilio/Italien[8), 9)]	100	TEUR	278	11	915
Metco Technical Consulting AG, Zug/Switzerland[8), 9)]	100	TEUR	93	28	1,609
RBL-Technologie Ltd., Naberezhnye Chelny/Russia[9)]	100	TEUR	56	(8)	93
SCI pour l'Industrie, Pau/France[8), 9)]	100	TEUR	93	0	93
Sichuan Knorr-Bremse Guo Tong Railway Transportation Equipment Co., Ltd., Chengdu/China[9)]	100.0	TEUR	(1)	(2)	7

4. Associated companies and other investments not valuated according to the equity method	Share of capital in %	Currency and unit	Equity	Income	Total assets
Haldex AB, Landskrona/Sweden	10.2	TEUR	157,105	14,911	359,751
IFB Institut für Bahntechnik GmbH, Berlin/Germany[8), 9)]	6.7	TEUR	2,079	165	4,078
Megalith Grundstücksverwaltungsgesellschaft mbH & Co. Vermietungs KG, Mainz/Germany (unlim. liab. shar. Is Knorr-Bremse AG, Munich/Germany, the voting majority share is held by Deutsche-Anlagen-Leasing GmbH)[9)]	100	TEUR	26	(7)	26
Shenzhen SF-Trailernet Technology Co., Ltd., Shenzhen/China[9)]	16.67	TEUR	678	(433)	690
Westinghouse Platform Screen Doors (Guangzhou) Ltd., Guangzhou/China[9)]	15	TEUR	(3,843)	(1,903)	18,980

1) Profit and loss transfer agreement
2) The companies are included in a Group division of Bendix Commercial Vehicle Systems LLC.
3) The companies are included in a Group division of Bendix Spicer Foundation LLC.
4) The companies are included in a Group division of Selectron Systems AG, Lyss/Switzerland.
5) The companies were consolidated for the first time in 2018. The statements of income were taken into consideration proportionally for the current year.
6) The Company was consolidated at equity
7) Control based on enforceability of management decisions and control of operations
8) Values refer to the 2017 fiscal year
9) Values according to the local financial reporting standard

Unless otherwise stated, the above amounts to equity, income and and total assets are calculated in accordance with IFRS.

I. SEGMENT INFORMATION

I.1. Basics of segmentation

Table → 3.97, Table → 3.98, Table → 3.99

The Group has two reportable segments, which are the Group's divisions, as described below. The divisions offer different products and services and are managed separately as they require different technology and marketing strategies.

The following summary describes the reportable segments of the Group.

In the **Rail Vehicle Systems** (RVS) segment, the Company plays a key role in the development, production, sales and service of modern braking systems and related subsystems for rail

3.97 INFORMATION ON REPORTABLE SEGMENTS

in TEUR	Reportable segments: Rail Vehicle Systems	Reportable segments: Commercial Vehicle Systems	Reportable segments: TOTAL	Reconciliation to IFRS: Rail Vehicle Systems	Reconciliation to IFRS: Commercial Vehicle Systems	Other segments and consolidation	Group
December 31, 2018							
External revenues	3,529,385	3,171,013	6,700,398	(69,474)	(11,597)	(3,527)	6,615,800
Inter segment revenues	16,993	12,379	29,372	(15,049)	(11,681)	(2,641)	
Segment revenues	**3,546,378**	**3,183,392**	**6,729,770**	**(84,523)**	**(23,279)**	**(6,168)**	**6,615,800**
EBITDA*)	642,360	488,212	1,130,573	50,715	28,200	(31,445)	1,178,042
Depreciation and amortization	(113,754)	(87,018)	(200,772)	5,887	5,031	(15,716)	(205,570)
EBIT*)	528,606	401,194	929,801	56,601	33,231	(47,161)	972,472
Interest income	11,445	1,699	13,144	1,972	3,465	1,546	20,128
Interest expense	(14,176)	(5,504)	(19,680)	(9,973)	(11,222)	(13,504)	(54,379)
Other financial result	(2)	–	(2)	(29,628)	(3,922)	(29,163)	(62,715)
thereof: Share of profit or loss from companies accounted for using the equity method	1	(943)	(942)	–	914	(3,564)	(3,591)
EBT	**525,873**	**397,389**	**923,262**	**18,973**	**21,552**	**(88,281)**	**875,506**
Net Working Capital	**563,988**	**255,182**	**819,170**	**53,062**	**6,385**	**(16,694)**	**861,923**
December 31, 2017							
External revenues	3,308,512	2,918,937	6,227,450	(50,213)	(29,059)	5,365	6,153,543
Inter segment revenues	16,705	9,036	25,741	(14,886)	(8,293)	(2,562)	–
Segment revenues	**3,325,217**	**2,927,973**	**6,253,191**	**(65,099)**	**(37,352)**	**2,803**	**6,153,543**
EBITDA*)	659,785	475,174	1,134,959	(20,467)	28,569	(27,551)	1,115,510
Depreciation and amortization	(112,749)	(83,559)	(196,307)	(3,259)	1,307	(13,220)	(211,479)
EBIT*)	547,037	391,615	938,652	(23,726)	29,876	(40,771)	904,031
Interest income	8,569	1,708	10,277	4,222	3,446	6,091	24,036
Interest expense	(12,580)	(7,780)	(20,360)	(8,825)	(2,808)	(6,808)	(38,801)
Other financial result	–	(953)	(953)	394	331	(36,570)	(36,797)
thereof: Share of profit or loss from companies accounted for using the equity method	–	(953)	(953)	–	–	–	(953)
EBT	**543,026**	**384,591**	**927,617**	**(27,935)**	**30,845**	**(78,058)**	**852,469**

*) Not explicitly presented in management reporting to CODM

vehicles. In addition, the product fields of platform screen doors, boarding systems, power supply systems, driver assistance systems, air conditioning systems, control technology, friction material, simulators and control components are served.

The **Commercial Vehicle Systems** (CVS) segment is also characterized by the development, production, sales and service of modern braking systems. In addition to the complete braking system including driver assistance systems, the product range of the Commercial Vehicle Systems also includes steering systems, torsional vibration dampers, powertrain-related solutions and transmission controls for improving efficiency and saving fuel.

Other business areas mainly include leasing, holding and logistics activities as well as media and IT services.

For each segment, the Group's management board reviews internal management reports on a monthly basis.

Transfer prices between the segments are determined on an arm's length basis.

I.2. Information on reportable segments

Information regarding the results of each reportable segment is given below. The profit (loss) of a segment before tax is used to measure profitability, as the management board believes that this is the most relevant information for assessing the results of the individual segments in relation to other industry companies.

Reporting to the management board as of December 31, 2018 was based on HGB figures. Revenue within the segment are presented on a pre-consolidated basis.

Internal reporting does not contain any segment-specific information on assets and liabilities, , except Net Working Capital which is defined as the sum of inventories, trade accounts receivables and contract assets (in prior year

3.98 REVENUES

	2018	2017
Revenues of reportable segments (German GAAP)	6,729,770	6,253,191
Revenues of other segments (German GAAP)	171,890	163,287
Inter-segment consolidation and other effects	(57,288)	(85,838)
Adjustment over-time-recognition	(68,101)	(38,310)
Adjustment based on disclosure differences due to implementation of BilRuG	(160,470)	(138,787)
Consolidated revenue	**6,615,800**	**6,153,543**

3.99 EARNING BEFORE TAX

	2018	2017
Earnings before tax of reportable segments (German GAAP)	923,262	927,617
Earnings before tax of other segments (German GAAP)	563,406	593,693
Inter-segment consolidation and other effects	(630,443)	(678,994)
Adjustment due to amortizations not recognized on goodwill	47,246	50,023
Adjustment over-time-recognition	(7,893)	(38,310)
Adjustment due to capitalization and amortization of development projects	36,593	20,789
Adjustment due to valuation differences in pension liabilities	22,072	17,863
Adjustment due to purchase options NCI	–	(12,543)
Adjustment inventory valuation	(648)	3,709
Adjustment provisions	(32,358)	10,669
Impairment of disposal groups	(19,410)	(25,368)
Hedging (unrealized profits / losses)	(32,797)	16,317
Other adjustments based on differences between German GAAP and IFRS	6,476	(32,996)
Earnings from continued operations, consolidated and before taxes	**875,506**	**852,469**

receivables from construction contracts), less trade accounts payable and contract assets (in prior year liabilities from construction contracts as well as prepayments received).

I.3. Geographical information

The following table shows the Group's sales revenues and non-current assets, broken down by country of domicile of the group Company. Table → 3.100, Table → 3.111

Non-current assets consist of property, plant and equipment, goodwill and other intangible assets.

Neither division is significantly dependent on external third parties. Neither in the year under review nor in the previous years did the Company generate more than 10% of its sales with one customer.

3.100 REVENUES BY REGION

	2018	2017
Europe/Africa	**3,261,412**	**3,076,353**
thereof Germany	1,655,737	1,536,024
North America	**1,469,277**	**1,294,040**
thereof USA	1,451,700	1,280,050
South America	**102,675**	**92,778**
Asia-Pacific	**1,782,435**	**1,690,372**
thereof China	1,085,081	1,235,805
	6,615,800	**6,153,543**

3.101 NON-CURRENT ASSETS BY REGION

	2018	2017
Europe/Africa	**1,034,070**	**909,959**
thereof Germany	655,176	537,849
North America	**257,893**	**230,695**
thereof USA	249,820	228,729
South America	**33,932**	**36,407**
Asia-Pacific	**178,557**	**180,094**
thereof China	84,525	86,089
	1,504,452	**1,357,155**
Goodwill or entity value	**305,892**	**299,737**
thereof Rail Vehicle Systems (Global)	184,538	181,521
thereof Commercial Vehicle Systems (Global)	121,354	118,216
	1,810,344	**1,656,893**

Regarding the change in the allocation of goodwill please refer to Chapter F.2.

J. GROUP ASSOCIATION AND DISCLOSURE

Knorr-Bremse AG is included in the consolidated financial statements of Stella Vermögensverwaltungs-GmbH, Grünwald/Germany as of December 31, 2018 (largest range). The consolidated financial statements are prepared according to the regulations of the International Financial Reporting Standards (IFRS) as applicable in the EU and are published in the electronic Federal Gazette.

The consolidated financial statements are published in the Federal Gazette and the commercial register of the District court of Munich/Germany. The subsidiaries Hasse & Wrede GmbH, Berlin/Germany, Kiepe Electric GmbH, Düsseldorf/Germany, Knorr-Bremse Powertech GmbH, Berlin/Germany, Knorr-Bremse Services GmbH, Munich/Germany, Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Munich/Germany, Knorr-Bremse Steering Systems GmbH, Wülfrath/Germany, KB Media GmbH Marketing und Werbung, Munich/Germany, are freed according to Sec. 264 para. 3 HGB from the obligation to prepare explanatory notes, a management report and from the auditing obligation and obligation to disclosure under Sec. 325 HGB. In addition, the subsidiary Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Munich/Germany is freed from the disclosure obligation of Sec. 325 HGB.

K. COMPLIANCE DECLARATION TO THE GERMAN CORPORATE GOVERNANCE CODE

The German Corporate Governance Codex includes regulations and recommendations for responsible management and controlling of publicly traded companies. The management board and Supervisory Board of publicly traded joint stock companies are obligated under Sec. 161 AktG to declare once annually that the regulations of the German Corporate Governance Codex governmental commission have been fulfilled and will be fulfilled, or which recommendations have not been or are not applied. In the latter case, justifications must be provided for why the respective recommendation was not and will not be fulfilled.

The declaration of the management board and Supervisory Board of Knorr-Bremse AG to the German Corporate Governance Codex in accordance with Sec. 161 AktG is available on our website (https://ir.knorr-bremse.com/websites/knorrbremse_ir/German/7000/corporate-governance.html).

Munich, March 28, 2019

Knorr-Bremse AG

Management Board

KLAUS DELLER RALPH HEUWING DR. PETER LAIER DR. JÜRGEN WILDER

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 Group management report includes a fair view of the development and performance of the business and the position of the Group, together with a description of the material opportunities and risks associated with the expected development of the Group.

Munich, March 28, 2019

Knorr-Bremse AG

Der Vorstand

KLAUS DELLER RALPH HEUWING DR. PETER LAIER DR. JÜRGEN WILDER

Based on the results of our audit, we have issued the following unqualified audit opinion:

Independent Auditor's Report

To Knorr-Bremse Aktiengesellschaft, Munich

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE GROUP MANAGEMENT REPORT

Opinion

We have audited the consolidated financial statements of Knorr-Bremse Aktiengesellschaft, Munich, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2018, the consolidated statement of income, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the fiscal year from 1 January to 31 December 2018, and notes to the consolidated financial statements including a summary of significant accounting policies. In addition, we have audited the combined group management report (hereinafter: 'group management report') of Knorr-Bremse Aktiengesellschaft for the fiscal year from 1 January to 31 December 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 at 31 December 2018, and of its financial performance for the fiscal year from 1 January to 31 December 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 Opinion

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Section 317 HGB and 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 (IDW) [Institute of Public Auditors in Germany]. Our responsibilities under those requirements and principles 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 opinion 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 judgement, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January to 31 December 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.

Revenue recognition in the project business under IFRS 15

Please refer to the disclosures in the notes to the consolidated financial statements, Sections "B, Accounting standards" and "D, Notes on the accounting and measurement methods (subsection D.1. Revenue)" for more information on the accounting policies applied.

Further explanatory notes can be found in Section "E.1. Revenue" in the notes to the consolidated financial statements.

THE FINANCIAL STATEMENT RISK

The Group's revenues amount to EUR 6,615.8 million in the fiscal year 2018. Of this, EUR 3,461.9 million are reported in the Rail Vehicles segment.

A significant part of revenues from the Rail Vehicles segment in the amount of EUR 1,348.4 million is recognised over time according to IFRS 15 and relates to the project business in the OE area of the segment. In this business, agreements on the design, production and supply of braking systems with a precisely defined functionality for a specific number of trains or locomotives are considered as an inseparable performance obligation. This is because the development services cannot be separated from other services, meaning that they form a unit. Comparable structures are found in projects with door systems and air conditioning systems.

As these orders from the project business involve customer-specific orders, an asset arises from the Group's performance that does not result in an alternative use for the Group. The Group has an enforceable right for payment for services already rendered, including an appropriate margin. Pursuant to IFRS 15, revenue is thus recognised over time based on stage of completion. The stage of completion is determined based on the costs incurred as at the reporting date as a proportion of the expected total costs of the respective project.

The calculation of total costs and the cut-off of costs incurred require judgement. There is the risk for the financial statements that the stage of completion is incorrectly assessed and thus the revenue and earnings arising from this performance are allocated to the wrong fiscal year.

OUR AUDIT APPROACH

In order to assess whether revenues are recognised on an accrual basis, we assessed the design and setup of internal controls relating to revenue recognition, the calculation of costs already incurred and the expected total costs, and, in particular, the determination of the stage of completion.

Due to the initial application of IFRS 15, a focus for our audit was defined as the evaluation of management's interpretation of the criteria for the recognition of revenue over time. To this end, we assessed the instructions of the group-wide accounting policy. Using a risk-based selection of contracts, we assessed the proper implementation of the accounting policy. We verified the methodology for calculating costs already incurred in respect of the types of costs included. We examined the process for properly recognising costs incurred on an accrual basis. Further, we audited the completeness of the costs recognised as at the reporting date by searching for costs/liabilities that were not recognised.

We examined the process for calculating the expected total costs in respect of the costs included and the indication-based updating of the projection of expected total costs based on a risk-oriented selection of projects. In this regard, we discussed the estimate of total costs with the respective project managers. We also confirmed the accuracy of the Company's forecasts to date by comparing the estimates of expected total costs in prior fiscal years with total costs actually incurred. We compared the planned total revenue with the relevant contract documentation.

Further, we computationally verified the stage of completion determined according to the ratio of costs actually incurred to the expected total costs.

OUR CONCLUSIONS

The approach taken by the Knorr-Bremse Group for revenue recognition cut-off in terms of properly estimating the stage of completion in the Rail Vehicles segment for revenue recognised over time according to IFRS 15 leads to appropriate results. The assumptions underlying the recognition of revenues are reasonable.

Existence and measurement of provisions for warranties

Please refer to the disclosures in the notes to the consolidated financial statements, Section "D. Notes on the accounting and measurement methods (subsection D.15. Other provisions)" in the notes to the consolidated financial statements.

Additional explanatory notes can be found in Section "A.5. Use of discretionary decisions and estimates" and "F.11. Other provisions" in the notes to the consolidated financial statements.

THE FINANCIAL STATEMENT RISK

The Knorr-Bremse Group recognised warranty provisions of EUR 340.9 million as at 31 December 2018. These provisions cover both obligations arising from claims that have already occurred as well as future obligations, which are based on experience. Warranty provisions are formed based on historical experience of warranty costs actually incurred as a proportion of revenues. Case-by-case warranty risks are recognised separately.

The projection of future warranty costs requires judgement. There is the risk for the consolidated financial statements that the warranty provisions are not recognised in the appropriate amount .

OUR AUDIT APPROACH

To audit the existence and measurement of provisions for warranties, we assessed the design, setup and the effectiveness of internal controls intended to ensure complete reporting of potential warranty claims and their risk assessment.

We verified the parameters used for the calculation of warranty provisions with actual warranty costs and the related revenues.

For case-by-case warranty provisions, we questioned the assumptions underlying the measurement and critically analysed the estimates of the responsible specialist departments within sales. We computationally verified the underlying hourly rates and, using comparisons of actual costs, evaluated the appropriateness of how they were calculated. We evaluated the number of products affected by the warranty based on supplies and the accruals recognised by Knorr-Bremse Aktiengesellschaft. We also confirmed the accuracy of the Company's forecasts to date by comparing the provisions of prior financial years with the warranty costs actually incurred. Where possible, we referred to actual costs to verify additional cost components such as material costs.

OUR CONCLUSIONS

The approach taken by the Knorr-Bremse Group for the recognition and measurement of the warranty provision is appropriate. The assumptions used for measurement are appropriate in total.

Other Information

Management is responsible for the other information. The other information comprises the annual report, with the exception of the audited consolidated financial statements and the group management report and our auditor's report.

Our opinion 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 doing so, to 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) will always detect a material misstatement. Misstatements may 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 judgement and maintain professional scepticism 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 controls,
- 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 at the annual general meeting on 14 March 2018. We were engaged by the Audit Committee on 7 February 2019. We have been the auditor of Knorr-Bremse Aktiengesellschaft, as publicly traded company, without interruption since financial year 2018.

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).

German Public Auditor Responsible for the Engagement

The German Public Auditor responsible for the engagement is Johannes Hanshen.

Munich, 30 April 2019

KPMG AG
Wirtschaftsprüfungsgesellschaft

[signature] Andrejewski
Wirtschaftsprüfer
[German Public Auditor]

[signature] Hanshen
Wirtschaftsprüfer
[German Public Auditor]

Glossary

Technology and Products

A

ABS (Anti-lock braking system)
When a motor vehicle is braking, ABS prevents the wheels from locking up (ceasing to rotate) by reducing the braking pressure, thus improving steering control and directional stability.

ADAS (Advanced driver assistance systems)
Electronic auxiliary systems in vehicles that assist the driver, in particular by enhancing road safety, but also by helping to improve driving comfort and economy. Assistance systems include, for example: anti-lock braking systems (ABS), traction control systems (TCS), electronic stability programs (ESP).

ASR (see **TCS**)

Automatic Emergency Braking System (AEBS)
A predictive driver assistance system for motor vehicles that warns the driver in case of danger, facilitates emergency braking, and/or brakes automatically to avoid colliding with an obstacle, or to reduce the speed of the collision.

C

CVS (Commercial Vehicle Systems)
Abbreviation for Knorr-Bremse's Commercial Vehicle Systems division.

E

ESP (Electronic stability program)
ESP describes an electronically controlled driver assistance system for motor vehicles that counteracts potential skidding by systematically braking individual wheels.

G

GSBC (Global Scalable Brake Control)
This integrated brake control system is easier to install in a vehicle with multiple interacting smart systems, thus reducing the development and assembly work required by the vehicle manufacturer.

H

HAD (Highly automated driving)
HAD represents an intermediate stage between assisted driving – where driver assistance systems help the driver to drive – and autonomous driving, where the vehicle drives itself without the driver's intervention.

I

iCOM
This digital platform for operators offers driver assistance systems, condition-based maintenance, methods for measuring and calculating energy consumption, optimized service processes, and recommendations for drivers. It brings greater transparency to real-time vehicle operation, and is capable of identifying potential problems at an early stage. Consequently, iCOM increases vehicle availability (uptime) and reduces operating costs.

iHSA (intelligent Hydraulic Steering Assist)
iHSA is a steering system with electronic actuation, intended for commercial vehicles. Especially developed to meet the requirements of automated driving, iHSA enhances safety and comfort by means of a torque overlay function, and is capable of interfacing with modern driver assistance systems.

In-Motion Charging (IMC)
Battery-powered buses equipped with Kiepe In-Motion Charging are recharged while they are traveling on sections of routes equipped with overhead contact lines, described as "Charging Roads". This ensures uninterrupted 24-hour operation – enhancing efficiency, conserving resources and improving availability.

K

KPS (Knorr-Bremse Production System)
The Knorr-Bremse Production System is the Company's proven platform for delivering Group-wide efficiency, organization, quality, and continuous improvement, always aiming for perfect workflow organization and execution.

M

Monorail
A rail vehicle or train, used to transport passengers or freight, that straddles or is suspended from a single narrow rail or guideway.

O

OEM (Original Equipment Manufacturer)
In the commercial vehicle industry, the term "OEM" refers to a component or systems manufacturer (supplier company) that supplies products used to manufacture vehicles.

P

ProFleet Connect
This modular telematics system for commercial vehicles optimizes fleet management, thereby enhancing efficiency, reducing costs and improving driver training courses.

R

Redundant systems
Safety systems are designed as multichannel systems so that if one component fails, other channels ensure that its function is performed regardless of the point of failure. If a braking system or component fails, for example, the redundant system or systems should still bring the vehicle safely to a standstill.

RVS (Rail Vehicle Systems)
Abbreviation for Knorr-Bremse's Rail Vehicle Systems division.

T

TCS (Traction control system; see also ASR)
Traction control prevents a vehicle's wheels from spinning when tackling difficult surfaces such as ice, snow or loose chippings or gravel, so that the vehicle does not skid sideways.

Truck Motion Controller
This central ECU controls individual actuators in the vehicle, and is an important prerequisite for automated driving.

Finance

A

Accounting Directive Implementation Act (see **German Accounting Directive Implementation Act)**

B

BilRUG (see **German Accounting Directive Implementation Act)**

C

Capital employed
Sum total of intangible assets, net working capital and property, plant and equipment.

Capital expenditure (CapEx) – investments
Investments are defined as additions to property, plant and equipment and intangible assets, excluding goodwill.

Cash conversion ratio
The cash conversion ratio is defined as free cash flow divided by net income.

Cash pooling system
Intra-Group liquidity management system. The aim is to pool all cash and cash equivalents in Knorr-Bremse AG and the respective holding companies in Asia and North America.

Compliance
Compliance is an integral part of corporate governance. It describes the adherence to laws, guidelines and voluntary codes within the Company.

Compound annual growth rate (CAGR)
CAGR is a way of describing the average annual growth rate.

D

Discounted cash flow method
A measurement (valuation) method whereby future cash flows are discounted to their present value at the time of sale.

E

EBIT
Earnings before interest and taxes (EBIT) is defined as earnings before income taxes, other financial result, interest expenses and interest income.

EBITDA
EBITDA is defined as earnings before income taxes, other financial result, interest expenses, interest income, depreciation and amortization.

Economic Value Added (EVA®)
Economic Value Added is determined by deducting **capital expenditure** (defined as operating assets multiplied by weighted average capital costs of 8%) from the Knorr-Bremse Group's **net operating profit after taxes** (NOPAT).

Equity ratio
The equity ratio is calculated as the ratio of equity to liabilities (total assets).

F

Factoring
Method for financing sales whereby Knorr-Bremse sells its trade receivables to a financing institution, which usually also assumes the full credit risk.

Financial covenants
Financial covenants represent certain ratios relating to equity, debt, income or liquidity. These financial ratios are agreed between the lender and the borrower, and reviewed at regular intervals.

Free cash flow
Free cash flow is calculated by deducting payments for investments in property, plant and equipment and intangible assets from the cash flow from operating activities.

Free float
The proportion of shares in a stock corporation that is not in fixed ownership. According to Deutsche Börse AG's definition, blocks of shares of less than five percent belong to the free float.

G

GCGC
The German Corporate Governance Code is a list of requirements imposed on German companies by the Government Commission on the German Corporate Governance Code.

Gearing (debt-equity ratio)
Indicates the ratio of net financial debt to equity.

German Accounting Directive Implementation Act (BilRUG)
BilRUG defines a more systematic approach to accounting, especially in terms of items reported in the Notes to the financial statements ("think small first"). Furthermore, statutory criteria required under the German Commercial Code (HGB) are being adjusted in line with the national legislator's decision to apply maximum limits to implementation of these criteria.

H

Hedge accounting
Hedge accounting refers to the accounting treatment of the relationship between two or more financial instruments. As a rule, the latter are used to hedge currency risks due to their opposing characteristics. Hedge accounting is governed by special accounting rules that differ from the general accounting rules.

I

IFRS
The International Financial Reporting Standards (IFRS) are international accounting standards for companies issued by the International Accounting Standards Board (IASB). They are intended to regulate the preparation of annual and consolidated financial statements so that the latter are internationally comparable, independently of national legislation.

Investments (see **Capital expenditure**).

N

Net operating profit after taxes (NOPAT) – net income after taxes
NOPAT is defined as EBIT minus taxes on income.

Net working capital (NWC)
Net working capital is defined as the balance of inventories, trade receivables, contractual assets, trade payables and contractual liabilities.

P

Percentage of completion accounting (PoC accounting)
Accounting method for valuing long-term contracts, based on measuring the percentage of completion of the product or project.

Put option
A put option is a contract that gives the buyer the right, but not the obligation, to sell an asset at a specified price and exercise date.

R

Return on capital employed (ROCE)
Return on capital employed (ROCE) is defined as EBIT divided by operating assets (sum total of intangible assets, net working capital and property, plant and equipment).

Return on equity
Indicates the rate of return on shareholders' equity. Return on equity should exceed the rate of return on a comparable investment.

S

Supplier Early Payment Program (SEPP)
To help our suppliers with finance, we offer a supply chain finance program to our major suppliers. These agreements primarily cover the application of longer payment terms. They do not, however, have any accounting or civil-law effects that would result in the reclassification of trade payables as other classes of liability in the balance sheet.

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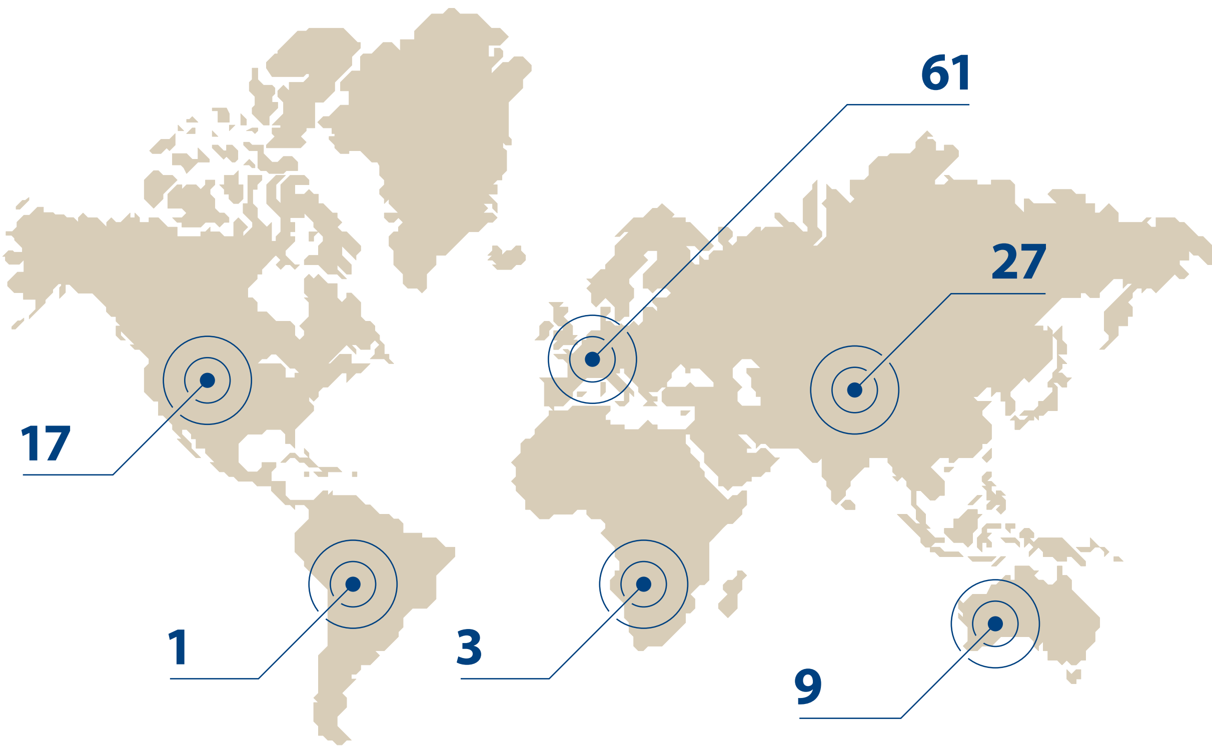
KNORR-BREMSE WORLDWIDE

LOCATIONS BY REGION



GLOBAL PRESENCE, LOCAL EXPERTISE.

Wherever you are, we are too. Knorr-Bremse is represented on every continent. In more than 30 countries at over 100 locations – including 70 production sites – our employees are on hand to support their customers. Because for many decades now, localization has been a core module in Knorr-Bremse's strategy. Highly qualified experts in engineering, marketing and business manage our local operations in the various markets with extensive autonomy. At the same time, Knorr-Bremse's worldwide presence is designed to ensure that, as a global partner to vehicle manufacturers and operators, we comply with all local regulations and standards in the rail and commercial vehicle sectors. This generates a substantial advantage for Knorr-Bremse and its business partners in the shape of the necessary proximity to both markets and customers.

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