Interim Report
January 1 to June 30, 2020

H1

KNORR-BREMSE

Half-Year Financial Report

JANUARY 1 TO JUNE 30, 2020
KNORR-BREMSE AG

Knorr-Bremse Group key performance indicators (IFRS)

KEY FIGURES KNORR-BREMSE GROUP (IFRS)

		1st half year 2020	1st half year 2019
Revenues	€ million	3,055.8	3,601.5
EBITDA	€ million	535.5	669.0
EBITDA margin	%	17.5	18.6
Operating EBITDA margin	%	17.5	19.0
EBIT	€ million	397.5	533.2
EBIT margin	%	13.0	14.8
Operating EBIT margin	%	13.0	15.6
Net income	€ million	256.9	363.7
Earnings per share (basic)	€	1.47	2.13
Order intake	€ million	2,727.1	3,581.2
Order book (June 30)	€ million	4,363.3	4,542.3
Operating cash flow	€ million	118.6	310.5
Free cash flow	€ million	(13.3)	189.7
Cash conversion rate	%	(5.2)	52.2
Capital expenditure (before IFRS 16 and acquisitions)	€ million	147.9	123.4[1)]
Capital expenditure in % of revenues (before IFRS 16 and acquisitions)	%	4.8	3.4
R&D costs	€ million	194.8	202.1
R&D costs in % of revenues	%	6.4	5.6
		6/30/2020	12/31/2019
Total assets	€ million	7,667.1	6,846.8
Equity (incl. non-controlling interests)	€ million	1,741.5	1,901.5
Equity ratio	%	22.7	27.8
ROCE (annualized)	%	22.2	34.1
Net financial (debt) / cash	€ million	(447.9)[2)]	57.7
Net working capital	€ million	1,196.8	809.1
Employees (incl. leased personnel)		28,941	28,905

[1)] adjusted for Munich headquarters “north sector” SLB (€ 10.3 million)
[2)] incl. dividend (€ 290.2 million)

First half 2020

- Business performance in the first half of 2020 impacted by the effects of the Covid-19 pandemic
- Temporary slowdown in orders as a consequence of lockdowns worldwide: Order intake down 23.8% year-on-year at € 2,727.1 million, but order book still solid at € 4,363.3 million (3.9% lower than in H1 2019)
- Revenues down 15.2% on prior-year figure at € 3,055.8 million due to a declining OE business; however, a dynamic recovery is already apparent in Asia, particularly in China, with revenues up year-on-year
- Aftermarket revenues 1.0% higher despite challenging market conditions, with share of total revenues therefore climbing from 31.7% to 37.7% and having a stabilizing effect on earnings performance
- Robust profitability levels: Operating EBITDA margin at 17.5% of revenues (H1 2019: 19.0%)
- Cash funds of € 2.3 billion ensure flexibility for operations
- Operating cash flow: Positive contribution of € 118.6 million, down 61.8% year-on-year, mainly due to a lower earnings contribution and measures taken to maintain delivery capability
- At the end of the first half of 2020, the strategic acquisition of R.H. Sheppard in North America was consolidated for the first time with the aim of expanding our global presence in the steering systems business
- Action program implemented to stabilize income and cash flows and safeguard delivery capability took effect and will be systematically implemented
- Full-year guidance for 2020 confirmed:
    - Revenues: € 5,900 million to € 6,200 million (2019: € 6,937 million)
    - Operating EBITDA margin: 16.5% to 17.5% (2019: 18.8%)

Interim Group Management Report

BUSINESS REPORT

Macroeconomic and Industry-specific Conditions

Economic Activity and Industry Environment

Economic growth

In the first half of 2020, events on the world stage were dominated by the Covid-19 pandemic, an unprecedented global health crisis. According to the World Bank Report, this unleashed the most severe global economic recession since World War II. A considerable number of governments radically restricted public life. Curfews, closures of schools and non-essential businesses, and travel bans were imposed to slow the spread of the virus and not overburden health care systems. This adversely affected business activity in many sectors, putting a damper on consumer spending and capital expenditure and dragging down employment and production levels. The pandemic spread internationally in the first half of 2020, bringing global trade, the financial and commodity markets, international supply chains, and travel and tourism to a standstill and triggering a deep recession in many countries. Most governments therefore have to contend with a very complex crisis at present: keeping health care systems running and eliminating disruption in the domestic markets while dealing with the collapse of international demand, a reversal in capital flows, and a slump in commodity prices.

If the Covid-19 pandemic lasts longer than expected, restrictions on movement must remain in place or be reinstated. The weakness of economic development would continue. In a more favorable scenario, a gradual lifting or easing of the restrictions from the second half of the year could initially pave the way for an economic recovery. Overall, however, development remains exceedingly uncertain and unstable. A possible increase in the occurrence of infection and the threat of further waves of infection could put a huge strain on development. Business performance was also impacted by exchange rate volatility; for example, the EUR/USD exchange rate in the first half of 2020 moved between 1.06 and 1.15.

Rail vehicle market

In 2020 to date, the regions of the rail vehicle market have been affected by the Covid-19 pandemic at different times. While China and Europe began to recover from the large-scale restrictions imposed during the initial months of the year towards the end of the first half, countries such as India, South Africa, and the United States and the region of Central and South America continued to feel the full force of the pandemic.

Slightly favorable developments also started to become apparent in individual markets – with supply chains remaining essentially intact, operators took advantage of lower passenger numbers and freight volumes to perform maintenance work and thus balance reductions stemming from fewer hours of operation.

Europe/Africa

After seeing very high levels of new business in previous years, the UK market weakened, though this was more than compensated for by other European markets such as Germany, France, and Italy.

North America/South America

Knorr-Bremse observed a weaker first half in the North American market in 2020, marked by the cyclical decline in the freight market and impacted by the Covid-19 pandemic.

Asia-Pacific

In the Asia-Pacific market, the pandemic took a major toll on China, particularly in Q1. From Q2, performance in India was diminished by severe Covid-19 restrictions. China remains the world's largest rail vehicle market and has steadily recovered.

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

Commercial vehicle market

The global commercial vehicle market, measured on the basis of the truck production rate, was impacted by the effects of the Covid-19 pandemic in most parts of the world especially in the first half of 2020, shrinking by 16% year-on-year for this and other reasons. Only the Chinese market saw a rapid recovery, outperforming the first half of 2019 by 21%.

Europe/Africa

Due to the plant closures mainly in connection with the Covid-19 pandemic in spring 2020, production in the first half of 2020 for the commercial vehicle market in Western Europe fell by 42% year-on-year, whereas in Eastern Europe production fell by just 13% in the same period.

North America/South America

The commercial vehicle market in North America (truck classes 6–8) also headed sharply south due to the effects of the Covid-19 pandemic, contracting by 49% versus the first half of 2019. Truck and bus production in South America plummeted by 38%.

Asia-Pacific

Production in Asia's commercial vehicle market in the first half of 2020 sustained the high level recorded in the prior-year period. The Chinese market recovered rapidly from the effects of the Covid-19 pandemic, expanding by 21%.

These market assessments are based on the Company's own analyses and numerous analysis reports on the truck sector.

Corporate management indicators

The most significant financial key performance indicators at Knorr-Bremse are revenues, (operating) EBITDA/ (operating) EBITDA margin, (operating) EBIT/ (operating) EBIT margin, net working capital in days' sales, and ROCE. Other key performance indicators, in particular at Group level, include the order intake, the order book, and capital expenditure as a percentage of revenues. Order intake and orderbooks are taken from management reporting and are not subject to the auditors review. These are explained in detail starting on page 75 of the 2019 Annual Report.

MANAGEMENT INDICATORS

	1st half year 2020	1st half year 2019
Revenues (€ million)	3,055.8	3,601.5
EBITDA (€ million)	535.5	669.0
EBITDA margin (% of revenues)	17.5	18.6
Operating EBITDA margin (% of revenues)	17.5	19.0
EBIT (€ million)	397.5	533.2
EBIT margin (% of revenues)	13.0	14.8
Operating EBIT margin (% of revenues)	13.0	15.6
ROCE, annualized (%)	22.2	31.3
Net working capital in days' sales	70.5	57.1
Employees (as of June 30, including leased personnel)	28,941	29,812

DIVISIONAL REVENUES AND EBITDA

	1st half year 2020	1st half year 2019
Rail Vehicle Systems		
Revenues (€ million)	1,740.8	1,876.0
EBITDA margin (% of revenues)	22.4	22.2
Operating EBITDA margin (% of revenues)	22.4	22.2
Commercial Vehicle Systems		
Revenues (€ million)	1,314.7	1,726.7
EBITDA margin (% of revenues)	12.0	15.3
Operating EBITDA margin (% of revenues)	12.0	16.3

To calculate operating EBITDA/EBIT margins, the impact of restructuring measures and transaction-related one-time effects were adjusted against reported revenue and earnings figures in the 2019 fiscal year. In contrast, there were no adjustments in the first half of 2020.

ROCE shows whether we generate an appropriate return on capital employed and thus provides the basis for efficient capital allocation. Annualized ROCE for the first half year, at 22.2%, was down on the prior-year period (31.3%). The decrease was mainly due to the higher capital employed. At 70.5 days, net working capital in days' sales was 13.4 days higher than at the prior-year reporting date (57.1 days' sales) as a result of measures taken to safeguard delivery capability.

We also regularly measure non-financial key performance indicators. These help us with the management and long-term strategic positioning of the Company. The most significant non-financial key performance indicator is the number of employees (FTE). However, non-financial key performance indicators are not primarily used in the management of the business.

The definitions of the key figures in this report have not changed since the 2019 Annual Report.

Significant events in the reporting period

Covid-19

The Covid-19 pandemic that has been spreading globally since March 2020 has been having a rapidly growing impact on public life, overall economic development, and also the business performance of the Knorr-Bremse Group. Softening demand as a consequence of the temporary closure of customer operations in the second quarter is one of the main reasons for this. Knorr-Bremse promptly responded by implementing a sweeping action program to stabilize the Group and protect its workforce as effectively as possible amid the challenging environment.

In addition to taking out additional lines of credit in the amount of € 750 million to increase the Company's flexibility for operations, this mainly included initiatives to stabilize earnings and cash flow and safeguard delivery capability. These initiatives include temporary cost measures, such as use of short-time allowances and similar arrangements in other countries, insofar as they are possible at the locations of the Knorr-Bremse Group. Furthermore, the Group also took advantage of the tax relief regarding advance tax payments. In addition, we continuously monitor our supply chains and safeguard them as needed by providing temporary support to selected suppliers or through stockpiling.

Extensive protective measures have been implemented for our employees worldwide, including site-specific hygiene concepts and the necessary organizational and infrastructural changes. These include, for example, strict separation of teams in both production and administration, increased use of mobile working, and provision of protective equipment.

Acquisition of R.H. Sheppard

By way of a purchase agreement dated January 30, 2020, Knorr-Bremse acquired all of the shares of R.H. Sheppard Co., Inc. from Wabco Holdings Inc. The transaction was consummated on June 1. The intermin purchase price for Sheppard of € 135.5 million was settled in full by June 30, 2020. The final purchase price depends on the agreed closing accounts, which had not yet been conclusively agreed between the contracting parties at the time the preliminary consolidated financial statements were prepared. Following the acquisition of the commercial vehicle steering business of Hitachi Automotive Systems in Japan in the last fiscal year, Knorr-Bremse's acquisition of R.H. Sheppard is another milestone in its plan to become a global provider of integrated steering and brake systems for commercial vehicles.

Legal risks

In the case of the other legal risks described in section H.9 of the 2019 Annual Report, apart from the investigations by the U.S. Department of Justice, the competition complaint filed by Haldex, the cancellation of long-term supply agreements by Robert Bosch GmbH as well as the investigative proceedings against Microelettrica Scientifica S.p. a., no new facts or other assessments had emerged by June 30, 2020.

Investigations by the U.S. Department of Justice

On April 3, 2018, the U.S. Department of Justice, Antitrust Division ("DOJ") announced that it had 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, several employees filed lawsuits against Knorr-Bremse AG, Wabtec, and individual subsidiaries. The aim of the class action lawsuits was to compensate employees for reduced payment on the basis of the alleged agreement between the parties above not to poach employees.

On October 16, 2019, Knorr-Bremse AG reached a settlement agreement in which it agreed to pay plaintiffs $ 12.0 million to settle the class action. The payment was made to an escrow account at the court in the last week of March 2020. This settlement agreement was finally confirmed by way of a court decision on August 26, 2020.

Haldex AB's complaints to the European Commission and the Brazilian competition authority

On February 13, 2020, Haldex AB filed complaints with the European Commission and the Administrative Council of Economic Defense (CADE) in Brazil. The complaints relate to the allegation that Knorr-Bremse AG had breached the relevant antitrust and merger control laws by acquiring and holding a minority stake in Haldex AB in September 2016.

Knorr-Bremse's minority shareholding in Haldex AB currently stands at 9.24%. Knorr-Bremse AG is defending itself against the accusations.

The European Commission is currently in the preliminary examination of the allegations. It is expected to decide during the third or fourth quarter of 2020 whether to open formal proceedings.

CADE Brazil decided on June 23, 2020 to open formal proceedings for a possible violation of the prohibition of implementation. The proceedings are still in the investigation phase. A decision on the discontinuation or continuation of the proceedings before a separate body of CADE is expected in the third or fourth quarter of 2020 at the earliest.

As both investigations are still at an early stage, a reliable statement cannot be issued at this time about the probability of success or the possible consequences of an adverse outcome of the administrative proceedings. The risk is currently assessed as fairly low.

Termination of long-term supply agreements by Robert Bosch GmbH

After Robert Bosch GmbH terminated various long-term supply agreements for a number of electronic components during ongoing price negotiations, which could lead to interruptions in supplies to customers of the Knorr-Bremse Group and thus to losses for the Knorr-Bremse Group due to production being halted, as well as to associated liability risks, Knorr-Bremse initiated arbitration proceedings against Robert Bosch GmbH on March 13, 2020 with a view to ensuring a continuous supply of components. The arbitration tribunal is expected to make a decision in the second quarter of 2021.

Proceedings in Italy

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 lawsuit will be filed against Microelettrica due to an alleged violation of internal regulations to avoid corrupt activities by the aforementioned individuals.

The court proceedings are still in a very early stage. 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 June 30, 2020.

Other legal risks

In the case of all other legal risks described in section H.9 of the 2019 Annual Report, no new facts or other assessments had emerged by June 30, 2020.

Dividend resolution

The Annual General Meeting of Knorr-Bremse AG resolved on June 30, 2020 to pay a dividend of € 1.80 per eligible share (161,200,000 shares). The total dividend distribution thus amounts to € 290.2 million or 46% of consolidated net income (H1 2019: 45%). This is also a reflection of our longstanding strategy of retaining sufficient funds within the Company to be able to make important investments in the future.

Knorr-Bremse has firmly established itself in the segment of Europe's leading industrial goods companies and is rated accordingly by capital market participants. Since the IPO, when eligible shares were issued at a price of € 80 per share, and including dividend payments since then, shareholders of Knorr-Bremse AG have seen the shares appreciate by around 38% (XETRA closing price of Knorr-Bremse shares on August 31, 2020: € 106.48).

Change in the composition of the Supervisory Board

At the Annual General Meeting on June 30, 2020, Heinz Hermann Thiele, Dr. Thomas Enders, and Dr. Theodor Weimer were elected to the Supervisory Board of Knorr-Bremse AG as new members. Mr. Thiele was released from his consultancy agreement with Knorr-Bremse AG early as of June 30, 2020 without compensation. Dr. Wolfram Mörsdorf, Wolfgang Tölsner, and Georg Weiberg stepped down from the Supervisory Board of Knorr-Bremse AG at the end of the AGM. The new Supervisory Board members have been appointed for the remainder of the original term of office of the departing members, i.e., until the end of the 2021 AGM.

Change of Leadership on the Executive Board

Ralph Heuwing retired from the Executive Board of Knorr-Bremse AG of his own volition with effect from April 30, 2020. Effective July 1, 2020, Frank Markus Weber was appointed as the new member of the Executive Board for the CFO department.

Events after the reporting period

Change of Leadership on the Executive Board

The Chairman of the Executive Board of Knorr-Bremse AG and member of the Executive Board responsible for labor relations as Labor Director pursuant to Section 33 of the Codetermination Act (MitbestG), Bernd Eulitz, left the Company by mutual agreement as of August 31, 2020. The Supervisory Board stands fully behind the successful business strategy of Knorr-Bremse AG. Bernd Eulitz left due to conflicting views on leadership and the active shaping of business interests. The Supervisory Board has already initiated the search for a successor. In the interim, the responsibilities of the Chairman of the Executive Board are assumed jointly by Executive Board members Frank Markus Weber, Dr. Peter Laier, and Dr. Jürgen Wilder.

Financial performance

GROUP KEY INDICATORS

in € million	1st half year 2020	1st half year 2019
Order intake	2,727.1	3,581.2
Order book	4,363.3	4,542.3
Revenues	3,055.8	3,601.5
EBITDA	535.5	669.0
EBITDA margin	17.5	18.6
EBITDA margin (operating)	17.5	19.0
EBIT	397.5	533.2
EBIT margin	13.0	14.8
EBIT margin (operating)	13.0	15.6
Net income	256.9	363.7
Capital expenditure (before IFRS 16 and acquisitions)	147.9	123.4[1)]
Depreciation and amortization	137.9	135.7
R&D costs	194.8	202.1
Employees (as of June 30, including leased personnel)	28,941	29,812

[1)] adjusted for Munich headquarters "north sector" SLB (€ 10.3 million)

At € 2,727.1 million in the first half of 2020, the Group's order intake was down by as much as 23.8% on the prior-year period (H1 2019: € 3,581.2 million) as a consequence of the Covid-19 pandemic. This decrease was largely due to muted demand from our customers in both divisions as a consequence of the worldwide lockdown in the second quarter. It resulted in an order book of € 4,363.3 million as of June 30, 2020 (June 30, 2019: € 4,542.3 million), equating to a forward order book of 8.7 months (June 30, 2019: 7.8 months), which underscores our continued solid order situation. The book-to-bill ratio – the ratio of incoming orders to revenues – was 0.89 in the first half of 2020 (H1 2019: 0.99).

Consolidated revenues also declined by 15.2% in the first half of the reporting period to € 3,055.8 million (H1 2019: € 3,601.5 million) as a consequence of the Covid-19 pandemic. At actual 2019 exchange rates, the decline in revenue was 15.0%. The acquisition of R.H. Sheppard consummated at the end of the first half of 2020 added € 7.7 million to revenues.

This situation affected both of our divisions. The Rail Vehicle Systems division saw revenues tumble by 7.2% relative to the prior-year period in response to the global contraction in OE revenues. This stood in contrast to the aftermarket business, which grew in absolute and relative terms. In the Commercial Vehicle Systems division, the decline in revenue of 23.9% was primarily attributable to a sharp drop in commercial vehicle production, especially in the second quarter. Temporary plant closures at nearly all key accounts led to a substantial revenue shortfall. By contrast, the aftermarket business remained almost flat in absolute terms and therefore increased in relative terms.

At Group level, the share of the aftermarket business increased perceptibly from 31.7% of total revenues to 37.7% (breakdown in accordance with management reporting), underpinning our robust business model.

In the Europe/Africa region, revenues fell by 18.9% to € 1,372.9 million (H1 2019: € 1,691.9 million), corresponding to a share of 45% (H1 2019: 47%). The North America region grew by 27.2% to € 612.7 million (H1 2019: € 841.2 million). This region consequently accounted for 20% of consolidated revenues (H1 2019: 23%). In the South America region, revenues dropped by 36.4% to € 35.1 million (H1 2019: € 55.2 million), corresponding to a share of 1% (H1 2019: 2%). By contrast, revenues in the Asia-Pacific region increased by 2.2% to € 1,035.0 million (H1 2019: € 1,013.2 million), representing 34% of consolidated revenues (H1 2019: 28%).

CONSOLIDATED REVENUES BY GROUP COMPANY LOCATION

in € million	1st half year 2020	1st half year 2019
Europe/Africa	1,372.9	1,691.9
North America	612.7	841.2
South America	35.1	55.2
Asia-Pacific	1,035.0	1,013.2
Total	**3,055.8**	**3,601.5**

The cost of materials amounted to € 1,468.4 million (H1 2019: € 1,799.6 million), representing a decrease of 18.4% on the previous year and thus declining at a faster rate than revenues. The cost of materials ratio was therefore perceptibly lower than the prior-year level at 48.1%, mainly on the strength of an improved sales mix and measures implemented to increase efficiency (H1 2019: 50.0%). In absolute terms, personnel expenses also fell by 4.5% to € 769.1 million (H1 2019: € 805.3 million). The personnel expenses ratio, at 25.2% of revenues, was up on the prior-year level (22.4%) due to the higher-than-average decrease in revenues. The sum of other operating income and expenses decreased, mainly due to the cost-cutting measures implemented, by 6.6% to € 334.4 million (H1 2019: € 357.9 million).

KEY R&D INDICATORS

in € million	1st half year 2020	1st half year 2019
R&D costs	**194.8**	**202.1**
Of which: capitalized development costs	37.3	31.0
Amortization of capitalized development costs	9.4	4.3

Knorr-Bremse invested € 194.8 million (6.4% of revenues) in research and development in the first half of 2020. Of this, € 98.6 million or 5.7% of associated revenues was spent in the Rail Vehicle Systems division and € 96.3 million or 7.3% of associated revenues in the Commercial Vehicle Systems division. R&D costs are taken from management reporting and are not subject to the auditors review.

EBITDA came to € 535.5 million in the first half of 2020 (H1 2019: € 669.0 million), a decrease of 20.0% on a year earlier due mainly to volume factors. At 17.5%, the EBITDA margin showed only a moderate decline (H1 2019: 18.6%). Adjusted for restructuring expenses for Wülfrath (€ 16.4 million), the operating EBITDA margin for the first half of 2019 came to 19.0%.

EBIT also declined by 25.4% to € 397.5 million in the first half of 2020 (H1 2019: € 533.2 million). The EBIT margin stood at 13.0%, down 1.8 percentage points on the prior-year period (14.8%). Adjusted for restructuring expenses for Wülfrath (€26.8 million), the operating EBIT margin in the previous year had amounted to 15.6%.

The negative financial result increased in the first half of 2020 by € 18.8 million to € 39.9 million (H1 2019: € 21.1 million). This is mainly attributable to effects from the transition to hedge accounting as well as to the reporting date measurement of derivative financial instruments.

As a result of the lower pre-tax earnings, tax expenses decreased by 32.2% to € 100.7 million in the first half of 2020 (H1 2019: € 148.5 million). The tax ratio, at 28.1%, was below the figure for the same period in 2019 of 29.0%, which in 2019 was due mainly to higher non-utilizable tax losses.

Net income, at € 256.9 million, decreased by 29.4% year-on-year in absolute terms (H1 2019: € 363.7 million). At 8.4%, the return on sales after taxes was 1.7 percentage points lower than a year earlier (H1 2019: 10.1%). After deduction of non-controlling interests, earnings per share amounted to € 1.47 (2018: € 2.13).

EMPLOYEES (JUNE 30)

FTE (including leased personnel)	6/30/2020	6/30/2019
Rail Vehicle Systems division	16,241	16,558
Commercial Vehicle Systems Division	11,962	12,562
Other	739	692
Total employees	**28,941**	**29,812**

EMPLOYEES (JUNE 30, BY GROUP COMPANY LOCATION)

FTE (including leased personnel)	6/30/2020	6/30/2019
Europe/Africa	14,985	15,789
thereof Germany	5,146	5,820
North/South America	5,696	6,027
Asia-Pacific	8,260	7,996
Total employees	**28,941**	**29,812**

The Knorr-Bremse Group had a total of 28.941 employees as of June 30, 2020, 2.9% fewer than in the prior-year period (H1 2019: 29,812 including leased personnel). The figures relate to full-time equivalents (FTE). Excluding leased personnel, the Group employed 26,438 people (H1 2019: 26,817). The decrease compared with the same period of the previous year was largely attributable to temporary adjustments resulting from the drop in revenues in the Europe and North America regions. The acquisition of R.H. Sheppard in the commercial vehicle business added 792 employees in the first half of 2020. On the other hand, the headcount no longer included the 529 employees from the Powertech Group in the rail vehicle business who were still on the books in the first half of 2019. The Powertech Group has since been sold.

As of the reporting date June 30, 2020, the Rail Vehicle Systems division employed a total of 16,241 people (June 30, 2019: 16,558) and the Commercial Vehicle Systems division a total of 11,962 (June 30, 2019: 12,562).

Rail Vehicle Systems division

The order intake in the Rail Vehicle Systems division dropped by a total of 13.5% year-on-year across all regions as a result of the Covid-19 crisis, falling from € 1,924.7 million to € 1,664.3 million By contrast, the order book rose to € 3,496.5 million as of June 30, 2020 due to the favorable order situation in the second half of 2019 in particular (H1 2019: € 3,261.1 million).

RAIL VEHICLE SYSTEMS DIVISION KEY INDICATORS

in € million	1st half year 2020	1st half year 2019
Order intake	1,664.3	1,924.7
Order book (June 30)	3,496.5	3,261.1
Revenues	1,740.8	1,876.0
EBITDA	390.2	417.0
EBITDA margin (% of revenues)	22.4	22.2
Operating EBITDA margin (% of revenues)	22.4	22.2
EBIT	325.6	359.4
EBIT margin (% of revenues)	18.7	19.2
Operating EBIT margin (% of revenues)	18.7	19.2
Capital expenditure (before IFRS 16 and acquisitions)	37.0	47.2[1)]
Depreciation and amortization	64.6	57.7
R&D costs	98.6	106.7
Employees (as of June 30, including leased personnel)	16,241	16,558

[1)] adjusted for Munich headquarters “north sector” SLB (€ 10.3 million)

The Rail Vehicle Systems division saw revenues decline by 7.2% (6.7% at constant exchange rates) to € 1,740.8 million (H1 2019: € 1,876.0 million). Growth in the RailServices business in the first half year was 2.4% in absolute terms and was attributable to the European and North American markets. By contrast, OE revenues fell worldwide, but especially in Europe, as a consequence of Covid-19. In the European business this was attributable for the most part to shortfalls in the light rail vehicles and regional and commuter trains segments as well as in the business for high-speed trains, while the business for railway carriages recorded growth. In addition, North America saw revenues decline, mainly in the freight business, as did Asia in the locomotive business and the business for high-speed trains. In the Asian market this was compensated to some extent by robust performance in the business for metro cars.

First-half R&D costs came to € 98.6 million, representing a slight decrease on the year-earlier figure (H1 2019: € 106.7 million). In relative terms, this resulted in an R&D ratio of 5.7% of revenues (H1 2019: 5.7%), thus remaining virtually constant year-on-year. We focused on the industry trends based on the megatrends. For rail vehicle systems these include transit capacity, eco-friendliness, availability, life cycle management, and digitalization.

At € 390.2 million, EBITDA was down by a comparatively moderate 6.4% on the prior-year figure (H1 2019: € 417.0 million) due to volume factors. This produced a stable trend in the EBITDA margin, which came to 22.4% for the first half year (H1 2019: 22.2%). The division benefited from the gratifying development of the high-margin aftermarket (service business), whose contribution to earnings helped the profit margin to stabilize at a high level in spite of the challenging market conditions. In addition, the cost reduction program implemented straight away to mitigate the effects of the Covid-19 pandemic had a positive effect on net income.

Capital expenditure in the Rail Vehicle Systems division amounted to € 37.0 million in the first half of 2020 (H1 2019: € 47.2 million) and targeted automation projects, expansion of capacity of fast-growing product groups, and replacement investments. At € 64.6 million, depreciation and amortization was moderately up on the previous year (H1 2019: € 57.7 million) and was due primarily to high capital expenditure in the last fiscal year.

As of June 30, 2020, the Rail Vehicle Systems division had 16,241 employees (June 30, 2019: 16,558 employees including leased personnel). The decrease in the headcount compared with the previous year is largely attributable to the sale of the Powertech Group, which had accounted for 529 employees in the first half of 2019. The otherwise relatively stable headcount is due in particular to perceptible signs of recovery in the Chinese rail vehicle market.

Commercial Vehicle Systems Division

The Commercial Vehicle Systems division recorded a sharp fall in its order intake of 36.1% in the first half of 2020 to € 1,060.6 million (previous year: € 1,658.5 million). This was attributable to temporary closures at customers’ manufacturing facilities because of the Covid-19 crisis, especially in the second quarter. The significant decrease in the order intake was also reflected in the order book, which dwindled by 32.1% to € 880.1 million as of June 30, 2020 (previous year: €1,295.6 million).

COMMERCIAL VEHICLE SYSTEMS DIVISION KEY INDICATORS

in € million	1st half year 2020	1st half year 2019
Order intake	1,060.6	1,658.5
Order book (June 30)	880.1	1,295.6
Revenues	1,314.7	1,726.7
EBITDA	158.2	264.2
EBITDA margin (% of revenues)	12.0	15.3
Operating EBITDA margin (% of revenues)	12.0	16.3
EBIT	94.2	194.7
EBIT margin (% of revenues)	7.2	11.3
Operating EBIT margin (% of revenues)	7.2	12.8
Capital expenditure (before IFRS 16 and acquisitions)	98.8	61.1
Depreciation and amortization	64.1	69.5
R&D costs	96.3	95.4
Employees (as of June 30, including leased personnel)	11,962	12,562

Revenues in the first half of 2020 fell by as much as 23.9% to € 1,314.7 million (H1 2019: € 1,726.7 million). At constant exchange rates, revenues were down 24.0% due to the shortfall of substantial OE revenues as a consequence of the lockdown and related plant closures by commercial vehicle manufacturers in Europe as well as in North and South America. The Chinese market on the other hand rebounded in the second quarter, enabling revenues for the Asia-Pacific region to exceed the prior-year level. OE customers accounted for 71.1% of the segment's total revenues, a year-on-year decrease of 6.6 percentage points (H1 2019: 77.7%). In contrast, the aftermarket share of total revenues (breakdown in accordance with management reporting) rose to 28.9% (previous year: 22.3%) and showed itself to be robust in absolute terms as well, coming in just shy of the prior-year level. The acquisition of R.H. Sheppard consummated at the end of the first half of 2020 added € 7.7 million to total revenues.

Divisional R&D costs rose moderately to € 96.3 million in the first half of 2020 (H1 2019: € 95.4 million), giving an R&D ratio of 7.3%. On account of the steeply declining revenues and other forward-looking investments, this was substantially higher than the figure of 5.5% recorded in the first half of 2019. Research and development activities focused on the megatrends of road safety, automated driving, emission reduction, e-mobility, and connectivity.

EBITDA in the Commercial Vehicle Systems division fell by 40.1% to €158.2 million (H1 2019: € 264.2 million). At 12.0%, the EBITDA margin was 3.3 percentage points below the prior-year figure (H1 2019: 15.3%). In previous year adjusted for the restructuring expenses for Wülfrath in the amount of €16.4 million, the operating EBITDA margin came to 16.3%.

Capital expenditure in the Commercial Vehicle Systems division increased by € 37.7 million year-on-year to € 98.8 million in the first half of 2020 (previous year: € 61.1 million). The considerable increase is attributable primarily to the expansion of manufacturing capacity at the Huntington and Bowling Green locations in North America, as well as to strategic investments in further software development for the steering systems business. Further capital expenditure was for the global provisioning of supplier tools and for replacement investments. Depreciation and amortization in the Commercial Vehicle Systems division, at € 64.1 million, was € 5.4 million lower than in the prior-year period (H1 2019: € 69.5 million) due in particular to the non-recurrence of the impairments for the closure of the Wülfrath plant that had been charged in the preceding year.

As of June 30, 2020, the Commercial Vehicle Systems division had 11,962 employees (H1 2019: 12,562), that is, 600 fewer employees (4.8%) than as of June 30, 2019. This figure includes 792 employees stemming from the R.H. Sheppard acquisition in the first half of 2020. The decrease was most pronounced in the Europe and North America regions (after adjusting for R.H. Sheppard).

Financing structure, cash flows and liquidity

Financing structure of the Knorr-Bremse Group

Financial and liquidity management is described together with the financing structure of the Knorr-Bremse Group beginning on page 83 of the 2019 Annual Report. Significant changes compared with December 31, 2019 were recorded in liabilities to banks and other financial liabilities, both of which are reported under financial liabilities. These essentially result from the drawdown of additional credit lines totaling € 750 million to increase our financial scope in connection with the Covid-19 action program. In the first half of 2020, the € 100 million loan from the European Investment Bank (EIB) was repaid on schedule.

FINANCIAL LIABILITIES

in € million	6/30/2020	12/31/2019
Derivative financial instruments	(31.6)	(26.4)
Bank loans	(843.8)	(196.7)
Bonds and debt instruments	(1,246.8)	(1,249.0)
Liabilities resulting from options on minority interests	(379.6)	(379.6)
Purchase price liabilities	(47.8)	(45.0)
Lease liabilities	(360.3)	(377.3)
Other financial liabilities	(607.7)	(259.8)
Total	**(3,517.6)**	**(2,533.8)**
Thereof:		
Current	(1,859.8)	(875.6)
Non-current	(1,657.8)	(1,658.2)

CONDENSED CASH FLOW STATEMENT

in € million	1st half year 2020	1st half year 2019
Cash flow from operating activities	118.6	310.5
Cash flow from investing activities	(253.3)	(322.2)
Cash flow from financing activities	572.0	(304.0)
Cash flow changes	437.3	(315.6)
Change in cash funds from exchange rate and valuation-related movements	(24.2)	6.8
Change in cash funds resulting from changes to the group structure	–	(0.2)
Change in cash funds	413.0	(309.0)
Free cash flow	(13.3)	189.7

Cash flow from operating activities

The cash inflow from operating activities fell in the first half of 2020 by a substantial € 191.9 million or 61.8% year-on-year to € 118.6 million. Starting with a decrease in net income of € 106.7 million or 29.4% to € 256.9 million, this was due in particular to measures implemented to safeguard delivery capability, which led to an increase in working capital.

Cash flow from investing activities

The net cash outflow from investing activities improved in the first six months of 2020 by € 68.8 million year-on-year to € 253.3 million. The decrease was due in particular to lower purchase price payments for the acquisition of consolidated companies. In the first half of 2020, these mainly related to € 135.5 million for the acquisition of R.H. Sheppard, offset by cash funds of € 11.9 million received through the acquisition. By contrast, the purchase price payments made in the previous year for Hitachi Automotive Systems Ltd. Japan (€ 163.4 million) and Sentient IP AB (including Sentient Heavy Vehicles AB), Gothenburg, Sweden (€ 4.8 million), as well as for the purchase of the assets of Snyder Equipment Company (€ 16.4 million) and Hitachi Automotive Systems Asia, Thailand (€ 9.6 million). There were also smaller cash outflows from the acquisition of equity investments. An amount of € 2.4 million was incurred in the first half of 2020, whereas in the previous year a total of € 12.2 million had been incurred for RailVision, Ra'anana, Israel (€ 5.2 million) and RailNova, Brussels, Belgium (€ 7.0 million). By contrast, cash outflows for capital expenditure for intangible assets rose by € 5.2 million to € 50.3 million and for property, plant and equipment by € 5.6 million to € 92.9 million compared with the prior-year period.

Cash flow from financing activities

The net cash inflow from financing activities amounted to € 572.0 million in the first half of 2020, representing a € 876.0 million increase year-on-year. This is primarily attributable to higher cash inflows from borrowings of € 715.8 million in connection with the Covid-19 action program through additional drawdowns of credit lines. Furthermore, the dividend payment to the controlling shareholders of the stock corporation in the amount of € 290.2 million, which was resolved on the last reporting date, was made in July 2020 and not in the first half of the year, as in 2019. Repayment of the loan from the European Investment Bank in the amount of € 100.0 million had an offsetting effect.

Free cash flow

Free cash flow in the first half of 2020 amounted to € -13.3 million, falling € 203.0 million short of the prior-year figure of € 189.7 million In addition to the lower cash flow from operating activities, this is due to moderately higher disbursements for investments in intangible assets and property, plant and equipment.

Liquidity

The substantial increase in cash funds to € 2,266.5 million as of June 30, 2020 (June 30, 2019: €1,409.7 million) was mainly comprised of the net cash inflow from financing activities (€ 572.0 million) and the net cash inflow from operating activities (€ 118.6 million) plus a lower net cash outflow from investing activities (€ 253.3 million). However, net debt rose from € 364.6 million as of June 30, 2019 to € 447.9 million as of June 30, 2020. In the net debt as of June 30, 2020, the liability for dividend payments is already included in other financial liabilities.

CASH FUNDS (JUNE 30)

in € million	1st half year 2020	1st half year 2019
Cash funds at the beginning of the period	1,853.5	1,718.7
Cash flow from operating activities	118.6	310.5
Cash flow from investing activities	(253.3)	(322.2)
Cash flow from financing activities	572.0	(304.0)
Other	(24.2)	6.6
Cash funds at the end of the period	2,266.5	1,409.7

The ratio of net debt to equity at the end of the first half year is 25.7% (June 30, 2019: 22.1%) and resulted from an increase in net debt of € 83.3 million In addition to the effects within the statement of cash flows described above, this increase was also due to higher lease liabilities resulting from the Munich headquarters "north sector" sale and leaseback transaction. Overall, lease liabilities rose by € 87.5 million compared with the prior-year period (€ 272.8 million) to € 360.3 million.

As of June 30, 2020, the undiscounted maximum level of liability for loan guarantees/sureties and contract performance guarantees/sureties for third-party services totaled € 22.6 million (December 31, 2019: € 20.7 million). Other financial commitments relate to items such as commitments for capital expenditure projects (€ 57.7 million), for rental and lease obligations (€ 153.4 million), as well as for major repairs and maintenance work (€ 9.6 million) and other obligations (€ 81.8 million).

In view of our ability to generate cash inflows from operating activities, our cash and cash equivalents, drawn-down credit facilities, and prevailing credit ratings, we believe that we have sufficient flexibility to cover our liquidity requirements.

Rating

Two external rating agencies, Standard & Poor's and Moody's, have been rating the Knorr-Bremse Group's financial standing since 2000. The ratings were investment grade from the outset and have steadily improved over the years. In August 2019, S&P confirmed the Knorr-Bremse Group's 2016 rating of "A, outlook stable." As part of the same rating review, S&P changed the industrial classification from "automotive supplier" to "capital goods industry." The change in category attests to greater stability and reduced dependence on cyclical economic trends due to the rising revenue and earnings contributions from the rail vehicles business. Moody's continues to rate the Knorr-Bremse Group as "A2" and simply changed its outlook in May 2020 from "stable" to "negative". Both rating agencies acknowledge the Group's continuing stable earnings quality, continuity of management performance, and strengthened competitive position, notably through high levels of research and development spending. They also underscore the Knorr-Bremse Group's substantial growth through acquisitions and the establishment of joint ventures.

Assets and capital structure

The Group's total assets rose by 12.0% to € 7,667.1 million compared with December 31, 2019 (€ 6,846.8 million). The increase in total assets was mainly attributable to new lines of credit for higher liquidity and ensuring flexibility for operations.

BALANCE SHEET RATIOS

in € million	6/30/2020	12/31/2019
Net debt/net cash	(447.9)	57.7
Net debt to EBITDA (%)	(83.6)	0
Gearing (%)	(25.7)	0
Net working capital (NWC)	1,196.8	809.1
Net working capital in days' sales	70.5	42.0
Turnover rate – inventories	3.3	8.5
Receivables/days' sales outstanding	83.1	59.6
Equity ratio	22.7	27.8
Total assets	**7,667.1**	**6,846.8**

Net working capital, defined as the sum total of inventories, trade accounts receivable, and contract assets less trade accounts payable and contract liabilities, stood at € 1,196.8 million as of June 30, 2020 (December 31, 2019: € 809.1 million). This corresponds to 70,5 days' sales (December 31, 2019: 42.0 days' sales). The increase is attributable in part to seasonal effects, but also to measures taken to preserve our supply chains, especially to China.

Provisions did not change materially compared with year-end 2019.

The equity ratio, which already includes the dividend payment in 2020, decreased, due in part to a lower earnings contribution as a consequence of the Covid-19 pandemic and also to an increase in total assets of 5.1 percentage points, from 27.8% as of December 31, 2019 to 22.7%.

EQUITY

in € million	6/30/2020	12/31/2019
Subscribed capital	161.2	161.2
Other equity	1,477.3	1,623.2
Equity attributable to the shareholders of Knorr-Bremse AG	**1,638.5**	**1,784.4**
Non-controlling shares	103.0	117.1
Total equity	**1,741.5**	**1,901.5**

CURRENT AND NON-CURRENT ASSETS

in € million	6/30/2020	12/31/2019
Intangible assets and goodwill	896.2	842.2
Property, plant and equipment	1,490.0	1,469.2
Other non-current assets	281.6	312.2
Non-current assets	**2,667.8**	**2,623.6**
Inventories	933.2	815.0
Trade accounts receivable	1,411.6	1,149.0
Other financial assets	41.5	62.6
Contract assets	91.4	89.9
Cash and cash equivalents	2,293.2	1,880.7
Other current assets	228.4	226.0
Current assets	**4,999.2**	**4,223.2**

Knorr-Bremse continued its forward-looking capital expenditure policy in the first half year despite the Covid-19 pandemic, underscoring the Group's long-term growth and innovation priorities. Significant capital investment in property, plant and equipment mainly related to ongoing construction projects as well as to investments for upgrading and expanding production plant and equipment. Furthermore, intangible assets increased relative to December 31, 2019, due among other things to additions to goodwill in connection with the acquisition of R.H. Sheppard.

REPORT ON RISKS, OPPORTUNITIES AND EXPECTED DEVELOPMENTS

Report on risks and opportunities

Risks and opportunities specific to the Knorr-Bremse Group and the associated risk management system, which has remained unaltered in 2020, are described in detail beginning on page 88 of the 2019 Annual Report.

Compared with year-end 2019, the risk portfolio in the Project Management risk category increased from very low to high (risk category after provisions: low). due among other things to higher project risks in connection with the Wuppertal suspension railway customer project. The remaining risk categories in the Knorr-Bremse Group's risk portfolio showed no material change relative to the end of 2019.

Depending on how the Covid-19 pandemic evolves, both risks and opportunities in relation to our revenues, results of operations, and financial position may arise as compared to our current forecast for the second half of the year.

Overall, analysis of the Group-wide risk profile at the end of the first half of 2020 showed that our risks are limited and that there are no identifiable risks that cast doubt on the Company's ability to continue as a going concern.

Report on expected developments

Global economy

In the first half of 2020, the Covid-19 pandemic and the associated economic lockdowns in advanced economies and other parts of the world changed the lives of billions of people and unleashed the deepest global recession in decades. Although the final outcome is still uncertain, the pandemic will lead to a decline in economic output in the vast majority of the countries affected. Labor productivity will also be impaired for a long time to come.

Economic experts' projections for 2020 and 2021 focus on two equally probable scenarios: one in which a second wave of infection with renewed restrictions occurs before the end of 2020 (double hit), and a second in which another serious outbreak can be avoided (single hit). Based on the single hit scenario, which envisages that most economies will slowly start to grow again beginning in the second half of the year, the IMF experts are forecasting negative global growth of –4.9% for 2020 followed by a recovery of 5.4% in 2021. In the event of a double hit scenario, however, OECD analysts are projecting global growth of –8.8% in 2020 and moderate growth of 1.7% for 2021.

Governments across the eurozone introduced a raft of measures to combat the pandemic – curfews, border closures, etc. – that left deep imprints on domestic economic activity. Furthermore, many eurozone member states are heavily dependent on tourism, which practically came to a standstill for months on end. Despite the gradual lifting of restrictions, this sector remains very vulnerable and, at best, will remain well below expectations. In response to this and other circumstances, the European Central Bank expanded its bond-buying program and provided cheap loans in an effort to give considerable fiscal policy support to all EU states. IMF analysts expect eurozone growth to contract sharply in 2020, falling to –10.2%. The experts anticipate a slight recovery starting from the end of the year and forecast growth of 6.0% for 2021.

In the United States, the outbreak also caused massive disruption in all sectors, with the service and health care sectors experiencing an unprecedented collapse. The jobless toll soared, while industrial production and retail sales witnessed an equally steep drop. Oil prices nosediving in the second quarter put the oil sector under considerable pressure. During the pandemic, the U.S. Federal Reserve cut its key rate to near zero and resolved or announced further far-reaching measures to stabilize the financial system. World Bank analysts estimate that U.S. GDP will be down 8.0% in 2020. The same analysts expect to see growth of 4.5% in 2021, largely on the strength of broad-based political support and a return of investor and consumer confidence.

China introduced tough measures at the end of January to combat the pandemic. An extended lockdown led to a sharp decline in production, consumer spending, and the service sector in Q1. As a result, China experienced dramatic drops in imports and even bigger declines in exports, mainly due to production stoppages. In response, the government implemented far-reaching monetary and fiscal policy measures to cushion the economic impact of the outbreak, such as providing substantial liquidity injections, tax breaks, and emergency health care packages and ramping up social spending. During the second quarter, many companies continued to experience financial difficulties and be affected by plummeting global demand. However, since then there have been numerous indications and signs of a gradual return to normal and of productivity picking up again. The World Bank experts thus expect growth of 1% in 2020 and a recovery of 8.2% in 2021, provided the global recovery in demand is sustained.

Financial markets

The lockdown measures that were part of the response to the spread of the Covid-19 pandemic almost brought the global economy to its knees in the first quarter of 2020 and precipitated a stock market crash in March. Central banks and governments acted quickly and decisively with rescue packages on a scale never seen before, unprecedented interest rate cuts, and bond-buying.

Thanks to these measures, confidence is once again dominating the stock markets, and since the beginning of June the markets have been pricing in a sharp V-shaped recovery. Since then, a certain amount of stabilization has been apparent. There are striking differences between individual regions and countries. Asian economies are currently driving the recovery, notably China and industrialized countries such as Taiwan, South Korea, and Singapore. Their lead is attributable to the advances made during the pandemic, but also to economic indicators. Once again, these are already showing significantly more rays of hope in Asia than in the rest of the world. Particularly in countries such as the United States and the United Kingdom, high unemployment and burgeoning public and private debt may dampen willingness to spend money during the recovery. Furthermore, the U.S. presidential election on November 3 could have a major impact on the markets. If renewed restrictions are as severe as at the onset of the Covid-19 crisis, optimism on the markets would wane again. The situation remains unstable.

Global rail vehicle market

The assessment of global rail vehicle market prospects has changed significantly year-on-year on account of the Covid-19 pandemic. All regions around the world are severely affected by lockdowns and restrictions, which led to the temporary suspension of passenger services, reduced passenger numbers, low freight volumes, and shuttering of vehicle manufacturers' production facilities. A rapid recovery and rising demand from the European and Asian rail transport sector can be expected in the longer term, especially in the passenger business segment, bolstered by numerous economic stimulus programs and by the climate conservation requirements.

In the wake of a severe downturn, particularly in the second quarter of 2020, a recovery is expected in Europe by 2021, underpinned by the extensive economic stimulus packages of individual states and the European Union, coupled with a clear focus on climate change targets.

Knorr-Bremse anticipates a sharp contraction across the North American market as a whole. The passenger market is expected to weaken temporarily due to the restrictions imposed by the Covid-19 pandemic. Along with the cyclical decline in the freight market, the situation in North America is expected to be exacerbated further by the Covid-19 pandemic.

Moderate growth in new business is forecast for the Asia-Pacific region. China will continue to be the largest procurement market and, following a major downturn in the first three months of 2020, enjoyed a recovery in the second quarter, though this will not continue in the same measure. The aftermarket business in China will be strongly influenced by further expansion of vehicle fleets. India, the growth driver in new business, will be severely affected by the continuing lockdown.

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

Global commercial vehicle production

Global commercial vehicle production declined significantly year-on-year, impacted by the effects of the Covid-19 pandemic. For 2020 as a whole, Knorr-Bremse expects global commercial vehicle production to fall by 10%, cushioned by the incipient recovery of markets in almost all regions around the world.

Despite the recovery being observed in the second half of 2020, the commercial vehicle market in Western Europe is projected to contract by around 30%, shrinking to approximately 320,000 units in 2020. In Eastern Europe, commercial vehicle production is expected to fall by 14% over the year as a whole, to around 60,000 units.

In the North and South American markets, which have been hit hardest by the Covid-19 pandemic, only a slight recovery is forecast for the second half of the year. Commercial vehicle production is therefore expected to fall by 43% year-on-year to around 330,000 units.

The commercial vehicle markets in Asia will probably grow by 7% this year to 1,950,000 units. In contrast to significant declines in the markets of Japan (–25%, 170,000 units) and India (–39%, 160,000 units), the commercial vehicle market in China showed a rapid recovery in commercial vehicle production early on in the year and is expected to expand by 21% compared with 2019, increasing to 1,625,000 units.

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

Outlook

The outlook for 2020 as a whole is as follows:

FULL-YEAR GUIDANCE FOR THE GROUP

Key performance indicators	Guidance for 2020	2019
Revenues (€ million)	5,900 – 6,200	6,937
Operating EBITDA margin (% of revenues)	16.5 – 17.5	18.8

Based on the first half of 2020 and subject to further lockdowns due to the Covid-19 pandemic with its impact on business performance up until the end of the year, the Company expects full-year 2020 revenues of € 5,900 to € 6,200 million (2019 reported: € 6,937 million) and an operating margin (EBITDA) of 16.5% to 17.5% (2019 reported: 18.8%). In contrast to the guidance published in the 2019 Annual Report, we now expect a slight increase in the number of employees (previously expected to be significantly lower) compared with the previous year due to the acquisition of R.H. Sheppard. As things stand today, we are also forecasting a moderate increase in the order book (previously a significantly decrease) versus the 2019 fiscal year resulting from a less pronounced decline in order intake compared with the development of revenues. Furthermore, due to the anticipated decline in revenues, we expect capital expenditure as a percentage of revenues to be significantly higher than in the 2019 fiscal year (previously forecast to be significantly lower). The current guidance already takes into account the effects of the aforementioned acquisition of R.H. Sheppard, but no further possible acquisitions or restructuring measures.

Compared with our assessment in the 2019 Annual Report, we now expect the Rail Vehicle Systems division's operating EBITDA margin to be slightly below the previous year's level (previously a significant decline was forecast). The assessment of the other key figures forecast in the 2019 Annual Report has not changed compared with the end of 2019, for the Group or for the divisions.

Our outlook assumes that global economic development will be no weaker than described above and that the political environment and exchange rates remain stable. Given the high uncertainty of further impacts of the Covid-19 pandemic and related economic risks, the assumptions could prove to be too optimistic.

Munich, September 10, 2020

Knorr-Bremse AG

FRANK MARKUS WEBER DR. PETER LAIER DR. JÜRGEN WILDER

CONSOLIDATED STATEMENT OF INCOME

CONSOLIDATED STATEMENT OF INCOME

in € thousand	1st half year 2020	1st half year 2019
Revenues	3,055,770	3,601,516
Change in inventory of unfinished/finished products	14,287	(831)
Own work capitalized	37,313	31,047
Total operating performance	**3,107,370**	**3,631,733**
Other operating income	48,725	25,208
Cost of materials	(1,468,377)	(1,799,590)
Personnel expenses	(769,117)	(805,328)
Other operating expenses	(383,111)	(383,064)
Earnings before interest, taxes, depreciation and amortization (EBITDA)	**535,489**	**668,959**
Depreciation and amortization	(137,945)	(135,710)
Earnings before interest and taxes (EBIT)	**397,544**	**533,249**
Interest income	9,222	11,446
Interest expenses	(23,521)	(25,905)
Other financial result	(25,640)	(6,647)
Income before taxes	**357,606**	**512,143**
Taxes on income	(100,662)	(148,451)
Net income	**256,944**	**363,692**
Thereof attributable to:		
Profit (loss) attributable to non-controlling interests	19,865	20,336
Profit (loss) attributable to the shareholders of Knorr-Bremse AG	237,079	343,356
Earnings per share in €		
basic	1.47	2.13
diluted	1.47	2.13

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

in € thousand	1st half year 2020	1st half year 2019
Net income	**256,944**	**363,692**
Actuarial gains and losses	(8,613)	(48,154)
Equity instruments recognized directly in equity	(5,856)	(5,909)
Deferred taxes	796	13,022
Items that will not be reclassified subsequently to profit or loss	**(13,673)**	**(41,041)**
Currency translation	(73,319)	12,193
Hedging transactions reserve	(11,042)	3,563
Reserve for costs of hedging	(2,323)	(899)
Deferred taxes	4,322	–
Items that may be reclassified subsequently to profit or loss	**(82,363)**	**14,857**
Other comprehensive income after taxes	**(96,036)**	**(26,184)**
Comprehensive income	**160,908**	**337,508**
Total comprehensive income attributable to non-controlling interests	16,731	21,472
Total comprehensive income attributable to the shareholders of Knorr-Bremse AG	144,176	316,036

CONSOLIDATED BALANCE SHEET

ASSETS

in € thousand	6/30/2020	12/31/2019
Assets		
Intangible assets and goodwill	896,187	842,180
Property, plant and equipment	1,490,022	1,469,212
Investments accounted for using the equity method	17,801	16,570
Other financial assets	57,823	63,471
Other assets	52,299	73,930
Assets from employee benefits	29,808	31,611
Deferred tax assets	123,896	126,598
Non-current assets	**2,667,835**	**2,623,572**
Inventories	933,159	815,011
Trade accounts receivable	1,411,563	1,148,999
Other financial assets	41,479	62,565
Other assets	167,040	152,088
Contract assets	91,413	89,885
Income tax receivables	61,349	73,900
Cash and cash equivalents	2,293,223	1,880,738
Current assets	**4,999,226**	**4,223,186**
Balance sheet total	**7,667,062**	**6,846,758**

LIABILITIES

in € thousand	6/30/2020	12/31/2019
Equity		
Subscribed capital	161,200	161,200
Capital reserves	13,884	13,884
Retained earnings	34,156	34,156
Other components of equity	(272,158)	(179,311)
Profit carried forward	1,464,304	1,166,041
Profit attributable to the shareholders of Knorr-Bremse AG	237,079	588,423
Equity attributable to the shareholders of Knorr-Bremse AG	**1,638,465**	**1,784,393**
Equity attributable to non-controlling interests	103,031	117,121
thereof share of non-controlling interests in net income	19,865	43,595
Equity	**1,741,496**	**1,901,514**
Liabilities		
Provisions for pensions	347,809	343,273
Provisions for other employee benefits	19,832	19,545
Other provisions	270,659	273,147
Financial liabilities	1,657,807	1,658,190
Other liabilities	3,426	5,627
Income tax liabilities	52,554	51,908
Deferred tax liabilities	94,666	80,789
Non-current liabilities	**2,446,754**	**2,432,480**
Provisions for other employee benefits	21,674	29,136
Other provisions	202,438	197,585
Trade accounts payable	946,185	967,447
Financial liabilities	1,859,774	875,567
Other liabilities	109,341	131,044
Contract liabilities	293,196	277,351
Income tax liabilities	46,204	34,635
Current liabilities	**3,478,812**	**2,512,764**
Liabilities	**5,925,566**	**4,945,244**
Balance sheet total	**7,667,062**	**6,846,758**

CONSOLIDATED STATEMENT OF CASH FLOWS

CONSOLIDATED STATEMENT OF CASH FLOWS

in € thousand	1st half year 2020	1st half year 2019
Net income (including minority interests)	256,944	363,692
Adjustments for		
Depreciation, amortization and impairment losses on intangible assets and property, plant and equipment	137,945	135,710
Change of impairment on inventories	8,415	6,439
Change of impairment on trade accounts receivable and contract assets	7,136	1,246
Loss on the sale of consolidated companies and other business units	111	–
Gain/(loss) on the sale of property, plant and equipment	263	(1,692)
Non-cash changes in provisions	76,326	139,469
Non-cash changes in the measurement of derivatives	8,865	2,201
Other non-cash expenses and income	10,771	16,011
Interest result	14,299	14,459
Investment result	(589)	91
Income tax expense	100,662	148,451
Income tax payments	(63,708)	(97,946)
Changes of		
Inventories, trade accounts receivable as well as other assets which cannot be allocated to investing or financing activities	(376,599)	(345,007)
Trade accounts payable as well as other liabilities which cannot be allocated to investing or financing activities	12,664	3,488
Provisions	(74,913)	(76,075)
Cash flow from operating activities	**118,591**	**310,537**
Proceeds from the sale of intangible assets	603	–
Disbursements for investments in intangible assets	(50,339)	(45,122)
Proceeds from the sale of property, plant and equipment	10,729	11,591
Disbursements for investments in property, plant and equipment	(92,875)	(87,269)
Proceeds from financial investments and from the sale of financial investments	1,744	–
Proceeds from the sale of consolidated companies and other business units	552	–
Disbursements for financial investments	(2,388)	(12,177)
Disbursements for the acquisition of consolidated companies and other business units	(125,911)	(194,252)
Interest received	6,344	6,418
Disbursements for investments in plan assets (pensions)	(1,807)	(1,342)
Cash flow from investing activities	**(253,347)**	**(322,153)**
Proceeds from borrowings	754,170	38,337
Disbursements from the repayment of borrowings	(112,081)	(3,825)
Disbursements for lease liabilities	(28,990)	(24,522)
Interest paid	(11,797)	(14,806)
Dividends paid to parent company shareholders	–	(283,750)
Dividends paid to non-controlling interests	(13,386)	(4,109)
Net payments from factoring	(17,229)	(11,347)
Proceeds from grants and subsidies	1,328	–
Cash flow from financing activities	**572,015**	**(304,022)**
Cash flow changes	**437,258**	**(315,638)**
Change in cash funds from exchange rate and valuation-related movements	(24,224)	6,837
Change in cash funds resulting from changes to the group structure	–	(195)
Change in cash funds	**413,034**	**(308,996)**
Cash funds at the beginning of the period	1,853,466	1,718,695
Cash funds at the end of the period	**2,266,500**	**1,409,699**
Cash and cash equivalents	2,293,223	1,426,493
Short-term securities available for sale	2	51
Short-term liabilities to banks (less than 3 months)	(26,725)	(16,845)

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

in € thousand	Subscribed capital	Capital reserve	Retained earnings	Group earnings
As of 1/1/2020	**161,200**	**13,884**	**34,156**	**1,754,465**
Dividends	–	–	–	(290,160)
Net income	**–**	**–**	**–**	**237,079**
Other comprehensive income after taxes	–	–	–	–
Comprehensive income	**–**	**–**	**–**	**237,079**
Gains and losses on hedging transactions and costs of hedging reclassified to inventories	–	–	–	–
Other changes	–	–	–	–
As of 6/30/2020	**161,200**	**13,884**	**34,156**	**1,701,383**
As of 12/31/2018	**161,200**	**13,884**	**39,924**	**1,447,918**
Initial application of IFRS 16	–	–	(5,768)	–
As 1/1/2019	**161,200**	**13,884**	**34,156**	**1,447,918**
Dividends	–	–	–	(283,750)
Net income	**–**	**–**	**–**	**343,356**
Other comprehensive income after taxes	–	–	–	–
Comprehensive income	**–**	**–**	**–**	**343,356**
Acquisition of non-controlling interests	–	–	–	(46)
Other changes	–	–	173	–
As of 6/30/2019	**161,200**	**13,884**	**34,329**	**1,507,478**

Other components of equity							
Currency translation	Reserve for costs of hedging	Hedging transactions reserve	Equity instruments recognized directly in equity	Remeasurements from defined pension benefits (IAS 19)	Equity attributable to the shareholders of Knorr-Bremse AG	Equity attributable to non-controlling interests	Total equity
(70,705)	(1,686)	(651)	(32,177)	(74,093)	1,784,393	117,121	1,901,514
–	–	–	–	–	(290,160)	(30,821)	(320,981)
–	–	–	–	–	237,079	19,865	256,944
(70,185)	(1,572)	(7,472)	(5,856)	(7,817)	(92,903)	(3,134)	(96,036)
(70,185)	(1,572)	(7,472)	(5,856)	(7,817)	144,176	16,731	160,908
–	(551)	607	–	–	56	–	56
–	–	–	–	–	–	–	–
(140,890)	(3,809)	(7,516)	(38,033)	(81,910)	1,638,465	103,031	1,741,496
(89,198)	–	–	(23,672)	(48,154)	1,501,902	105,208	1,607,110
–	–	–	–	–	(5,768)	(13)	(5,781)
(89,198)	–	–	(23,672)	(48,154)	1,496,134	105,196	1,601,329
–	–	–	–	–	(283,750)	(4,109)	(287,859)
–	–	–	–	–	343,356	20,336	363,692
11,277	(899)	3,563	(5,909)	(35,352)	(27,320)	1,136	(26,184)
11,277	(899)	3,563	(5,909)	(35,352)	316,036	21,472	337,508
–	–	–	–	–	(46)	46	–
–	–	–	–	–	173	–	173
(77,921)	(899)	3,563	(29,581)	(83,506)	1,528,547	122,605	1,651,152

Notes to the condensed interim consolidated financial statements of Knorr-Bremse AG

1 Accounting principles

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 and other critical systems. The product portfolio of the Rail Vehicle Systems Division 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 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.

Accounting policies

The interim consolidated financial statements for the period January 1 to June 30, 2020 are condensed and have been prepared in accordance with IAS 34 *Interim Financial Reporting* and hence in accordance with the International Financial Reporting Standards (IFRS) as published by the International Accounting Standards Board (IASB) and adopted by the European Union (EU). The interim consolidated financial statements are based on and should be read in conjunction with the consolidated financial statements as of December 31, 2019. The accounting policies that the Group applied in these interim financial statements are essentially the same as those applied in the consolidated financial statements for 2019.

The interim consolidated financial statements were released for publication by the Executive Board on September 10, 2020.

Additional disclosures

The judgments, accounting estimates, and assumptions affecting accounting policies made for the half-year financial report as of June 30, 2020 did not differ from those made for the consolidated financial statements as of December 31, 2019.

The applicable nominal tax rate for the Group amounts to 32.3% as of June 30, 2020. The calculation of the Group's income tax expenses for the first six months of 2020 was based on the expected effective tax rate for the full financial year of 28.1% (prior period: 29.0%). The difference compared with the nominal tax rate is mainly attributable to different tax rates among the group companies (decrease of tax rate), non-deductible operating expenses (increase of tax rate), as well as non-creditable tax withheld at source (increase of tax rate).

The interim consolidated financial statements are presented in euros (€), the euro being the functional and reporting currency of Knorr-Bremse AG. Unless otherwise indicated, all figures in the consolidated financial statements and the notes are commercially rounded to thousand euros (€ thousand). Rounding differences may therefore arise in tables in the condensed notes to the consolidated financial statements.

2 IFRS issued but not yet adopted by the EU and not yet applied

In the second quarter of 2020, the International Accounting Standards Board issued an amendment to IFRS 16 ("Covid-19-Related Rent Concessions") which permits lessees, as a practical expedient, to account for rent concessions occurring as a direct consequence of the Covid-19 pandemic as if they are not lease modifications. The Knorr-Bremse Group does not make use of this practical expedient.

3 Accounting estimates and judgments based on the Covid-19 pandemic

Accounting estimates and judgments may affect the amount of the assets and liabilities reported, the disclosures on contingent assets and liabilities at the reporting date, and the income and expenses presented for the reporting period. Due to the currently unforeseeable worldwide consequences of the Covid-19 pandemic, these accounting estimates and judgments are subject to a higher level of uncertainty. Actual amounts may differ from the accounting estimates and judgments; changes may have a material effect on the interim financial statements.

When the accounting estimates and judgments were being updated, available information on expected economic development and country-specific government measures was taken into account.

This information was included in the impairment testing of financial assets. It did not lead to any changes in the assumptions for the annual financial statements as of December 31, 2019.

In order to counteract the effects of the Covid-19 pandemic, use was made of government subsidies such as short-time allowances, insofar as these are available in the different countries in which the Knorr-Bremse Group operates, as well as the repayment of advance tax payments.

Goodwill impairment testing

The Knorr-Bremse Group generally reviews the carrying amount of goodwill for impairment at the end of each fiscal year. The Covid-19 pandemic was identified as an indication that goodwill might be impaired. For this reason, the Knorr-Bremse Group tested goodwill for impairment in accordance with IAS 36 as of the reporting date June 30, 2020 and determined that goodwill is not impaired.

4. Changes in the scope of consolidation and acquisitions

Changes in the scope of consolidation

The following Group company was included in the Group's consolidated financial statements for the first time as of June 30, 2020: Kiepe Electric India Private Limited, New Delhi/India (newly established).

The companies Alpha Process Controls (International) Ltd, Peterlee/United Kingdom and Aldona Seals Ltd, Peterlee/United Kingdom left the scope of consolidation as of May 4, 2020.

As of March 4, 2020, Knorr Brake Realty LLC., Westminster, Maryland/USA was merged with Knorr Brake Company LLC., Westminster, Maryland/USA.

Significant business combinations

Acquisition of R.H. Sheppard Co., Inc., Hanover, USA

By way of a purchase agreement dated January 30, 2020, Knorr-Bremse acquired all of the shares of R.H. Sheppard Co., Inc. from Wabco Holdings Inc. The transaction was consummated on June 1.

Following the acquisition of the commercial vehicle steering business of Hitachi Automotive Systems in Japan in the last fiscal year, Knorr-Bremse's acquisition of R.H. Sheppard is another milestone in its plan to become a global provider of integrated steering and brake systems for commercial vehicles.

In the first half of 2020, revenues of € 7,691 thousand and earnings before taxes of € –1,501 thousand contributed to consolidated earnings.

a) Consideration transferred
The preliminary purchase price for Sheppard of € 135,507 thousand and was settled in full by June 30, 2020. The final purchase price depends on the agreed closing accounts, which had not yet been conclusively agreed between the contracting parties at the time the consolidated financial statements were prepared.

b) Acquisition-related costs
The Group has incurred € 2,440 thousand in costs associated with the business combination for due diligence, legal fees and notary fees to date. These costs are recognized in other operating expenses.

c) Identifiable assets and liabilities acquired

The fair values of the assets and liabilities acquired at the date of acquisition are summarized below:

FAIR VALUES OF THE ASSETS AND LIABILITIES ACQUIRED

in € thousand	
Customer relationships	6,017
Brand name	2,245
Other intangible assets	4,939
Property, plant and equipment	66,418
Inventories	38,444
Trade accounts receivable	10,513
Other assets	4,701
Cash	11,871
Provisions	(3,656)
Trade accounts payable	(14,782)
Deferred tax liabilities	(14.270)
Other liabilities	(538)
Total identifiable net assets acquired	**111,902**

The gross amount of trade accounts receivable includes contractual receivables of € 11,076 thousand, of which € 563 thousand were assessed as probably uncollectible at the time of acquisition and therefore were value-adjusted.

d) Goodwill

The goodwill as a result of the acquisition was recognized as follows:

DETERMINATION OF GOODWILL

in € thousand	
Consideration transferred	135,507
Fair value of the net assets	(111,902)
Goodwill	**23,605**

The goodwill primarily results from the future development potential of the existing technologies, the anticipated broadening of the product and customer base and the know-how of the staff. This is allocated to the Commercial Vehicle Systems segment. The goodwill reported is not tax-deductible in the United States.

If the acquisition had occurred at the start of the fiscal year, consolidated revenue would have been increased by a further € 37,298 thousand to € 3,093,068 thousand and consolidated earnings before interest and taxes would have decreased by € 10,211 thousand to € 387,333 thousand. When calculating the amounts, the Executive Board assumed that the fair values from the purchase price allocation at the respective date of acquisition would also have been valid in the event of an acquisition on January 1, 2020.

5. Revenues

The table below breaks down consolidated revenues in the first half of 2020 by regions and timing and reconciles them to revenues in segment reporting.

CLASSIFICATION OF REVENUE AND RECONCILIATION WITH SEGMENT REVENUES

	IFRS revenue			Reconciliation to segment revenue			Revenue according to segment reporting		
in € thousand	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total
									6/30/2020
1. Disaggregation by segment									
a) Region (by registered offices of the Group companies)									
Europe/Africa	852,789	519,803	1,372,592	11,611	5,017	16,628	864,399	524,820	1,389,220
North America	197,955	414,807	612,762	(2,543)	7,583	5,039	195,411	422,390	617,801
South America	9,968	25,131	35,099	48	695	743	10,016	25,826	35,842
Asia-Pacific	680,084	354,958	1,035,043	1,994	938	2,932	682,079	355,896	1,037,975
	1,740,795	**1,314,699**	**3,055,495**	**11,110**	**14,233**	**25,343**	**1,751,905**	**1,328,932**	**3,080,837**
b) Type of time recording									
Recognition over time	573,067	–	573,067	(573,067)	–	(573,067)	–	–	–
Recognition at a point in time	1,167,729	1,314,699	2,482,428	584,176	14,233	598,409	1,751,905	1,328,932	3,080,837
	1,740,795	**1,314,699**	**3,055,495**	**11,110**	**14,233**	**25,343**	**1,751,905**	**1,328,932**	**3,080,837**
2. Other segments and consolidation	**–**	**–**	**275**	**–**	**–**	**(275)**	**–**	**–**	**–**
3. Total	**1,740,795**	**1,314,699**	**3,055,770**	**11,110**	**14,233**	**25,067**	**1,751,905**	**1,328,932**	**3,080,837**

	IFRS revenue			Reconciliation to segment revenue			Revenue according to segment reporting		
in € thousand	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total
									6/30/2019
1. Disaggregation by segment									
a) Region (by registered offices of the Group companies)									
Europe/Africa	929,710	763,417	1,693,127	13,611	4,870	18,481	943,321	768,287	1,711,608
North America	215,093	626,065	841,158	(9,211)	5,910	(3,301)	205,882	631,975	837,857
South America	12,846	42,397	55,242	85	660	745	12,931	43,057	55,988
Asia-Pacific	718,364	294,828	1,013,192	(10,537)	(924)	(11,461)	707,827	293,904	1,001,731
	1,876,012	**1,726,707**	**3,602,719**	**(6,052)**	**10,516**	**4,464**	**1,869,960**	**1,737,223**	**3,607,183**
b) Type of time recording									
Recognition over time	651,006	–	651,006	(651,006)	–	(651,006)	–	–	–
Recognition at a point in time	1,225,006	1,726,707	2,951,713	644,954	10,516	655,471	1,869,960	1,737,223	3,607,183
	1,876,012	**1,726,707**	**3,602,719**	**(6,052)**	**10,516**	**4,464**	**1,869,960**	**1,737,223**	**3,607,183**
2. Other segments and consolidation	**–**	**–**	**(1,202)**	**–**	**–**	**1,202**	**–**	**–**	**–**
3. Total	**1,876,012**	**1,726,707**	**3,601,516**	**(6,052)**	**10,516**	**5,666**	**1,869,960**	**1,737,223**	**3,607,183**

The reconciliation impact from IFRS to revenue according to segment reporting totals € 25,067 thousand. Thereof, € 11,110 thousand resulted from the Rail Vehicle Systems segment and € 14,233 thousand from the Commercial Vehicle Systems segment. € -275 thousand is attributable to “Other segments and consolidation”.

The reconciliation difference is composed as follows:

RECONCILIATION EFFECT OF IFRS ON REVENUES ACCORDING TO SEGMENT REPORTING

in € thousand	Rail Vehicle Systems	Commercial Vehicle Systems	Other segments and consolidation	Total
				6/30/2020
Elimination of the effect of the over-time recognition of revenue	(1,077)	–	–	(1,077)
Application of the German Accounting Directive Implementation Act (BilRuG), proceeds from the disposal of prototypes and scrap sales, and other effects	11,909	15,373	(275)	27,006
Recognition of additions to and releases of transaction price-related provisions and accruals	277	(1,140)	–	(863)
Total	**11,110**	**14,233**	**(275)**	**25,067**
				6/30/2019
Elimination of the effect of the over-time recognition of revenue	(18,752)	–	–	(18,752)
Application of the German Accounting Directive Implementation Act (BilRuG), proceeds from the disposal of prototypes and scrap sales, and other effects	12,754	12,343	1,202	26,298
Recognition of additions to and releases of transaction price-related provisions and accruals	(54)	(1,827)	–	(1,880)
Total	**(6,052)**	**10,516**	**1,202**	**5,666**

In the first six months of the 2020 fiscal year, revenues of the Knorr-Bremse Group fell by 15.2% from € 3,601,516 thousand in the prior period to € 3,055,770 thousand. Organically, revenues decreased by 14.4% after taking into account the sale of Powertech (€ 39,115 thousand) in 2019 and the acquisition of R.H. Sheppard (€ 7,691 thousand) in 2020.

Knorr-Bremse's business activities are not subject to any material seasonal variations.

6. Other operating income

OTHER OPERATING INCOME

in € thousand	1st half year 2020	1st half year 2019
Income from other services	5,048	5,973
Insurance compensation and indemnity payments	5,352	6,141
Income from government grants	2,788	2,906
Rental income	1,022	3,767
Income from the disposal of land and buildings	1,153	2,787
Income from the disposal of intangible and other tangible assets	–	164
Other income	33,363	3,470
	48,725	**25,208**

The increase in other operating income is mostly attributable to higher other income. The other operating income item includes mainly realized and unrealized income denominated in foreign currency in the amount of € 30,749 thousand, which rose substantially as compared with the previous year.

7. Other operating expenses

OTHER OPERATING EXPENSES

in € thousand	1st half year 2020	1st half year 2019
Order-related expenses	(76,883)	(83,835)
Legal, consulting, and audit costs	(40,328)	(44,029)
Personnel expenses	(31,530)	(52,180)
Other services	(43,611)	(46,023)
Maintenance expenses	(41,191)	(54,073)
Rents and leases	(7,743)	(10,160)
External research and development costs	(23,018)	(21,691)
Other taxes	(13,728)	(13,562)
Administrative expenses	(16,333)	(13,914)
Losses from the disposal of land and buildings	(1,236)	(2,147)
Donations	(2,246)	(2,305)
License and patent fees	(14,930)	(13,350)
Impairment losses	(14,170)	(766)
Energy, insurance, and utility costs	(10,138)	(8,035)
Other expenses	(46,026)	(16,995)
	(383,111)	**(383,064)**

At € 383,111 thousand, other operating expenses in the first half of 2020 were on a level with the previous year. Personnel expenses and maintenance expenses in particular fell as a result of the coronavirus pandemic. This stands in sharp contrast to the realized and unrealized losses denominated in foreign currency that are reported under other expenses and increased significantly to € 34,012 thousand. Impairment losses mainly include expenses from the sale of buildings.

8. Other financial result

The other financial result decreased by € 18,992 thousand compared with the previous year. This is primarily due to the losses incurred for realized measurement in foreign currency and the unrealized effects from the measurement of derivative financial instruments at the reporting date, which were higher than for the first half of 2019.

9. Financial instruments

Classification and fair values

The table below shows the unnetted carrying amounts and the fair values of financial assets and financial liabilities for each category of financial instruments in accordance with IFRS 9. For the classification (hierarchy levels) of fair value in accordance with IFRS 13, please refer to the section on accounting policies in the consolidated financial statements as of December 31, 2019.

The financial instruments can be classified as financial instruments at fair value through profit or loss (FVTPL), financial instruments at fair value through other comprehensive income (FVOCI), and financial instruments at amortized cost.

INFORMATION IN ACCORDANCE WITH IFRS 9

in € thousand	6/30/2020								
	Carrying amount					Fair value			
Category	FVTPL	FVOCI	Other	At amortized cost	Total	Level 1	Level 2	Level 3	Total
Financial assets	**14,593**	**28,137**	**2,207**	**3,759,152**	**3,804,089**	**19,112**	**11,188**	**2,586**	**32,887**
Derivative financial instruments to which hedge accounting is applied	–	–	2,207	–	2,207	–	2,207	–	2,207
Derivative financial instruments to which hedge accounting is not applied	8,982	–	–	–	8,982	–	8,982	–	8,982
Equity instruments	5,611	16,087	–	–	21,698	19,112	–	2,586	21,698
Trade accounts receivable*	–	12,050	–	1,399,514	1,411,563	–	–	–	–
Purchase price receivables from disposal of land*	–	–	–	31,111	31,111	–	–	–	–
Other financial liabilities*	–	–	–	35,304	35,304	–	–	–	–
Cash and cash equivalents*	–	–	–	2,293,223	2,293,223	–	–	–	–
Financial liabilities	**(13,672)**	**–**	**(378,215)**	**(4,071,879)**	**(4,463,766)**	**(1,281,878)**	**(1,256,159)**	**–**	**(2,538,037)**
Derivative financial instruments to which hedge accounting is applied	–	–	(17,887)	–	(17,887)	–	(17,887)	–	(17,887)
Derivative financial instruments to which hedge accounting is not applied	(13,672)	–	–	–	(13,672)	–	(13,672)	–	(13,672)
Bank loans	–	–	–	(843,847)	(843,847)	–	(844,985)	–	(844,985)
Liabilities resulting from options on minority interests	–	–	–	(379,616)	(379,616)	–	(379,616)	–	(379,616)
Bonds and debt instruments	–	–	–	(1,246,774)	(1,246,774)	(1,281,878)	–	–	(1,281,878)
Lease liabilities*	–	–	(360,328)	–	(360,328)	–	–	–	–
Purchase price liabilities*	–	–	–	(47.800)	(47.800)	–	–	–	–
Other financial liabilities*	–	–	–	(607.657)	(607.657)	–	–	–	–
Trade accounts payable*	–	–	–	(946,185)	(946,185)	–	–	–	–

in € thousand	12/31/2019								
	Carrying amount					Fair value			
Category	FVTPL	FVOCI	Other	At amortized cost	Total	Level 1	Level 2	Level 3	Total
Financial assets	**19,239**	**33,360**	**2,408**	**3,100,766**	**3,155,773**	**24,546**	**16,091**	**2,953**	**43,590**
Derivative financial instruments to which hedge accounting is applied	–	–	2,408	–	2,408	–	2,408	–	2,408
Derivative financial instruments to which hedge accounting is not applied	13,683	–	–	–	13,683	–	13,683	–	13,683
Equity instruments	5,556	21,943	–	–	27,499	24,546	–	2,953	27,499
Trade accounts receivable*	–	11,417	–	1,137,582	1,148,999	–	–	–	–
Purchase price receivables from disposal of land*	–	–	–	31,111	31,111	–	–	–	–
Other financial liabilities*	–	–	–	51,335	51,335	–	–	–	–
Cash and cash equivalents*	–	–	–	1,880,738	1,880,738	–	–	–	–
Financial liabilities	**(20,280)**	**–**	**(383,390)**	**(3,097,533)**	**(3,501,204)**	**(1,286,568)**	**(602,792)**	**–**	**(1,889,360)**
Derivative financial instruments to which hedge accounting is applied	–	–	(6,097)	–	(6,097)	–	(6,097)	–	(6,097)
Derivative financial instruments to which hedge accounting is not applied	(20,280)	–	–	–	(20,280)	–	(20,280)	–	(20,280)
Bank loans	–	–	–	(196,713)	(196,713)	–	(196,799)	–	(196,799)
Liabilities resulting from options on minority interests	–	–	–	(379,616)	(379,616)	–	(379,616)	–	(379,616)
Bonds and debt instruments	–	–	–	(1,249,013)	(1,249,013)	(1,286,568)	–	–	(1,286,568)
Lease liabilities*	–	–	(377,293)	–	(377,293)	–	–	–	–
Purchase price liabilities*	–	–	–	(44,990)	(44,990)	–	–	–	–
Other financial liabilities*	–	–	–	(259,755)	(259,755)	–	–	–	–
Trade accounts payable*	–	–	–	(967,447)	(967,447)	–	–	–	–

* without information on fair value based on the fact that the carrying amount approximately equals the fair value

Receivables at FVOCI relate to receivables in connection with factoring.

Valuation techniques used to measure fair value

The market value of financial derivatives is the price at which a party would assume the rights and/or obligations of 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 measured 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 measured on the basis of quoted prices in an active market.

Options are measured using recognized option pricing models (such as Black-Scholes).

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 is the credit default swap spread 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 measured using the discounted cash flow method. This is based on a discount rate that reflects the issuer's borrowing rate at the end of the reporting period. The Company's own non-performance 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. In accordance with IFRS 9, this is accounted for at amortized cost. Regarding the disclosed fair value as well as the methods and inputs for its determination, there were no changes compared to December 31, 2019, due to the arbitration.

Equity instruments also include non-consolidated companies. Knorr-Bremse Gou Tong (Guangzhou) Railway Transportation Equipment Co., Ltd., Guangzhou, China, was included in the consolidated financial statements as of December 31, 2019 for the first time as a non-consolidated company. The company does not yet have any material business activities. There are no significant effects on the net assets, financial position, and results of operations of the Group. The other equity instruments measured at fair value level 3 are considered both individually and in the aggregate as insignificant to the Group's net assets, financial position, and results of operations, which means that further information is also not provided for these.

Transfers between levels of the fair value hierarchy

There were no transfers between levels of the fair value hierarchy in the first six months of the 2020 fiscal year.

10 Statement of cash flows

Overall, there was a total cash inflow of € 437,258 thousand in the first half of the year, compared to a total cash outflow of € 315,638 thousand in the same period last year. This was mainly due to the € 876,036 thousand increase in the net cash inflow from financing activities, boosted in particular by proceeds from borrowings of € 754,170 thousand, which rose by € 715,833 thousand year-on-year. Dividends paid to non-controlling interests include the portion of the dividend of € 1,932 thousand already paid to the minority shareholder Bosch and recognized in the financial result. Cash flow from investing activities in the first half of 2020 was affected in particular by the purchase price of € 135,507 thousand paid for the companies within the scope of the R.H. Sheppard acquisition, which is divided into the items of disbursements for the acquisition of consolidated companies and disbursements for financial investments. The cash and cash equivalents of € 11,871 thousand received as a result of the acquisition have an offsetting effect in these items. The net cash inflow from operating activities, which fell by € 191,946 thousand to € 118,591 thousand, due in particular to the drop in net income of € 106,748 thousand to € 256,944 thousand, had less of an impact on the total net cash inflow than in the prior-year period.

For the 2018 fiscal year, a dividend of € 1.75 per bearer share was resolved in the 2019 fiscal year and therefore paid in the total amount of € 282,100 thousand. The dividend payment for 2019 in the 2020 fiscal year did not take place in the first half of 2020.

11. Earnings per share

In accordance with IAS 33, basic earnings per share is calculated by dividing net income attributable to the shareholders of Knorr-Bremse AG by the weighted average number of shares outstanding during the period. Earnings per share amounted to € 1.47 in the first half of 2020 (H1 2019: € 2.13).

12. Events after the reporting period

The Chairman of the Executive Board of Knorr-Bremse AG and member of the Executive Board responsible for labor relations as Labor Director pursuant to Section 33 of the Codetermination Act (MitbestG), Bernd Eulitz, left the Company by mutual agreement as of August 31, 2020. The responsibilities of the Chairman of the Executive Board are assumed in the interim by Executive Board members Dr. Peter Laier, Frank Markus Weber, and Dr. Jürgen Wilder.

In this connection, payments of € 3,733 thousand will be made to Bernd Eulitz that will reduce other comprehensive income in the third quarter. Along with a settlement payment, this includes the repayment of short-term incentive commitments for 2020 to 2021 on the basis of 100% corporate target attainment. If 100% target attainment is exceeded, Mr. Eulitz will be paid additional compensation for the difference. In connection with the termination of the employment relationship with Mr. Eulitz, Knorr-Bremse AG has been granted an option that can be exercised until December 31, 2020 to limit the compensation paid by Knorr-Bremse AG to Mr. Eulitz for the expiry of the STI and LTI tranches granted by the Linde Group to a total amount of € 2,000 thousand.

13. Other financial commitments and contingent liabilities

OTHER FINANCIAL OBLIGATIONS

in € thousand	Up to 1 year	1 to 5 years	Over 5 years	Total
6/30/2020				
Rent and lease obligations	4,672	33,820	114,863	153,356
Investment projects	51,648	5,966	62	57,676
Major repairs/maintenance work	8,237	1,279	130	9,646
Other obligations	64,559	12,505	4,743	81,806
	129,116	**53,570**	**119,799**	**302,485**
12/31/2019				
Rent and lease obligations	11,615	46,059	78,395	136,069
Investment projects	69,616	10,857	–	80,474
Major repairs/maintenance work	5,897	954	166	7,017
Other obligations	47,353	13,445	4,743	65,541
	134,481	**71,315**	**83,304**	**289,100**

CONTINGENT LIABILITIES

in € thousand	6/30/2020	12/31/2019
Guarantees	21,627	19,728
Warranties	986	976
	22,613	**20,704**

The future rental and lease obligations relate to rental agreements that have already been signed but do not commence until 2020 or 2021, after which they will be accounted for in accordance with IFRS 16, and to short-term or low-value rental agreements and leases that are not recognized under the exemption in IFRS 16.5. The increase compared with December 31, 2019 results in particular from rental agreements in connection with a sale and leaseback transaction in the United States that had been signed but not yet implemented.

The commitments for capital expenditure projects mainly relate to ongoing construction projects as well as to upgrading and expansion expenditure on production plant and equipment.

Commitments for major repairs and maintenance work mostly comprise commitments in connection with building refurbishment and maintenance at the Munich location.

Other obligations also include current orders, purchase commitments for building charges, and license obligations.

The Company's contingent liabilities involve guarantees and warranties. Guarantees have been issued for outstanding bank bonds, performance warranties for banks, as well as a rent guarantees for commercial/factory buildings.

There are guarantees in Hungary for customer contracts for products.

14. Related party disclosures

Related parties within the meaning of IAS 24 are natural persons or entities that have the ability to control or exercise significant influence over Knorr-Bremse AG, or are influenced by another related party of Knorr-Bremse AG. Transactions with related parties are conducted at arm's length.

Except for the transactions presented in the following, no material changes have arisen relative to the information disclosed with the 2019 consolidated financial statements.

Change of Leadership on the Executive Board

Ralph Heuwing retired from the Executive Board of Knorr-Bremse AG of his own volition with effect from April 30, 2020. Effective July 1, 2020, Frank Markus Weber was appointed as the new member of the Executive Board for the CFO department.

In this connection, payments will be made to Mr. Weber in the amount of € 1,020 thousand. These include a settlement from benefits earned that had not been paid out by his former employer, plus the reimbursement of other expenses.

Change in the composition of the Supervisory Board

At the Annual General Meeting on June 30, 2020, Heinz Hermann Thiele, Dr. Thomas Enders, and Dr. Theodor Weimer were elected to the Supervisory Board of Knorr-Bremse AG as new members. Mr. Thiele was released from his consultancy agreement with Knorr-Bremse AG early as of June 30, 2020 without compensation, but the 36-month consultancy agreement between Mr. Thiele and Knorr Brake Holding Corporation, Watertown, New York, USA, is scheduled to run until March 31, 2021. Dr. Wolfram Mörsdorf, Wolfgang Tölsner, and Georg Weiberg stepped down from the Supervisory Board of Knorr-Bremse AG at the end of the AGM. The new Supervisory Board members have been appointed for the remainder of the original term of office of the departing members, i.e., until the end of the 2021 AGM.

15. Legal risks

Investigations by the U.S. Department of Justice

On April 3, 2018, the U.S. Department of Justice, Antitrust Division ("DOJ") announced that it had 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 with the DOJ, several employees filed lawsuits against Knorr-Bremse AG, Wabtec, and individual subsidiaries. The aim of the class action lawsuits was to compensate employees for reduced payment on the basis of the alleged agreement between the parties above not to poach employees.

On October 16, 2019, Knorr-Bremse AG reached a settlement agreement in which it agreed to pay plaintiffs $ 12.0 million to settle the class action. The payment was made to an escrow account at the court in the last week of March 2020. This settlement agreement was finally confirmed by way of a court decision on August 26, 2020.

Haldex AB's complaints to the European Commission and the Brazilian competition authority

On February 13, 2020, Haldex AB filed complaints with the European Commission and the Administrative Council of Economic Defense (CADE) in Brazil. The complaints relate to the allegation that Knorr-Bremse AG had breached the relevant antitrust and merger control laws by acquiring and holding a minority stake in Haldex AB in September 2016.

Knorr-Bremse's minority shareholding in Haldex AB currently stands at 9.24%. Knorr-Bremse AG is defending itself against the accusations.

The European Commission is currently in the preliminary examination of the allegations. It is expected to decide during the third or fourth quarter of 2020 whether to open formal proceedings.

CADE Brazil decided on June 23, 2020 to open formal proceedings for a possible violation of the prohibition of implementation. The proceedings are still in the investigation phase. A decision on the discontinuation or continuation of the proceedings before a separate body of CADE is expected in the third or fourth quarter of 2020 at the earliest.

As both investigations are still at an early stage, a reliable statement cannot be issued at this time about the probability of success or the possible consequences of an adverse outcome of the administrative proceedings. The risk is currently assessed as fairly low.

Termination of long-term supply agreements by Robert Bosch GmbH

After Robert Bosch GmbH terminated various long-term supply agreements for a number of electronic components as part of ongoing price negotiations, which could lead to interruptions in supplies to customers of the Knorr-Bremse Group and thus to losses for the Knorr-Bremse Group due to production being halted, in addition to associated liability risks, Knorr-Bremse initiated arbitration proceedings against Robert Bosch GmbH on March 13, 2020 with a view to ensuring a continuous supply of components. The arbitration tribunal is expected to make a decision in the second quarter of 2021.

Proceedings in Italy

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 lawsuit will be filed against Microelettrica due to an alleged violation of internal regulations to avoid corrupt activities by the aforementioned individuals.

The court proceedings are still in a very early stage. 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 June 30, 2020.

Other legal risks

In the case of all other legal risks described in section H.9 of the 2019 Annual Report, no new facts or other assessments had emerged by June 30, 2020.

16. Number of employees

AVERAGE NUMBER OF EMPLOYEES

	1st half year 2020	1st half year 2019
Wage earners	14,638	15,761
thereof leased personnel	2,438	2,632
Salaried employees	13,819	13,540
thereof leased personnel	218	261
Trainees	201	193
Total	**28,658**	**29,494**

17. Segment reporting

INFORMATION ON REPORTABLE SEGMENTS

in € thousand	Reportable segments			Reconciliation to IFRS			
	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Other segments and consolida-tion	Group
6/30/2020							
External revenues	1,741,532	1,318,585	3,060,117	(1,089)	(4,377)	1,119	3,055,770
Inter-segment revenues	10,373	10,347	20,720	(10,021)	(9,856)	(844)	–
Segment revenues	**1,751,905**	**1,328,932**	**3,080,837**	**(11,110)**	**(14,233)**	**275**	**3,055,770**
EBITDA*	351,585	127,540	479,125	38,602	30,706	(12,944)	535,489
Depreciation and amortization	(45,471)	(62,528)	(107,999)	(19,098)	(1,559)	(9,289)	(137,945)
EBIT*	306,114	65,012	371,126	19,504	29,147	(22,233)	397,544
Interest income	4,585	1,361	5,946	1,074	336	1,866	9,222
Interest expenses	(4,354)	(3,793)	(8,147)	(8,121)	(1,183)	(6,070)	(23,521)
Other financial result	(215)	(591)	(806)	(3,355)	(3,830)	(17,648)	(25,640)
thereof: Share of profit or loss from companies accounted for using the equity method	*(714)*	*(456)*	*(1,170)*	*0*	*(0)*	*589*	*(581)*
EBT	**306,130**	**61,989**	**368,119**	**9,102**	**24,470**	**(44,085)**	**357,606**
Net working capital	**794,924**	**418,455**	**1,213,379**	**1,321**	**(18,516)**	**569**	**1,196,753**
6/30/2019							
External revenues	1,860,843	1,728,632	3,589,475	14,138	(2,629)	531	3,601,516
Inter segment revenues	9,117	8,591	17,708	(8,086)	(7,888)	(1,734)	–
Segment revenues	**1,869,960**	**1,737,223**	**3,607,183**	**6,052**	**(10,516)**	**(1,202)**	**3,601,516**
EBITDA*	372,701	239,511	612,212	44,344	24,672	(12,270)	668,959
Depreciation and amortization	(46,253)	(57,549)	(103,802)	(11,399)	(11,922)	(8,586)	(135,710)
EBIT*	326,448	181,962	508,410	32,945	12,750	(20,856)	533,249
Interest income	5,207	813	6,020	1,287	3,390	750	11,446
Interest expenses	(6,721)	(2,440)	(9,162)	(7,634)	(2,869)	(6,240)	(25,905)
Other financial result	300	(687)	(387)	(593)	765	(6,433)	(6,647)
thereof: Share of profit or loss from companies accounted for using the equity method	–	–	–	–	*(687)*	*116*	*(571)*
EBT	**325,233**	**179,649**	**504,882**	**26,005**	**14,036**	**(32,779)**	**512,143**
Net working capital	**735,690**	**358,207**	**1,093,897**	**50,058**	**(2,177)**	**719**	**1,142,496**

* Not explicitly included in management reporting to the CODM

Reconciliation

Internal reporting does not contain any segment-specific information on assets and liabilities; this is therefore not included in the segment reporting.

RECONCILIATION OF REVENUES

in € thousand	1st half year 2020	1st half year 2019
Revenues of reportable segments (German GAAP)	3,080,837	3,607,183
Revenues of other segments (German GAAP)	94,374	91,393
Inter-segment consolidation and other effects	(105,493)	(93,819)
Adjustment over-time recognition	1,077	18,752
Adjustment based on disclosure differences due to implementation of BilRuG	(15,024)	(21,992)
Consolidated revenue	**3,055,770**	**3,601,516**

RECONCILIATION OF EARNINGS BEFORE TAXES

in € thousand	1st half year 2020	1st half year 2019
Earnings before taxes of reportable segments (German GAAP)	368,119	504,882
Earnings before taxes of other segments (German GAAP)	(46,208)	(30,176)
Inter-segment consolidation and other effects	1,611	839
Adjustment due to amortizations not recognized on goodwill	15,700	11,960
Adjustment over-time recognition	3,792	3,647
Adjustment due to capitalization and amortization of development projects	24,174	26,772
Adjustment due to measurement differences in pension liabilities	9,003	7,521
Adjustment inventory valuation	(2,628)	6,078
Adjustment provisions	(11,138)	(16,201)
Adjustment for fair value measurement of financial instruments	(5,228)	(2,397)
Other adjustments for differences between German GAAP and IFRS	409	(783)
Earnings from continued operations, consolidated and before taxes	**357,606**	**512,143**

Geographical information

The following table shows the Group's revenues broken down by the country of domicile of Group companies.

REVENUES BY REGION

in € thousand	1st half year 2020	1st half year 2019
Europe/Africa	1,372,905	1,691,924
North America	612,725	841,158
South America	35,097	55,242
Asia-Pacific	1,035,043	1,013,192
	3,055,770	**3,601,516**

Munich, September 10, 2020

Knorr-Bremse AG

The Executive Board

FRANK MARKUS WEBER DR. PETER LAIER DR. JÜRGEN WILDER

Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles for interim financial reporting, the interim consolidated financial statements give a true and fair view of the net assets, financial position, and results of operations of the Group, and the Group's interim management report includes a fair review 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 for the remaining months of the fiscal year.

Munich, September 10, 2020

Knorr-Bremse AG

The Executive Board

FRANK MARKUS WEBER **DR. PETER LAIER** **DR. JÜRGEN WILDER**

Review Engagement Certificate

To Knorr-Bremse Aktiengesellschaft, Munich

We have reviewed the condensed interim consolidated financial statements of the Knorr-Bremse AG – comprising consolidated balance sheet, consolidated statement of income, consolidated statement of comprehensive income, consolidated statement of cash flows, consolidated statement of changes in equity and notes to the condensed interim consolidated financial statements – together with the interim group management report of the Knorr-Bremse AG, for the period from January 1 to June 30, 2020 that are part of the semi annual (or quarterly financial report) according to § 115 WpHG ["Wertpapierhandelsgesetz": "German Securities Trading Act"]. The preparation of the condensed interim consolidated financial statements in accordance with International Accounting Standard IAS 34 "Interim Financial Reporting" as adopted by the EU, and of the interim group management report in accordance with the requirements of the WpHG applicable to interim group management reports, is the responsibility of the Company's management. Our responsibility is to issue a report on the condensed interim consolidated financial statements and on the interim group management report based on our review.

We performed our review of the condensed interim consolidated financial statements and the interim group management report in accordance with the German generally accepted standards for the review of financial statements promulgated by the Institut der Wirtschaftsprüfer (IDW). Those standards require that we plan and perform the review so that we can preclude through critical evaluation, with a certain level of assurance, that the condensed interim consolidated financial statements have not been prepared, in material respects, in accordance with IAS 34, "Interim Financial Reporting" as adopted by the EU, and that the interim group management report has not been prepared, in material respects, in accordance with the requirements of the WpHG applicable to interim group management reports. A review is limited primarily to inquiries of company employees and analytical assessments and therefore does not provide the assurance attainable in a financial statement audit. Since, in accordance with our engagement, we have not performed a financial statement audit, we cannot issue an auditor's report.

Based on our review, no matters have come to our attention that cause us to presume that the condensed interim consolidated financial statements have not been prepared, in material respects, in accordance with IAS 34, "Interim Financial Reporting" as adopted by the EU, or that the interim group management report has not been prepared, in material respects, in accordance with the requirements of the WpHG applicable to interim group management reports.

Munich, September 10, 2020

KPMG AG
Wirtschaftsprüfungsgesellschaft

Andrejewski	Hanshen
Wirtschaftsprüfer	Wirtschaftsprüfer
[German Public Auditor]	[German Public Auditor]