Annual Report **2019**

NEXT GENERATION MOBILITY

#MOBILITY
LIFE
BALANCE

KEY FIGURES

	2019	2018 [1]
Sales in € million	36,518	36,929
Adjusted EBIT in € million	1,503	2,074
Adjusted EBIT margin in %	4.1	5.6
Net profit or loss before tax in € million	540	1,228
in % of sales	1.5	3.3
Net profit or loss after tax in € million	400	967
Adjusted free cash flow [2] in € million	803	891
Investment in property, plant and equipment in € million	1,879	1,586
Equity ratio (end of the year in %)	22.0	26.2
Employees [3]	147,797	148,969

1) Prior-year figures partly adjusted
2) Cash flow from operating activities less cash flow from investing activities, adjusted for company acquisitions and disposals.
3) Direct and indirect employees without temporary workers, apprentices and vacation workers as of December 31.

80%
Cars and light commercial vehicles <6t

€36,518 million
Sales

12%
Commercial vehicles >6t

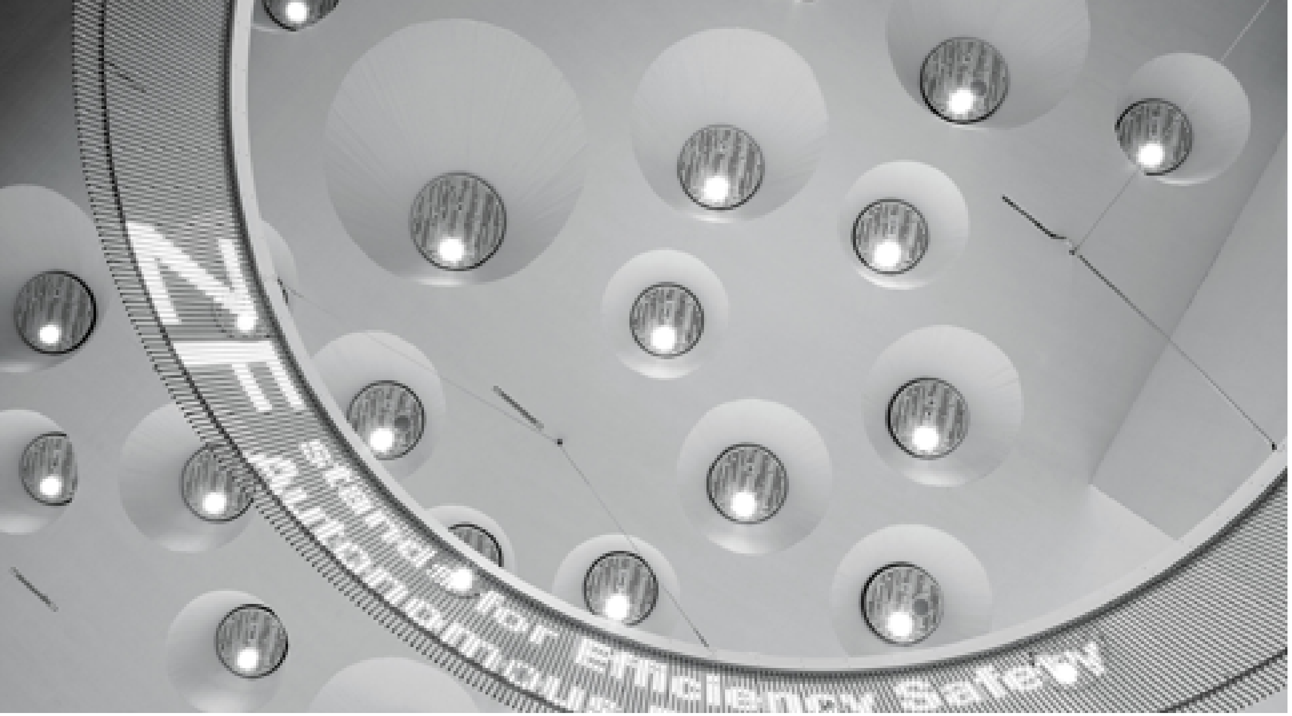
€2,652 million
Expenditure on research and development

SALES DEVELOPMENT BY REGION

Europe	46%
North America	29%
Asia-Pacific	21%
South America	3%
Africa	1%

8%
Construction and agricultural machinery, marine craft, aircraft and wind power

147,797
Employees in 41 countries



COMPANY PROFILE

ZF is a global technology company and supplies systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. With its comprehensive technology portfolio, the company offers integrated solutions for established vehicle manufacturers, mobility providers and start-up companies in the fields of transportation and mobility. ZF continually enhances its systems in the areas of digital connectivity and automation in order to allow vehicles to see, think and act. In 2019, ZF achieved sales of €36.5 billion. The company has a global workforce of 147,797 employees with approximately 240 locations in 41 countries. Founded in 1915, ZF has evolved from a supplier specializing in aviation technology to a global mobility technology company. Every year, the company spends more than 7 percent of its sales on research and development. With its innovative portfolio, ZF is focusing on the “Next Generation Mobility” for passenger cars, commercial vehicles and industrial applications. Group shareholders include the Zeppelin Foundation, administered by the City of Friedrichshafen, holding 93.8 percent of shares, and the Dr. Jürgen and Irmgard Ulderup Foundation, Lemförde, with 6.2 percent.

CONTENTS

The laptop symbol provides you with a link to a Web page containing more information.

The arrow provides you with a link to another page in the Annual Report.

BOARD OF MANAGEMENT LETTER

WOLF-HENNING SCHEIDER

Dear Reader,

2019 was a challenging year for our company and the automotive industry as a whole. The environment was difficult but also presented us with opportunities. We have taken advantage of this and won new orders – in electromobility, automated driving, and also in conventional technology. The income from the latter continues to give us the strength to invest in our future. Last year, we spent more than seven percent of our sales on research and development. That represents a €150 million increase on the previous year.

Besides pushing on with the transformation, our main tasks included responding to a weakened market environment in an appropriate manner, which we did emphatically. The measures involved in doing so included postponing investments that were not immediately necessary as well as reviewing and amending the personnel capacities and working hours in all of the areas affected. The effectiveness of the measures was clearly noticeable in the second half of the year.

These measures also allowed us to hold our ground against the trend, thus ensuring that our income data was within the forecasted range that had been corrected in mid-2019: standing at €36.5 billion, sales were almost on par with the prior-year figure. Due to higher costs and investments, EBIT suffered a significant decline and totaled €927 million, which resulted in the adjusted EBIT margin falling to 4.1 percent. Adjusted free cash flow dropped slightly to €803 million. We have different objectives, which is why we will continue to work intensively on our costs.

The acquisition and integration of WABCO represented an important milestone on our journey of designing the mobility of the future in all areas. In order to purchase the brake manufacturer, we successfully raised a total of €4.8 billion on the capital market last October. Considerably more investors wanted to subscribe than would have been necessary for this funding measure. This shows us that the financial market also sees and supports the potential of this acquisition.

What are our expectations for the current year? We will continue pursuing our goals in a committed manner, even though we do not expect the economic situation to improve noticeably and that owing to the current uncertain mood, further downturns are possible. Despite this, we will continue investing in the key future mobility technologies to the same extent as before and we will implement further efficiency and cost-cutting measures in close collaboration with all of our employees. To ensure that such projects are a success, everyone involved will need to demonstrate a high degree of commitment. I am therefore delighted that the corporate units, as well as their employees, are treading this – sometimes difficult – path so well.

It is not just economic growth that is proving challenging to us. The vast dynamics of our industry require us to go off the beaten track and break new ground. In doing so, we have to engage with the unknown, deal with uncertainty, and also make one or two difficult decisions. This includes streamlining our processes, reviewing our portfolio, further developing locations, integrating companies into the Group, developing new areas of knowledge and technology, as well as ceasing activities if they don't help us in the long run.

"At ZF, we are ready to take on the challenges of the upcoming years."

In all of these endeavors, we will have a compass to clearly point us in the right direction – with our "Next Generation Mobility" strategy, we have developed an image of the mobility of the future that will help us to coordinate our next steps. This will ensure that were are not as reliant on the traditional vehicle business over the next few years and will further strengthen our market position. Our four technological fields of Vehicle Motion Control, integrated safety, automated driving, and electromobility comprise the key aspects of the next-generation mobility. We no longer only contemplate individual products or vehicles, but instead see mobility as a holistic system to be used by the people of the 21st century.

With our strategy, we want to help curtail climate change, including by reducing our carbon footprint. We will therefore continue to invest in our own sustainability in 2020 – despite the numerous initiatives that we currently have in place to cut costs. Here too, it is a question of investing in areas that are important for securing our future.

I would like to thank the shareholder representatives and the members of the Supervisory Board for their hard work and once again extremely constructive help throughout the past year. I am looking forward to working together with my Board of Management team and you all to continue writing ZF's success story this year.

WOLF-HENNING SCHEIDER
Chief Executive Officer

THE BOARD OF MANAGEMENT
(from left to right):
Dr. Holger Klein
Dr. Martin Fischer
Sabine Jaskula
Wolf-Henning Scheider
Dr. Konstantin Sauer
Wilhelm Rehm
Michael Hankel

MANAGEMENT BODIES

BOARD OF MANAGEMENT

Wolf-Henning Scheider, Chief Executive Officer

Research & Development, Sales

Wolf-Henning Scheider (born in 1962) has been Chief Executive Officer of ZF Friedrichshafen AG since February 1, 2018. Having graduated in Business Administration, he started his career at Bosch in 1987 where he assumed various management functions within the Group in Germany and abroad as a member of the Board of Management and Divisional Director. From 2010 to 2015, he was a member of the Board of Management of Robert Bosch GmbH where he also became spokesman of the Automotive Technology sector in 2013. From 2015 to 2018, Wolf-Henning Scheider was Chief Executive Officer of the Mahle Group.

Dr. Konstantin Sauer, Chief Financial Officer

Finance, IT, M&A

Dr. Konstantin Sauer (born in 1959) has been Chief Financial Officer of ZF Friedrichshafen AG since 2010. In this function, he is responsible for major financial transactions such as the acquisition of TRW. Having studied industrial engineering, he did his PhD at the University of St. Gallen (Switzerland) in cooperation with Daimler-Benz in Stuttgart (Germany), before he moved on to ZF Friedrichshafen AG in 1990. Here he held various management roles, taking over responsibility as a CEO for the entire Region of South America in 2000.

Sabine Jaskula, Director of Labor Relations

Human Resources and Legal

Sabine Jaskula (born in 1967) has been a member of the Board of Management of ZF Friedrichshafen AG since January 2019. After completing her studies, the fully qualified lawyer headed the legal department of Mast-Jägermeister, before joining an international corporate law firm. Since 2001, she had been working at the Continental Group, where she started out as an HR officer, before assuming various management functions in Human Resources from 2005. Having worked for Continental in China for several years, she moved on to become the head of Human Resources at ContiTech in 2016.

Dr. Martin Fischer

Passive Safety Systems, Active Safety Systems, Electronics and ADAS, North and South America Region, Quality

An electrical engineer with a PhD title, Dr. Martin Fischer (born in 1970) has been a member of the Board of Management of the ZF Group since November 2019. After completing his studies at the Technical University of Darmstadt (Germany), he joined Siemens VDO Automotive in 1998, assuming various management roles, before moving on to automotive supplier Hella in 2006. From 2014, he held various management positions at U.S. automotive supplier BorgWarner, including in the USA.

Michael Hankel

Car Powertrain Technology, E-Mobility, Key Account Management Passenger Car Customers Europe and North America, Production

Michael Hankel (born in 1957) has been a member of the Board of Management of ZF Friedrichshafen AG since 2013. Having studied mechanical engineering, with a major in aviation and aerospace engineering, he started his career at automotive supplier Teves (ITT) in 1984. Until 2001, Michael Hankel held various management positions for ITT, later Continental Teves. He then moved on to become a member of the Board of Management of rolling bearing manufacturer FAG Kugelfischer, before joining ZF Sachs AG as head of the chassis business in 2003. From 2007, Michael Hankel was Chairman of the Board of Directors of ZF Lenksysteme GmbH.

Dr. Holger Klein

Car Chassis Technology, Aftermarket, Regions of Asia-Pacific and India, Key Account Management Passenger Car Customers Asia-Pacific and India

In October 2018, Dr. Holger Klein (born in 1970) was appointed to the ZF Friedrichshafen AG Board of Management, having assumed responsibility for the Car Chassis Technology Division in the previous year. After completing his industrial engineering studies with a major in mechanical engineering, and having gained a PhD title from the Technical University of Darmstadt (Germany), Dr. Holger Klein held various management positions for McKinsey in Düsseldorf (Germany) and Chicago, Illinois (USA). From 2006, he was part of the global management team for the automotive sector. In 2014, he transferred to the ZF Group as head of Integration Management for the acquisition of TRW.

Wilhelm Rehm

Commercial Vehicle Technology, Industrial Technology, Corporate Materials Management

Wilhelm Rehm (born in 1958) has been a member of the Board of Management of ZF Friedrichshafen AG since 2012. Having studied mechanical engineering, he started his career at LOKOMA, a provider of business facilities, before moving on to become head of the assembly department at the AGCO/Fendt group of companies in 1984, which is the biggest manufacturer and provider of tractors and agricultural machinery worldwide. For almost two decades, Wilhelm Rehm held various management positions at several locations of the group of companies. In 2003, he joined ZF Passau GmbH as Managing Director responsible for Production and Materials Management. In 2010, he assumed the role of chairman of the board in Passau and became a member of the Board of Management of ZF Friedrichshafen AG, responsible for the Off-Road Driveline Technology and Axle Systems Division.

SUPERVISORY BOARD

Dr.-Ing. Franz-Josef Paefgen
Chairman, former Chief Executive Officer of Bentley Motor Ltd., Crewe, UK

Roman Zitzelsberger*
Deputy Chairman, District Manager of IG Metall Baden-Württemberg, Stuttgart (since November 21, 2019)

Ernst Baumann
Former Member of the Management Board of BMW Motoren-werke AG, Munich

Andreas Brand
First Mayor of the City of Friedrichshafen

Jürgen Bunge*
Chairman of the Lemförde location Works Council of ZF Friedrichshafen AG, Friedrichshafen

Achim Dietrich*
Chairman of the Group Works Council of ZF Friedrichshafen AG, Friedrichshafen

Robert Friedmann
Chairman of the Central Managing Board of the Würth Group, Künzelsau

Joachim Holzner*
Head of the CV Chassis Technology Business Unit of ZF Friedrichshafen AG, Friedrichshafen

Frank Iwer*
Deputy Chairman, Head of Staff Position Political and Strategic Planning of the Board of Management of IG Metall, Frankfurt (until September 30, 2019)

Peter Kippes*
First Representative of IG Metall, Administration Center Schweinfurt

Mario Kläs*
Chairman of the Saarbrücken location Works Council of ZF Friedrichshafen AG, Friedrichshafen (since August 1, 2019)

Prof. Dr.-Ing. Gisela Lanza
Director of Production Systems at the wbk Institute of Production Science, Karlsruhe Institute of Technology (KIT), Karlsruhe

Dr. Joachim Meinecke
Lawyer, Freiburg

Oliver Moll*
Chairman of the Schweinfurt location Works Council of ZF Friedrichshafen AG, Friedrichshafen

Jürgen Otto
CEO of DRÄXLMAIER Group, Vilsbiburg

Vincenzo Savarino*
First Representative of IG Metall, Administration Center Friedrichshafen-Upper Swabia

Matthias Scherer*
Chairman of the Saarbrücken location Works Council of ZF Friedrichshafen AG, Friedrichshafen (until July 31, 2019)

Hermann Sicklinger*
Chairman of the Passau location Works Council of ZF Friedrichshafen AG, Friedrichshafen

Dr. Mohsen Sohi
CEO of Freudenberg SE, Weinheim

Dagmar Steinert
CFO of Fuchs Petrolub SE, Mannheim

Axel Strotbek
Former member of the Board of Management of Audi AG, Ingolstadt

Erdal Tahta*
Chairman of the Koblenz location Works Council of ZF Active Safety GmbH, Koblenz

*Employee representative

OUR STRATEGY

The “Next Generation Mobility” strategy continued to serve as our manifesto in 2019. Despite a challenging market environment, we moved forward with our objectives – the cornerstones of our strategic roadmap.

Our industry is beginning the biggest structural transformation it has ever seen. People want constantly available, affordable, clean and safe mobility – but the reality looks a little different: traffic jams, emissions and a lack of mobility services. Our “Next Generation Mobility” strategy rises to these challenges with new, holistic solutions that will enable us, as an integrated systems supplier, to play a decisive role in shaping future mobility.

Megatrends such as digitalization are now changing the mobility sector faster than expected, with software and artificial intelligence increasingly central to what lies ahead. Consequently, a raft of new players from other sectors are vying for a foothold in the mobility market to capitalize on its growth potential. Competition is set to intensify between not only manufacturers but also suppliers. We, too, are preparing ourselves for these developments by boosting our agility and broadening the appeal of our portfolio.

A resolute technology-neutral stance

Zero-emission, automated and autonomous driving will make traffic safer, smoother and more comfortable in the medium to long term. The market requires innovative solutions based on the type of application. For passenger cars, intelligent driver assistance functions, also referred to as level 2+ systems, currently have the biggest potential. The commercial vehicle segments and particularly urban public transportation are more likely to be able to use fully automated systems. Autonomous driving functions used in self-contained areas – such as depots and factory sites – as well as on specific routes are already paving the way.

Electromobility is extremely high on the automotive industry’s development agenda. ZF is taking a technology-neutral stance. We are convinced that this is an essential requirement for real innovation. In the long term, we expect purely electric drivelines to prevail in passenger cars and many commercial vehicles in markets with suitable infrastructure and favorable geography.

And we see plug-in hybrids as a vital solution for bringing electrification to the mass market. The plug-in hybrid offers the best of both worlds: local zero-emission driving and a good ability to cover long distances.

Four technology fields for three customer segments

ZF is a global leader in driveline and chassis technology as well as in active and passive safety technology. We provide our customers in the passenger car, commercial vehicle and industrial technology segments with a wide-ranging product and service portfolio including aftermarket business.

In taking the company forward, our strategic focus is on electrification, digital networking and automation. In line with this we are further developing our product portfolio around four technology fields, combining them through integrated solutions:

- **Vehicle Motion Control:** The chassis, comprising intelligence and motion-related actuators, plays a major role in ensuring vehicle safety, comfort and efficiency. ZF can network and synchronize virtually all the systems that effect longitudinal, transverse, or vertical acceleration so that cars and commercial vehicles are quiet and safe regardless of whether they are driven or driverless.

- **Integrated Safety:** One day, autonomous driving and intelligent traffic routing will make accidents a thing of the past. Nevertheless, occupant safety will still be paramount. ZF already has the most comprehensive safety technology portfolio in the supplier industry. It ranges from electronic control units, sensors, brakes, steering systems and seat belts to airbags, electronics, supercomputers and active chassis that are equipped with systems such as the active adaptive rear axle.

- **Automated Driving:** Automated driving will make mobility safer and everyday life easier for people. Systems from ZF like sensors, central computers and actuators are already enabling cars to see, think and act as well as drive autonomously. This will also lead to innovative mobility concepts for which new suppliers are already positioning themselves. Moreover, for ZF as a systems supplier it is creating additional opportunities across the broad spectrum of mobility.

- **Electromobility:** Zero-emission local mobility is forging ahead throughout the world. Hybrid and fully electric vehicle drives have been a reality for some time and will grow at a substantial rate. ZF supplies both the core components for electromobility such as hybrid drives, electric motors and power electronics, as well as complete systems covering all vehicle types, focusing on passenger cars and commercial vehicles.

Five objectives for balanced evolution

To ensure that the company evolves holistically, we are implementing our strategy around five objectives comprising areas of relevance for the Group.

1. **Innovation leadership and cost leadership:** Our extensive, unique portfolio already sets the benchmark for this, and we strengthen that position through constant innovation and investing in R&D. At the same time, by working on our efficiency and performance we guarantee a steady and substantial flow of funds with which to achieve this. Cost leadership is vital in safeguarding our global competitiveness.

2. **Balanced market penetration:** Where our customers go, we go – worldwide. Our aim is a balanced presence in all markets. Alongside Europe and the USA we are focusing particular attention on regions with further medium-term growth potential: China and India. Equally, we strive for a well-balanced customer portfolio. So in parallel with maintaining our traditional customer base, we are developing our customer relations in mobility solutions.

3. **Financial independence:** We aim to make business decisions from a position of financial stability at all times, while also further increasing the company's value to fulfill the economic interests of our owners. To achieve this, we manage our finances proactively in line with a solid balance sheet structure and appropriate free cash flow. We stay fully abreast of opportunities and risks, and continuously improve our operational fitness.

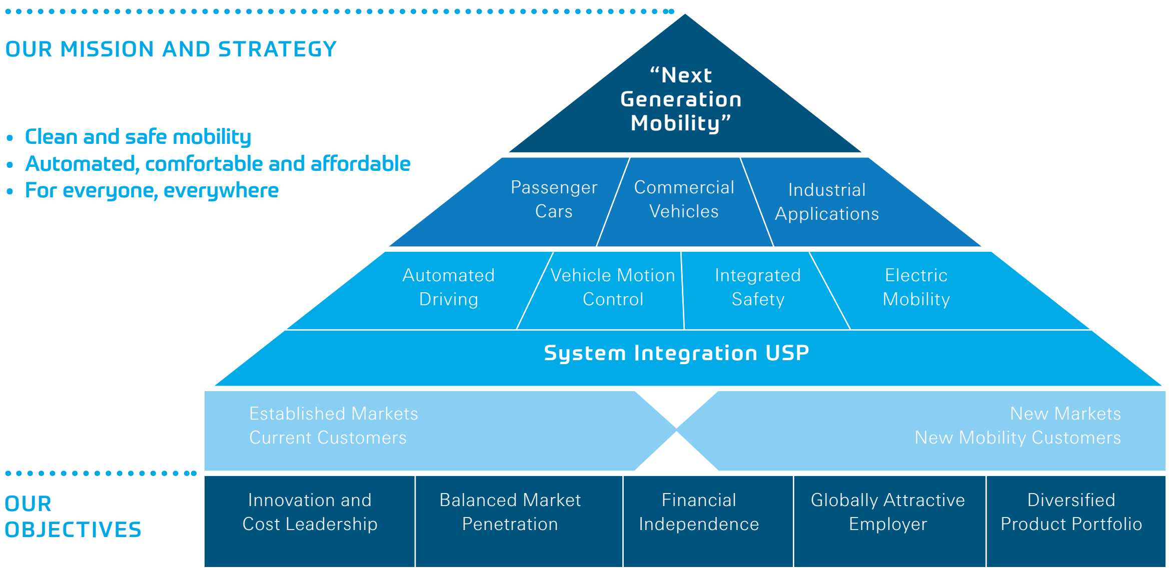
4. **Globally attractive employer:** We currently have employees in 41 countries. Our market success demands highly trained people who are motivated to move forward with the company and its aspirations for systems leadership. Consequently, we are boosting our agility and developing working arrangements that enhance our appeal as an employer. Equally, we are refining our employer branding in order to raise our profile.

5. **Diversified product portfolio:** We are committed to a wide-ranging portfolio. As a result, we are developing our business activities in a decentralized manner, based on our business areas, to increase customer proximity, monitor individual markets for new business opportunities and tailor our solutions to market and customer needs. Diversification also provides the Group with stability and makes it easier for us to deal with temporary market fluctuations.

Sustainability: carbon-neutral by 2040

We want our solutions to help reconcile society's mobility needs with nature's ecological boundaries. Consequently, we worked very hard on our Group carbon-neutrality strategy last year, setting a deadline of 2040 for all of our locations – from supply chain to product use. This means no more CO_2 emissions from all power generated and electricity purchased (Scope 1 and 2 under the Greenhouse Gas Protocol). By 2030, ZF aims to reduce CO_2 emissions in these areas by 50 percent compared to 2018. To do so, we are targeting a 20 percent increase in energy efficiency in our plants and will procure more of our power from renewable energy sources. At the same time, we will reduce emissions across our entire supply chain and minimize the environmental impact of our products (Scope 3).

G_01 The road to Next Generation Mobility



REPORT OF THE SUPERVISORY BOARD

DR.-ING. FRANZ-JOSEF PAEFGEN

Dear Reader,
In 2019, the Supervisory Board supported the Board of Management through a challenging fiscal year. One standout event was the acquisition of WABCO, which will shortly be concluded. This is an important component in the implementation of our Group's Next Generation Mobility strategy which makes ZF, among other things, an integrated systems supplier of commercial vehicle technology. Issues that impacted our daily business were economic and political uncertainties such as trade conflicts, tariff discussions and Brexit. Such factors contributed to declining markets, making it very difficult for the ZF Group to reach its defined targets. These external influences will continue to affect ZF in the coming year.

However, 2019 also highlighted the ever-faster transformation in the automotive industry. Naturally, this will determine ZF's activities in the transition from a classic component supplier to a systems supplier. It will further accelerate our entry into new business fields such as electromobility and automated driving.

Key personnel changes in the last year were:

Mr. Matthias Scherer left the Supervisory Board on his retirement on July 31, 2019. His successor as a representative of the workforce is Mr. Mario Kläs, who took up this office on August 1, 2019. On October 1, 2019, Mr. Frank Iwer became Head of HR Germany at ZF Friedrichshafen AG. For this reason, he left his position as an employee representative and Deputy Chairman of the Supervisory Board as of September 30, 2019. On the joint recommendation of the Groups Works Council and the Board of Management, the registration court of Ulm appointed Mr. Roman Zitzelsberger as his successor. The Supervisory Board then elected him as Deputy Chairman with effect from November 28, 2019.

The Supervisory Board wishes to thank the former members for their constructive involvement in the company's further development. Special thanks go to the former Deputy Chairman of the Supervisory Board Frank Iwer for his many years of excellent work on the Supervisory Board and for his support of the Chairman.

With effect from January 1, 2019, Ms. Sabine Jaskula joined the company in the position of Member of the Board of Management for Human Resources and Legal Affairs and as Director of Labor Relations of ZF Friedrichshafen AG. This position was vacant for a time, and in the interim period Mr. Wolf-Henning Scheider additionally took on these corporate functions as well as the position of Director of Labor Relations. Dr. Franz Kleiner retired on December 31, 2019, leaving his post as a member of the Board of Management. Dr. Martin Fischer was appointed his successor as a member of the Board of Management as from November 1, 2019.

The Supervisory Board wishes to thank Dr. Kleiner for his many years of excellent work for the company and especially for his successful efforts in the integration of TRW.

As required by the law and our articles of association, the Supervisory Board continually and extensively monitored the work of the Board of Management. It assisted the Board of Management in the execution of its central managerial tasks, the strategic further development of the company and other important matters. Outside of the board meetings, the Chairman of the Supervisory Board also received regular reports from the Chief Executive Officer about current and important developments in the company.

At the end of 2019, as in previous years, the Supervisory Board carried out a self-evaluation with the intention of further improving cooperation and efficiency in its own activities.

During 2019, the Supervisory Board met for four regular meetings during which the Board of Management reported on the company's situation and all essential current and strategically important issues. The Supervisory Board also held two extraordinary meetings and passed two resolutions by way of circular resolution.

The subject of the extraordinary Supervisory Board meetings in March 2019 was the acquisition of WABCO. The two circular resolutions supported decisions on HR matters. In its December meeting, the Supervisory Board resolved new rules of procedure for the Audit Committee.

In various meetings, the Supervisory Board discussed the challenges posed by and the progress achieved in implementing the strategy devised by the Board of Management in depth. It also thoroughly examined the measures for dealing with the consequences of market decline, transformation in the automotive industry and uncertainties due to changed political conditions. One example of causes for concern is increasing protectionism by individual countries, such as the introduction and expansion of strict market access barriers in the form of protective tariffs. Another is Brexit. Despite the decline in business performance compared to the prior year, the company will continue to invest in future-oriented technology. The Supervisory Board also noted positive achievements. ZF attracted large orders in traditional segments such as driveline technology, e.g. with a further developed 8-speed automatic transmission, but also in new areas such as electromobility. Here, ZF launched a purely electric drive for an electric car manufactured by an OEM. There was also a focus on further development of the Autonomous Driving Business Unit. In its October meeting, the Supervisory Board heard an in-depth presentation on this topic. At its last regular meeting of 2019, the Supervisory Board approved the company's operational planning.

As part of the Group-wide risk management system, the Board of Management reported quarterly to the Supervisory Board and the Audit Committee on the main opportunities and risks identified. No individual risks that threaten the existence of the company or its results of operations, net assets and financial position were discovered. Furthermore, the Board of Management presented the Compliance Report.

The Supervisory Board will continually seek information about progress in implementing the measures for continued business success even in today's difficult environment. It will advise and support the Board of Management in this respect.

At its meetings, the Executive Committee addressed, in particular, the strategic focus of the ZF Group, personnel issues of the Board of Management and Division Management and succession planning.

During the meeting on April 1, 2019, the appointed auditor reported to the Audit Committee in detail on the results of the annual financial statements and the consolidated financial statements, and discussed these as well as ZF's challenges in Finance with the Board of Management. In two other meetings, the committee tackled, among other subjects, the further development of the internal monitoring system and the Compliance Organization, risk management, the Corporate Audit report and the amendment of the internal rules of procedure of the Audit Committee. The chairpersons of both committees, Dr. Franz-Josef Paefgen and Mr. Axel Strotbek, reported on the essential issues and activities in their committees at the subsequent Supervisory Board meetings.

The annual financial statements of ZF Friedrichshafen AG compiled by the Board of Management in accordance with the provisions of the German Commercial Code (HGB) and the consolidated financial statements compiled in accordance with Sec. 315e HGB on the basis of the International Financial Reporting Standards (IFRS), dated December 31, 2019, as well as the corresponding management reports, were audited by Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft. The company issued its unqualified audit opinion in each case.

The Supervisory Board extensively studied the documentation. All members of the Supervisory Board had access to the audit reports to do this. In addition, the appointed auditor explained the main audit results first to the Audit Committee and then to the Supervisory Board during the board meeting on March 25, 2020. In both cases, the results were discussed in detail in the presence of the auditor. The Supervisory Board raised no objections, accepted the financial statement audit results and adopted the annual financial statements of ZF Friedrichshafen AG as well as the consolidated financial statements. The Supervisory Board advised the shareholders to approve the annual financial statements, adopt the consolidated financial statements and accept the recommendation of the Board of Management for the appropriation of the net profit.

For the fiscal year 2019, the Board of Management drew up a report on the relations to affiliated companies (dependence report) according to Sec. 312 German Stock Corporation Act (AktG). The Supervisory Board audited this report; no objections were raised. Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft audited the report and issued the following audit opinion:

"Based on our dutiful audit and assessment, we confirm that
1. the actual statements of the report are correct;
2. the contribution by the company with regard to the legal transactions presented in the report was not unreasonably high."

The Supervisory Board agrees to the audit result of the appointed auditor. According to the concluding audit result by the Supervisory Board, no objections are to be raised with regard to the Board of Management's closing statement contained in the report.

Despite facing difficult obstacles at times, the Board of Management, the management, the employee representatives and the entire workforce of the ZF Group once again did an outstanding job in 2019. The Supervisory Board would like to take this opportunity to express its appreciation and thank everyone for the work they have done, their high level of commitment to the company as well as their good and constructive teamwork.

Friedrichshafen, March 2020

On behalf of the Supervisory Board
DR.-ING. FRANZ-JOSEF PAEFGEN
Chairman of the Supervisory Board

GROUP MANAGEMENT REPORT

Contents of Management Report

Note: Information referring to related links are not part of the audited Group management report.

BASIC PRINCIPLES OF THE ZF GROUP

OPERATING ACTIVITIES AND STRUCTURE

Global technology solutions provider focused on mobility
ZF Friedrichshafen AG is a global technology company supplying advanced mobility products and systems for passenger cars, commercial vehicles and industrial technology. Our comprehensive technology portfolio is aimed primarily at established vehicle manufacturers, mobility providers and start-up companies in the fields of transportation and mobility.

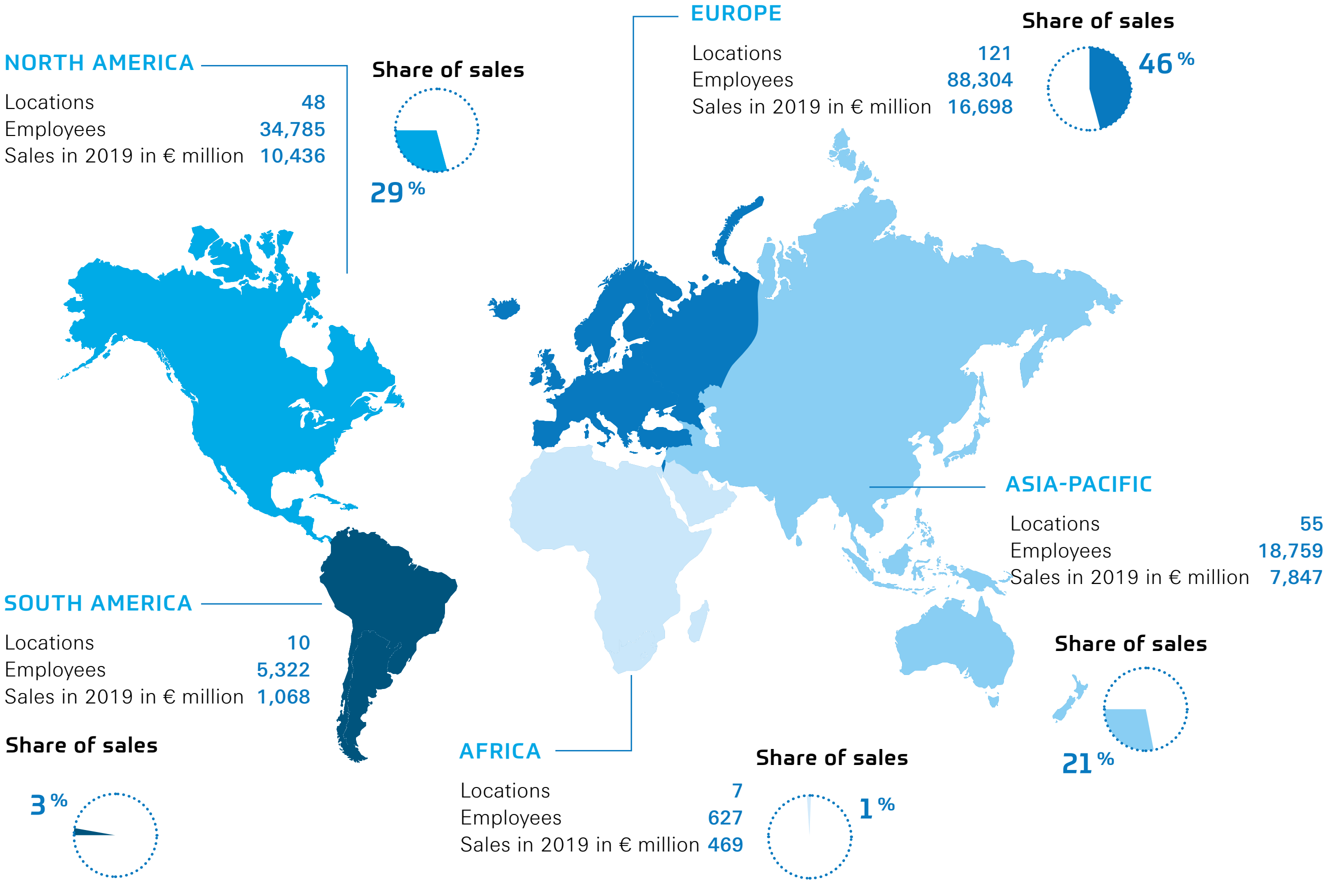
Alongside our core markets – passenger cars and commercial vehicles – we also serve market segments such as wind power, marine propulsion, aviation technology, rail drives, special drives and test systems.

The ZF Aftermarket Division provides our OEM expertise for the aftermarket through a relevant product and service portfolio. Our spare parts business encompasses the ZF, TRW, Lemförder, Boge and Sachs brands. Our service portfolio covers workshop concepts and intelligent connectivity solutions along with maintenance and repair services, plus conversions and retrofitting to enhance efficiency, comfort and safety.

Our workforce worldwide comprises around 148,000 employees at 241 locations in 41 countries. Our main sales markets are Europe, North America and the Region of Asia-Pacific, with China as the core market and India as the growth market.

A focus on four technology fields
Our strategic focus is digital networking and automation. In line with this we are developing our product portfolio around four technological fields, systematically combining them through integrated solutions: **Vehicle Motion Control, Integrated Safety, Automated Driving and Electromobility.**

G. 01 ZF worldwide



241 locations in **41** countries
161 production locations in **27** countries
16 main development locations in **9** countries
130 service locations
650 service partners

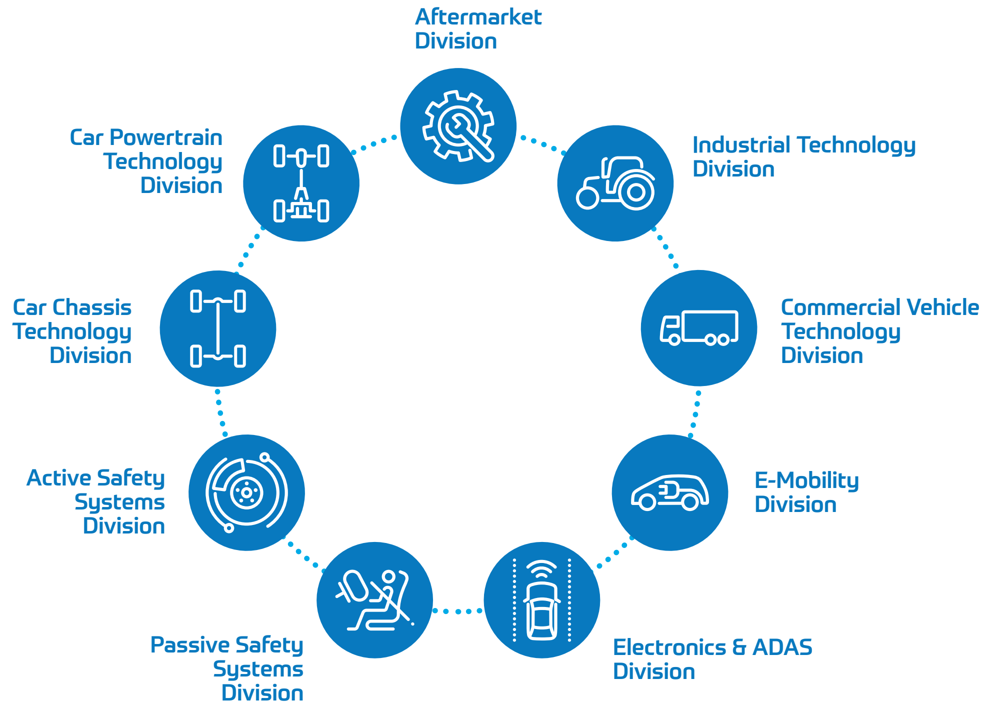
Corporate structure

ZF Friedrichshafen AG is a corporation headquartered in Friedrichshafen (Germany). The Zeppelin Foundation owns 93.8% of the company. These shares are managed by the city of Friedrichshafen. The remaining 6.2% is owned by the Dr. Jürgen and Irmgard Ulderup Foundation, Lemförde (Germany). The shareholders exercise their voting rights at the annual shareholders' meeting.

A matrix organization links the Group-wide competencies of the corporate functions with the global business responsibility of the divisions and business units. Operational topics are mainly addressed in the divisions, and are assigned directly to the members of the Board of Management.

The headquarters are managed by the Board of Management. The same applies to the responsibilities with regard to the Regions of North America, South America and Asia-Pacific. The regions provide local guidelines as well as corresponding services for the business activities in their regions.

G. 02 Corporate structure



Car Powertrain Technology	Car Chassis Technology	Commercial Vehicle Technology	Industrial Technology	E-Mobility	Aftermarket	Electronics & ADAS	Passive Safety Systems	Active Safety Systems
Automatic Transmissions Manual Transmissions/ Dual Clutch Transmissions Powertrain Modules	Chassis Systems Chassis Components Suspension Technology	Truck & Van Driveline Technology Axle & Transmission Systems for Buses & Coaches CV Chassis Technology CV Powertrain Modules CV Steering Systems	Off-Highway Systems Industrial Drives Marine & Special Driveline Technology Test Systems Aviation Technology Wind Power Technology	Electronic Systems Electric Traction Drive Axle Drives Electronic Interfaces System House	Independent Aftermarket Original Equipment Service/Specific Original Equipment Manufacturing Friction Materials Group	Advanced Driver Assistance Systems (ADAS) Safety Electronics	Inflatable Restraint Systems Seat Belt Systems Steering Wheel Systems	Foundation Brakes Brake Controls Rack Drive Column Drive
Corporate Functions/Regions								

CORPORATE MANAGEMENT

Board of Management
ZF Friedrichshafen AG and the ZF Group are led by the Board of Management, which runs the business independently and sets the company's strategic direction. The strategy is implemented in close coordination with the Supervisory Board, which monitors the Board of Management's activities and receives regular management updates concerning business performance, strategy and potential opportunities and risks.

In line with our matrix organization, in addition to strategic and functional management, the Board of Management has responsibility for the divisions and regions.

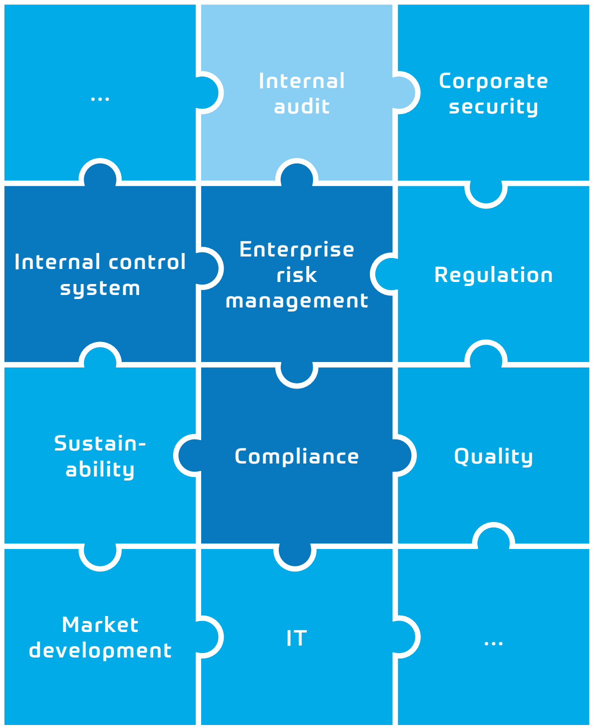
In the 2019 fiscal year, the Board of Management initially comprised seven members, and later, eight: Chief Executive Officer Wolf-Henning Scheider, Dr. Konstantin Sauer, Michael Hankel, Sabine Jaskula, Dr. Holger Klein, Dr. Franz Kleiner and Wilhelm Rehm. Dr. Martin Fischer was appointed to the Board of Management on November 1, 2019. As of 2020, he took charge of the responsibilities previously managed by Dr. Franz Kleiner, who stepped down on December 31, 2019.

Supervisory Board
The Board of Management is overseen by the Supervisory Board, whose members are appointed with equal representation. In the fiscal year, the Supervisory Board comprised 20 members under the leadership of Dr. Ing. Franz-Josef Paefgen. It is supported by an Executive Committee and an Audit Committee which are both composed of members of the Supervisory Board.
↘ **Management bodies**

Corporate Governance
The Board of Management and the Supervisory Board are committed to managing and monitoring the company responsibly in accordance with the principles of good corporate governance. These are a prerequisite for sustainable business success and the fundamental standard on which our day-to-day management is based. The Board of Management and the Supervisory Board share a firm conviction that acting according to the principles of responsible corporate management geared to sustainable value creation is an all-encompassing requirement across the whole business.

Enterprise Risk Management
Over the past two years, the Group has gradually enhanced its enterprise risk management, which entails defining and regulating clear roles and responsibilities along with a standardized Group-wide risk management process. A key aspect of the revised Enterprise Risk Management is an integrated approach to governance, risk and compliance distinguished by improved interfaces between the Internal Control System, Compliance, Corporate Audit and Corporate Risk Management. Our risk situation is now more transparent. We document, monitor and manage risks in a structured way, taking account of both strategic and operational risks, and – going forward – aggregating the overall risk landscape.

G. 03 **Risk management system with structured interfaces**



Structured interfaces make the risk situation more transparent.

Compliance

The company is committed to dealing with customers, business partners, employees and the environment in a reliable and respectful manner. This implies lawful, honest, responsible behavior at every level and in all areas as the core value of our corporate culture.

We promote professional conduct and minimize the risks of misconduct through a Group-wide compliance management system focused on preventing and detecting compliance cases as well as on responding quickly and effectively to potential violations.

ZF's Code of Conduct lays down mandatory Group-wide principles for correct, legally compliant and ethical behavior. The code requires legal compliance and fair competition, and addresses key issues such as human rights, anti-corruption activities, economic and social responsibility, product compliance, workplace safety, data privacy and transparency. The code is incorporated in our Compliance Management System and is available in more than 25 languages.

We do not tolerate violations of applicable legislation, our Code of Conduct, internal guidelines or, above all, our values.

Internal control system

ZF's internal control system (ICS) aims to guarantee that we achieve our objectives in terms of relevant business activities (effectiveness/efficiency), reliable financial reporting and compliance. Our standardized ICS method applies company-wide and is implemented accordingly throughout the Group. It is based on the tenets of transparency, the four-eyes principle and the separation of duties. The ICS helps to monitor control procedures and documentation.

Equality and equal opportunities

Equality and equal opportunities are vital for our company's success. We support the wide variety of social cultures in our company and nurture our employees regardless of their personal attributes. ZF promotes an integrative working environment and an open work culture that respect, value and encourage individual differences.

With due consideration for German legislation governing equal representation of women and men in managerial positions in the private and public sectors, ZF Friedrichshafen AG has discussed and set targets for the relevant managerial levels to be achieved by June 30, 2022.

- For vacancies regarding the Supervisory Board, a target quota of 30% female supervisory board members was set. The quota is currently 10%.
- For vacancies regarding the Board of Management, a quota of 10% female Board of Management members is envisaged. The appointment of Sabine Jaskula as member of the Board of Management for the HR and Legal Corporate Function means that this target has been met.
- At the first managerial level (executive vice president/ senior vice president) and the second managerial level (vice president) below the Board of Management, the percentage of women is planned to increase to 15% each.

NON-FINANCIAL KEY PERFORMANCE INDICATORS

Alongside financial indicators, non-financial KPIs are also very important for our future business success. For a deeper insight into these topics, ZF publishes a separate Sustainability Report at the same time as the Annual Report. This report is available on the website at **www.zf.com**

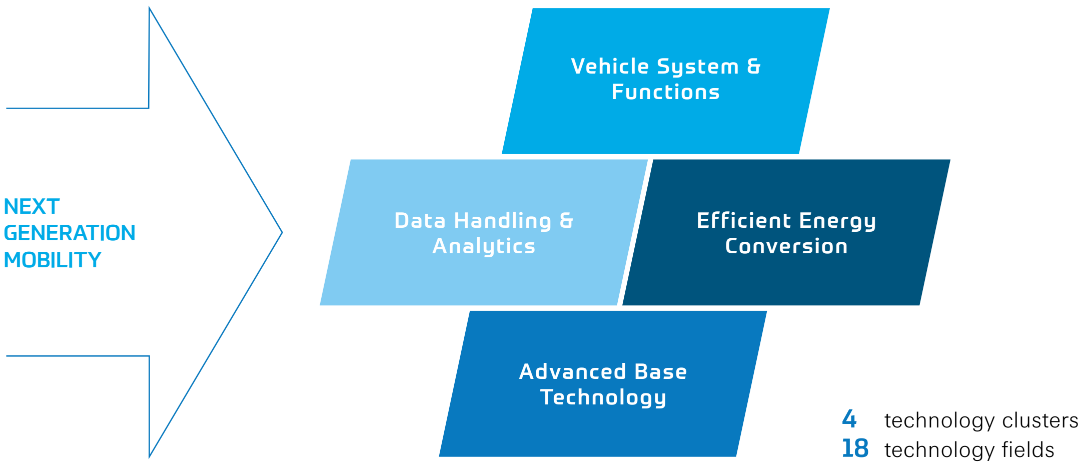
Research & Development

Our objective: new mobility
Implementation of our corporate strategy "Next Generation Mobility" also extends to our global network of research and development centers. Accordingly, we drew on the corporate strategy to develop our "Next Generation Technology" strategy.

Our goal is technology leadership within our industry. Our roadmap to that goal consists of four technology clusters that we have defined as follows:

- Vehicle System & Functions: In the future, vehicles will increasingly be controlled by system functions. This cluster is developing the necessary architectures and software methods as well as the structure of these complex system functions.
- Data Handling & Analytics: This cluster focuses on vehicle connectivity and communication with the infrastructure, from embedded components to the IoT platform necessary for data analysis, and algorithms including artificial intelligence.
- Efficient Energy Conversion: We are researching and developing the efficient storage (batteries, hydrogen/fuel cell) and conversion (frequency changers, electric motors, DC/DC converters) of electrical energy as well as systemic algorithms for optimized vehicle control.

G. 04 Technology strategy



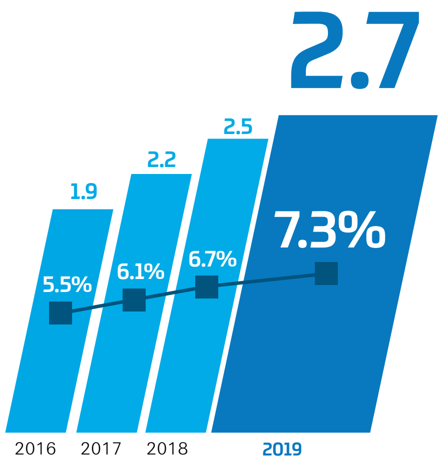
- Advanced Base Technology: This cluster deals with basic technologies that make complex vehicle functions possible, including modern, high-resolution sensors, artificial intelligence, powerful central electronic controls, and cutting-edge materials for efficient power electronics.

Within these four clusters are 18 key technologies that we are pursuing in global research and development.

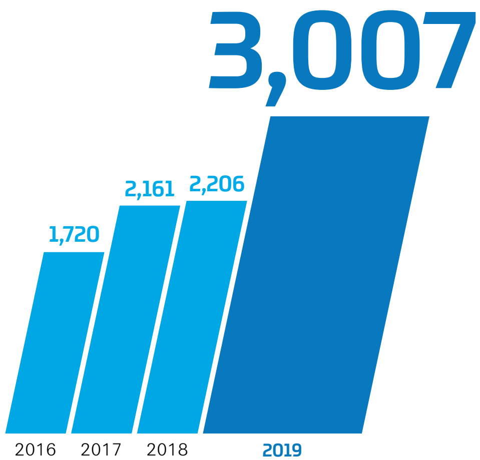
R&D expenditure and staff increased
In 2019, we invested €2,652 million (2018: €2,501 million) in research and development, which is 7.3% of sales (2018: 6.7%). R&D expenditure is defined as research and development costs according to the statement of profit or loss plus capitalized development costs, less their depreciation.

In the past fiscal year, the Group employed around 19,400 people in R&D (2018: 17,100). Of that number, around 3,140 (2018: 2,520) engineers and technicians were working in the Group's basic research and divisional project development departments. ZF's Research and Development Departments have 16 main development locations around the world

G. 05 **R&D expenditure**
in € billion / share of sales in %



G. 06 **Patent applications**



T. 01 **Research and development figures**

	2018	2019	Changes compared to 2018
R&D expenditure in € million	2,501	2,652	6.0%
R&D expenses ratio in %	6.7	7.3	0.6 ppt
Number of patent applications	2,206	3,007	36.3%
Number of R&D employees	17,100	19,409	13.5%

including Friedrichshafen, Koblenz, Schweinfurt, Alfdorf, Düsseldorf, Dielingen, Passau and Auerbach in Germany, as well as Detroit (USA), Shanghai (China), Hyderabad (India), Czestochowa (Poland), Pilsen (Czech Republic), Solihull (UK), Vigo (Spain) and Yokohama (Japan).

Patent applications up significantly
In the year under review, our company units submitted a total of 3,007 patent applications – a significant increase on the previous year. Of these inventions, 1,979 were first-time patent applications.

R&D delivering basic technologies for future-proof products
Our technology strategy is designed to ensure that the technologies we need for future product development are available across the Group. The future of mobility will largely be determined by complex system functions and software. Consequently, in 2019 we laid the groundwork for faster and more comprehensive software development in R&D. Going forward, ZF will also be supplying the automotive sector with software-only products.

Our Software Competence Center, set up in April 2019, brings together all the relevant topics. This new unit is developing basic modules for complex technical functions in a range of applications – for example, a fully automated forklift truck with a barcode-based guidance system. Software will be one of the biggest influencing factors in the future development of vehicle systems, and a key differentiator in achieving higher levels of automation. We intend to help drive that trend.

ZF is also stepping up its attention to data analysis. The first functional version of our IoT cloud platform went live last October, with data storage and analytics functions that network our developers around the world, as well as the use of state-of-the-art development tools.

Since the beginning of 2019, ZF has been investing heavily in setting up centers for artificial intelligence (AI) and cyber security in Friedrichshafen and Saarbrücken (Germany). We also established cooperations with the Helmholtz Center for Information Security (CISPA) and the German Research Center for Artificial Intelligence (DFKI). As part of the “Quality 360” project, we are using artificial intelligence, for example, to set up a predictive model (digital twin) based on real processes so that we can optimize them and detect deviations at an early stage.

Technological foundations

Our technology strategy leverages four strategic technical fields: Vehicle Motion Control, Integrated Safety, Automated Driving and Electromobility – all connected by the common thread of digitalization. In 2019, we laid further foundations in research & development for new products in these fields. Specific examples include:

- **Automated Driving**
In the "ADAS.AI" project, we use artificial intelligence to make the test kilometers driven usable for other test scenarios. This means that camera images can be used for validation in other applications, even if the position of the camera on the vehicle has changed. This can reduce the cost of test kilometers by around 90% for each additional variant, with a corresponding reduction in validation time.

- **Electromobility**
Our new two-speed electric drive for passenger cars integrates a newly developed electric motor with a shift element and appropriate power electronics. The improvement in energy conversion efficiency compared to previous e-drives extends the driving range for each battery charge. And its compact design also makes this new drive system of interest for passenger cars in the compact class.

- **Integrated Safety**
A new pre-crash safety system prototype developed by ZF uses an external side airbag deployed milliseconds before a collision. It provides an additional lateral crumple zone, which can help reduce occupant injury severity by up to 40 percent. To make this possible, ZF has linked the airbags with the vehicle's environment sensors. Algorithms can determine if a crash is imminent and decide whether or not to deploy the airbag.

- **Vehicle Motion Control**
"cubiX" is a central software component that gathers sensor information from the entire vehicle and prepares it for optimized control of active systems in the chassis, steering, brakes and propulsion. Designed with a vendor-agnostic approach, cubiX will support components from ZF as well as third-party components. By connecting multiple vehicle systems such as electric power steering, active rear axle steering, the sMOTION active damping system, driveline control and integrated brake control, cubiX can optimize the behavior of the vehicle from one central source.

Accelerating development through strategic partnerships and investments

Establishing strategic partnerships and equity stakes continues to play a decisive role in our development work – especially in automated driving technologies.

We expanded our skills base again in 2019 with targeted investments, acquiring a 60-percent share of 2getthere B.V. Based in Utrecht (Netherlands) with offices in San Francisco, Dubai and Singapore, the company supplies fully automated transport systems. It is working on applications ranging from automated guided electric vehicle systems for airports, business and theme parks through to dedicated urban transport infrastructures. The company has more than three decades of experience in the autonomous passenger transport market as well as unique engineering and software skills.

In 2019 we entered additional strategic partnerships with technology companies to continue expanding our electromobility and artificial intelligence development network.

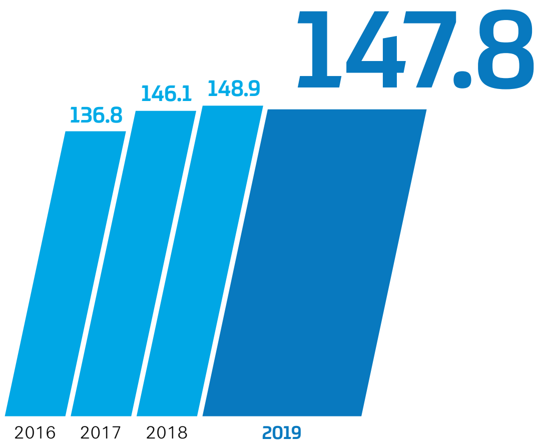
Employees

Number of employees remains stable

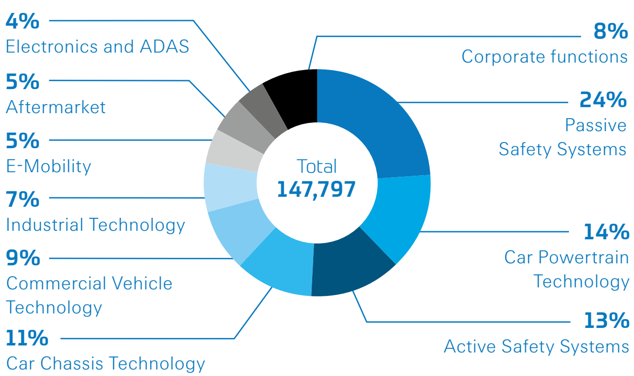
As of December 31, 2019, ZF employees worldwide numbered 147,797 (2018: 148,969). While additional employees were hired in the research and development area, employee numbers in production and production-related fields were adjusted as a consequence of the market development in the automotive industry. Contrary to our expectations, employee numbers slightly declined compared to the prior year. The largest share of employees work in Europe, most of them in Germany (50,864). On the key date, the percentage of women in the ZF Group amounted to 27 percent. Temporary workers numbered 12,429 in the year under review (2018: 12,421).

At the end of 2019, we employed some 2,500 apprentices worldwide. This young target group can choose between 25 apprentice professions and ten dual work-study courses. With roughly 2,000 apprentices and students in the

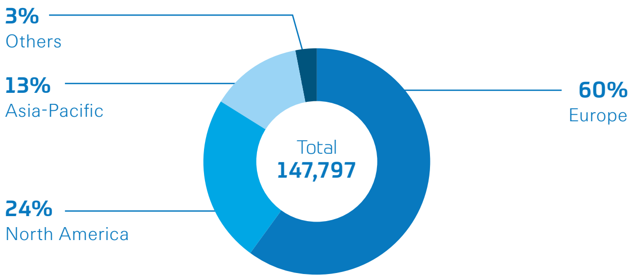
G. 07 Employees
in thousand



G. 08 **Employees by division**



G. 09 **Employees by region**



dual program in Germany (2018: approximately 2,100), ZF Friedrichshafen AG ranks among Germany's largest providers of training and apprenticeship opportunities. In the year under review, some 628 young people started an apprenticeship or dual work-study program at ZF in Germany.

Continued focus on employee qualifications
Due to progressive digitalization, employees and graduates specializing in software and IT are becoming increasingly important for the automotive industry. In order to develop and manufacture intelligent mechanical products, we need workers not only from traditional occupations, but also employees who can meet entirely new job specifications. This is also enabled by a global qualification program which is based on the corporate strategy. Key subjects include artificial intelligence, electromobility and autonomous driving functions.

Activities to retain and attract employees
In order to hold on to our existing employees and attract new recruits, we offer various incentives to our staff. Apart from an international work environment and attractive social benefits, our employees can also use options such as flexible hours and sabbaticals. Enjoying a good reputation both with existing staff and potential recruits, we were able to further increase our attractiveness as an employer in the year under review. This is confirmed by the current ranking established by Universum's market researchers. In the Engineering category for Germany, ZF climbed from position 14 to 11 in the external professionals ranking.

Procurement, production, sales

Procurement: global network of suppliers
As a manufacturer, ZF generates a large part of its value creation with the production and supply of components. Correspondingly, a major focus once again in 2019 was on systematically securing supplies. For the procurement process, our Group maintains a global network of suppliers of different sizes. Our partners supply raw materials as well as producing basic components and component products. They also develop systems which we integrate into ZF solutions.

We regularly check our suppliers for compliance with our quality requirements. Furthermore, we require all suppliers to comply with our Business Partner Principles (BPP). These define basic sustainability requirements for cooperation and among other things address human rights, working standards, environmental protection, responsible raw materials procurement, business ethics and compliance.

Production: compliance with quantity and quality criteria
Our production network includes 161 production plants at 137 production locations in 27 countries. Europe is the largest production region. Processes and materials must comply with all of our quality, safety and environmental protection standards. All production locations use the EHS Management System (Environment, Health and Safety) to manage environmental protection and occupational health and safety, thereby ensuring that production in the plants is environmentally compliant in line with defined targets.

Sales: new structure strengthens customer proximity
Our components and systems increasingly offer our customers ever more complex vehicle functions. In response to these requirements and with the participation of our key accounts, we restructured our sales organization in 2019. In this global key-account management organization, Key Account Executives (KAEs) manage their customer accounts with an entrepreneurial approach. They are responsible for customer-specific results and function as sparring partners for the divisions. Our internal Sales Academy supports the establishment of the new key-account management organization by providing corresponding training.

Our Aftermarket Division draws on an international service network of around 130 service locations and 650 service partners. Our offers include services for fleets, exchange units and maintenance, as well as intelligent connectivity solutions plus upgrades and retrofits for more efficiency, comfort and safety. In addition, we develop workshop concepts that provide the technical know-how needed for diagnosis, maintenance and repair of our components.

Environmental protection, occupational health and safety

Commitment to sustainable occupational safety and health and environmental protection
Responsibility for environmental protection as well as the safety of our employees and partners is reflected in the Environment, Health and Safety (EHS) Policy approved by the Board of Management as well as the corresponding targets.

Systematic environmental management according to ISO 14001 is the standard for all production and main development locations. External expert audits confirm that the participating locations conform to current environmental, occupational health and safety legislation as well as certification standards. When it comes to production processes, new manufacturing technologies with a focus on energy efficiency as well as product-related environmental concerns are gaining in importance.

Through innovative products and state-of-the-art production technologies with a special focus on energy efficiency, ZF has succeeded in sustainably reducing the unfavorable environmental impacts resulting from its business activities and the use of ZF products. High technical environmental standards have been implemented at all production plants. Product-related environmental issues are gaining in importance and an internal development directive guarantees that environmental protection procedures are integrated into all product development processes.

Climate protection strategy developed
In 2019, we developed a climate protection strategy for our Group based on the corporate carbon footprint (CCF) principle. This commits ZF to significantly reducing greenhouse gas emissions, especially CO_2, from our plant operations by 2040. Our concrete goal is that we will be climate neutral according to the criteria of the UN Intergovernmental Panel on Climate Change by 2040. To achieve this, we will expand our existing energy efficiency programs as well as strategically enhance the in-house generation of renewable energies and the transition to green energy.

We have already achieved absolute reductions in energy consumption and CO_2 emissions from our plant operations. This is a good starting point for our future adherence to the new climate protection strategy, which takes into account the 1.5 degree target of the Paris Climate Agreement.

CCF footprint reported for the first time
The reporting year was the first time the upstream and downstream processes (purchased items, product utilization etc.) were reported in the form of a corporate carbon footprint (CCF). In this context, the current supplier evaluation is being enhanced to incorporate the CO_2 strategy.

As part of the Carbon Disclosure Project (CDP), ZF was able to report on progress in reducing greenhouse gas emissions in 2019, and achieved a rating of Level B-. With the emissions evaluation, the Group is helping to improve CO_2 emissions transparency in vehicle manufacturing. As part of the CDP project, ZF also reported on projects for conserving water at production locations suffering from water shortages, like South Africa.

Certification projects strengthen occupational safety and health
All ZF locations use a systematic occupational safety and health management system in line with the corporate standard. ZF customers are consistently pushing for certifications of occupational health and safety, for instance, according to the ISO 45000 standard. To continue to ensure that ZF meets the requirements of certifiability, further certification projects were initiated, continued and completed at various locations.

Since 2017, and especially true in 2019, ZF has been focusing on behavior-related workplace safety and the role executive managers play in influencing the behavior of employees. A workshop concept was designed on this topic and rolled out at all locations. Last but not least, these efforts helped ZF to again significantly reduce the frequency of accidents in LTAR (Lost Time Accident Rate). You can also find further information on environmental protection, occupational health and safety in ZF's Sustainability Report under **www.zf.com**

ECONOMIC REPORT

MARKET AND INDUSTRY ENVIRONMENT

Global economy losing momentum
In 2019, global economic growth witnessed a wide-spread downturn with the growth rate slumping to 3.0%. This has been the lowest recorded growth since the financial crisis in 2008/2009. The reason behind the stagnation was that the economic climate has remained subdued over the last two years in face of a decline in trading and investment activities alongside increasing political uncertainties.

In most industrialized countries, GDP growth in 2019 was down on last year, particularly in the eurozone with growth at 1.2% and in the United States at 2.3%. China's growth also weakened to 6.2% where political interventions to curb the country's debt burden and the economic consequences of growing trade tensions have been felt on the overall demand.

Growth in India dropped to 5.0% in 2019. Here, a corporate and environmental regulatory uncertainty coupled with doubts about the strength of the financial sector have burdened domestic demand. Other emerging countries – including Russia with a GDP growth of 1.4% and Mexico with −0.1% – saw significantly less growth in 2019 than in the previous fiscal year and were below their previously generated average growth rates.

The decline in industrial production partly due to global trade tensions and political uncertainties in many areas are to blame for this sluggish economy, coupled with a significant drop in global vehicle production. Investment activities were also hampered by the continued absence of a clear political strategy on how to tackle climate change.

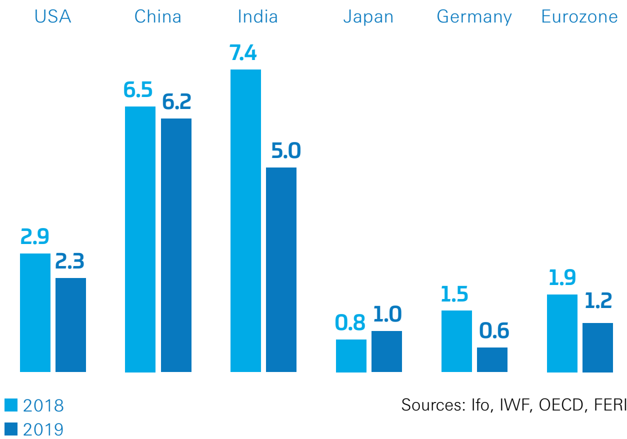
In 2019, international financial markets were impacted by shifting political risk assessments as well as the monetary policy decisions of the central banks. In the U.S., the Federal Reserve cut interest rates three times over the course of the year by a total of 0.75 percentage points. The European Central Bank also reacted in the fall by slashing interest rates to −0.5% while also resuming bond purchases.

ZF markets under pressure
After the previous high of 95 million cars and light commercial vehicles in 2017, production in 2018 was already down slightly by −1%, largely due to a sharp final-quarter slowdown in China in 2018, the first market to show a negative trend.

The worldwide production of passenger cars faced an even stronger decline in 2019: The number of vehicles produced worldwide dropped by 6% to 89 million vehicles, causing virtually all markets to see a recession. While Europe and North and South America recorded relatively moderate recession rates of −5% and −4% respectively, the demand of end customers in the world's largest markets, India and China, slumped more sharply by −12% and −8% respectively.

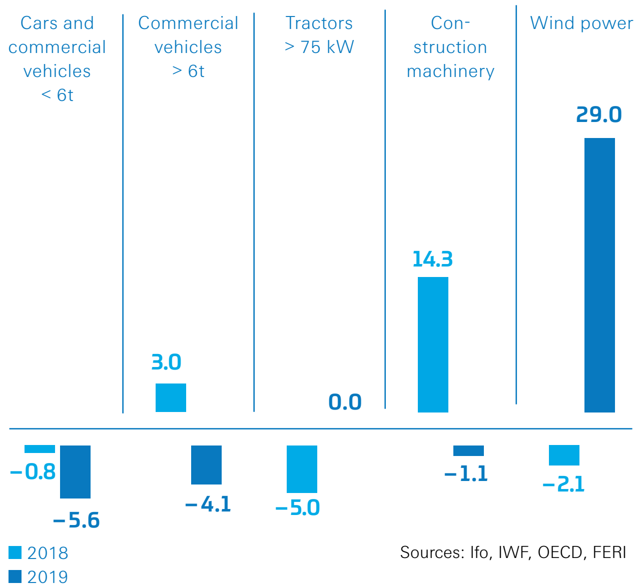
The start of 2019 also saw the market for HCVs over 6 tons shift into reverse: Following years of growth (2017: +16%; 2018: +3%), vehicle production fell by 4% to 3.6 million units, 160,000 units less than in the previous year. India recorded the worst downturn with −33%. Key factors influencing this decline included the precarious financing conditions, high stocks and pending emission control regulations. In Europe, production dropped by 7%. China was far more resilient than expected. Despite predictions of a decline, China had generated a 3% increase by the end of the year. North and South America recorded above-average results, with an increase in production of 6% and 4% respectively.

G. 10 GDP growth 2018–2019
in %



Sources: Ifo, IWF, OECD, FERI

G. 11 Development of ZF's industries 2018–2019
in %



Sources: Ifo, IWF, OECD, FERI

The markets in the non-automotive sector proved relatively stable over the course of 2019. The global production of agricultural machinery above 75 kW was on a par with the previous year, although both China and Europe saw a negative development of −3% and −2% respectively. In contrast, North America sustained the previous year's level while South America even recorded double-digit growth. Production of construction machinery dropped on a global scale by 1%, with a 5% growth on the Chinese market, a marginal 1% drop in Europe and a sharper decline of 8% in North America. The wind power segment gained considerable momentum with a year-on-year increase of one third in installed gigawatts. Only Germany and India were forced to accept significant losses; all other key markets, including Europe and North America, grew exponentially by 30% to 40%. China, too, developed positively with growth of over 30%.

OVERALL DEVELOPMENT OF THE GROUP

Overview of the business trend and overall statement on business performance from the Board of Management

For ZF, 2019 was dominated by the rollout of its "Next Generation Mobility" strategy and the economic development in the automotive industry. The global decline of markets and uncertainties attributed to Brexit and trade conflicts led to sales and profits for the fiscal year falling below the initial expectations.

Despite facing complex market developments, ZF was able to continue advancing its strategy in 2019 and increased investments in future technologies, especially in electromobility and autonomous driving. One key milestone in pursuit of this development was the acquisition of WABCO Holdings Inc. (WABCO) initiated in 2019. The acquisition of this company will enable ZF to become the leading systems supplier in the commercial vehicle segment. The financing of this planned company takeover was secured by several transactions made in 2019.

The forecast for the last fiscal year issued at the start of 2019, which predicted sales between €37 and €38 billion, an adjusted EBIT between 5% and 5.5% and an adjusted free cash flow of approximately €1 billion was adjusted at the start of August 2019 in line with the altered economic situation.

In the face of a difficult market environment for the automotive industry, ZF managed to achieve its adjusted sales target (between €36 and €37 billion). As regards sales, ZF's figure of €36.5 billion was slightly below last year's result. After adjusting for exchange rate influence and M&A activities, sales decreased by 1.9%. In spite of this drop, sales are still above the average development of the markets and specifically of the automotive market.

The adjusted EBIT of €1.5 billion is attributed to investments in the future with increased costs for research and development as well as the establishment of new locations specializing in future technologies. The effects of the economic downturn in the automotive industry are also leaving their mark on the result. The adjusted EBIT margin of 4.1% is at the bottom end of the adjusted forecast (between 4% and 5%).

The adjusted free cash flow amounted to €0.8 billion and was therefore within the adjusted forecast (between €0.5 and €1.0 billion).

Against the backdrop of the market environment in the automotive industry, the establishment of new locations particularly in the electromobility segment as well as a further increase in research and development costs, we concentrated our attention in the Group on stabilizing the profit situation. Another focus was the planned acquisition of WABCO and its financing.

The drop in equity ratio to 22.0% was largely driven by the increase in total assets resulting from capital market transactions. The ZF Group rests on a solid financial foundation thanks to its long-term oriented financing, cash and cash equivalents of €2.3 billion, current securities of €2.6 billion as well as affirmed and unused credit lines of €6.1 billion at Group level.

ZF's credit rating agencies, Moody's and Standard & Poor's, affirmed the investment grade ratings on the announcement of the WABCO transaction. The agencies rated the transaction to be positive from a strategic perspective. The rating agencies have taken account of the higher debt burden expected from the acquisition by adjusting the company's rating outlook to "negative".

Against the backdrop of a secured liquidity and financial basis as well as stable business performance, the Board of Management considers the economic situation of the consolidated ZF Group to be positive on the whole.

RESULTS OF OPERATIONS, NET ASSETS AND FINANCIAL POSITION

Preliminary remark
The intention to acquire WABCO was confirmed by the WABCO shareholders with an approval rate of 68.44% on June 27, 2019. The financing of the purchase price was secured initially by concluding a credit line. In the second half of 2019, this credit line was replaced in part by two large successful capital market transactions. These transactions comprised the issue of bonded loans as well as the issue of a corporate bond denominated in euros.

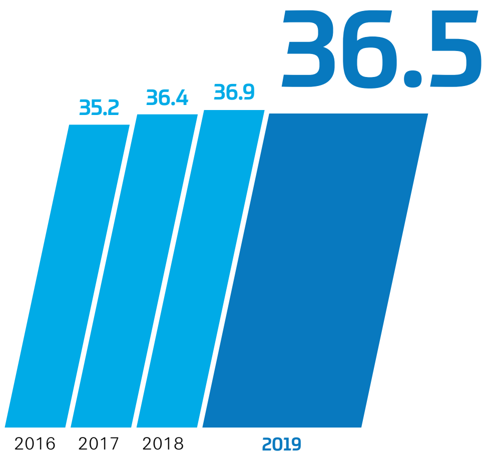
In the wake of the strategic reorientation of the consolidated ZF Group, the Group's structure was adjusted as of January 1, 2019. For this purpose, the Active & Passive Safety Technology Division was divided into three Divisions: Passive Safety Systems, Active Safety Systems, and Electronics and ADAS.

T.02 Statement of profit or loss

in € million	2019	%	2018 adjusted	%
Sales	36,518	100.0%	36,929	100.0%
Cost of sales	–30,768	–84.3%	–30,827	–83.5%
Gross profit on sales	**5,750**	**15.7%**	**6,102**	**16.5%**
Research and development costs	– 2,270	– 6.2%	– 2,158	–5.9%
Selling and administrative expenses	– 2,579	– 7.1%	– 2,593	–7.0%
Other income and expenses	– 17	0.0%	39	0.1%
Net result from participations	43	0.1%	147	0.4%
EBIT	**927**	**2.5%**	**1,537**	**4.1%**
Net financial result	– 387	–1.0%	– 309	–0.8%
Net profit or loss before tax	**540**	**1.5%**	**1,228**	**3.3%**
Income taxes	–140	–25.9%	–261	–21.3%
Net profit or loss after tax	**400**	**1.1%**	**967**	**2.6%**

G.13 Sales development

in € billion



The first-time application of the financial reporting standard IFRS 16 (Leases) led to an increase of total assets as a result of the capitalization of right-of-use assets from previously unrecognized lease agreements and the associated liabilities.

In addition, the recognition of long-service awards was changed in the fiscal year. Right from the beginning, these awards are recognized as pension provisions to the extent that they include retirement benefit elements.

The effects on the consolidated financial statements are explained in detail in the notes to the consolidated financial statements in the "Accounting policies" section in the paragraph "Changes in accounting policies."

The previous year's comparative figures in the group management report were adjusted to provide for a better understanding.

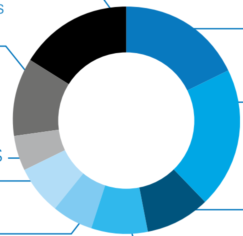
Results of operations

Group sales almost on prior-year level
In the fiscal year 2019, the ZF Group generated sales of €36,518 million (2018: €36,929 million). Accordingly, sales were within the range of the forecast revised in mid-year. The decline in sales of around €400 million compared to the prior year is mainly attributable to the economic slowdown in the automotive industry, the uncertainties surrounding Brexit as well as the trade disputes between the USA and China. Adjusted by M&A activities as well as positive exchange rate effects, this leads to an organic sales decline of 1.9%.

T. 03 Sales development by division

in € million	2019	2018 adjusted	Changes compared to 2018
Car Powertrain Technology	7,312	7,775	−6.0%
Car Chassis Technology	7,684	7,876	−2.4%
Commercial Vehicle Technology	3,701	3,720	−0.5%
Industrial Technology	2,990	2,782	7.5%
E-Mobility	2,346	2,195	6.9%
Active Safety Systems	6,303	6,559	−3.9%
Passive Safety Systems	4,337	4,125	5.1%
Electronics and ADAS	1,848	1,666	10.9%
Aftermarket	2,929	2,975	−1.5%
Corporate Functions	327	321	1.9%
− Consolidation	−3,259	−3,065	
Total	**36,518**	**36,929**	−1.1%

G. 14 2019 sales by division



Divisions develop differently
Sales in the Car Powertrain Technology Division amounted to €7,312 million (2018: €7,775 million) in the fiscal year 2019. The decline by approximately €460 million is attributable to the reduced global vehicle production. The lower demand in the passenger car market also had an effect on the Car Chassis Technology Division. The annual sales of €7,684 million (2018: €7,876 million) are 2.4% below the previous year's level.

Sales in the Commercial Vehicle Technology Division amounted to €3,701 million (2018: €3,720 million). The weaker demand in the second half could be largely offset by the roll-out of a joint venture in China as well as by a higher demand for bus technology. Accordingly, sales were roughly on the prior-year level.

In the fiscal year 2019, sales of the Industrial Technology Division amounted to €2,990 million, representing an increase of 7.5% (2018: €2,782 million). The main reason for this increase is a stronger demand for wind power technology and off-highway systems.

Despite the negative market environment, the E-Mobility Division continued to grow and recorded sales of €2,346 million (2018: €2,195 million).

Due to the effects of a decline in production in the passenger car market, sales in the Active Safety Systems Division in the fiscal year 2019 amounted to €6,303 million (2018: €6,559 million).

Both the Passive Safety Systems Division and the Electronics and ADAS Division grew despite the market decline. The driver for this development was, among other things, the rise in demand for airbags and camera systems. The Passive Safety Systems Division generated sales of €4,337 million, representing an increase of €212 million over the prior-year sales of €4,125 million. With sales of €1,848 million, the Electronics and ADAS Division achieved growth of around 11% (2018: €1,666 million).

In the past fiscal year 2019, the sales of the Aftermarket Division amounted to €2,929 million (2018: €2,975 million), thus almost reaching the previous year's level.

Regional distribution of sales
The economic slowdown, the uncertainty surrounding Brexit as well as the trade disputes between the USA and China also had an effect on our regional sales development.

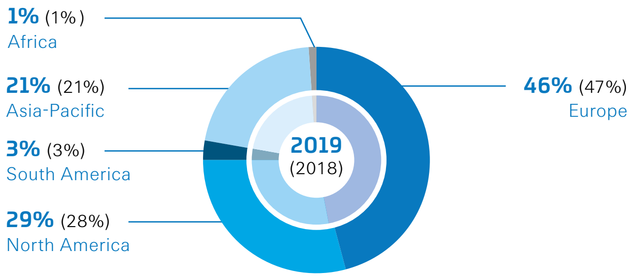
The market development in Europe varies depending on country and segment. While the passenger car production in the fiscal year 2019 fell by approximately 5%, accumulated production figures for heavy commercial vehicles declined by around 7%. Overall, ZF's organic sales in Europe decreased by 3% to €16,698 million (2018: €17,390 million).

T. 04 Sales development by region[1]

in € million	2019	2018	Change
Europe	16,698	17,390	– 4.0%
North America	10,436	10,264	1.7%
South America	1,068	1,034	3.3%
Asia-Pacific	7,847	8,008	– 2.0%
Africa	469	233	101.3%
Total	**36,518**	**36,929**	**– 1.1%**

1) Sales by target country

G. 15 Sales by region[1]



1) Sales by target country

In North America, sales declined organically by 1.9%. In the USA, the light vehicle market declined by around 4% in the year under review. Thus, ZF achieved an outperformance in the overall declining passenger car market.

With sales of €7,847 million (2018: €8,008 million), the Asia-Pacific Region declined organically by around 3% over the previous year. In China, the country with the largest market share in the region, the production of passenger cars in the entire fiscal year 2019 fell by approximately 8% year-on-year. The consumer restraint, which had already started in the fourth quarter of 2018, continued in 2019.

Sales in South America amounted to €1,068 million in the year under review, which is above the previous year's level of €1,034 million. The recovery of the markets, especially in Brazil, led to a positive organic growth in this region of 9%.

The distribution of sales by region only showed minor changes compared to the sales in the prior year. The top-selling region was again Europe, accounting for 46%, followed by North America with 29% and Asia-Pacific with 21%. The Region of South America with a sales share of 3% and the Region of Africa with a share of 1% remained unchanged from the prior year.

Gross margin of around 16%

Gross profit on sales amounted to €5,750 million (2018: €6,102 million), which is equivalent to a gross margin of 15.7% (2018: 16.5%). This decline is above all the result of lower sales due to the weakened markets. In addition, higher depreciation as a result of the increased investing activities had an effect. Furthermore, structural costs, which were catered to growth, affected the gross margin. The implementation of the measures to adjust costs led to an improvement of the earnings quality, especially in the second half of the year. Research and development costs amounted to €2,270 million (2018: €2,158 million). The increase by €112 million compared to the prior year highlights the implementation of the corporate strategy to strengthen the defined future technologies.

Selling and administrative expenses changed only slightly compared to the previous year, with an overall ratio to sales of 7.1% (2018: 7.0%).

The net result from participations amounts to €43 million in the year under review (2018: €147 million). In the prior year, the measurement of participations at fair value had a notable effect.

Adjusted EBIT margin at 4.1%

EBIT totaled €927 million in the year under review (2018: €1,537 million). Adjusted by extraordinary items relating to the purchase price allocation from the TRW acquisition in the amount of €531 million, restructuring costs of €34 million and M&A costs of €11 million, the adjusted EBIT margin was 4.1% (2018: 5.6%). Accordingly, the margin was at the low end of the 4–5% range expected at mid-year, mainly due to higher research and development expenses, start-up costs for new plants especially for E-Mobility and the cost structures, which were defined by growth at the beginning of the year.

The net financial result fell from €– 309 million to €– 387 million, largely due to higher loss allowances for financial assets.

Tax expenses amounted to €140 million in 2019, compared with €261 million in the previous year. This corresponds to an income tax rate of 25.9% (2018: 21.3%).

Net assets and financial position

IFRS 16 affects the presentation of property, plant and equipment and financial liabilities
The financial reporting standard IFRS 16 (Leases) required to be applied as of January 1, 2019, leads to the recognition of previously unrecognized right-of-use assets from leases under property, plant and equipment in the amount of €625 million and the recognition of the corresponding liabilities under financial liabilities.

Slight increase in total assets
The increase in total assets to €32,350 million (2018: €27,720 million) is primarily attributable to capital market transactions carried out in the year under review to finance the planned acquisition of WABCO.

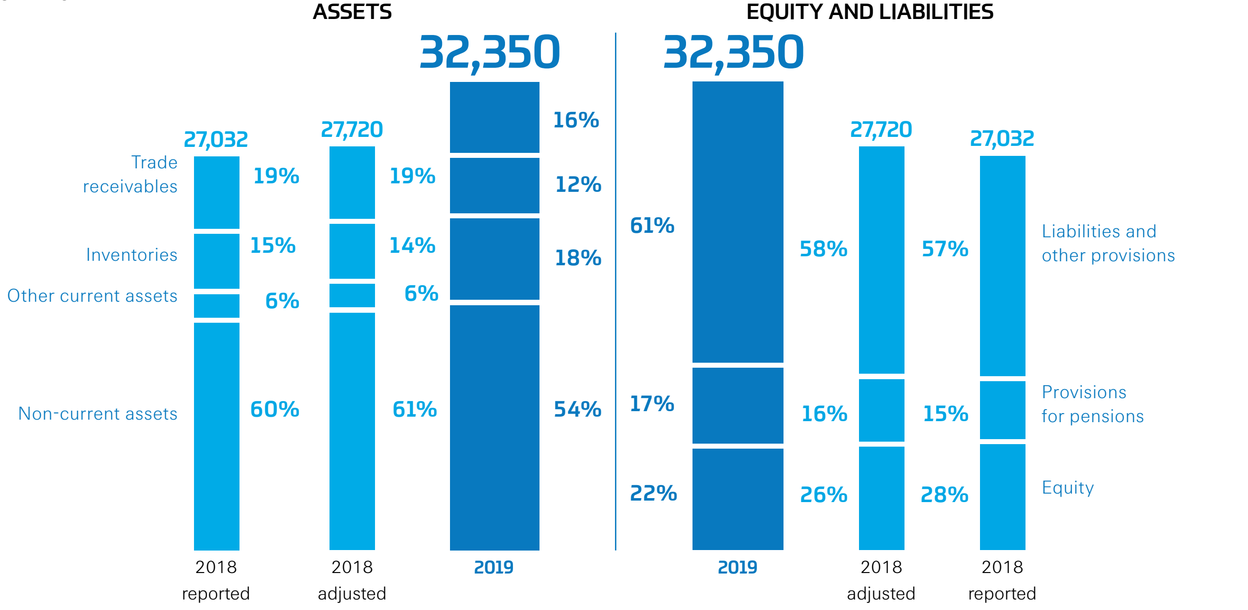
Current assets increased by €4,081 million to €14,816 million (2018: €10,735 million) due to the cash inflow from capital market transactions and the related increase in cash and cash equivalents to €2,302 million (2018: €922 million) as well as in current financial assets to €2,824 million (2018: €84 million). The payment of the purchase price for the WABCO acquisition will be made upon closing, which is expected for spring 2020.

Trade receivables amounted to €5,041 million as of December 31, 2019, thus only slightly below the prior-year level.

Non-current assets increased by €549 million to €17,534 million (2018: €16,985 million). Apart from deferred tax assets, property, plant and equipment rose by €414 million due to the intensified investing activities. In contrast, intangible assets declined to €6,841 million (2018: €7,205 million). This reduction is primarily attributable to amortization of hidden reserves identified within the framework of the purchase price allocation concerning the TRW acquisition.

Investment ratio climbs considerably
In the past fiscal year, investments in property, plant and equipment amounted to €1,879 million (2018: €1,586 million). The investment ratio of 5.2% of sales was clearly above the prior-year level (4.3%).

G. 16 Consolidated statement of financial position
in € million

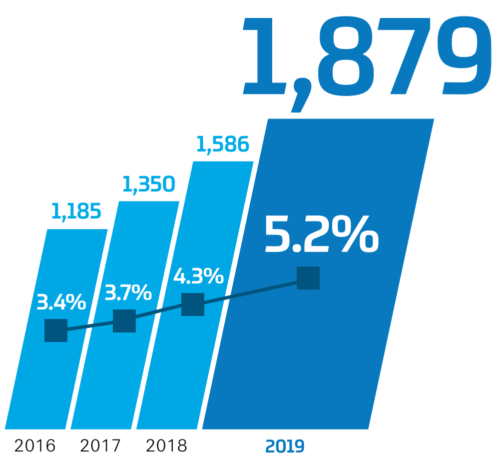


Of the capital expenditure, 44.5% was spent on payments in advance and construction in progress, 34.1% was spent on technical equipment and machines, 12.1% on other equipment, factory and office equipment, and 9.3% on land and buildings.

In geographical terms, capital expenditure focused on Europe (59%), followed by North America (21%) and Asia-Pacific (18%).

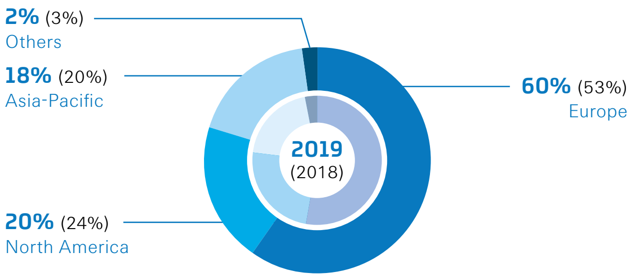
Capital expenditure related to the expansion of capacities for existing products and the ramp-up of new products. It also related to the traditional businesses such as transmission applications (including hybridization), chassis systems, electronics, damper modules, brakes, steering systems and additional safety technology as well as to new technological areas such as electromobility and autonomous driving. In addition,

G. 17 Investments and investment ratio
in € million / in %



capital was spent on the construction or the expansion of production and development buildings in existing locations (e.g. Pilsen (Czech Republic)).

G. 18 **Investments by region**



Gross debt rises
Current and non-current financial liabilities amounted to €9,689 million as of December 31, 2019 (2018: €5,731 million). Without considering the change of derivative financial instruments, there was an increase in gross debt year-on-year by €3,966 million due to the capital market transactions carried out during the year under review.

The planned acquisition of WABCO was secured by concluding a credit line in the amount of €7.3 billion. The credit line originally consisted of three tranches in the amount of €4.8 billion (term until 2021 at the maximum), €1.0 billion (term until 2022) as well as €1.5 billion (term until 2024). The €4.8 billion tranche has already been largely replaced through the issue of bonded loans as well as euro bonds. As of December 31, 2019, the tranches remaining under the credit line remained fully unused. The bonded loans had a nominal amount totaling €2,057 million and were issued in October 2019 by ZF Friedrichshafen AG. The total amount includes forward tranches amounting to €382 million, which were disbursed in January and February 2020, respectively. The bonded loans are divided into fixed and variable rate tranches with terms of three, five, seven and ten years from disbursement. The euro bonds that were also newly issued in October 2019 have a nominal amount of €2,700 million and are entirely fixed rate bonds. The terms of the tranches amount to four, six, eight and ten years. The bonds were issued via ZF Europe Finance B.V., a wholly-owned subsidiary of ZF Friedrichshafen AG.

The additional financial liabilities primarily result from the financing of the TRW acquisition in 2015. The financial instruments issued in this context are euro and U.S. dollar-denominated bonds with final maturities from 2020 to 2025 and a nominal amount outstanding as of the reporting date of €1,075 million for the euro bonds and $2,247 million for the US dollar bonds (2018: €1,075 million and $2,247 million, respectively) and bonded loans with final maturities in 2020 or 2022, respectively, and an outstanding nominal amount of €755 million (2018: €894 million). Both the bonds mentioned and the bonded loans bear fixed interest.

In addition, a variable interest-bearing loan in the amount of €500 million was taken out at the European Investment Bank in the fiscal year 2018. The loan has to be repaid in 2024 at the latest. The syndicated loan that was refinanced in 2016 and had a remaining amount of €3.0 billion in the form of a revolving credit line was unused as of the reporting date. The credit line has a residual term until July 2023.

Against the backdrop of the corporate goal to be financially independent, ZF is aiming at a stable investment grade rating. As of the reporting date, ZF had company and bond ratings of Baa3 with a negative outlook from Moody's and BBB- from Standard and Poor's, also with a negative outlook. Compared to the previous reporting date, the ratings continued to be in the investment grade area, however, the outlook was changed by each of the rating agencies from stable to negative. The background for this is primarily the increased indebtedness in connection with the planned WABCO acquisition as well as the agencies' reduced expectations for growth for the automotive industry as a whole.

Trade payables amounted to €5,462 million as of the reporting date, hence roughly on the previous year's level (2018: €5,507 million). Provisions for pensions amounted to €5,348 million as of December 31, 2019 (2018: €4,389 million). The increase largely resulted from the reduction of the discount rate in Germany used for the measurement of the pensions to 1.2% (2018: 2.0%).

Equity ratio amounts to 22.0%
As of December 31, 2019, Group equity, including non-controlling interests, amounted to €7,106 million (2018: €7,276 million). Dividends paid to the shareholders of ZF Friedrichshafen AG (€162 million, 2018: €195 million) and to holders of non-controlling interests (€37 million, 2018: €66 million) reduced equity. In addition, there are actuarial losses from the measurement of provisions for pensions in the amount of €647 million. In turn, equity mainly increased due to the net profit after tax in the amount of €400 million as well as the foreign currency translation differences of €151 million. Another positive effect came from the mark-to-market of financial instruments in the amount of €133 million, primarily relating to the currency hedge of the US dollar purchase price for WABCO. The equity ratio declined to 22.0%, above all due to the increase of total assets (2018: 26.2%).

Adjusted free cash flow at €803 million
In the year under review, the application of IFRS 16 (Leases) resulted in an increase in the cash flow from operating activities by approximately €157 million due to the change in the recognition of lease payments. In addition, there was a corresponding increase in expenditures in the cash flow from financing activities.

Taking into account effects of exchange rate changes (€13 million), the cash position was increased in the year under review from €922 million to €2,402 million as of year-end.

The cash flow from operating activities mainly increased due to lower income taxes paid and a positive change in working capital to €2,439 million (2018: €2,389 million). The decline in result had a negative impact. The payment of the anti-trust fine of €188 million to the European Commission also reduced cash flow.

The cash flow from investing activities amounted to €– 4,183 million (2018: €– 842 million). The previous year benefited particularly from the cash inflow from the sale of the Global Body Control Systems Business Unit. The operating drivers in the current reporting year are higher investments in property, plant and equipment. A negative effect came from investments in securities in the amount of approximately €2,500 million, reflecting the cash inflow from the capital transactions in connection with the planned WABCO acquisition which was used for short-term investments in special funds, as well as capital expenditures for future technologies such as the acquisition of SIMI Reality Motion Systems GmbH. The sale of Haldex shares in September 2019 had a positive effect.

As a result, the free cash flow amounts to €– 1,744 million compared to €1,547 million in 2018. The free cash flow, adjusted by cash inflows and outflows in connection with M&A activities in the amount of €47 million and investments in securities in the amount of €2,500 million, amounts to €803 million (2018: €891 million).

The cash flow from financing activities amounted to €3,211 million in the past fiscal year (2018: €– 1,942 million). The cash inflow in the fiscal year 2019 primarily results from the financing instruments taken out in connection with the planned WABCO acquisition. The balance from repayments and new borrowings of financial debt amounted to €3,718 million (2018: €– 1,485 million). Of that amount, €1,675 million are attributable to the bonded loan issued by ZF Friedrichshafen AG in October 2019 and €2,700 million to the euro bonds which were newly issued also in October. Interest paid and transaction costs rose from €230 million to €298 million in the fiscal year 2019, primarily due to the financing transactions in the context of the planned WABCO acquisition and the initial application of IFRS 16.

The net financial position was €– 4,748 million (2018: €–4,759 million) as of the reporting date. It consists of current and non-current financial liabilities excluding derivative financial instruments, less cash and cash equivalents as well as securities recorded as financial assets.

T. 05 Consolidated statement of cash flows

in € million	2019	2018
Cash flow from operating activities	2,439	2,389
Cash flow from investing activities	– 4,183	– 842
Free cash flow	**– 1,744**	**1,547**
Cash flow from financing activities	3,211	– 1,942
Net change in cash	**1,467**	**– 395**
Cash position at the beginning of the fiscal year	922	1,342
Changes in cash position from exchange rate effects	13	– 7
Cash position at the end of the fiscal year	**2,402**	**922**

OPPORTUNITIES AND RISKS

OPPORTUNITY AND RISK MANAGEMENT

Opportunity and risk management system

Our corporate management is geared toward generating added value, by which we mean sustaining the continued existence of the Group and its business units, and increasing their value. To achieve this, we weigh the opportunities and inherent risks that arise in the complex business environment we inhabit. ZF defines risk as any event that may result in a negative deviation from the business plan. In contrast, opportunities are events that may result in the Group exceeding its targets.

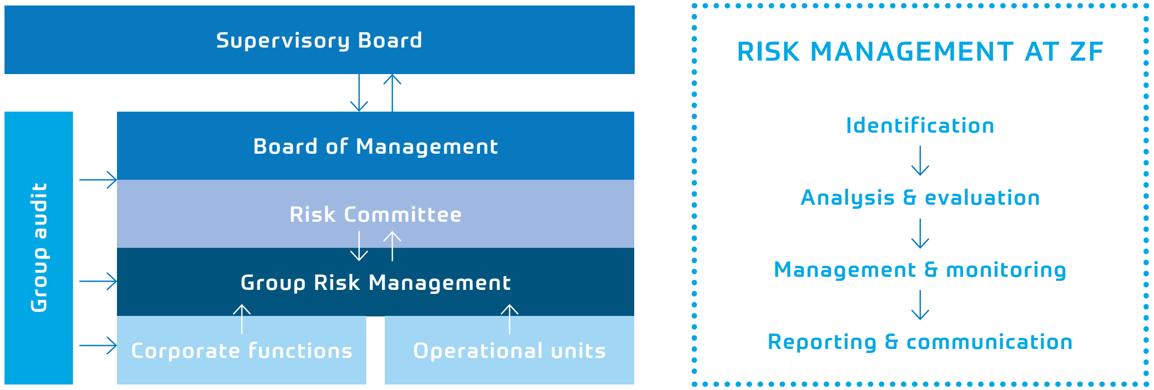
Our risk management system aims to identify and take opportunities as early as possible while preempting risks that could adversely affect the value of our activities by identifying them early, assessing them appropriately and initiating suitable measures with which to manage them.

The framework conditions for this, as well as the responsibilities and processes of the risk management system, are laid down in a Group-wide directive approved by the Board of Management. It is accessible to all employees and is subject to regular review by Group Risk Management, which also ensures compliance with the directive.

Group Risk Management provides the structure, methods and techniques for the risk management process and coordinates it at Group level. This means that the opportunity and risk management system is integrated in the strategic, planning, management and reporting processes of all corporate functions and operational reporting units.

The Board of Management has overall responsibility for the risk management system and reports at least quarterly to the Supervisory Board about the main opportunities and risks

G. 19 Risk management at ZF



identified. The Supervisory Board is responsible for monitoring the Board of Management and, as part of that remit, oversees the effectiveness of the risk management system.

At Group level, the Risk Committee, chaired by the board member responsible for finance, IT and M&A, is tasked, among other things, with evaluating ZF's cross-divisional and cross-functional risk situation.

Corporate Audit regularly reviews the implementation and effectiveness of risk management. In addition, the external auditors check our early risk detection system as part of the annual Group audit.

Risk evaluation and reporting

The Board of Management and the Risk Committee continuously monitor ZF's opportunity and risk situation based on quarterly risk identification, evaluation and reporting by the corporate functions and operational units. The identified risks are summarized at division and Group level and tracked in coordination with the corporate functions involved.

The three-year review period for the risk assessment is based on operational planning, with the focus on the current year. Risks and their impacts are chiefly assessed using quantitative criteria based on the gross principle, i.e., before operational risk treatment. Taking all the reported risks and based on their probability of occurrence and the potential extent of the losses relative to the planned profit indicators in the period under review, we identify the major individual risks to the Group. Major risk criteria are defined by thresholds set by the Board of Management. We include opportunities if they have a direct material link to a risk.

In addition to this quarterly reporting, the risk management system is an established, continuous task within the Group. For example, risk managers at division and Group level have an immediate (ad hoc) obligation to report both reputational risks, and emerging individual risks whose impact on earnings exceeds a threshold defined by the Board of Management. This process enables us to initiate effective risk control measures in a timely manner.

Risk management

We aim to avert or reduce risks by taking appropriate countermeasures. For each individual risk classified as major, the risk managers in the corporate functions or operational units initiate measures. These are documented and tracked centrally by Group Risk Management. Group Risk Management and the Risk Committee continuously monitor the development of all identified major risks and the status of the risk treatment measures initiated. The ongoing Group-wide analysis of identified risks and opportunities increases risk awareness inside the organization and establishes the framework for our corporate risk culture.

KEY RISKS COMMENTARY

Based on our current assessment, the risks classed as significant to the future development of the company are described below. The reporting here generally covers a whole year. Risks that are subject to regular reporting essentially arise in the areas of quality and sales. Risks that arise out of transactions relevant under taxation law and other legislation are also reported. We also identify latent risks for the ZF Group. Major opportunities are also listed and analyzed. They are then actioned if substantiated. Risks and opportunities are not set off against each other.

Industry environment risks

As a global player we face risks arising from overall economic developments. General economic conditions have a major influence on the ZF Group’s commercial success.

Political upheaval in individual countries and diplomatic tensions between them can lead to turbulence on the financial markets and to unfavorable global market developments. Two such examples are the uncertainty around Brexit plans and the ratification of the new NAFTA (United States-Mexico-Canada Agreement USMCA). Given the ongoing conflict in Ukraine, there is a risk that Russia will respond to European Union and U.S. sanctions with counter-sanctions, which in turn may have a negative impact on demand for our products. We are also seeing an increase in protectionist measures in individual countries trying to protect or improve their competitiveness on the global markets, such as the introduction and expansion of firm market access barriers, industrial policies and additional certification processes.

We view the escalating trade conflict between the USA and China and the increasing trade tensions between the USA and Europe as major risks. Impending U.S. tariffs on vehicle and parts imports from global markets may significantly affect our value chains as well as those of our customers and suppliers and could be detrimental to our sales, profitability and financing conditions. Moreover, fiercer competition, especially in our key sales markets in Europe, the USA and China, may also adversely affect sales development and sales prices.

In the overall economic environment we are seeing a global shift from an expansionary monetary policy to one that is tighter and more conservative, potentially affecting inflation, interest rates and general funding policies.

We also face location- and country-specific risks. In addition to activities in the traditional markets, ZF is operating more widely in growth markets. Structural deficits and economic downturns in these countries – especially Argentina, Brazil, Russia, India or China – may lead to declining sales and payment defaults.

We have dedicated cross-functional projects in place to continuously monitor the developments surrounding U.S. trade policy and Brexit and to introduce countermeasures where required. If necessary, market slowdowns in individual regions and countries can be counteracted by volume shifts to other markets. ZF decisively limits these kinds of market risks by specifically promoting a broader, more diverse product portfolio.

Sales risks

As a global supplier, primarily for the automotive and industrial sectors, demand for our products and services is largely determined by the global economic conditions and developments described above. At the same time, demand in these sectors is subject to cyclical fluctuations.

Risks may ensue not only from the various market developments in the product segments and regions, but also from the ramp-up of new products and the breakthrough of disruptive technologies. In addition, as an automotive supplier we are faced with high capital investments as well as high price pressure from vehicle manufacturers.

Consumer behavior in mobility is changing. In Europe, there is a risk that cities will ban diesel vehicles. There is also the "new-energy" vehicle quota in China, under which battery electric vehicles, plug-in hybrids and fuel cell vehicles must account for a certain share of manufacturers' new vehicle fleets. Uncertainties about the future of the traditional combustion engine – especially diesel technology and its unknown legal implications – may reduce sales of vehicles and parts in this business area, with a resulting decline in ZF's earnings.

The large number of economic factors influencing automotive demand exposes global production to high volatility, which makes it difficult for us to predict sales accurately. If markets and consequently our sales develop differently than expected, our production facilities may be left underutilized, resulting in idle costs, impairment losses and falling sales prices.

Low growth rates in the Chinese market are among the volume risks in the Car Powertrain Technology, Car Chassis Technology and Active Safety Systems Divisions. A fall in orders due to customer insourcing coupled with increasing price pressure call for the systematic implementation of cost-cutting measures in the Commercial Vehicle Technology Division. Accelerated consolidation of the customer base and the availability of new technological alternatives for core products is exacerbating the already high price pressure in the Aftermarket Division, especially where merchandise is concerned.

We resolutely combat these sales risks by continuously monitoring sales markets, conducting market research and exchanging information with the regional and local contacts in order to identify changes in market structures and consumer behavior at an early stage. The planned takeover of brake specialist WABCO will substantially expand our commercial vehicle expertise and technical aftermarket portfolio. Requirements-oriented production planning and the logistics early-warning system also help us respond flexibly to fluctuations in demand.

To guarantee compliance with emissions requirements we are stepping up our operational strength in electromobility. Through a network of partnerships and alliances, we are constantly adapting our product range to market conditions and significantly expanding our activities in this pioneering field. In the event of an unpredictable drop in prices, we try to mitigate the losses through systematic renegotiations with our suppliers.

Quality risks

If products fail to meet customer specifications or (allegedly) malfunction, ZF may incur considerable costs from warranty and product liability claims. This particularly applies to very high-volume products such as the 8HP and 9HP automatic transmissions. ZF is also exposed to this risk in the field of safety-related products such as brake systems, seat belt anchorage systems and airbags.

Supplier quality issues and non-compliant supplier components installed in our products may also require modifications and reworking, which in turn may entail significant costs.

Quality risks are potentially damaging not just financially but also as a serious threat to our reputation.

We take responsibility for our products and thus for their impact on society, our business partners and the environment. That is why, despite the increasing complexity of those products, we continually strive to maintain the best possible quality with the help of a certified ZF quality management system, consistent quality checks and regularly optimized process workflows. Furthermore, in 2019 we set up a Product Safety and Regulatory Office to analyze, evaluate and track all relevant quality incidents and their associated risks. Findings are reported directly to the board member responsible for quality.

Procurement risks

As a manufacturer, our earnings performance – particularly in the automotive business units – is exposed to raw material and energy price trends. Along with volatile steel and aluminum prices, raw material and component price trends are an increasing challenge where our electronics applications and components are concerned. Tighter protectionist measures in individual countries plus fundamental political developments such as Brexit also pose risks. These may take the form of additional or higher tariffs, and thus costs, for products and parts that we buy or sell. Unless we compensate for this by improving productivity and establishing synergies, demand for ZF products may decline. In addition, risks may arise due to financial problems affecting key suppliers, capacity shortages caused by supply disruptions, and the underutilization of supplier production capacity.

To counter these risks, our sophisticated supplier risk management aims to prevent any hiatus in supplies due to a supplier's financial instability or market launch, quality and logistics problems, to provide supply alternatives and to minimize our general risk position in relation to suppliers. We review key suppliers at regular intervals based on solid criteria, and define appropriate measures to mitigate the identified risks. In addition, constant market investigation and regular, targeted analyses help ZF respond early to unfavorable index developments on the raw materials and energy markets.

Research and development risks

Due to ever-increasing technical complexity, rapid technological progress, and stringent emissions, consumption and safety regulations, product introduction and manufacture, especially in the automotive sector, always involves development and technology risks. The Group currently generates a substantial proportion of its sales with products based on the combustion engine driveline. The rapid progressive electrification in the passenger car and commercial vehicle drive segment may jeopardize our strong market position. We also note a gradual shift from components to systems business, which may reduce our share of value added.

To counter these risks, we are strategically increasing product and production enhancement based on the modular principle, expanding our strategic partnerships as well as acquiring equity stakes in the area of future technologies. Since 2019 we have been aligning our skills and capabilities across the Group with four technology fields. At the same time, we are operating cross-divisionally via agile system houses. This allows us to provide both established and new customers with system solutions for any application in line with their needs and with market requirements. We are also strengthening our position in this promising area through targeted expansion of our electrification and hybridization activities and a consistent focus on investment in interface and forward-looking technologies.

Cyber and information technology risks

Cyber and information technology (IT) risks ensue from digitalization and the increasing technical complexity in terms of connectivity between machines, products, systems, services and partners. To provide appropriate protection for people, commercial and personal information and data, and tangible and intangible assets, we have an integrated cybersecurity policy. Our comprehensive integrated Information Security Management System (ISMS) covers not only IT but also development, production, staff security, compliance, physical security and legal and customer requirements. Corporate Security advises and supports the corporate functions and the business in implementing and enhancing the ISMS. Our key information security processes were audited and certified both externally and internally under the international ISO 27001 standard.

Data protection and security requirements have increased significantly since the EU General Data Protection Regulation came into force in May 2018. Data protection is a top priority in all ZF Group application areas from driver assistance systems and autonomous or automated driving systems to sensor and vehicle data.

We combat cyber and IT risks with technical and organizational measures designed to safeguard the availability of our production, development and IT infrastructure and to maintain the strictest confidentiality in dealing with corporate, partner and employee information and data. The security infrastructure protects data streams and processing both on premise (operated on site) and off premise (e.g. in the cloud). Alongside these technical measures, ZF's security culture plays a key role in the company's resilience. Consequently, we roll out regular, mandatory awareness-raising measures to our workforce worldwide. Internal and external information sources are used to monitor ZF's security situation. Alarm and emergency systems are in place for security incidents, allowing us to react immediately with corresponding contingency plans and clearly identified crisis response teams.

Financial risks

Liquidity, foreign currency, interest rate and counterparty risks as well as credit risks are monitored and controlled as part of central risk management in order to safeguard our financial stability. Where necessary, we hedge these risks using appropriate instruments. Guidelines and provisions regarding the individual risk types have been put in place which determine how to assess and manage the particular risk. Wherever possible and expedient, we use derivative financial instruments to manage interest and currency risks in particular, as well as existing underlying or planned transactions. Only hedges that refer to a specific underlying transaction are allowed, using spot transactions, forwards, swaps and options. We also use hedge accounting if the prerequisites are met. Our acquisition of TRW permanently increased our currency risks, in particular due to changes in internal financing requirements and a significant increase in activities in Eastern Europe and Asia. In order to manage these risks more effectively, a new Group strategy was developed in 2017 to hedge currency risks and has been implemented gradually over the last few years. Since January 1, 2020, we have been managing and hedging currency risks with a standardized cash flow hedging model and system environment.

In order to reduce counterparty risks within finance, we only transact with banks having a first-class credit rating and within centrally stipulated limits. The necessary financial flexibility is guaranteed by means of central cash pooling with sufficient cash and committed credit lines with matching maturities. The financial stability of our suppliers and customers is continually checked; if necessary, measures are initiated to safeguard the supply chain or receivables. There are risks to recognize impairments on financial assets particularly in connection with ZF's investments in equity stakes in the area of future technologies as well as their financing.

Risks are also associated with the syndicated loan agreement of ZF Friedrichshafen AG and the loan agreement with the European Investment Bank. These agreements comprise not only obligations but also financial covenants which have to be complied with at all times. A breach of these financial covenants would mean that, in the event of a respective claim, the creditor could demand immediate repayment of the loan or terminate the credit line. ZF Friedrichshafen AG has complied with the financial covenants at all times, including as of the reporting date. From a current perspective, ZF has no reason to believe that these obligations will be breached in future.

The necessary financing of the anticipated purchase price for the WABCO acquisition was initially secured through a syndicated loan agreement with our 15 core banks. Parts of this financing package have since been refinanced on a long-term basis via the capital market. The currency risk from the transaction is hedged with one of our core banks under a forward contract that only triggers an obligation for ZF if the acquisition project is successfully closed.

Legal and other risks

As a global company, ZF is bound to comply with a variety of regional and national legislation and regulations. We make every effort to minimize and control the legal risks. To this end, ZF has precautions and structures in place to detect potential threats as early as possible and, if necessary, to defend our rights. Nevertheless, we remain fundamentally exposed to the risk of legal disputes in areas such as product liability, competition law, environmental protection and taxation.

Unlawful conduct could harm the company’s reputation, weaken our market position and result in a loss of earnings due to payment or other liabilities.

In particular, national antitrust authorities continue to focus on investigating infringements of competition rules in the automotive supplier industry, which may result in fines or obligations by civil law. Despite diligent compliance with national laws, the company may potentially infringe applicable legislation. In the event of ongoing or future investigations, we cooperate fully with the relevant authorities. Accounting provisions for legal risks are made in accordance with the applicable accounting regulations.

The ZF Group is subject to worldwide audits in the various countries in which our reporting units operate. In current or future audits, tax laws and relevant facts or circumstances, especially in relation to acquisitions, could be interpreted and assessed in a different manner by local tax authorities than by ZF. This poses the risk of a claim for back taxes based on an adjustment to the tax base.

ZF is subject to high pension liabilities, particularly in Germany. We invest the plan assets in a variety of asset classes that are exposed to corresponding fluctuations in value. A change in key parameters such as interest rates can have a negative impact on ZF’s earnings.

Generally, ZF is also facing risks regarding sustainability and environmental protection. This is a particular consequence of increased civil awareness and respective demands resulting from the debate on climate change. Relevant legislative and regulatory action is implemented worldwide. Significant past investments were required to improve our environmental performance in preparation for new regulations or customer expectations. ZF has been collecting and reporting non-financial information in detail for years and actively involves different stakeholders. Accordingly, developments are recognized early and taken into account when managing the individual issues concerned.

The current spread of the coronavirus poses a risk for our employees and our value chain, which we need to reevaluate and manage correspondingly each day. Corporate Health Services is monitoring the situation in close cooperation with Corporate Security. We are observing the development from a medical point of view to evaluate the situation for our employees and derive protective measures. Together with the divisions, the corporate functions are evaluating the repercussions of the coronavirus on sales, the supply chain and production and launching countermeasures. Moreover, as a member of the VDA (German Association of the Automotive Industry), ZF is part of a task force which aims to pool information on the coronavirus available in our industry and on its consequences in order to achieve solid evaluation and a more effective handling of the related risks.

KEY OPPORTUNITIES COMMENTARY

Industry environment opportunities

As a global player in an industry where disruption is on the rise, we see a steady flow of new opportunities. Systematically leveraging these is a key element of ZF's sustainable growth policy. Using our market investigation and environmental analyses, we take a structured approach to carving out opportunities with the potential to improve our product design, production efficiency, market performance and cost structure. Opportunities with a high probability of occurrence are taken into account in our plans and forecasts.

Our presence in almost every mature industrial market means that we are well-placed to pick up on dynamic growth trends in emerging markets and capitalize on these by stepping up market development. For example, we tapped into a new market by opening a production site in Hai Phong, North Vietnam. The Vietnamese automotive industry is one of the fastest growing markets in Southeast Asia. Positive economic developments in this territory as well as other emerging regions in which we are active would result in additional sales potential. Our business model and strategy are producing a raft of opportunities from different regions, customer industries and highly diversified product groups and customers.

Company-specific opportunities

Our business activities in today's highly dynamic market environment are a constant source of performance-related opportunities. Systematically identifying and implementing these to enhance our processes, products and services is an essential part of our long-term corporate strategy "Next Generation Mobility". Our ongoing aim is to play an active role in shaping the megatrends of the mobility industry – digitalization, electrification and urbanization. As a systems supplier with a wide range of products and services in vehicle motion control, integrated safety, automated driving and electromobility, we are very well-placed to succeed in the market for these technology fields.

Increasing pressure to meet emission standards coupled with growing demand for clean mobility are intensifying the need for energy-efficient and low-emission drive solutions. Vehicle manufacturers are required to reduce fleet consumption through their vehicle mix. These factors are reinforcing the trend toward electrification. If electric and hybrid drives were to become cheaper alternatives earlier than expected, as a systems supplier we would benefit from this. We are laying the groundwork for solid organic growth through strategic acquisitions and equity stakes.

In the commercial vehicles sector, the planned WABCO acquisition is an opportunity for us to shape the future of commercial mobility as a systems supplier for commercial vehicle technology. By joining forces we will improve our position to capitalize on future demand for autonomous, efficient and connected commercial vehicles.

Lower material price structures and the expansion of our global value chains open up the opportunity for us to improve operational performance even further.

Enhanced standardization and a decrease of complexity in our internal processes facilitate the fast and flexible adaptation of our organizational structure to market demands. Our new, unified Group sales structure is designed to boost cooperation and coordination between the divisions and the company organization, making the business more customer-oriented.

To optimize the way in which we meet our various customer groups' expectations, we employ a dual operating system. Depending on the area and the market situation, we use two different but complementary practices: Efficiency Backbone and Agile.

The Efficiency Backbone method focuses on efficiency, scalability and reliability, with standardized processes that enable high productivity and optimal use of resources for mature products. This practice is essential, especially when productivity pressure is high, for ZF to secure income by using proven, efficient processes. The Agile method is more goal-oriented. It enables us to react quickly and adapt flexibly to new conditions such as the rapidly changing market requirements of the industry. An agile corporate culture with a focus on collaboration and continuous improvement lays the foundation for increasingly effective, efficient systems and processes, and prompt reaction to sudden changes.

Research and development opportunities

New technology trends like the connected car and ADAS (Advanced Driver Assistance Systems) are increasingly marketable and open up new opportunities, as do the advancing developments in driveline electrification. ZF plans to invest a double-digit billion amount in electromobility and autonomous driving as well as other interface and forward-looking technologies, underlining the strategic importance of these areas of expertise for the Group.

In 2019 we founded our Innovation Factory, aimed at accelerating ideation and development from day one. A young team in Germany and the USA is tasked with global scouting, preparing and selecting the best ideas at pitch events, developing minimum viable products (MVPs) and running proofs of concept (PoCs). A further team in China is planned for 2020.

Our #MobilityLifeBalance campaign offers the public solutions to the challenges of future mobility in every aspect of life. The campaign's approach is in line with our overriding objective: to enable a form of mobility that chimes with people's current and future aspirations, bringing us closer to the customer and opening up additional sales opportunities.

Opportunities also arise from continuously developing new and existing products, expanding development expertise and setting up new locations both at home and abroad, which in turn consolidates and boosts our global competitiveness. Hence, ZF is building a third research and development center in Guangzhou, southern China. It is scheduled to go operational in 2023 and will develop key technologies and system solutions for ZF that we can also use in other market regions.

Digitalization and information technology opportunities

Digitalization and the Internet of Things (IoT) make it possible for us to increase the connectivity between our mobility and industrial applications and to expand our services. Accordingly, we are adding new digital products and services to our existing business model. Opportunities will arise from scaling up our mobility concepts and the services based on them.

We are expecting significant improvements in productivity and processes thanks to new applications in the area of artificial intelligence. We also continue to enhance our capabilities in digital connectivity and automation, both of which are prerequisites in enabling tomorrow's vehicles to see, think and act. To this end, we are also building on our internal resources with partnerships with start-ups.

OVERALL STATEMENT ON THE OPPORTUNITY AND RISK SITUATION

The ZF Group works to counter the above risks using an established risk management system. The Opportunities Report represents a consolidated observation of significant opportunities in the period under review. Wherever cost-effective and within the Group's sphere of influence, we do our best to develop these.

The risk management system is integrated in our operational and strategic business activities. The risk management method is subject to a continuous improvement process.

Based on information available at present as well as the individual risks illustrated in the financial statement and set out in this report, we can identify no additional market-related opportunities and risks which may substantially influence the ZF Group's results of operations, net assets and financial position in fiscal year 2020. The Group's financial situation is stable; the need for financial means is covered by existing liquidity and available credit lines.

Given our market position and the precautions we have taken, we are confident in our ability to control these risks and meet the resulting challenges. We can therefore state that, from our point of view, when analyzing the overall picture, no major risks can be identified which may jeopardize the company's continued existence, either alone or in combination with other risks.

FORECAST REPORT

INDUSTRY ENVIRONMENT TRENDS

Prognosis subject to uncertainty
After a noticeable economic slowdown in 2019, global growth is expected to stabilize at 3.1% during the current year. Both the newly industrialized countries responsible to some extent for the decline in 2019 and the developed economies that have underperformed in recent years will make a significant contribution to this.

The prediction for 2020 is stable growth of 1.5% in the developed economies. While the eurozone is forecast to remain stable at 1.1%, the U.S. economy is set to experience a gradual slowdown to 1.7%. In the medium term, growth in the industrialized countries is likely to remain subdued owing to moderate productivity growth and slower growth in the labor force due to demographic trends.

China's growth will fall well below 6% in 2020, partly as a result of the coronavirus. In certain newly industrialized countries, such as Brazil and Mexico, growth is set to recover slightly at 1.8% and 0.9% respectively.

Persistent political uncertainty may continue to weigh on global growth and ultimately result in lower growth rates, lower productivity growth and disruptions in industrial supply chains.

The main factors jeopardizing the economy are a possible escalation of trade conflicts, a no-deal Brexit and a prolonged spread of the coronavirus. In this respect, long-term economic forecasts are subject to increasing uncertainty due to the number of unpredictable factors involved.

Central banks' current monetary policy is boosting employment and propping up demand, but equally, dampening expectations around inflation. Financial risks are increasing, which could result in a sustained economic downturn. Moreover, a worsening of the mood on the financial markets would exacerbate general financial conditions, particularly for economies that are already struggling.

No signs of an upward trend in the industry
The market for passenger cars and light commercial vehicles is experiencing a lull. Uncertainty around regulations, trade conflicts, customs duties and the economic situation, but also around various technologies (gas, diesel, battery, PHEV, MHEV, biofuel and fuel cell) and a noticeable downturn in demand in China in the first quarter due to the coronavirus are stifling end users' willingness to buy. All major markets are expected to continue on a downward trend. Production in Europe and North America will remain under pressure and is expected to fall by 2% and 1% respectively, while vehicle production in China is set to decline by 6%. The few positive signs in newly industrialized countries like Brazil are too weak to change the global picture.

In the market for heavy commercial vehicles over six tons, the outlook is equally pessimistic. Incoming orders in the sector point to an stronger decline in volume in 2020, with production expected to fall by a further 8%. The U.S. market stands to lose the most in this respect. After several years of very healthy growth, production peaked in 2019. Given the economic slowdown, the outlook indicates the possibility of a 20% fall in the Class 8 trucks, which are most heavily affected. A double-digit volume decline is also feared in Europe. The largest market, China, is also in reverse and could contract by 7%.

Nor are the industrial markets entirely immune to the general trend. The global market for agricultural tractors, down 1%, remains relatively stable. While Europe and North America are expected to decline by 2–3%, the Asian markets appear steady compared to 2019. The prospects for construction machinery are somewhat more downbeat: Global production could see a further slowdown of 3%, driven mainly by shrinking markets in Europe and China. In contrast, the wind power market is set to experience another year of growth; installed global capacity in gigawatts will increase by a further 15% in 2020, with the USA, China and, to a lesser extent, India as the main growth drivers.

THE OUTLOOK FOR ZF

Sales forecast
Assuming the above-mentioned market developments and stable currency exchange rates, ZF is expecting Group sales of around €35–37 billion for 2020. The sales forecast is based on flat development in the markets relevant to the Group. The planned acquisition of WABCO is excluded from the forecasts provided here.

Our current-year expectations for the divisions are as follows:

Sales for the Car Powertrain Technology and Car Chassis Technology Divisions will remain at the previous year's level, assuming stable demand in both existing and new customer business given steady passenger car production.

Despite the forecast decline in demand in the commercial vehicle sector, we expect our Commercial Vehicle Technology Division to be able to sustain last year's sales level, buoyed up in particular by new customer business in Asia.

We anticipate a slight increase in sales for the Industrial Technology Division, mainly in Asia-Pacific and India. This dynamic growth is being driven particularly by the Off-Highway Systems and the Wind Power Technology Business Units. The Wind Power Technology Business Unit is profiting from the further global expansion of wind power as an alternative to fossil fuels for generating electricity.

The E-Mobility Division will benefit significantly from the rising demand for products in conjunction with electrification of the driveline. Different product ramp-ups, including electric axles, power electronic applications and electric shift systems will drive sales growth.

The Aftermarket Division anticipates that sales of spare parts and services will match last year's level in all regions.

In the Active Safety Systems and Passive Safety Systems Divisions, we expect a slight decline in sales owing to general market developments in the passenger car sector, particularly in the Asia-Pacific Region.

The Electronics and ADAS Division is set to see a slight increase in sales based on increased demand for our advanced driver assistance systems.

Adjusted EBIT margin stable

In light of predicted market developments, market upheavals and intense competition, the Group anticipates an adjusted EBIT margin of between 4% and 4.5% (before the WABCO acquisition) in the coming fiscal year.

Based on the planned development of the operating business, the intended investments as well as the continuation of consistent working capital management, the aim is to achieve free cash flow adjusted for company acquisitions and disposals of between €0.5 billion and €1 billion for 2020.

If the coronavirus persists to spread worldwide, there is a risk that the forecast financial figures cannot be achieved.

T. 06 Financial forecast figures

	2020 FORECAST	REPORTED 2019
Sales in € billion	35 – 37	36.5
Adjusted EBIT margin in %	4.0 – 4.5	4.1
Adjusted free cash flow in € million	500 – 1,000	803

Provided that sales and profit development will not deteriorate, we assume that the number of employees will not change significantly. Adjustments as part of business development, among others in view of the significant uncertainty in case of a further spread of the coronavirus, cannot be ruled out.

Overall, ZF is heading in the right direction

Given the different development of the regional markets and divisions, ZF demonstrates sound, sustainable growth in the short and medium term when analyzing the overall picture. The Group is tapping into new markets, rolling out new future-oriented products and underpinning its technology leadership through ongoing investment in research and development.

Supported by the trust of customers and cooperative collaboration with suppliers and business partners as well as committed, qualified employees willing to deliver outstanding performance and embrace change, ZF can rise to the upcoming challenges and look into the future with optimism.

Friedrichshafen, March 2, 2020
ZF Friedrichshafen AG
The Board of Management

CONSOLIDATED FINANCIAL STATEMENTS

Contents

CONSOLIDATED STATEMENT OF PROFIT OR LOSS

ZF FRIEDRICHSHAFEN AG FOR THE PERIOD DATING JANUARY 1 TO DECEMBER 31, 2019

in € million	Notes	2019	2018 [1]
Sales	1	36,518	36,929
Cost of sales	2	30,768	30,827
Gross profit on sales		**5,750**	**6,102**
Research and development costs	9	2,270	2,158
Selling expenses		1,267	1,290
General administrative expenses		1,312	1,303
Other income	3	585	651
Other expenses	4	602	612
Result from associates	5	25	43
Other net result from participations	5	18	104
EBIT		**927**	**1,537**
Financial income	6	359	267
Financial expenses	7	746	576
Net profit or loss before tax		**540**	**1,228**
Income taxes	8	140	261
Net profit or loss after tax		**400**	**967**
thereof shareholders of ZF Friedrichshafen AG		350	904
thereof non-controlling interests		50	63

1) Adjustments to the previous year (see further explanations in the Notes to the Consolidated Financial Statements, Changes in accounting policies).

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

ZF FRIEDRICHSHAFEN AG FOR THE PERIOD DATING JANUARY 1 TO DECEMBER 31, 2019

in € million	Notes	2019	2018 1)
Net profit or loss after tax		**400**	**967**
Line items that will be reclassified in the consolidated statement of profit or loss			
Foreign currency translation differences			
Gains arising during the year		151	103
Reclassification adjustments for gains/losses included in profit or loss		0	–16
Mark-to-market of cash flow hedges			
Gains arising during the year (2018: losses)		128	–15
Reclassification adjustments for gains/losses included in profit or loss		34	4
Income taxes		–10	4
		303	**80**
Line items that will not be reclassified in the consolidated statement of profit or loss			
Mark-to-market of securities		–19	–19
Actuarial losses from pension obligations		–920	–362
Income taxes		273	105
		–666	**–276**
Other comprehensive income after tax	25	**–363**	**–196**
Total comprehensive income		**37**	**771**
thereof shareholders of ZF Friedrichshafen AG		–17	709
thereof non-controlling interests		54	62

1) Adjustments to the previous year (see further explanations in the Notes to the Consolidated Financial Statements, Changes in accounting policies).

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

ZF FRIEDRICHSHAFEN AG AS OF DECEMBER 31, 2019

Assets

in € million	Notes	Dec. 31, 2019	Dec. 31, 2018 [1]
Current assets			
Cash and cash equivalents		2,302	922
Financial assets	10	2,824	84
Trade receivables	11	5,041	5,161
Contract assets	12	113	82
Other assets	13	558	482
Income tax receivables		30	89
Inventories	14	3,948	3,915
		14,816	**10,735**
Non-current assets			
Financial assets	10	901	945
Associates	15	461	454
Contract assets	12	215	109
Other assets	13	156	102
Intangible assets	16	6,841	7,205
Property, plant and equipment	17	7,669	6,630
Deferred taxes	8	1,291	910
		17,534	**16,355**
		32,350	**27,090**

Liabilities and equity

in € million	Notes	Dec. 31, 2019	Dec. 31, 2018 [1]
Current liabilities			
Financial liabilities	20	1,259	606
Trade payables		5,417	5,467
Contract liabilities	21	1,039	899
Other liabilities	22	1,409	1,494
Income tax provisions		334	294
Other provisions	23	696	812
		10,154	**9,572**
Non-current liabilities			
Financial liabilities	20	8,430	4,464
Trade payables		45	40
Contract liabilities	21	406	357
Other liabilities	22	110	98
Provisions for pensions	24	5,348	4,389
Other provisions	23	339	379
Deferred taxes	8	412	484
		15,090	**10,211**
Equity			
Subscribed capital	25	500	500
Capital reserve	25	386	386
Retained earnings	25	5,935	6,128
Equity attributable to shareholders of ZF Friedrichshafen AG		**6,821**	**7,014**
Non-controlling interests		285	293
	25	**7,106**	**7,307**
		32,350	**27,090**

1) Adjustments to the previous year (see further explanations in the Notes to the Consolidated Financial Statements, Changes in accounting policies).

CONSOLIDATED STATEMENT OF CASH FLOWS

ZF FRIEDRICHSHAFEN AG FOR THE PERIOD DATING JANUARY 1 TO DECEMBER 31, 2019

in € million	Notes	2019	2018 1)
Net profit or loss before income tax		540	1,228
Depreciation/Reversal of impairments for intangible assets and property, plant and equipment		2,039	1,817
Results from first-time consolidation and deconsolidation		−3	−83
Net result from participations and net financial result		344	162
Results from the disposal of intangible assets and property, plant and equipment		3	−9
Income taxes paid		−220	−563
Changes in non-current provisions made through profit or loss		67	57
Decrease (2018: increase) in inventories		9	−264
Decrease in trade receivables		220	93
Increase in other assets		−244	−95
Decrease in trade payables		−131	−94
Decrease (2018: increase) in other liabilities		−185	140
Cash flow from operating activities		**2,439**	**2,389**
Expenditures for investments in			
intangible assets		−57	−62
property, plant and equipment		−1,681	−1,586
associates and other participations		−15	−43
financial receivables		−92	−47
securities		−3,117	0
Proceeds from the disposal of			
intangible assets		1	10
property, plant and equipment		48	46
associates and other participations		53	5
financial receivables		14	3
securities		641	0
Cash inflow from the sale of consolidated companies	28	0	766
Cash outflow from the acquisition of consolidated companies	29	−27	0
Dividends received		27	47
Interest received		22	19
Cash flow from investing activities		**−4,183**	**−842**
Dividends paid to ZF Friedrichshafen AG shareholders		−162	−195
Dividends paid to holders of non-controlling interests		−37	−40
Cash paid for the acquisition of non-controlling interests		−17	0
Proceeds from capital increases through holders of non-controlling interests		7	7
Repayments of borrowings	30	−9,084	−4,800
Proceeds from borrowings	30	12,802	3,315
Interest paid and transaction costs		−298	−229
Cash flow from financing activities		**3,211**	**−1,942**
Net change in cash		**1,467**	**−395**
Cash position at the beginning of the fiscal year		922	1,324
Effects of exchange rate changes on cash		13	−7
Cash position at the end of the fiscal year	27	**2,402**	**922**

1) Adjustments to the previous year (see further explanations in the Notes to the Consolidated Financial Statements, Changes in accounting policies).

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

ZF FRIEDRICHSHAFEN AG FOR THE PERIOD DATING JANUARY 1, 2018, TO DECEMBER 31, 2019

in € million	Subscribed capital	Capital reserve	Retained earnings: Other retained earnings	Retained earnings: Foreign currency translation differences	Retained earnings: Mark-to-market of securities	Retained earnings: Mark-to-market of cash flow hedges	Retained earnings: Actuarial gains and losses	Equity attributable to shareholders of ZF Friedrichshafen AG	Non-controlling interests	Group equity
Jan. 1, 2018	**500**	**386**	**6,924**	**−422**	**−31**	**−13**	**−858**	**6,486**	**299**	**6,785**
Change in accounting policies			1					1	−2	−1
Jan. 1, 2018 (adjusted)	**500**	**386**	**6,925**	**−422**	**−31**	**−13**	**−858**	**6,487**	**297**	**6,784**
Net profit or loss after tax			904					904	63	967
Other comprehensive income after tax				88	−19	−7	−257	−195	−1	−196
Total comprehensive income	**0**	**0**	**904**	**88**	**−19**	**−7**	**−257**	**709**	**62**	**771**
Changes in basis of consolidation								0	7	7
Dividends paid			−195					−195	−66	−261
Acquisition of non-controlling interests			8					8	−8	0
Capital increase in exchange for company shares								0	7	7
Other changes			5					5	−6	−1
Dec. 31, 2018	**500**	**386**	**7,647**	**−334**	**−50**	**−20**	**−1,115**	**7,014**	**293**	**7,307**
Jan. 1, 2019	**500**	**386**	**7,647**	**−334**	**−50**	**−20**	**−1,115**	**7,014**	**293**	**7,307**
Change in accounting policies			−30					−30	−1	−31
Jan. 1, 2019 (adjusted)	**500**	**386**	**7,617**	**−334**	**−50**	**−20**	**−1,115**	**6,984**	**292**	**7,276**
Net profit or loss after tax			350					350	50	400
Other comprehensive income after tax				147	−19	152	−647	−367	4	−363
Total comprehensive income	**0**	**0**	**350**	**147**	**−19**	**152**	**−647**	**−17**	**54**	**37**
Changes in basis of consolidation								0	3	3
Dividends paid			−162					−162	−37	−199
Acquisition of non-controlling interests			16					16	−34	−18
Capital increase in exchange for company shares								0	7	7
Other changes			−69		69			0		0
Dec. 31, 2019	**500**	**386**	**7,752**	**−187**	**0**	**132**	**−1,762**	**6,821**	**285**	**7,106**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

OF ZF FRIEDRICHSHAFEN AG FOR 2019

FUNDAMENTAL PRINCIPLES

Corporate structure

ZF Friedrichshafen AG is a corporation, of which 93.8% is owned by the Zeppelin Foundation and 6.2% by the Dr. Jürgen and Irmgard Ulderup Foundation. The company is headquartered in 88046 Friedrichshafen, Germany, Löwentaler Straße 20 and is listed in the commercial register of the municipal court of Ulm under the number HRB 630206.

Further explanations on the corporate structure can be found in the management report.

General

The line items of the consolidated statement of profit or loss, the consolidated statement of comprehensive income, the consolidated statement of financial position, the consolidated statement of cash flows and the consolidated statement of changes in equity are broken down and explained in the notes to the consolidated financial statements.

The Group's currency is the euro. Unless otherwise stated, all amounts are reported in millions of euros (€ million).

The Board of Management of ZF Friedrichshafen AG approved these consolidated financial statements on March 2, 2020, and forwarded them to the Supervisory Board.

The consolidated financial statements, which were prepared as of December 31, 2019, as well as the group management report will be announced in the Federal Gazette.

The consolidated statement of financial position is broken down by maturities. The financial line items are divided into non-current and current assets and/or liabilities on the basis of whether they have a residual term of more than one year or up to one year, respectively.

Assets and liabilities included in a disposal group classified as held for sale as well as assets held for sale are presented separately from other assets and liabilities in the consolidated statement of financial position.

The recognition of assets and liabilities is carried out according to the historical cost principle. This does not include derivative financial instruments, securities and investments in participations that are recognized at fair value.

Adoption of IFRS

As a company that is not publicly traded, ZF Friedrichshafen AG has chosen the option to draw up its consolidated financial statements on the basis of IFRS pursuant to Sec. 315e para. 3 HGB (German Commercial Code).

The consolidated financial statements are in accordance with the standards and interpretations valid on the reporting date and issued by the International Accounting Standards Board (IASB), London, as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e para. 3 in conjunction with Sec. 315e para. 1 HGB.

In the fiscal year 2019, the following new and/or amended standards were applied for the first time:

- IFRS 16 “Leases”
- Amendments to IFRS 9 “Prepayment Features With Negative Compensation”
- Amendments to IAS 19 “Plan Amendment, Curtailment or Settlement”
- Amendments to IAS 28 “Long-Term Interests in Associates and Joint Ventures”
- IFRIC 23 “Uncertainty over Income Tax Treatments”
- Improvements to IFRSs 2015 – 2017

IFRS 16 replaces and changes the previous provisions of IAS 17 in relation to the accounting for leases by lessees. The distinction previously made pursuant to IAS 17 regarding the lessee between recognized obligations from finance leases and unrecognized obligations from operating leases is revoked and replaced by an accounting model for lessees that introduces mandatory recognition.

The impact of IFRS 16 on the consolidated financial statements of ZF Group is presented in the “Changes in accounting policies” section.

The first-time application of the other amendments to standards did not lead to any change in accounting within the consolidated ZF Group.

The listed standards and interpretations issued or revised by the IASB were not yet applied by ZF in the fiscal year 2019 because either the application of these standards and interpretations was not yet mandatory or the European Union had not yet endorsed them. ZF will not adopt any of these standards earlier.

Standard/ Interpretation	Title	Applicable pursuant to IFRS as of	Endorsement by EU	Expected impact
IFRS 3	Amendments to IFRS 3 "Definition of a Business"	Jan. 1, 2020	No	None
IFRS 17	Insurance Contracts	Jan. 1, 2021	No	None
IAS 1/IAS 8	Amendments to IAS 1 and IAS 8 "Definition of Material"	Jan. 1, 2020	Yes	None
IFRS 9/IAS 39/IFRS 7	Amendments to IFRS 9, IAS 39 and IFRS 7 "Interest Rate Benchmark Reform"	Jan. 1, 2020	Yes	None
	Amendments to References to the Conceptual Framework	Jan. 1, 2020	Yes	None

With the amendments to IAS 1 and IAS 8, the IFRS now provides a standardized and clearer definition of "material" with regard to information contained in financial statements. ZF does not expect any effects on the consolidated financial statements.

The amendments to IFRS 9, IAS 39 and IFRS 7 especially refer to hedging relationships that are affected by the reform of the IBOR interest rate benchmark. ZF does not have any hedging transactions that are linked to the IBOR interest rate benchmark. Therefore, ZF does not expect any effects from these amendments.

The Group currently also does not expect that the other changes in the new or amended standards in their current form will have a significant impact on the presentation of financial statements.

Basis of consolidation

In addition to ZF Friedrichshafen AG, 34 German and 236 international subsidiaries controlled by ZF Friedrichshafen AG are included in the consolidated financial statements.

The following table shows the composition of the consolidated ZF Group (without ZF Friedrichshafen AG):

	Jan. 1, 2019	First-time consolidations	Legal changes	Deconsolidations	**Dec. 31, 2019**
Subsidiaries	263	9	–1	–1	**270**
of which German	34	1	–1	0	**34**
of which international	229	8	0	–1	**236**
Joint ventures	10	0	0	–4	**6**
Associates	11	2	0	0	**13**

Company acquisitions

On March 28, 2019, ZF Friedrichshafen AG signed a binding agreement regarding the purchase of all outstanding shares of WABCO Holdings Inc. (WABCO) listed on the New York Stock Exchange for a cash purchase price of $136.50 per share. This corresponds to a purchase price of approximately $7 billion. The Board of Management and the Supervisory Board of ZF as well as the Board of Directors of WABCO agreed to the planned acquisition. On June 27, 2019, 68.44% of the WABCO shareholders agreed to the transaction. The transaction is subject to a number of general closing conditions, e.g., approval by the responsible authorities. ZF expects to be able to complete the transaction in the spring of 2020.

WABCO is a leading global supplier of brake control systems, technologies and services for the improvement of the safety, efficiency and connectivity of trucks, buses and trailers. WABCO offers integrated brake control and stability control systems, air suspension, transmission automation and aerodynamics, telematics and fleet management systems. In 2019, WABCO achieved sales of €3 billion. The company employs approximately 14,000 people in 40 countries around the globe.

By way of a purchase contract dated March 13, 2019, 60% of the shares of 2 Getthere Holding B.V., Utrecht, Netherlands, (2 Getthere) as well as its two subsidiaries were acquired. The company based in Utrecht with offices in San Francisco, Dubai and Singapore offers complete automated transport systems. It is working on applications ranging from automated guided electric vehicle systems for airports, business and theme parks through to dedicated urban transport infrastructures. With this strategic investment, ZF implements its “Next Generation Mobility” strategy and strengthens its foothold in the “Mobility as a Service” and automated guided vehicle systems growth markets. The preliminary purchase price amounts to €19 million and was calculated taking the agreed, earnings-dependent earn-out regulation into account. At the point of taking over control, €24 million were paid in cash. The goodwill recognized based on the preliminary purchase price allocation amounts to €9 million. The excess remaining after capital consolidation results in particular from the strengthening of ZF activities in the field of autonomous transport systems. The amount of the non-controlling interest recognized at the date of acquisition is €6 million.

The acquired assets and liabilities of the corporate group have been recognized at the date of acquisition with the following fair values which are based on a preliminary purchase price allocation:

in € million	
Trade receivables	7
Inventories	6
Associates	1
Intangible assets	15
Financial liabilities	–6
Trade payables	–1
Contract liabilities	–3
Other liabilities	–1
Deferred tax liabilities	–2
Total net assets	**16**
Acquired ZF share of net assets	**10**
Purchase price	19
Excess remaining after capital consolidation	**9**

In connection with the share deal, ZF acquired receivables at a fair value of €7 million. These are exclusively trade receivables. There are no uncollectible receivables. The acquisition of 2 Getthere did not have any significant impact on the net assets, financial position and results of operations of the ZF Group.

The purchase price allocation has not been completed since there are no final valuations of assets available. Adjustments may in particular result from contingent purchase price elements.

By way of a purchase contract dated July 26, 2019, 100% of the shares of Brake Force One GmbH, Tübingen, Germany, (BFO) were acquired. The company develops, designs and sells brake systems as well as accessories for two-wheeled vehicles and holds corresponding industrial property rights. The company acquisition was made in the context of ZF's activities in the two-wheeler segment as well as against the backdrop of the existing participation in Sachs Micro Mobility GmbH and the further strengthening of two-wheeler engineering competencies. The purchase price was €1.00. The goodwill recognized based on the preliminary purchase price allocation amounts to €1 million. The excess remaining after capital consolidation results in particular from the strengthening of ZF activities in the two-wheeler segment.

The acquired assets and liabilities of the company have been recognized at the date of acquisition with the following fair values, which are based on a preliminary purchase price allocation:

in € million	
Financial receivables	6
Trade receivables	1
Inventories	1
Associates	8
Property, plant and equipment	2
Financial liabilities	–14
Trade payables	–1
Contract liabilities	–4
Acquired total net assets	**–1**
Purchase price	0
Excess remaining after capital consolidation	**1**

In connection with the share deal, ZF acquired receivables at a fair value of €1 million. These are exclusively trade receivables. There are no uncollectible receivables. The acquisition of BFO did not have any significant impact on the net assets, financial position and results of operations of the ZF Group.

The purchase price allocation has not been completed since there are no final valuations of assets available. Adjustments may result particularly from the measurement of associates.

By way of a purchase contract dated December 18, 2018, and effective July 3, 2019, the remaining 50% of the shares of Shanghai TRW Automotive Safety Systems Co., Ltd., Shanghai, China, were acquired, which led to an increase of the participation quota to 100%. The company's line of business is the manufacture and sale of passive safety systems for passenger cars, including seat belts, airbags and steering wheels. The purchase price was €10 million. The negative difference of €3 million was due to a bargain purchase and was recorded as other income.

The acquired assets and liabilities of the company were recognized at the date of acquisition with the following fair values, which are based on a purchase price allocation:

in € million	
Cash and cash equivalents	7
Trade receivables	36
Inventories	6
Property, plant and equipment	17
Deferred tax assets	2
Financial liabilities	−3
Trade payables	−33
Contract liabilities	−5
Other liabilities	−3
Acquired total net assets	**24**
Fair value of shares already held	11
Purchase price	10
Badwill	**−3**

In connection with the share deal, ZF acquired receivables at a fair value of €36 million. These are exclusively trade receivables. There are uncollectible receivables in the amount of €1 million. Since the acquisition date, Shanghai TRW Automotive Safety Systems Co., Ltd. has contributed sales of €44 million and an amount of €3 million to net profit after tax. If the acquisition had been effected as of January 1, 2019, the Group's sales would have amounted to approximately €36,566 million and the Group's net profit after tax would have amounted to €400 million.

Company disposals

In connection with the proposed WABCO acquisition, shares in Haldex Aktiebolag, Stockholm, Sweden, were sold on September 20, 2019. The realizable value amounted to €40 million, and the accumulated loss since the acquisition date amounted to €70 million.

Consolidation principles

The consolidation of investments in subsidiaries is carried out according to the purchase method. When control was obtained, the revalued assets and liabilities of the subsidiary and contingent liabilities, if they do not depend on a future event, are offset against the fair value of the consideration paid for the shares. Contingent purchase price payments are recognized at the amount expected. Subsequent adjustments of contingent purchase price payments are recognized in profit or loss. Acquisition-related expenses are recognized in profit or loss when they are incurred.

Any excess remaining after capital consolidation is recognized as goodwill and recorded under intangible assets. The goodwill is tested for impairment as of the reporting date. An impairment test is performed during the year if there are any triggering events. Negative differences arising on the consolidation of investments in subsidiaries are recognized in profit or loss in the consolidated statement of profit or loss under other income.

If not all interests are acquired during an acquisition, the non-controlling interests can be recognized at the amount of the proportionally revalued net assets or at their proportional total company value including the applicable goodwill. This right of choice is applicable to every company acquisition. As of December 31, 2019, all non-controlling interests are reported with the proportional net assets.

In the case of a step acquisition, the already existing interests in the company to be consolidated are revalued at the fair value at the date when control is obtained. The difference to the carrying amount of the investment is recognized in profit or loss.

The acquisition of additional interests of already fully consolidated subsidiaries is recognized as an equity transaction. In this method, the difference between the cost of the investment acquired and the carrying amount of the non-controlling interest is recognized in retained earnings. The effects of a sale of interests, which does not lead to a loss of control over a subsidiary, are to be recognized in other comprehensive income with no effect on profit or loss by offsetting the capital gain or loss against retained earnings and by increasing the non-controlling interests to the amount of the proportional net assets.

The deconsolidation of subsidiaries is carried out on the date of the loss of control or the date of liquidation. The gain or loss on deconsolidation is recognized in other income or expenses, respectively. Remaining interests are recognized at fair value under investments in participations.

Consolidation of receivables, liabilities, provisions, income and expenses as well as gains or losses is effected for the companies included in the basis of consolidation. Guarantees and warranties between consolidated companies are eliminated.

Foreign currency translation

The financial statements of consolidated group companies prepared in foreign currencies are translated on the basis of the concept of functional currency by the modified closing rate method. Since the subsidiaries operate independently from a financial, economic and organizational point of view, the functional currency is generally identical with the company's local currency. Accordingly, the income and expenses in the financial statements of subsidiaries drawn up in foreign currencies are translated in the consolidated financial statements applying average rates, and assets and liabilities at the closing rate. The exchange difference resulting from the translation of equity at historical rates and the exchange differences resulting from the translation of the statement of profit or loss at the average exchange rate are recognized in other comprehensive income in equity without effect on profit or loss.

Upon initial recognition, foreign currency receivables and liabilities are measured at the rate valid on the day of transaction in the individual financial statements of ZF Friedrichshafen AG and its subsidiaries. The closing rate on the reporting date will be used for subsequent measurements. Foreign exchange gains and losses from the revaluation of trade receivables and trade payables on the reporting date are recognized in other income and expenses. Foreign exchange gains and losses from financial assets and liabilities are generally recognized within other financial income and financial expenses. To the extent that non-current financial receivables or liabilities denominated in foreign currency exist toward a foreign operation, the settlement of which is neither planned nor likely in the foreseeable future, any translation differences are not recognized in profit or loss in other financial income and expenses, but directly in equity as other comprehensive income. A transfer to the consolidated statement of profit or loss only occurs upon repayment or sale of the foreign operation.

The translation of any goodwill carried in foreign currency is based on the closing rate as of the reporting date. The differences resulting from currency translation are recognized in equity through other comprehensive income as foreign currency translation differences.

The exchange rates used for foreign currency translation with a significant influence on the consolidated financial statements changed as follows in relation to one euro:

	Closing rate		Average rate	
	Dec. 31, 2019	Dec. 31, 2018	2019	2018
U.S. dollar	1.1234	1.1450	1.1196	1.1808
British pound	0.8508	0.8945	0.8775	0.8847
Chinese renminbi	7.8205	7.8751	7.7339	7.8097
Brazilian real	4.5157	4.4440	4.4105	4.3015
Mexican peso	21.2202	22.4921	21.5587	22.6997

Accounting policies

The financial statements of ZF Friedrichshafen AG and the companies included in the consolidated financial statements are drawn up as of December 31 of each fiscal year, applying uniform Group accounting principles.

Recognition of expenses and income
Sales are recognized in accordance with IFRS 15 at the date when control over the product or the service is obtained by the customer. The assessment is made separately for each type of performance promise. The amount of sales is determined by the contractual agreement. To the extent that the purchase price refers to multiple sales transactions, the transaction price is allocated appropriately to the individual sales transactions.

Sales from selling products and tools as well as the reimbursement of development expenses are recognized at a point in time, i.e., once the ownership or the risk is transferred to the customer. Income from services and licenses are recognized either at a point in time or over a period of time, depending on the respective contractual structure. Sales are reported net of cash discounts, price reductions, customer bonuses and rebates.

Additional explanation regarding revenue recognition in accordance with IFRS 15 can be found in the notes on judgments.

Cost of sales comprises the cost of conversion of products sold as well as the purchase costs of sold merchandise. In addition to the directly attributable material and production costs, it also includes indirect production-related overheads, including depreciation on property, plant and equipment used and amortization of intangible assets. Cost of sales also includes write-downs of inventories to the lower net realizable value.

Research costs and non-capitalizable development costs are recognized in profit or loss when incurred.

Borrowing costs that are directly attributable to the acquisition or production of an asset which requires a considerable amount of time in order to be brought into the intended usable or sellable state are recognized as part of the cost of that asset. All other borrowing costs are recognized immediately as expenses.

Interest income is recognized in profit or loss when it is incurred.

Dividend income is recognized at the time the payout entitlement arises.

Hedging transactions

Derivative financial instruments are used at the consolidated ZF Group for hedging in order to reduce foreign currency and raw material price risks as well as interest rate and market price risks. IFRS 9 introduces new rules for recognition and measurement, impairment, derecognition and hedge accounting in relation to financial assets and liabilities. While ZF introduced the new rules for classification and measurement as well as for impairment as of January 1, 2018, the Group will apply the new hedge accounting rules only as of January 1, 2020. The changeover of the existing cash flow hedges used for hedging currency risks to the IFRS 9 rules is made by reversal and redesignation. This will not lead to material effects. The other hedging relationships will be continued unchanged.

If the criteria for hedge accounting are met, they are accounted for as fair value hedges or cash flow hedges. If hedge accounting is not applicable, the derivative financial instruments are measured at their fair values and changes in fair value are reflected in profit or loss.

Fair value hedges are used to hedge risks of changes in the value of items recognized in the statement of financial position. If the criteria are met, the results from mark-to-market of derivative financial instruments and the underlying hedged items are reflected in profit or loss.

Cash flow hedges are used to hedge exposure to variability in future cash flows. If the market value of derivative financial instruments – used for cash flow hedges – changes, the unrealized gains and losses in the amount of the effective portion are initially recognized in other comprehensive income without affecting profit or loss. Reclassification to the consolidated statement of profit or loss is effected in the same period during which the hedged transaction affects profit or loss. The ineffective part of market value changes is reflected directly in the consolidated statement of profit or loss.

Impacts on profit or loss resulting from hedging transactions that have been concluded in order to hedge risks relating to raw material price changes are shown under cost of sales. The profit and loss derived from foreign currency hedging in connection with hedging operating transactions is recognized under other income and expenses or as part of acquisition cost. The gains and losses from derivative financial instruments used to hedge interest rate, market price or foreign currency risks related to financial assets or liabilities are shown under other financial results.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, bank deposits available any time and short-term overnight money.

Financial assets

In general, the classification of current and non-current financial assets in accordance with IFRS 9 is based on the following three measurement categories:

- at amortized cost (AC)
- at fair value through other comprehensive income (FVtOCI) or
- at fair value through profit or loss (FVtPL)

The classification into the relevant measurement category is determined by the business model based on the management of the respective financial asset and by the contractual cash flow characteristics of the financial asset.

If the financial asset is allocated to the “Hold“ business model and if the cash flows collected are solely payments of principal and interest, the asset is measured at amortized cost (AC). The initial measurement is based on the fair value including transaction costs, while subsequent measurement is based on amortized cost. This measurement category primarily includes trade receivables held to maturity as well as financial receivables.

If the financial asset can be allocated to the “Hold and Sell“ business model and if the cash flows collected are solely payments of principal and interest, the asset is measured at fair value through other comprehensive income (FVtOCI). Fair value changes recognized in other comprehensive income are reclassified to the statement of profit or loss upon the disposal of the financial asset, except in the case of equity financial instruments. The initial measurement is based on the fair value including transaction costs, subsequent measurement is based on the fair value. This measurement category may be used for trade receivables to the extent that these are held to maturity or sold prior to maturity.

To avoid mismatches in terms of recognition or measurement, a financial asset that falls within the scope of one of the two measurement categories mentioned above may, alternatively, be measured at fair value through profit or loss (FVtPL). This measurement category is currently not in use.

Financial assets that do not meet the above-mentioned criteria regarding business model and cash flow characteristics are recognized at fair value through profit or loss (FVtPL). Both initial and subsequent measurement are based on the fair value. This measurement category includes investments in participations and securities.

Alternatively, if certain prerequisites are met, assets within the scope of this measurement category may also be measured at fair value through other comprehensive income (FVtOCI). ZF uses this option for equity instruments not held for trading (for example, instruments held in the portfolio for strategic reasons). Subsequently, all future changes in fair value have to be recognized in other comprehensive income; after the derecognition of the financial instrument, these changes remain within equity. Only dividend income is recorded through profit or loss.

Financial instruments measured at amortized cost mainly comprise current receivables. Impairments on these receivables are determined using the simplified model for the recognition of expected credit losses (loss allowance based on creditworthiness). This results in an earlier recognition of losses since not only incurred losses are taken into account, but also losses expected for the future. For this purpose, ZF applies a rating-based model to determine loss rates of receivables and contract assets. This involves the classification of customers into four risk categories. This risk classification is based on credit metrics provided by an external rating agency (Euler-Hermes) and takes into account both past and forward-looking information. Changes in the customers' creditworthiness are recorded within the framework of a regular monitoring process. The basis for the calculation of the general credit-based loss allowances are the respective gross receivables, less credit-based specific loss allowances and the expected probability of default. Cash and cash equivalents are normally not reviewed in more detail as to a potentially existing credit risk.

A significant increase in credit risk is assumed to exist when the risk category has deteriorated.

Risk category	Risk	Probability of default (from … to)	Definition of category
Risk category 1	Low risk	0.1–0.5%	Customers have a small credit risk and a strong ability to meet their payment obligations.
Risk category 2	Medium risk	1–4%	Customers have a medium credit risk and a good ability to meet their payment obligations.
Risk category 3	High risk	4–10%	Customers have an increased credit risk and a sufficient ability to meet their payment obligations.
Risk category 4	In default/ insolvent	18%	Customers have a high credit risk. It can be expected that the customers cannot meet their payment obligations in whole or in part.

As a rule, financial assets are capitalized as of the settlement date.

A financial asset is derecognized as of the settlement date when the contractual rights to receive cash flows from the asset have expired or substantially all risks and rewards have been transferred. A derecognition is performed once it has been established that the trade receivables as well as financial receivables are uncollectible.

Inventories

As a general rule, raw materials and supplies as well as merchandise are measured at their average cost taking into consideration the lower net realizable value. Work in progress and finished goods, including development expenses to be reimbursed by customers, are recognized at cost of conversion, taking into account the lower net realizable value. The cost of conversion includes all costs directly attributable to the manufacturing process and appropriate portions of the production-related overheads. This includes production-related depreciation, prorated general administrative expenses and prorated social expenses.

Contract assets

Contract assets comprise contingent customer receivables. This mainly includes development expenses, which are being reimbursed through the component price within the framework of volume production delivery. After the transition of the development results to the customer, these expenses are derecognized from inventories and recognized as contingent customer receivables in contract assets.

Investments in associates and joint ventures
Investments in associates and joint ventures are generally recognized in accordance with the equity method with the proportionate equity. If, on the reporting date, there is objective evidence for the impairment of an investment, an impairment test is performed. The share of the consolidated ZF Group in the profit for the period of the associate or joint venture, respectively, is recognized separately in the consolidated statement of profit or loss. Income and expenses that are directly recognized in the equity of the associate or joint venture are recognized in the consolidated ZF Group without effect on profit or loss as well and presented separately in the consolidated statement of comprehensive income.

Intangible assets
Purchased or internally generated intangible assets are capitalized if a future economic benefit can be expected from the use of the asset and the costs of the assets can be reliably determined.

For recognition and measurement of goodwill, please refer to the explanations on the consolidation principles.

Development costs that are not reimbursed by the customer are capitalized at cost of conversion in as far as both technical feasibility and marketability are ensured. It must furthermore be sufficiently probable that the development activity will generate future economic benefits. Capitalized development costs comprise all costs directly attributable to the development process. Capitalized development costs are amortized from the start of production over an expected product life cycle of five years.

Other intangible assets are recognized at cost and amortized based on the following useful lives:

	in years
Software	3 to 5
Patents, trademarks and licenses	5 to 10
Customer relations	3 to 30

Property, plant and equipment
The entire property, plant and equipment is used for business purposes and is measured at cost less depreciation for wear and tear. Depreciation on property, plant and equipment is recorded on the basis of the straight-line method in accordance with its utilization and allocated to the function costs. Throughout the consolidated group, systematic depreciation is based on the following useful lives:

	in years
Buildings	9 to 33
Technical equipment and machines	2 to 14
Other equipment, factory and office equipment	2 to 13

The depreciation on machines used in multi-shift operations is increased accordingly by shift allowances.

The residual values, depreciation methods and useful lives of assets are reviewed annually and adapted, if necessary.

Leases are accounted for in accordance with IFRS 16. A lease is a contract that conveys the right to use an asset for an agreed period of time in exchange for consideration. In accordance with IFRS 16, right-of-use assets are capitalized and a corresponding lease liability is recognized at the inception of a lease in which ZF acts as the lessee. The lease liability is recognized at the present value of the future lease payments and discounted using the interest rate implicit in the lease. Normally, this rate cannot be readily determined. In these cases, ZF's incremental borrowing rate for matching maturities and currencies is used. This rate is derived from observable credit spreads and swap rates. Lease liabilities are measured at the updated carrying amount using the effective interest method.

Amounts that are expected to be paid due to a residual value guarantee as well as extension, termination and purchase options – to the extent reasonably certain – are taken into account in the measurement of future payments.

In addition to the present value of the future lease payments, the cost of the right-of-use asset is determined by taking into account any payments made before the commencement date, lease incentives and initial direct costs, if applicable. Furthermore, the estimated costs for retirement obligations assumed are included in the measurement. The capitalized right-of-use assets are depreciated on a straight-line basis over the shorter of the lease term or the expected useful life. By exercising the corresponding option, agreements with a term of up to one year and agreements regarding assets that can be used independently and are of low value are recognized directly in profit or loss, not affecting the statement of financial position. ZF does not apply IFRS 16 to transactions involving intangible assets (including software and licenses). These continue to be accounted for in accordance with IAS 38.

Government grants

Government grants are recognized only if there is reliable evidence that the related conditions are met and the subsidies are likely to be granted. Investment subsidies are deducted from property, plant and equipment in the period in which they were received. Expense subsidies are recognized as income during the same period in which the expenses, for which compensation was granted, are incurred.

Current market interest rates are used for the valuation of non-interest-bearing or low-interest-bearing government loans. The difference between the discounted value and the repayment value is deferred and recognized under other liabilities. The deferred amount is broken down over the duration of the loan contract and recognized in interest expenses.

Assets held for sale and disposal groups

Assets and liabilities are reported as disposal groups when these are to be disposed of by sale together as a group in a single transaction which is highly probable. Individual assets are reported in the statement of financial position as assets held for sale. The affected assets and liabilities are presented separately in the statement of financial position in current assets and liabilities as “Assets held for sale and disposal groups“ and “Liabilities of disposal groups,“ respectively. Income and expenses of the assets and liabilities affected are included in the profit or loss from continuing operations until disposal.

The disposal group is measured upon initial recognition in accordance with the relevant IFRS standards. Subsequently, the disposal group is measured at the lower of its carrying amount or fair value less costs to sell.

Impairment tests

For investments in associates, intangible assets already in use as well as property, plant and equipment, it is verified as of the reporting date whether there are indications of potential impairment. If there are any indications, an impairment test must be performed. Intangible assets that are not yet ready to be used are subject to an annual impairment test.

To perform the impairment test, the recoverable amount is determined. This is the higher amount of the asset’s or the smallest cash-generating unit’s fair value less costs to sell and their value in use. The recoverable amount is determined for the individual asset or a cash-generating unit, if no cash flows can be allocated to the individual asset. The cash-generating units underlying the impairment tests are defined on the basis of the Group’s business units or the regional organization of the Group. The Group’s business units also represent the organizational level which is subject to regular review by management.

The value in use is the net present value of future cash flows, which are expected from the continued use of the asset (or the cash-generating unit) and its disposal at the end of its useful life. The value in use is determined by the discounted cash flow method on the basis of the current corporate planning data which refers to a three-year planning horizon. The capital cost rates of the consolidated ZF Group, which are determined on the basis of the WACC (Weighted Average Cost of Capital) method, are used to discount the cash flows.

The forecast for cash flows is based on the current operational planning of the consolidated ZF Group, in which general economic data from external macroeconomic research as well as financial surveys is also taken into consideration. The assumptions made consider the country-specific rates of inflation for the period investigated. Cost of materials is forecast based on the individual premises at the level of each cash-generating unit. The development of personnel expenses is also forecast individually on the basis of the collective agreements in effect. Based on these cash flow predictions, the value in use of the cash-generating units is determined assuming a discount factor before tax of 10% (2018: 10%) and a growth rate of 1.0% (2018: 1.5%). For perpetuity going beyond the three-year planning horizon, the cash flows are extrapolated taking into account the respective sustainable expected margin of the individual cash-generating units.

Fair values less costs to sell for property, plant and equipment are estimated on the basis of discounted cash flows as well as a cost-based approach for comparable assets that are generally not based on parameters observable on the market.

An impairment loss is recognized if the recoverable amount falls below the carrying amount of the asset or the cash-generating unit.

If the reason for an impairment loss recognized in an earlier period ceases to exist, the impairment loss is reversed, however up to a maximum of the carrying amount that would have been determined (net of depreciation or amortization) if no impairment loss had been recognized. Impairment losses and reversals of impairment losses for intangible assets and property, plant and equipment are assigned to the functional areas of the consolidated statement of profit or loss.

Goodwill from business combinations is allocated to those groups of cash-generating units that derive benefit from the business combinations. In the consolidated ZF Group, these are the respective divisions and business units. An impairment test for goodwill is performed annually using the impairment test in accordance with the above-described methods. An impairment of goodwill is recognized if the recoverable amount of the corresponding cash-generating unit is below its carrying amount. Impairment losses for goodwill are reported under other expenses. Impairment losses recognized on goodwill are not reversed.

Financial liabilities and other liabilities

If financial liabilities are held for trading, the related changes in fair value are recognized through profit or loss (FVtPL). Both initial and subsequent measurement are based on the fair value.

Financial liabilities not held for trading are measured at amortized cost (AC) (if they do not fall within a special category). The initial measurement is based on the fair value less transaction costs, while subsequent measurement is based on amortized cost. This measurement category primarily comprises financial debt and trade payables.

Alternatively, to avoid mismatches in terms of recognition or measurement, the liabilities may also be measured at fair value through profit or loss (FVtPL).

The consolidated ZF Group generally dispenses with applying the fair value option to recognize financial liabilities upon initial recognition at fair value through profit or loss (FVtPL).

Contract liabilities

Contract liabilities comprise prepayments from customers received for goods or services that are yet to be delivered or provided by ZF. In addition, outstanding charges by the customer to ZF or credits not yet granted by ZF to the customer are reported in this item.

Provisions for pensions

Provisions for pensions are recognized in accordance with the projected unit credit method. Under this method, not only pensions and vested interests recognized as of the reporting date are taken into account, but also increases in pensions and current salaries and wages that are expected in the future. The calculation is based on actuarial reports, taking into account biometric calculation bases. The plan assets, which are solely used for satisfying the pension obligations and which are restricted from the access of all other creditors, are offset against provisions. If these exceed the amount of provisions, such excess is reported under non-current financial assets. The plan assets are recognized at fair value. Expenses resulting from unwinding the discount on pension obligations and expected returns on plan assets are offset and recognized in interest expenses. Actuarial gains and losses are recognized in full in other comprehensive income in the period in which they occur. All other expenses resulting from the addition to pension provisions are assigned to the affected functional areas within the consolidated statement of profit or loss.

Other provisions

Other provisions are recognized if an obligation to third parties exists, which will probably result in the outflow of resources, and if a reliable estimate can be made of the amount required.

As a general rule, all cost elements that are capitalized in inventories are reflected in the measurement of provisions relating to sales, in particular those for warranties and potential losses on pending transactions. The measurement takes place at the value of the best possible estimate of expenses which are necessary to fulfill the obligation on the reporting date. The measurement of provisions for warranty costs takes place on the basis of actual warranty expenses under consideration of warranty and goodwill periods as well as sales development over several years.

Personnel-related obligations mainly relate to semi-retirement obligations, obligations in connection with restructuring measures as well as long-service awards. The provisions for semi-retirement obligations comprise individual or pay-scale-related top-up benefits for pension insurance as well as the wages and salaries to be paid during the release phase. They are accrued on a pro-rata basis when the obligation arises.

The major portion of the semi-retirement obligations is protected against insolvency using a trust model. The assets, which are solely used for satisfying the semi-retirement obligations and which are restricted from the access of all other creditors, are offset against provisions (plan assets). They are recognized at fair value. If the plan assets exceed the amount of provisions, such excess is reported under non-current financial assets. The return on plan assets is offset against expenses from the interest cost of provisions and reported in the statement of profit or loss.

Provisions for restructuring measures are recorded as soon as a formal plan exists and was communicated to the parties affected.

Provisions for employee long-service bonuses are calculated on an actuarial basis.

Non-current provisions with a residual term of more than one year are recognized at the reporting date with their discounted settlement amount. They are discounted when the effect of the time value of money is material.

Income tax

The actual income tax receivables and provisions for current and previous periods, which also include tax risks, are measured using the amount for which reimbursement from or payment to tax authorities is expected. The amount is calculated using the tax rates and the tax laws that are in effect on the reporting date.

Deferred tax assets and liabilities are recognized via temporary differences between the tax basis and the IFRS carrying amounts. Deferred tax assets also include tax reductions that will result from the expected utilization of existing tax loss carryforwards and tax credits in the subsequent years. Deferred taxes are computed on the basis of the tax rates that will or are expected to apply on the realization date with sufficient probability in accordance with the current legal situation in the individual countries.

Deferred tax assets on temporary differences and on tax loss carryforwards are only recognized if there is sufficient probability that the tax reductions resulting from them will actually occur in future.

The carrying amount of deferred tax assets is reviewed on each reporting date and written down accordingly, if it is anticipated that there will not be enough taxable profit to offset the tax assets at least in part. Unrecognized deferred tax assets are reviewed on each reporting date and recognized to the extent that a future taxable income allows the utilization of deferred tax assets.

In addition, no deferred tax assets and liabilities are recognized if these result from the initial recognition of goodwill, an asset or a liability as part of a business transaction which is not a business combination, and if, through this initial recognition, neither the accounting net profit or loss before income tax nor the taxable profit is influenced.

Deferred taxes that refer to line items that are directly recognized in equity are also recognized in equity and not in the consolidated statement of profit or loss.

Deferred tax receivables and deferred tax liabilities are offset against each other if the consolidated group has a recoverable right to offsetting the actual tax refunds against actual tax liabilities and if they apply to the income taxes of the same tax subject levied by the same tax authority.

Judgments and uncertainties in connection with estimates

Preparation of the consolidated financial statements requires assumptions to be made and estimates to be applied, which affect the reported amounts and disclosure of assets and liabilities, income and expenses as well as contingent liabilities.

Essential assumptions and estimates as used in the recognition and measurement of the balance sheet items are explained below.

ZF recognizes sales from a transaction with a customer at the date when ZF has satisfied its performance obligation and control over the product or the service is transferred to the customer. For the major part of the transactions, the transfer of control occurs on the basis of the terms of delivery agreed with the customer (Incoterms). The most commonly used Incoterms are “Ex Works” and “Free Carrier” (FCA). After the transfer of control, the payment for the items delivered or services rendered is made based on terms of payment that are common in the industry and dependent on the individual creditworthiness of the customer. To the extent that warranties with service characteristics are provided to customers that extend beyond typical warranty agreements, sales are recognized over the agreed service period.

In the case of sales not related to volume production, ZF partially receives prior to or concurrently with service provision advance payments in relation to the services to be provided. The transaction price underlying revenue recognition is measured on the basis of the payment claim contractually agreed at the date of the transaction. Any existing variable price components, such as price reductions linked to meeting specific quantity targets or to the development of material prices or exchange rates, are reviewed periodically as to their feasibility.

Contract assets (Note 12) are amortized depending on the project term and unit prices. They are reviewed regularly as to their feasibility based on orders received and sales expectations. If there are any indications that a contract asset is not recoverable, a loss allowance is recognized in the corresponding amount.

Management estimates as to technical and economic feasibility of development projects influence the decision to capitalize development costs under intangible assets (Note 16). The measurement of the capitalized development costs depends on the assumptions about the amount and timing of expected future cash flows as well as on the discount rates to be applied.

For the accounting of other intangible assets and property, plant and equipment, the assumptions and estimates essentially relate to the definition of useful lives.

Measurement as well as the determination of the useful lives of assets, liabilities and contingent liabilities to be recognized in the context of acquisitions were primarily made using cash-flow-based estimates. The allocation of purchased goodwill was subject to estimates as regards the amount and the timing of future cash flows resulting from synergies.

In the context of the impairment tests (Note 19), assumptions and estimates are used in determining the future cash flows to be expected as well as for defining discount rates. This may have an influence on the values of intangible assets in particular.

The assessment of the recoverability of trade receivables (Note 11) is subject to judgment as regards the expected probability of default.

In accounting the deferred tax assets (Note 8), the assumptions and estimates essentially relate to the likelihood of expected tax reductions actually occurring in the future.

When determining the outstanding customer charges or credits to the customer as part of contract liabilities (Note 21) in the consolidated financial statements in connection with differences in prices or quantities, assumptions and estimates were made based on ongoing customer negotiations or past experience with customers.

The actuarial valuation of provisions for pensions (Note 24) is particularly based on assumptions as to discount rates, future pension developments and age shifts.

Determination of warranty provisions (Note 23) is subject to assumptions and estimates which refer to the time period between delivery date and the occurrence of the warranty event, warranty and goodwill periods as well as future warranty burdens.

The determination of provisions for onerous contracts (Note 23) is subject to judgments with respect to the interpretation of supply contracts. In this respect, the major decision criteria are the bindingly defined term of delivery as well as quantities and prices.

ZF Friedrichshafen AG and its subsidiaries are exposed to various claims arising from legal disputes (Note 33), in particular in connection with warranty cases as well as antitrust proceedings and investigations by authorities. Against the backdrop of complex legal matters, the assessment of the outcome of the proceedings is subject to discretion. The probability and the amount of utilization is taken into account when recognizing provisions. The assessment is based on internal estimates, supported by external consultants and lawyers in individual cases. These estimates will be adjusted if new insights and changes in circumstances occur, and they may deviate significantly from the actual outcome of the proceedings. This could have an impact on the Group's future net assets, financial position and results of operations.

Extension, termination and purchase options have to be taken into account in the recognition of right-of-use assets from leases (Note 18) as well as lease liabilities to the extent that it is reasonably certain that such options are exercised. Reasonably probable extension and purchase options lead to an increase of future payments and thus to higher right-of-use assets and, accordingly, to higher future depreciation. In contrast, reasonably probable termination options result in a decrease of the recognized right-of-use assets and to lower future depreciation. In particular, real estate rental contracts may include such options, and the exercise of such options is reviewed regularly taking into account economic aspects.

No other major judgments were made.

In individual cases, actual amounts could differ from these assumptions and estimates. Changes are recognized in profit or loss as soon as better information is available.

When preparing the consolidated financial statements, the underlying estimates were not subject to any major risks; therefore, no major adjustments to the assets and liabilities recognized in the consolidated statement of financial position are expected during the subsequent fiscal year.

Changes in accounting policies

IFRS 16 Leases
Since January 1, 2019, ZF has applied the new standard for lease accounting (IFRS 16). A lease is a contract that conveys the right to use an asset for an agreed period of time in exchange for consideration. ZF acts as the lessee of production, warehouse and office buildings as well as, to a smaller extent in terms of value, of forklift trucks and vehicles.

IFRS 16 replaces and changes the previous provisions of IAS 17 in relation to the accounting for leases by lessees. The distinction previously made pursuant to IAS 17 regarding the lessee between recognized obligations from finance leases and unrecognized obligations from operating leases is revoked and replaced by an accounting model for lessees that introduces mandatory recognition similar to the provision for finance lease contracts applicable under IAS 17. The procedure set out in IAS 17 for finance leases is largely followed. Accordingly, as per IFRS 16, a liability in the amount of the present value of the future lease payment and a corresponding asset in the form of a right of use have to be recognized. Accordingly, the depreciation expense for the right of use has to be presented separately from the interest expenses on the leasing liability in the statement of profit or loss, with interest expenses being recognized as a component of the net financial result.

ZF elected to apply the modified retrospective method for the first-time application of IFRS 16, which means that the cumulative effect from the first-time application of IFRS 16 as of January 1, 2019, was reported in retained earnings. The prior year's comparative figures, including the disclosures in the notes to the consolidated financial statements, were not adjusted and are therefore comparable only to a limited degree.

The reasons for the material changes from the application of IFRS 16 as well as the adjustments of the amounts as of January 1, 2019, are detailed below. In addition, the consolidated statement of financial position as of December 31, 2019, the consolidated statement of cash flows and the consolidated statement of profit or loss for the fiscal year 2019 are presented after adjustments due to the effects from the application of IFRS 16.

The changes primarily refer to the accounting treatment of contracts previously classified as operating leases. These leases had been recognized outside the statement of financial position until December 31, 2018. Upon the initial application of IFRS 16, a right-of-use asset as well as a lease liability were recognized in the statement of financial position for these contracts.

Upon initial application, the transition requirements set out in IFRS 16 were taken into account and the elections and practical expedients provided for by the standard were exercised as follows:

- At the time of the initial application, the classification of agreements so far existing under IAS 17 as leases was not reassessed.
- Irrespective of their original term, leases that expired before January 1, 2020, were recognized directly in profit or loss as short-term leases, thus not affecting the statement of financial position.
- Apart from very few exceptions, the rights of use from leases were measured in the amount of the leasing liability. The latter is the present value of the outstanding lease payments as of January 1, 2019, discounted using the incremental borrowing rate applicable at the corresponding point in time.
- Initial direct costs were not taken into account for the evaluation of the rights of use from leases as of January 1, 2019.
- An impairment test for the rights of use as of January 1, 2019, was not carried out while potentially existing provisions for onerous contracts were taken into account.
- Options for renewal, termination and purchase – if sufficiently likely – were taken into account for the evaluation of the rights of use, the lease liabilities and the depreciation period. Reasonably probable renewal and purchase options lead to an increase of the right-of-use assets and, accordingly, to higher future depreciation. In contrast, reasonably probable termination options result in a decrease of the recognized right-of-use assets and consequently to lower future depreciation.

Beyond initial application, there are further accounting choices as well as practical expedients that are exercised by ZF as follows:

- Lease agreements with a term of up to one year and agreements for which the underlying asset is of low value and can be used on a standalone basis are directly recognized in profit or loss, remaining off-balance.
- ZF does not apply IFRS 16 to transactions involving intangible assets (including software and licenses). These continue to be accounted for in accordance with IAS 38.

The implementation of IFRS 16 has mainly led to the following effects:

- For previously existing operating leases, right-of-use assets in the amount of €625 million and corresponding lease liabilities in the amount of €661 million were recognized in the statement of financial position as of January 1, 2019. These amounts are mainly related to real estate rental contracts (right-of-use asset of €555 million) as well as factory and office equipment such as forklift trucks and vehicles (right-of-use asset of €61 million). For individual real estate rental contracts, the election to measure the right-of-use asset at the amount of the lease liability was not exercised. The resulting difference between the right-of-use asset and the lease liability as of January 1, 2019, in the amount of €36 million was directly recorded in retained earnings.
- In the opening balance, the application of IFRS 16 resulted in an increase in total assets by 2%.

- The present value of the lease liabilities was determined using an incremental borrowing rate applicable for the respective lease term and currency. This was derived from credit spreads and swap rates observed on the market and amounts to a weighted average of 3.4% upon initial recognition.
- Pursuant to IAS 17, non-exercised extension options had to be taken into account in the measurement of the financial liability from finance leases only in specific cases. To the extent that their exercise is reasonably certain, such options are included in the carrying amount in accordance with IFRS 16.
- To a minor extent, temporary differences led to the recognition of deferred taxes.

Based on the nominal value of the future minimum lease payments as of December 31, 2018, the following table shows the reconciliation to the opening balance of the lease liabilities as of January 1, 2019:

in € million	
Nominal value of future minimum lease payments as of December 31, 2018	718
Practical expedient for short-term leases	−38
Practical expedient for leases with an underlying asset of low-value	−5
Obligations from extension and termination options	86
Other	10
Obligations from leases classified as operating leases under IAS 17 as of January 1, 2019 (undiscounted)	**771**
Discounting	−110
Present value of obligations from leases classified as operating leases under IAS 17 as of January 1, 2019	**661**
Carrying amount of liabilities of leases classified as finance leases under IAS 17 as of December 31, 2018	35
Carrying amount of lease liabilities as of January 1, 2019	**696**

The major effects from the application of the new standard IFRS 16 on the net assets, financial position and results from operations are described in the following sections.

The following table shows the adjustment of the opening balances of the financial position as of January 1, 2019:

Assets in € million	Dec. 31, 2018 published	Adjustments	**Jan. 1, 2019 adjusted**
Current assets			
Cash and cash equivalents	922		922
Financial assets	84		84
Trade receivables	5,161		5,161
Contract assets	82		82
Other assets	482		482
Income tax receivables	89		89
Inventories	3,915		3,915
	10,735		**10,735**
Non-current assets			
Financial assets	945		945
Associates	454		454
Contract assets	109		109
Other assets	102		102
Intangible assets	7,205		7,205
Property, plant and equipment	6,630	625	7,255
Deferred taxes	910	5	915
	16,355	**630**	**16,985**
	27,090	**630**	**27,720**

Liabilities and equity in € million	Dec. 31, 2018 published	Adjustments	Jan. 1, 2019 adjusted
Current liabilities			
Financial liabilities	606	115	721
Trade payables	5,467		5,467
Contract liabilities	899		899
Other liabilities	1,494		1,494
Income tax provisions	294		294
Other provisions	812		812
	9,572	**115**	**9,687**
Non-current liabilities			
Financial liabilities	4,464	546	5,010
Trade payables	40		40
Contract liabilities	357		357
Other liabilities	98		98
Provisions for pensions	4,389		4,389
Other provisions	379		379
Deferred taxes	484		484
	10,211	**546**	**10,757**
Equity			
Subscribed capital	500		500
Capital reserve	386		386
Retained earnings	6,128	−30	6,098
Equity attributable to shareholders of ZF Friedrichshafen AG	**7,014**	**−30**	**6,984**
Non-controlling interests	293	−1	292
	7,307	**−31**	**7,276**
	27,090	**630**	**27,720**

The following tables show the effect from the application of IFRS 16 on items of the financial statements affected by the changes as of December 31, 2019. In the table, the values including the application of IFRS 16 (column 1) are compared with the values without application of IFRS 16 (column 2) for the primarily affected line items.

In the statement of profit or loss, the application of IFRS 16 had the effect that rental and lease expenses for contracts previously classified as operating leases are now divided into depreciation and interest expenses. The depreciation expense, as previously the rental and lease expenses, is reported under the function costs while the interest expense is shown under the net financial result. For the subsequent measurement as of December 31, 2019, the capitalized rights of use were depreciated on a straight-line basis over the contract term or – if shorter – the applicable useful life. Compared to the previous recognition of expenses from operating leases in the operating profit only, this results in an improvement in the EBIT by €13 million as well as a deterioration of the net interest result by €26 million.

Consolidated statement of profit or loss in € million	2019 Including IFRS 16	2019 Excluding IFRS 16	2018 Excluding IFRS 16
Cost of sales	30,768	30,774	30,827
Gross profit on sales	**5,750**	**5,744**	**6,102**
Research and development costs	2,270	2,272	2,158
Selling expenses	1,267	1,268	1,290
General administrative expenses	1,312	1,316	1,303
EBIT	**927**	**914**	**1,537**
Financial expenses	746	721	576
Net profit or loss before tax	**540**	**552**	**1,228**
Income taxes	140	143	261
Net profit or loss after tax	**400**	**409**	**967**
thereof shareholders of ZF Friedrichshafen AG	350	359	904
thereof non-controlling interests	50	50	63

Assets in € million	Dec. 31, 2019 Including IFRS 16	Dec. 31, 2019 Excluding IFRS 16	Dec. 31, 2018 Excluding IFRS 16
Non-current assets			
Property, plant and equipment	7,669	6,983	6,630
Deferred taxes	1,291	1,283	910

Liabilities and equity in € million	Dec. 31, 2019 Including IFRS 16	Dec. 31, 2019 Excluding IFRS 16	Dec. 31, 2018 Excluding IFRS 16
Current liabilities			
Financial liabilities	1,259	1,126	606
Non-current liabilities			
Financial liabilities	8,430	7,829	4,464
Equity	7,106	7,146	7,307

In the consolidated statement of cash flows, the application of IFRS 16 has led to an increase in the cash flow from operating activities (€157 million). The cash flow from financing activities is reduced by the redemption amount of the lease liabilities (€131 million) and the interest portion contained in the lease payments (€26 million).

Provisions for pensions

In 2004, ZF Group companies in Germany granted their employees a benefit plan that comprises, apart from typical long-service awards, a post-employment element in the form of a pension component; upon reaching the specified service anniversary this pension benefit is calculated according to a fixed formula and contributed by the employer into the company pension scheme. The accounting policy of this grant was changed as from the fiscal year 2019. Previously, the grant was measured and reported under other provisions until reaching the specified service anniversary. Upon reaching the service anniversary, the grant was recognized and measured as a pension provision, which at that time led to a corresponding increase in the obligation as well as a reclassification from other provisions to pension provisions. For accounting purposes, since the fiscal year 2019, a separation has been made into typical long-service benefits that are recognized as other provisions as well as a post-employment component that is accounted for over the entire benefit phase as a pension liability.

This change in accounting policy provides for a consistent accounting treatment of the obligation over the entire vesting period.

The comparative figures, including the disclosures in the notes to the consolidated financial statements, were adjusted retrospectively.

The change in the accounting policy had the following effects on the consolidated statement of financial position as of January 1, 2018, and December 31, 2018, respectively:

Assets in € million	Jan. 1, 2018 published	Adjustments	Jan. 1, 2018 adjusted
Current assets	**11,205**		**11,205**
Non-current assets			
Deferred taxes	772	46	818
	16,628	**46**	**16,674**
	27,833	**46**	**27,879**

Liabilities and equity in € million	Jan. 1, 2018 published	Adjustments	Jan. 1, 2018 adjusted
Current liabilities	**10,442**		**10,442**
Non-current liabilities			
Provisions for pensions	3,851	270	4,121
Other provisions	613	–118	495
	10,606	**152**	**10,758**
Equity			
Retained earnings	5,600	–106	5,494
	6,785	**–106**	**6,679**
	27,833	**46**	**27,879**

Assets in € million	Dec. 31, 2018 published	Adjustments	Dec. 31, 2018 adjusted
Current assets	**10,735**		**10,735**
Non-current assets			
Deferred taxes	852	58	910
	16,297	**58**	**16,355**
	27,032	**58**	**27,090**

Liabilities and equity in € million	Dec. 31, 2018 published	Adjustments	Dec. 31, 2018 adjusted
Current liabilities	**9,572**		**9,572**
Non-current liabilities			
Provisions for pensions	4,065	324	4,389
Other provisions	511	–132	379
	10,019	**192**	**10,211**
Equity			
Retained earnings	6,262	–134	6,128
	7,441	**–134**	**7,307**
	27,032	**58**	**27,090**

The effects of the change in accounting policy on the items of the consolidated statement of profit or loss and the consolidated statement of comprehensive income for 2018 are presented in the following tables:

Consolidated statement of profit or loss in € million	2018 published	Adjustments	2018 adjusted
Cost of sales	30,836	–9	30,827
Gross profit on sales	**6,093**		**6,102**
EBIT	**1,528**		**1,537**
Financial expenses	570	6	576
Net profit or loss before tax	**1,225**		**1,228**
Income taxes	260	1	261
Net profit or loss after tax	**965**		**967**
thereof shareholders of ZF Friedrichshafen AG	902		904
thereof non-controlling interests	63		63

Statement of comprehensive income in € million	2018 published	Adjustments	2018 adjusted
Net profit or loss after tax	**965**	**2**	**967**
Line items that will not be reclassified in the consolidated statement of profit or loss			
Actuarial losses from pension obligations	–319	–43	–362
Income taxes	92	13	105
	–246		**–276**
Other comprehensive income after tax	**–166**		**–196**
Total comprehensive income	**799**		**771**
thereof shareholders of ZF Friedrichshafen AG	737		709
thereof non-controlling interests	62		62

NOTES TO THE CONSOLIDATED STATEMENT OF PROFIT OR LOSS

The consolidated statement of profit or loss has been drawn up in accordance with the cost of sales method.

1 Sales

In the following tables, the sales based on contracts with customers are broken down into sales categories and geographical regions:

in € million	2019	2018
Volume production business sales	31,797	32,057
Aftermarket and service sales	3,274	3,288
Other sales	1,447	1,584
	36,518	**36,929**

in € million	2019	2018
Germany	7,052	7,405
Western Europe	6,888	7,297
Eastern Europe	2,759	2,688
North America	10,435	10,264
South America	1,068	1,034
Asia-Pacific	7,847	8,008
Africa	469	233
	36,518	**36,929**

2 Cost of sales

in € million	2019	2018
Cost of materials	22,532	22,668
Personnel expenses	4,783	4,752
Depreciation, amortization and impairment	1,545	1,432
Other	1,908	1,975
	30,768	**30,827**

3 Other income

in € million	2019	2018
Foreign exchange gains	375	349
Income from hedging	77	91
Income from the disposal of intangible assets and property, plant and equipment	9	19
Income from rentals and lease payments	5	2
Income from deconsolidations	0	83
Badwill	3	0
Miscellaneous income	116	107
	585	**651**

4 Other expenses

in € million	2019	2018
Foreign exchange losses	390	367
Expenses from hedging	82	90
Changes of allowances for receivables	20	15
Losses on the disposal of intangible assets and property, plant and equipment	13	9
Miscellaneous expenses	97	131
	602	**612**

5 Net result from participations

in € million	2019	2018
Expenses from deconsolidations	0	−1
Result from at-equity valuation	25	44
Result from associates	**25**	**43**
Income from participations	18	23
Write-ups on participations	0	77
Income from the disposal of participations	0	6
Expenses from the disposal of participations	0	−2
Other net result from participations	**18**	**104**
Net result from participations	**43**	**147**

6 Financial income

in € million	2019	2018
Interest from current financial investments	8	5
Interest from non-current financial investments	5	4
Other interest	18	25
Return on plan assets	23	0
Interest income	**54**	**34**
Foreign exchange gains	219	137
Income from derivative financial instruments	84	96
Income from the disposal of securities	2	0
Other financial income	**305**	**233**
Financial income	**359**	**267**

Interest income under the effective interest method accounts for €31 million (2018: €34 million) for the 2019 fiscal year.

7 Financial expenses

in € million	2019	2018
Interest on financial liabilities	194	200
Interest on lease liabilities	26	0
Other interest	27	11
Interest cost on pension provisions	62	62
Unwinding the discount on other non-current items	0	16
Interest expenses	**309**	**289**
Foreign exchange losses	209	139
Expenses from derivative financial instruments	108	111
Write-downs of financial receivables	71	5
Losses on the disposal of securities	2	0
Transaction costs and incidental expenses	47	32
Other financial expenses	**437**	**287**
Financial expenses	**746**	**576**

8 Income taxes

Income tax expenses are comprised as follows:

in € million	2019	2018
Actual taxes	337	460
Deferred taxes	−197	−199
Income tax expenses	**140**	**261**

Actual income tax expenses included adjustments in the amount of €26 million (2018: €58 million) for current taxes of prior fiscal years. Deferred tax income includes tax income of approximately €203 million (2018: €261 million) in connection with the development of temporary differences.

The actual taxes in Germany were determined on the basis of an overall tax rate of 30%, derived from the corporate income tax rate of 15%, the solidarity surcharge of 5.5% and an average trade tax rate of 14.175%. The actual taxes of international subsidiaries have been determined on the basis of relevant national tax laws and the tax rate applicable in the country of incorporation. Deferred tax assets and liabilities are measured at the tax rates in Germany and abroad, respectively, which are expected to apply at the time of realizing the asset or discharging the liability.

The (current and deferred) income tax expenses expected on the basis of the German overall tax rate of 30% (2018: 30%) deviate from the reported income tax expenses as set out below:

in € million	2019	2018
Expected income tax expenses	162	368
Increase/decrease of income taxes due to		
Tax effects due to different national tax rates and taxation systems	−66	−109
Effects of changes in tax laws	6	11
Tax effects due to non-recognition and write-down of deferred tax assets and their reversal	22	11
Tax effects due to permanent differences [1)]	10	−54
Tax effects due to prior-period items	8	37
Other	−2	−3
Reported income tax expenses	**140**	**261**

1) Permanent differences comprise tax-reducing items such as tax credits as well as non-deductible operating expenses.

The gross amounts of deferred tax assets and liabilities resulted from the following line items:

	2019		2018	
in € million	**Deferred tax assets**	**Deferred tax liabilities**	Deferred tax assets	Deferred tax liabilities
Intangible assets	0	673	0	786
Other assets	229	248	307	204
Pensions	1,040	0	664	0
Other liabilities	477	205	243	63
Tax loss carryforwards and tax credits	259	0	265	0
Total	**2,005**	**1,126**	**1,479**	**1,053**
Netting	−714	−714	−569	−569
	1,291	**412**	**910**	**484**

The change in deferred taxes results not only from income taxes recognized in the consolidated statement of profit or loss but also from the transition to IFRS 16 (€5 million), changes in line items of the consolidated statement of comprehensive income, and from foreign currency effects.

At the end of the fiscal year, the company reported tax loss carryforwards which were subject to offsetting restrictions. To that extent, no deferred tax assets were recognized for these since their utilization due to future positive taxable profit is not probable.

No deferred tax assets were recorded for the following matters (gross amounts):

in € million	**2019**	2018
Deductible temporary differences	381	332
Tax loss carryforwards and tax credits	846	772
	1,227	**1,104**

Of the unrecognized tax loss carryforwards, €430 million (2018: €368 million) had a limited expiration period of up to 20 years and €415 million (2018: €404 million) were unlimited. Other items in the amount of €357 million (2018: €340 million) were not taken into account because the probability of a claim is deemed to be extremely low.

Deferred taxes are to be recognized for temporary differences in relation to subsidiaries if their realization is probable. Deferred tax liabilities of €61 million (2018: €97 million) were recorded for reserves generated by subsidiaries. Apart from that, no deferred taxes have been recognized for the reserves generated by subsidiaries of €1,907 million (2018: €1,553 million), as the profits are to be reinvested for an indefinite period of time.

9 Other notes to the consolidated statement of profit or loss

The consolidated statement of profit or loss includes the following cost of materials:

in € million	**2019**	2018
Cost of raw materials, supplies and merchandise	22,481	22,609
Cost of purchased services	327	320
Other cost of materials	34	32
	22,842	**22,961**

The breakdown of personnel expenses is as follows:

in € million	**2019**	2018
Wages and salaries	6,324	6,262
Social security and benefits expenses	1,184	1,144
Pension expenses	256	232
	7,764	**7,638**

Personnel expenses include expenses for defined contribution plans in the amount of €358 million (2018: €351 million). The expenses contained for the state plans amounting to €263 million (2018: €277 million) primarily comprise the employer's contribution to the state pension scheme, which is included in the social security expenses.

Termination benefits and other long-term employee benefits of €45 million (2018: €13 million) were recorded in the consolidated statement of profit or loss. They affect severance pay as well as expenses from additions to restructuring provisions.

Amortization on intangible assets and property, plant and equipment is included in the following consolidated statement of profit or loss items:

	Intangible assets		Property, plant and equipment	
in € million	**2019**	2018	**2019**	2018
Cost of sales	295	290	1,250	1,142
Research and development costs	47	34	96	68
Selling expenses	187	183	24	9
General administrative expenses	22	21	118	65
	551	**528**	**1,488**	**1,284**

Impairment losses on property, plant and equipment amount to €1 million (2018: €3 million). There have been no reversals of impairments in the year under review (2018: €1 million). There have been no impairment losses on intangible assets (2018: €2 million), and reversals of impairments amount to €1 million (2018: €0 million).

Research and development costs recorded in the fiscal year reached €2,270 million (2018: €2,158 million). This figure includes amortization for capitalized development costs of €27 million (2018: €17 million).

NOTES TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

10 Financial assets

	Dec. 31, 2019		Dec. 31, 2018	
in € million	**Total**	**Thereof current**	Total	Thereof current
Investments in participations	161	0	205	0
Securities	2,576	2,576	0	0
Financial receivables	203	105	183	51
Net assets from defined benefit plans	562	0	542	0
Net assets for other performance obligations toward employees	65	0	58	0
Derivative financial instruments	158	143	41	33
	3,725	**2,824**	**1,029**	**84**

Investments in participations have developed as follows:

in € million	**2019**	2018
Carrying amount as of Jan. 1	205	138
Changes in the basis of consolidation	4	0
Changes not affecting profit or loss	–19	–19
Additions	14	11
Disposals	–43	–2
Reversals of impairments	0	77
Carrying amount as of Dec. 31	**161**	**205**

The financial receivables include granted loans and direct insurance claims against life insurances of €36 million (2018: €36 million).

The financial receivables also contain earmarked bank deposits and time deposit investments of €65 million (2018: €58 million).

The specific loss allowances for the financial assets have developed as follows:

in € million	2019	2018
Carrying amount as of Jan. 1	7	3
Additions	71	5
Utilization	0	−1
Carrying amount as of Dec. 31	**78**	**7**

The credit-based loss allowances for financial assets remained unchanged at €1 million.

11 Trade receivables

The trade receivables have the following risk structure:

Dec. 31, 2019 Risk category	Net in € million	Risk structure %	Specific loss allowances in € million	Credit-based loss allowances in € million	Gross in € million
1	1,998	40	22	8	2,028
2	2,525	50	33	36	2,594
3	516	10	10	14	540
4	2	0	12	0	14
Total	**5,041**	**100**	**77**	**58**	**5,176**

Dec. 31, 2018 Risk category	Net in € million	Risk structure %	Specific loss allowances in € million	Credit-based loss allowances in € million	Gross in € million
1	2,449	48	4	5	2,458
2	2,237	43	41	32	2,310
3	455	9	14	13	482
4	20	0	1	3	24
Total	**5,161**	**100**	**60**	**53**	**5,274**

The specific loss allowances for trade receivables have developed as follows:

in € million	2019	2018
Carrying amount as of Jan. 1	60	48
Net exchange differences	3	−1
Additions	29	26
Utilization	−2	−1
Reversals	−13	−12
Carrying amount as of Dec. 31	**77**	**60**

The credit-based loss allowances for trade receivables have developed as follows:

in € million	2019	2018
Carrying amount as of Jan. 1	53	52
Net exchange differences	1	0
Net additions	4	1
Carrying amount as of Dec. 31	**58**	**53**

Net additions for credit-based loss allowances are due to a slight increase in expected probability of default compared to the previous year.

12 Contract assets

	Dec. 31, 2019		Dec. 31, 2018	
in € million	Total	Thereof current	Total	Thereof current
Volume production business	179	56	62	26
Product development and application	138	46	113	40
Others	11	11	16	16
	328	**113**	**191**	**82**

Sales recorded in the fiscal year 2019 from performance obligations satisfied (or partially satisfied) in previous fiscal years amount to €26 million (2018: €5 million).

Contract assets have developed as follows:

in € million	2019	2018
Carrying amount as of Jan. 1	191	126
Additions	222	115
Utilization	−82	−49
Reversals	−3	−1
Carrying amount as of Dec. 31	**328**	**191**

The contract assets have the following risk structure:

Dec. 31, 2019 Risk category	Net in € million	Risk structure %	Specific loss allowances in € million	Credit-based loss allowances in € million	Gross in € million
1	309	94	0	1	310
2	18	5	0	0	18
4	1	1	0	0	1
Total	**328**	**100**	**0**	**1**	**329**

Dec. 31, 2018 Risk category	Net in € million	Risk structure %	Specific loss allowances in € million	Credit-based loss allowances in € million	Gross in € million
1	188	98	0	1	189
4	3	2	0	0	3
Total	**191**	**100**	**0**	**1**	**192**

The credit-based loss allowances for contract assets remained unchanged at €1 million.

13 Other assets

in € million	Dec. 31, 2019 Total	Dec. 31, 2019 Thereof current	Dec. 31, 2018 Total	Dec. 31, 2018 Thereof current
Other tax receivables	404	376	326	320
Prepaid expenses	153	84	113	66
Sundry assets	157	98	145	96
	714	**558**	**584**	**482**

Other tax receivables are, for the most part, sales tax refund entitlements. Sundry assets comprise, in general, payments in advance and capitalized reimbursement claims against suppliers.

As in the previous year, there were no specifically impaired receivables as of the end of the fiscal year.

The credit-based loss allowances for other assets remained unchanged at €1 million.

14 Inventories

in € million	Dec. 31, 2019	Dec. 31, 2018
Raw materials and supplies	1,537	1,560
Work in progress	1,431	1,285
Finished goods and merchandise	972	1,050
Payments in advance	8	20
	3,948	**3,915**

Compared to the prior year, write-downs of inventories remained unchanged at €182 million (2018: increase by €7 million).

15 Associates

in € million	Dec. 31, 2019	Dec. 31, 2018
Investments in joint ventures	158	172
Investments in associates	303	282
	461	**454**

The joint ventures and associates, including the shareholding, are set out in the list of shares held.

ZF PWK Mécacentre S.A.S., St. Etienne (France), is classified as an associate despite a participation quota of 50% as the company is not jointly controlled.

The total comprehensive income of the associates is as follows:

in € million	Investments in joint ventures 2019	Investments in joint ventures 2018	Investments in associates 2019	Investments in associates 2018
Net profit or loss after tax	9	19	16	25
Other comprehensive income	0	–1	0	1
Total comprehensive income	**9**	**18**	**16**	**26**

16 Intangible assets

in € million	Goodwill	Patents, licenses, software and similar rights and assets	Development costs	Payments in advance	Total
Cost as of Jan. 1, 2019	**4,126**	**4,792**	**208**	**53**	**9,179**
Changes in the basis of consolidation	10	7	10	0	27
Net exchange differences	45	86	4	2	137
Additions	0	44	3	10	57
Reclassifications	0	8	0	−8	0
Disposals	0	−20	0	−1	−21
Cost as of Dec. 31, 2019	**4,181**	**4,917**	**225**	**56**	**9,379**
Accumulated amortization as of Jan. 1, 2019	**41**	**1,855**	**78**	**0**	**1,974**
Changes in the basis of consolidation	0	0	2	0	2
Net exchange differences	1	31	0	0	32
Additions (amortization)	0	524	27	0	551
Disposals	0	−20	0	0	−20
Reversals of impairments	0	−1	0	0	−1
Accumulated amortization as of Dec. 31, 2019	**42**	**2,389**	**107**	**0**	**2,538**
Carrying amount as of Dec. 31, 2019	**4,139**	**2,528**	**118**	**56**	**6,841**

In addition to EDP software acquired in return for payment and capitalized development costs, intangible assets primarily comprise goodwill from the acquisition of companies.

in € million	Goodwill	Patents, licenses, software and similar rights and assets	Development costs	Payments in advance	Total
Cost as of Jan. 1, 2018	**4,022**	**5,859**	**209**	**151**	**10,241**
Changes in accounting policies	0	−1,395	−5	−102	−1,502
Net exchange differences	104	196	8	3	311
Additions	0	43	1	19	63
Reclassifications	0	111	0	−2	109
Disposals	0	−22	−5	−16	−43
Cost as of Dec. 31, 2018	**4,126**	**4,792**	**208**	**53**	**9,179**
Accumulated amortization as of Jan. 1, 2018	**41**	**2,098**	**63**	**0**	**2,202**
Changes in accounting policies	0	−793	0	0	−793
Net exchange differences	0	52	3	0	55
Additions (amortization)	0	511	17	0	528
Additions (impairments)	0	2	0	0	2
Disposals	0	−15	−5	0	−20
Accumulated amortization as of Dec. 31, 2018	**41**	**1,855**	**78**	**0**	**1,974**
Carrying amount as of Dec. 31, 2018	**4,085**	**2,937**	**130**	**53**	**7,205**

Goodwill

Accordingly, goodwill from the consolidation of investments in subsidiaries and from the individual financial statements is shown below:

in € million	Dec. 31, 2019	Dec. 31, 2018
Car Powertrain Technology	571	571
Car Chassis Technology	341	341
Commercial Vehicle Technology	468	466
Industrial Technology	188	187
E-Mobility	183	183
Aftermarket	491	484
Passive Safety Systems	1,000	–
Active Safety Systems	888	1,853
Central units	9	0
	4,139	**4,085**

Goodwill mainly represents synergies in the areas of materials purchasing and administrative company organization.

Within the framework of the divisional reorganization of ZF, goodwill previously allocated to the Active & Passive Safety Technology Division was reallocated to the Active Safety Systems and Passive Safety Systems Divisions. The relative value of these divisions which was determined using the discounted cash flow method on the basis of the planning data available at the time of reallocation formed the foundation of the reallocation.

17 Property, plant and equipment

in € million	Land and buildings	Technical equipment and machines	Other equip-ment, factory and office equipment	Payments in advance and construction in progress	Total
Cost as of Jan. 1, 2019	**2,929**	**10,654**	**2,549**	**1,059**	**17,191**
Changes in accounting policies	555	9	61	0	625
Changes in the basis of consolidation	17	29	2	1	49
Net exchange differences	13	49	9	11	82
Additions	175	641	227	836	1,879
Reclassifications	119	625	79	−809	14
Disposals	−37	−368	−146	−13	−564
Cost as of Dec. 31, 2019	**3,771**	**11,639**	**2,781**	**1,085**	**19,276**
Accumulated depreciation as of Jan. 1, 2019	**1,188**	**7,465**	**1,908**	**0**	**10,561**
Changes in the basis of consolidation	7	17	1	0	25
Net exchange differences	1	15	4	0	20
Additions (amortization)	199	1,043	246	0	1,488
Additions (impairments)	0	1	0	0	1
Reclassifications	22	−8	0	0	14
Disposals	−27	−336	−139	0	−502
Accumulated depreciation as of Dec. 31, 2019	**1,390**	**8,197**	**2,020**	**0**	**11,607**
Carrying amount as of Dec. 31, 2019	**2,381**	**3,442**	**761**	**1,085**	**7,669**

Assets from property, plant and equipment in the amount of €21 million (2018: €0 million) have been pledged as collateral for financial liabilities as well as for possible obligations from finance court cases.

in € million	Land and buildings	Technical equipment and machines	Other equipment, factory and office equipment	Payments in advance and construction in progress	Total
Cost as of Jan. 1, 2018	**2,800**	**8,616**	**3,051**	**931**	**15,398**
Changes in accounting policies	0	1,099	0	−91	1,008
Changes in the basis of consolidation	1	5	2	1	9
Net exchange differences	−14	−51	−7	11	−61
Additions	68	514	170	834	1,586
Reclassifications	95	789	−372	−621	−109
Disposals	−21	−318	−295	−6	−640
Cost as of Dec. 31, 2018	**2,929**	**10,654**	**2,549**	**1,059**	**17,191**
Accumulated depreciation as of Jan. 1, 2018	**1,089**	**5,904**	**2,211**	**0**	**9,204**
Changes in accounting policies	0	793	0	0	793
Changes in the basis of consolidation	0	3	1	0	4
Net exchange differences	−14	−99	−10	0	−123
Additions (amortization)	93	980	211	0	1,284
Additions (impairments)	0	2	1	0	3
Reclassifications	31	196	−227	0	0
Disposals	−11	−314	−278	0	−603
Reversals of impairments	0	0	−1	0	−1
Accumulated depreciation as of Dec. 31, 2018	**1,188**	**7,465**	**1,908**	**0**	**10,561**
Carrying amount as of Dec. 31, 2018	**1,741**	**3,189**	**641**	**1,059**	**6,630**

18 Leases

ZF applied the new IFRS 16 standard “Leases” for the first time to the fiscal year ended December 31, 2019. In addition to leased real estate, leased motor vehicles as well as forklift trucks are primarily within the scope of the new standard. The right-of-use assets from leases reported under property, plant and equipment, including the assets capitalized as finance leases in accordance with IAS 17, developed as follows in the year under review:

in € million	Leased land and building	Leased technical equipment and machines	Other leased equipment, factory and office equipment	Total
Additions during the fiscal year	110	34	40	184
Depreciations during the fiscal year	96	6	32	134
Carrying amount as of Dec. 31, 2019	**598**	**36**	**73**	**707**

In the fiscal year 2019, expenses for current leases amounted to €55 million and expenses for leases of low-value assets were incurred in the amount of €10 million. Interest expenses for leases reported in the net financial result amounted to €26 million.

In the fiscal year, payments for lease liabilities in the amount of €163 million, including interest, were made.

The maturity structure of lease liabilities as of December 31, 2019, is as follows:

in € million	2019
within the upcoming fiscal year	140
between 2 and 5 years	358
more than 5 years	263
	761

As of December 31, 2019, there are purchase commitments for short-term leases to the customary extent.

19 Impairment tests

In the fourth quarter of 2019, the consolidated ZF Group performed impairment tests to assess the impairment of its assets. These impairment tests were triggered by the macroeconomic environment in individual economies. There was no need identified regarding impairment of cash-generating units.

In addition, impairments were recognized for individual assets of property, plant and equipment in the following divisions:

in € million	2019	2018
Car Chassis Technology	0	1
Industrial Technology	0	1
Active Safety Systems	0	1
Passive Safety Systems	1	0
	1	**3**

As part of the process, the assets were measured at fair value less costs to sell.

The impairment losses are distributed by region as follows:

in € million	2019	2018
Europe	0	1
Asia-Pacific	1	1
South America	0	1
	1	**3**

In the previous year, reversals of impairment losses for property, plant and equipment were recognized in the Industrial Technology Division in the amount of €1 million.

In the previous year, impairment losses for intangible assets were recorded in the Aftermarket Division in the amount of €2 million.

In the past fiscal year, reversals of impairment loss on intangible assets in the amount of €1 million were realized in the Central Units Division.

Inter alia, assumptions were made with regard to the development of sales in order to calculate the impairment tests. The assumptions made for the average sales increase in the three-year planning period are as follows:

in %	2019	2018
Car Powertrain Technology	5	8
Car Chassis Technology	2	5
Commercial Vehicle Technology	8	7
Industrial Technology	6	7
Active Safety Systems	2	4
E-Mobility	14	22
Passive Safety Systems	0	2
Electronics and ADAS	5	12
Aftermarket	3	4

As in the previous year, the annual impairment tests of goodwill led to no impairments. In addition, a sensitivity analysis regarding material measurement parameters was conducted in the context of these impairment tests. This involved an analysis to what extent, if assessed on an isolated basis, a reduction of the sustainable operating profit by 10%, a reduction of the sustainable growth rate to 0.5% or an increase in the capitalization rate by 10% would have an effect on the recoverability of goodwill. Even in all of the scenarios analyzed, this sensitivity analysis would not have led to an impairment of goodwill.

20 Financial liabilities

	Carrying amount as of Dec. 31, 2019		Carrying amount as of Dec. 31, 2018	
in € million	Total	Thereof current	Total	Thereof current
Bonds	5,771	535	3,067	35
Bonded loans	2,456	434	916	64
Liabilities to banks	646	99	965	422
Other financial liabilities	13	12	37	37
Lease liabilities	761	140	35	7
Derivative financial instruments	42	39	50	41
	9,689	**1,259**	**5,070**	**606**

Under current financial liabilities, non-current loans, bonded loans and bonds are recognized with their redemption installments due within one year. Moreover, current liabilities which serve short-term financing purposes are included under this item. The country-specific interest rates on these short-term loans fluctuate between 2.5% (2018: 0.3%) and 4% (2018: 10.3%). The country-specific interest rate on the loans reported in non-current financial liabilities is between 0.3% (2018: 0.4%) and 9.7% (2018: 9.7%). Most of the financial liabilities have a fixed interest rate. Most of the loans are due at the end of the contractual term.

The past fiscal year was dominated by various financing transactions in connection with the planned acquisition of WABCO. Accordingly, a syndicated loan was concluded in March 2019 over a total amount of €7.3 billion to hedge this transaction. The loan was refinanced partially by the issue of bonded loans and bonds in 2019. In addition, as of the reporting date, there was an unused revolving line of credit in the amount of €3.0 billion as well as a loan from the European Investment Bank in the amount of €500 million, which was fully drawn. Apart from other obligations, the loans mentioned also include a financial covenant that ZF has to comply with. It is defined as the ratio of net debt to adjusted, consolidated EBITDA. This financial covenant is tested quarterly and provides for an upper limit of indebtedness of 3.0 as of the reporting date. Due to the completion of the WABCO acquisition, the upper limit was increased to 4.00 and will be reduced gradually over time. As from the fourth quarter of 2023, the upper limit will be 3.25 once again. ZF met the requirement on all test dates in the past and on the reporting date.

21 Contract liabilities

in € million	Dec. 31, 2019 Total	Dec. 31, 2019 Thereof current	Dec. 31, 2018 Total	Dec. 31, 2018 Thereof current
Volume production business	705	678	602	577
Product development and application	702	337	592	278
Others	38	24	62	44
	1,445	**1,039**	**1,256**	**899**

Contract liabilities have developed as follows:

in € million	2019	2018
Carrying amount as of Jan. 1	1,256	1,002
Additions	860	685
Utilization	−623	−425
Reversals	−48	−6
Carrying amount as of Dec. 31	**1,445**	**1,256**

The expected future sales from performance obligations not satisfied (or partially not satisfied) as of December 31, 2019, are as follows:

in € million	2019	2018
1 to 5 years	1,177	1,347
> 5 years	53	13
	1,230	**1,360**

The performance obligations not satisfied (or partially not satisfied) mainly refer to contracts with customers in connection with development orders as well as tools.

22 Other liabilities

in € million	Dec. 31, 2019 Total	Dec. 31, 2019 Thereof current	Dec. 31, 2018 Total	Dec. 31, 2018 Thereof current
Liabilities to employees	651	601	795	743
Social contributions	59	59	58	58
Other tax liabilities	273	273	236	236
Prepaid expenses	22	5	20	5
Sundry liabilities	514	471	483	452
	1,519	**1,409**	**1,592**	**1,494**

Other tax liabilities are mainly sales tax liabilities. Sundry liabilities include, among others, deferred liabilities from sales, for legal costs and costs of litigation, as well as liabilities for licenses and commissions.

23 Other provisions

in € million	Dec. 31, 2019 Total	Dec. 31, 2019 Thereof current	Dec. 31, 2018 Total	Dec. 31, 2018 Thereof current
Obligations from sales	746	509	726	466
Obligations from personnel	119	67	104	49
Other obligations	170	120	361	297
	1,035	**696**	**1,191**	**812**

in € million	Jan. 1, 2019	Net exchange differences	Addition	Unwinding of the discount	Utilization	Reversals	Netting of plan assets	Dec. 31, 2019
Obligations from sales	726	5	314	2	−188	−113	0	746
Obligations from personnel	104	4	78	2	−40	−12	−17	119
Other obligations	361	0	39	0	−222	−8	0	170
	1,191	**9**	**431**	**4**	**−450**	**−133**	**−17**	**1,035**

The provisions for obligations from sales primarily include provisions for warranty, product liability and punitive damages as well as for recall from delivery obligations.

The obligations from personnel mainly include provisions for restructuring measures as well as other obligations to employees. Provisions for restructuring measures, above all, affect expenses for severance pay which will arise within the context of plant closures and relocations.

Other obligations include, among other things, provisions for litigation and other legal risks, environmental protection measures, other punitive damages as well as other tax risks.

Utilization of all current provisions is expected for the following fiscal year.

Non-current obligations from sales are expected to be utilized at a rate of 98% within the next five years. Also, about 71% of the provisions contained in the non-current obligations from personnel and about 61% of other non-current obligations will presumably be utilized in the next five years.

Expected reimbursements as of December 31, 2019, amount to €29 million (2018: €43 million), of which €29 million (2018: €43 million) was capitalized as assets.

24 Provisions for pensions

The provisions for pensions are broken down as follows:

	Present value of defined benefit plans					Financial assets	Provisions for pensions
2019 in € million	Unfunded	Funded	Total	Plan assets	Net value	**Net assets**	**Net liability**
Germany	4,651	2,398	7,049	−2,044	5,005	13	5,018
United States of America	2	305	307	−307	0	2	2
United Kingdom	1	1,486	1,487	−2,020	−533	534	1
Other	114	98	212	−106	106	13	119
	4,768	**4,287**	**9,055**	**−4,477**	**4,578**	**562**	**5,140**
Obligations from medical care benefits	208	0	208	0	208	0	208
Balance sheet disclosure						**562**	**5,348**

	Present value of defined benefit plans					Financial assets	Provisions for pensions
2018 in € million	Unfunded	Funded	Total	Plan assets	Net value	Net assets	Net liability
Germany	3,928	1,874	5,802	−1,784	4,018	8	4,026
United States of America	3	279	282	−259	23	0	23
United Kingdom	1	1,266	1,267	−1,788	−521	523	2
Other	98	89	187	−88	99	11	110
	4,030	**3,508**	**7,538**	**−3,919**	**3,619**	**542**	**4,161**
Obligations from medical care benefits	228	0	228	0	228	0	228
Balance sheet disclosure						**542**	**4,389**

Provisions for pensions are set up for obligations from vested benefits and current pensions for entitled current and former employees of the consolidated ZF Group and their surviving dependents. Various retirement pension fund systems exist that depend on the legal, economic and tax situation in the respective country, which – as a rule – are based on the length of service and emoluments of the employees. A distinction has to be made in connection with company pension schemes between defined contribution plans and defined benefit plans.

Under defined contribution plans, the consolidated ZF Group does not enter into any obligations apart from the payment of contributions into earmarked funds and private pension insurance carriers.

Under defined benefit plans, the obligation of the consolidated ZF Group consists of fulfilling promised benefits to current and former employees, whereby a distinction is made between unfunded and funded pension systems.

Description of plans

The following paragraphs describe the most significant pension and post-employment medical care plans of the consolidated ZF Group. The essential risks for the company lie with the actuarial parameters, particularly interest rate and pension trend as well as mortality rates.

Germany (GER)
Until December 31, 1993, defined benefit obligations depending on time of service and salary were granted. These were frozen, and since then they have been further developed according to the cost of living index. As of January 1, 1997, so-called pension modules were promised to pay-scale employees; the amount depends on the pensionable income in relation to the social security contribution ceiling of the statutory pension insurance. Since January 1, 2005, the allocated annual pension modules have been decoupled from the social security contribution ceiling. Since then, the modules' amounts have been calculated on the basis of the remuneration, the length of service, the respective classification of the position within the company hierarchy and the employee's age.

Within the scope of the acquisition of ZF TRW, ZF also acquired unfunded defined benefit plans in Germany. The plans are only open for new entries of executive managers as of a certain grade. The plan benefits depend upon salary, length of service and the cost of living index.

A Group-internal contractual trust arrangement (CTA) was concluded in 2016 to hedge various direct defined benefit obligations. In the context of a trusteeship agreement and to have adequate capital for pension obligations, assets were transferred to ZF Asset Trust e.V., Friedrichshafen, which acts as a trustee. This created plan assets, which are settled with the pension obligations on which they are based in the consolidated statement of financial position. In Germany, there are no legal or regulatory minimum funding requirements.

In the context of the "ZF Rente" pension scheme, employee-financed pension modules are awarded. Under these modules, employees may defer between 1% and 5% of their pensionable remuneration, where deferring at least 1% is compulsory. There are two rates: The first rate includes guaranteed interests of 3.5% for established employees before December 31, 2005. The second rate does not offer guaranteed interests for new employees as of 2006. Up to and including the year 2016, this direct grant was made in the form of a participation in a multi-employer plan that constitutes a defined benefit plan. Since January 1, 2017, this has been effected in the form of of a direct grant. The waiver amount is transferred to the assets of ZF Asset Trust e.V., Friedrichshafen, as trust funds.

In the fiscal year 2019, employees were granted defined benefit obligations who previously had none. Starting in 2020, these employees may pay monthly contributions into a benefit account from their pensionable wages or salaries, including one-off and special payments, by way of deferred remuneration. The employer also makes contributions depending on the level of the employee's contributions. The commitment includes a retirement benefit as well as risk-based benefits in the case of reduced earning capacity and death. The employees can choose between several payout options. Both employer and employee contributions for this new company pension scheme are managed by a trust fund association specifically established for this purpose. The employer contributions were committed retroactively as of January 1, 2019, and are included in the provisions as of December 31, 2019.

United States of America (USA)
Due to past acquisitions, ZF maintains defined benefit plans in the USA. These plans are closed for new entrants. Any vesting of further entitlements is normally no longer possible. The plans are mainly funded and comply with the provisions of the U.S. Employee Retirement Income Security Act (ERISA).

In addition, ZF finances several unfunded post-employment medical care plans. These plans are closed for new entrants. The level of the benefits and the contributions for pensioners differ depending on the location. The major risks for grants of medical care benefits are increasing medical care costs as well as a decreasing participation of the government in these costs. Moreover, these plans are subject to risks typical for defined benefit grants, particularly the risk from changes in discount rates.

United Kingdom (UK)
ZF maintains funded defined benefit plans that have been closed. The major part of these defined benefit plans results from acquisitions of ZF made in the past. The plans are maintained pursuant to legal provisions and are managed by trust companies. The financing is determined every three years by technical valuations in compliance with local provisions.

Defined benefit plans
Changes in the present value of the defined benefit obligation and the fair value of the plan assets can be based on actuarial gains and losses. These can be caused, among other things, by changes in the calculation parameters, changes in estimates with regard to the risk trend of the pension obligations and differences between the actual and the expected return on plan assets.

The amount of the pension obligations was calculated in accordance with actuarial methods (present value of the defined benefit obligation) for which estimates are unavoidable. In addition to assumptions on life expectancy, fluctuation and expected salary increases, the following premises have a material effect on the amount of the obligation:

	2019			2018		
in %	**GER**	**USA**	**GB**	GER	USA	GB
Discount rate	1.2	3.2	2.0	2.0	4.3	2.9
Pension increases	1.3	–	1.9 – 2.9	1.3	–	2.1 – 3.2

The average maturity period of the defined benefit obligations is as follows:

	2019			2018		
in years	**GER**	**USA**	**GB**	GER	USA	GB
Average maturity	22	11	18	19	13	19

The measurement of direct defined benefit obligations from pension plans in Germany, where additional awards may still be earned, is not based on a uniform replacement interest rate, but by applying a yield curve corresponding to the relevant term of the underlying future cash flows.

In addition, the discount rates are determined on the basis of high-quality corporate bonds with a rating of AA (or equivalent) from at least one of the three big rating agencies and are extrapolated based on the yield curve of zero coupon government bonds.

The pension obligations were measured using current mortality tables as of December 31 of the relevant fiscal year. The following mortality tables were used as of December 31, 2019:

	2019	2018
GER	Heubeck 2018 G mortality tables	Heubeck 2018 G mortality tables
USA	120% RP-2014 projected back to 2009 using Scale MP-2014	120 %RP-2014 projected back to 2009 using Scale MP-2014
GB	2018 VITA Tables (averaged) with CMI 2018	2018 VITA Tables (averaged) with CMI 2017

A discount as regards the probability of disability according to the Heubeck 2018 G mortality tables to measure pension obligations at Group companies in Germany was applied for the first time in the fiscal year 2019. The discount is determined on the basis of company-owned historical data. The adjustment of the probability of disability led to an actuarial gain.

The effects from the application of revised mortality tables on the present value of the defined benefit obligations are recognized in other comprehensive income as actuarial gains or losses from changes in demographic assumptions.

The pension obligations resulting under the projected unit credit method are netted in the case of a funded pension system with the plan assets measured at fair value. As soon as the plan assets exceed the pension obligations, an asset is created which is recognized under non-current financial assets.

The development of the present value of the defined benefit obligations and the plan assets at fair value is presented as follows:

in € million	GER	USA	UK	Other	2019 Total
Present value of the defined benefit obligations as of Jan. 1	**5,802**	**282**	**1,267**	**187**	**7,538**
Current service costs	160	0	0	15	175
Interest expenses	99	11	34	5	149
Contributions by plan participants	74	0	0	0	74
Settlements	0	−30	0	0	−30
Pension payments	−149	−8	−93	−9	−259
Actuarial gains (−) and losses (+) from the change in demographic assumptions	−37	−1	13	−1	−26
Actuarial gains (−) and losses (+) from the change in financial assumptions	1,052	45	178	16	1,291
Actuarial gains (−) and losses (+) due to experience adjustments	48	0	20	1	69
Net exchange differences from plans abroad	0	8	68	−2	74
Present value of the defined benefit obligations as of Dec. 31	**7,049**	**307**	**1,487**	**212**	**9,055**
Plan assets at fair value as of Jan. 1	**1,784**	**259**	**1,788**	**88**	**3,919**
Expected return on plan assets	31	11	51	3	96
Actuarial gains (+) and losses (−) from the change in financial assumptions	160	51	179	9	399
Employer contributions to the plan assets	6	13	1	6	26
Employee contributions	71	0	0	0	71
Settlements	0	−25	0	0	−25
Pension benefits paid	−8	−7	−93	−2	−110
Other changes	0	0	−2	0	−2
Net exchange differences from plans abroad	0	5	96	2	103
Plan assets at fair value as of Dec. 31	**2,044**	**307**	**2,020**	**106**	**4,477**

in € million	GER	USA	UK	Other	2018 Total
Present value of the defined benefit obligations as of Jan. 1	**5,389**	**296**	**1,431**	**171**	**7,287**
Current service costs	133	0	0	12	145
Interest expenses	92	11	37	7	147
Contributions by plan participants	73	0	0	0	73
Past service costs	1	0	15	0	16
Additions (+)/disposals (–)	1	0	0	–2	–1
Pension payments	–144	–6	–155	–8	–313
Other changes	0	0	0	–5	–5
Actuarial gains (–) and losses (+) from the change in demographic assumptions	74	–3	–21	–2	48
Actuarial gains (–) and losses (+) from the change in financial assumptions	125	–27	–69	9	38
Actuarial gains (–) and losses (+) due to experience adjustments	58	–2	39	9	104
Net exchange differences from plans abroad	0	13	–10	–4	–1
Present value of the defined benefit obligations as of Dec. 31	**5,802**	**282**	**1,267**	**187**	**7,538**
Plan assets at fair value as of Jan. 1	**1,748**	**248**	**2,013**	**87**	**4,096**
Expected return on plan assets	31	9	50	3	93
Actuarial gains (+) and losses (–) from the change in financial assumptions	–76	–14	–102	–3	–195
Employer contributions to the plan assets	31	13	1	6	51
Employee contributions	71	0	0	0	71
Pension benefits paid	–21	–7	–155	–3	–186
Other changes	0	–2	–5	1	–6
Net exchange differences from plans abroad	0	12	–14	–3	–5
Plan assets at fair value as of Dec. 31	**1,784**	**259**	**1,788**	**88**	**3,919**

The pension obligations result in expenses recognized through profit or loss of €223 million (2018: €215 million), which are made up of the following components:

in € million	GER	USA	GB	Other	2019 Total
Current service costs	160	0	0	15	175
Curtailments and settlements	0	−5	0	0	−5
Unwinding the discount on net liabilities	68	0	−17	2	53
	228	**−5**	**−17**	**17**	**223**

in € million	GER	USA	GB	Other	2018 Total
Current service costs	133	0	0	12	145
Past service costs	1	0	15	0	16
Unwinding the discount on net liabilities	61	2	−13	4	54
	195	**2**	**2**	**16**	**215**

All components of the pension expenses recognized in profit or loss, with the exception of the interest portion, are reported in the functional areas.

The actuarial losses amounting to €935 million (2018: losses of €385 million) are recorded in other comprehensive income with no effect on profit or loss.

The plan assets consist of the following items:

in € million	2019	2018
Cash and cash equivalents	210	104
Securities		
Equity instruments	797	719
Debt instruments	2,755	3,021
Fund shares	300	301
Land and buildings	1	20
Derivative financial instruments	15	−15
Other	399	−231
	4,477	**3,919**

Securities are measured at prices quoted on active markets. The "Other" item is basically comprised of asset-backed securities (2018: obligations from current repurchase agreements in the United Kingdom).

Contributions to plan assets are expected to amount to €24 million (2018: €31 million) in the following year.

Pension payments for the next ten years are as follows:

in € million	2019	2018
within the upcoming fiscal year	307	299
one to five years	1,111	1,145
five to ten years	1,442	1,455

The calculation presents the actual pension payments and not just the pension modules earned by employee service rendered as of the closing date, i.e., pension modules that are to be allocated in future are also considered. In addition, it was assumed that the number of active employees remains constant. For the other calculation assumptions, the same parameters were used as for the determination of the defined benefit obligations.

The effect of a change in significant assumptions on the defined benefit obligations is shown in the following:

in € million	GER	USA	GB	Other	2019 Total
Discount rate					
−0.25%	+406	+11	+68	+7	+492
+0.25%	−374	−10	−63	−7	−454
Pension increases					
−0.25%	−151	0	−38	0	−189
+0.25%	+159	0	+50	0	+209
Life expectancy					
−1 year	−207	−7	−53	−1	−268
+1 year	+232	+7	+53	+1	+293

in € million	GER	USA	GB	Other	2018 Total
Discount rate					
−0.25%	+301	+9	+60	+6	+376
+0.25%	−278	−8	−56	−5	−347
Pension increases					
−0.25%	−126	0	−42	0	−168
+0.25%	+132	0	+ 45	0	+177
Life expectancy					
−1 year	−167	− 6	−43	−8	−224
+1 year	+188	+6	+43	+6	+243

For the sensitivity analysis, pension obligations were re-measured. It was assumed that all other factors remain unchanged. For calculating the sensitivity of life expectancy, it was assumed that the average life expectancy of a 65-year-old individual will be increased or reduced by one year.

Disclosures on medical care benefits

Certain foreign subsidiaries, particularly in the USA and Canada, grant post-retirement benefits to their employees if specific conditions as to age and period of employment are met.

The average maturity period of the defined benefit obligations is 15 years (2018: 14 years).

The development of the present value of the defined benefit obligations is presented as follows:

in € million	2019	2018
Present value of the defined benefit obligations as of Jan. 1	**228**	**256**
Interest expenses	9	8
Payments made	−20	−20
Actuarial gains (−) and losses (+) from the change in demographic assumptions	−1	−3
Actuarial gains (−) and losses (+) from the change in financial assumptions	−12	−14
Actuarial gains (−) and losses (+) due to experience adjustments	−2	−6
Net exchange differences from plans abroad	6	7
Present value of the defined benefit obligations as of Dec. 31	**208**	**228**

The premises for discounting for the purpose of calculating the obligations for medical care benefits vary depending on the circumstances in the individual countries. As of December 31, 2019, the valuation factors for discounting were between 1.8% and 7.6% (2018: 2.5% and 9.4%).

The net expenses of the obligations for medical care benefits are comprised of as follows:

in € million	2019	2018
Unwinding the discount on net liabilities	9	8

The actuarial gains amounting to €15 million (2018: gains of €23 million) are recorded in other comprehensive income with no effect on profit or loss.

The effect of a change in significant assumptions on the medical care obligations is shown in the following:

in € million	2019	2018
Discount rate		
−0.25%	+5	+5
+0.25%	−5	−5
Life expectancy		
−1 year	−10	−9
+1 year	+10	+10

25 Equity

Subscribed capital
At the end of the fiscal year, the subscribed capital still amounts to €500 million. As of December 31, 2019, the subscribed capital is divided into 500,000,000 registered shares. All shares are fully paid in.

Capital reserve
At the end of the fiscal year, the capital reserve still amounts to €386 million. The capital reserve comprises the premium on the issuance of shares. It is subject to the restrictions of Sec. 150 AktG (German Stock Corporation Law).

Other retained earnings
Other retained earnings contain the legal reserve of ZF Friedrichshafen AG and the accumulated earnings of the companies included in the consolidated financial statements to the extent that such accumulated earnings are not distributed. Asset and liability differences resulting from the capital consolidation in accordance with the book value method and the previously used accounting policies are also accounted for in this line item. Other components include the reserves from the first-time adoption of IFRS and the cumulative currency translation adjustments, which were reclassified when changing over to IFRS.

Foreign currency translation differences
The line item contains amounts not affecting profit or loss that result from the currency translation of the financial statements from foreign subsidiaries (non-euro area) recognized starting from the date of the first-time adoption of IFRS.

The change in equity resulting from foreign currency translation differences amounting to €151 million (2018: €+87 million) is attributed to non-controlling interests in the amount of €4 million (2018: €–1 million).

Mark-to-market of securities and cash flow hedges
This line item includes the post-tax effects of the financial instruments valuation that do not affect profit or loss.

Actuarial gains and losses

This line item contains the actuarial gains and losses from employer pension plans after tax, with no effect on profit or loss.

Deferred taxes on equity items not affecting profit or loss	2019		
in € million	**Before income tax**	**Income tax**	**After tax**
Foreign currency translation differences	151	0	151
Mark-to-market of securities	–19	0	–19
Mark-to-market of cash flow hedges	162	–10	152
Actuarial gains and losses	–920	273	–647
Other comprehensive income	**–626**	**263**	**–363**
	2018		
Foreign currency translation differences	87	0	87
Mark-to-market of securities	–19	0	–19
Mark-to-market of cash flow hedges	–11	4	–7
Actuarial gains and losses	–362	105	–257
Other comprehensive income	**–305**	**109**	**–196**

Dividends

ZF Friedrichshafen AG has proposed a dividend payout of €63 million for the fiscal year 2019 (€0.13 per share). In the fiscal year, a dividend of €162 million (€0.32 per share) for 2018 was paid.

26 Disclosures on capital management

The primary objective of capital management at the consolidated ZF Group is to ensure the financial stability and independence of ZF and to meet the requirements of the shareholders and lenders. Ensuring a sufficient equity ratio is an important basis for achieving this objective. Net debt and the debt-equity ratio (net debt in relation to EBITDA) are central parameters for capital management at ZF with regard to external financing. The credit rating by the commissioned rating agencies is another vital indicator. The objective is to achieve a solid Group rating at investment grade level.

In order to determine the equity ratio, the equity disclosed in the consolidated statement of financial position is used.

	Dec. 31, 2019	Dec. 31, 2018
Equity in € million	7,106	7,307
Equity ratio in %	22	27

ZF Friedrichshafen AG is not subject to by-laws-based capital requirements.

NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS

27 General

The consolidated statement of cash flows shows how the cash position of the consolidated ZF Group changed during the fiscal year due to the inflow and outflow of funds. A distinction is drawn between cash flows from operating, investing and financing activities.

The cash position presented in the consolidated statement of cash flows covers all cash and cash equivalents reported in the consolidated statement of financial position, i.e., cash on hand and cash at banks, available at any time for use by the consolidated ZF Group. In addition, the cash position comprises highly liquid financial investments that have a maturity of less than three months and that are subject to small fluctuations in value.

Cash is comprised as follows:

in € million	Dec. 31, 2019	Dec. 31, 2018
Cash and cash equivalents	2,302	922
Securities	100	0
	2,402	**922**

The cash flows from investing and financing activities are determined on the basis of payments. The cash flow from operating activities, on the other hand, is indirectly derived from the net profit or loss before income tax.

Dividends and interest received are assigned to the cash flow from investing activities. Interest and transaction costs paid for borrowings, including lease liabilities, are included in cash flow from financing activities. To this end, the net profit or loss before income tax in the cash flow from operating activities is adjusted by the net result from participations and the financial result.

As part of the indirect calculation, the changes in financial line items taken into account in conjunction with the operating activities are adjusted for effects from the translation of foreign currencies and changes in the basis of consolidation. Changes in the respective financial line items can therefore not be reconciled to the corresponding values on the basis of the published consolidated statement of financial position.

28 Proceeds from the sale of consolidated companies

The divestments in assets and liabilities from the share deals relate to the following:

in € million	2019	2018
Current assets	0	208
thereof cash and cash equivalents	0	12
Non-current assets	0	724
Current liabilities	0	163
Non-current liabilities	0	74

The sales price for the sale of shares in the previous year amounted to €778 million.

29 Company acquisition

The assets and liabilities of consolidated companies assumed on the date of acquisition are composed as follows:

in € million	2019	2018
Current assets	63	0
thereof cash and cash equivalents	7	0
Non-current assets	52	0
Current liabilities	61	0
Non-current liabilities	18	0

The total of the sales prices taking into account the agreed earn-out regulations amounts to €29 million. €34 million were paid in cash.

30 Changes in financial liabilities

The change in financial liabilities from financing activities due to cash and non-cash effects is as follows:

in € million	Carrying amount as of Jan. 1	Change in cash	Non-cash changes			Carrying amount as of Dec. 31
			Reclassification	Currency effects	Other	
Current financial liabilities	558	−537	1,009	4	46	1,080
Non-current financial liabilities	4,427	4,395	−1,009	35	−42	7,806

The presentation neither considers lease liabilities nor derivative financial instruments. Changes in cash involve taking on and extinguishing financial liabilities. Other non-cash changes are primarily comprised of changes in deferred interests (partly cash items) as well as the cancelation of loan-raising costs and additions resulting from the acquisition of companies.

OTHER DISCLOSURES

31 Contingent liabilities

No provisions were set up for the following contingent liabilities, which are recognized at nominal values, because the probability of a claim is deemed to be low:

in € million	Dec. 31, 2019	Dec. 31, 2018
Guarantees	59	27
thereof for participations	53	13
Other	163	130
	222	**157**

The guarantees are due within a year when fully utilized. The other contingent liabilities essentially refer to potential liabilities from procurement and personnel as well as from litigation and other taxes. Like in 2018, there were no collaterals for contingent liabilities during the fiscal year.

32 Other financial obligations

In addition to liabilities, provisions and contingent liabilities, other financial obligations consist of investment projects launched and procurement agreements initiated.

in € million	Dec. 31, 2019	Dec. 31, 2018
Purchase commitments	797	908
Payment obligations on participations	40	22
	837	**930**

The purchase commitments can be broken down into intangible assets amounting to €10 million (2018: €8 million) and property, plant and equipment amounting to €787 million (2018: €900 million).

33 Litigation

ZF continues to be in close contact with the National Highway Traffic Safety Administration (NHTSA) in the USA in relation to the latter's investigation regarding certain vehicles that are equipped with ZF airbag control units and of which a few were recently subject to a recall by Toyota and to recalls by FCA and HKMC some time ago. Based on the currently available investigation results, ZF does not believe to have culpably caused the recalls and is defending itself against lawsuits pending in the USA and Canada.

In 2014, the Brazilian antitrust authority, Conselho Administrative de Defensa Economica (CADE), searched the premises of one of our Brazilian subsidiaries to investigate the suspected violation of antitrust provisions in connection with the sale of specific vehicle components. ZF is cooperating in this procedure.

A class action lawsuit in the USA against several companies from the automotive industry in which plaintiffs stated that ZF had participated in the alleged development and implementation of illegal equipment for vehicle emission tests was resolved by means of a settlement agreed upon by the parties involved. Not being a defendant itself, ZF is freed from any claims thanks to the settlement. ZF continues its cooperation with the authorities in connection with an investigation procedure led by the public prosecutor's office in Stuttgart with regard to emission and consumption topics.

In general, claims for damages may be asserted even in connection with completed proceedings. Neither ZF nor any of its Group companies are involved in current or foreseeable court or arbitration proceedings, which, based on facts known today, have had in the past or could have a significant impact on the economic situation of the consolidated ZF Group.

34 Disclosures on financial instruments

Carrying amounts of the financial instruments by category

The following table shows the recognized financial assets and liabilities by measurement category:

in € million	Dec. 31, 2019	Dec. 31, 2018
Assets		
At amortized cost	7,460	6,058
At fair value through other comprehensive income		
Debt instruments	86	194
Equity instruments	2	61
At fair value through profit or loss	2,745	165
Derivative financial instruments (hedge accounting) 1)	148	34
	10,441	**6,512**
Liabilities		
At amortized cost	14,348	10,492
At fair value through profit or loss	17	7
Lease liabilities 1)	761	35
Derivative financial instruments (hedge accounting) 1)	25	43
	15,151	**10,577**

1) No measurement category in accordance with IFRS 9

In the fiscal year under review, there were no reclassifications of financial assets between the measurement categories.

Fair values

The fair values of the financial assets and liabilities are presented below. Provided that financial assets and liabilities are recognized at amortized cost, the fair value is compared to the carrying amount.

The following table shows the carrying amounts and the fair values of the financial assets and liabilities recognized at amortized cost. Due to short maturities, the carrying amounts of the current financial instruments recognized at cost approximate the fair values.

	Dec. 31, 2019		Dec. 31, 2018	
in € million	Carrying amount	Fair value	Carrying amount	Fair value
Assets				
At amortized cost				
Cash and cash equivalents	2,302	2,302	922	922
Financial receivables	203	203	169	169
Trade receivables	4,955	4,955	4,967	4,967
	7,460	**7,460**	**6,058**	**6,058**
Liabilities				
At amortized cost				
Bonds	5,771	6,079	3,067	3,069
Bonded loans	2,456	2,485	916	972
Liabilities to banks	646	654	965	964
Other financial liabilities	13	13	37	37
Trade payables	5,462	5,462	5,507	5,507
Lease liabilities 1)	761	–	35	–
	15,109	**14,693**	**10,527**	**10,549**

1) No measurement category in accordance with IFRS 9

In the following, the financial instruments are allocated to the three levels of the fair value hierarchy based on the input parameters used for measurement. The classification as well as the need to perform reclassifications is reviewed on the reporting date. Level 1 covers those financial instruments for which prices for identical assets and liabilities quoted on active markets are available. Allocation to level 2 occurs if input parameters are used for the measurement of financial instruments that are directly (e.g. prices) or indirectly (e.g. derived from prices) observable on the market. Financial instruments whose valuation is based on information that is not observable on the market are reported in level 3.

The following table shows the allocation of the fair values of the financial instruments recognized at amortized cost to the three levels of the fair value hierarchy:

in € million	Level 1	Level 2	Level 3	**Dec. 31, 2019 Total**
Assets				
Cash and cash equivalents	0	2,302	0	2,302
Financial receivables	0	203	0	203
Trade receivables	0	4,955	0	4,955
	0	**7,460**	**0**	**7,460**
Liabilities				
Bonds	6,079	0	0	6,079
Bonded loans	0	2,485	0	2,485
Liabilities to banks	0	654	0	654
Other financial liabilities	0	13	0	13
Trade payables	0	5,462	0	5,462
	6,079	**8,614**	**0**	**14,693**

in € million	Level 1	Level 2	Level 3	Dec. 31, 2018 Total
Assets				
Cash and cash equivalents	0	922	0	922
Financial receivables	0	169	0	169
Trade receivables	0	4,967	0	4,967
	0	**6,058**	**0**	**6,058**
Liabilities				
Bonds	3,069	0	0	3,069
Bonded loans	0	972	0	972
Liabilities to banks	0	964	0	964
Other financial liabilities	0	37	0	37
Trade payables	0	5,507	0	5,507
	3,069	**7,480**	**0**	**10,549**

Except for bonds, the market values of assets and liabilities were calculated using the net present value method. Here, the future cash flows were discounted with the current risk-free interest rates matching the maturities plus a ZF-specific credit risk markup. Bonds were calculated using the fair value on the market.

The following tables show the financial instruments recognized at fair value.

in € million	Dec. 31, 2019	Dec. 31, 2018
Assets		
At fair value through other comprehensive income		
Investments in participations	2	61
Trade receivables	86	194
At fair value through profit or loss		
Securities	2,576	0
Investments in participations	159	144
Financial receivables	0	14
Derivative financial instruments	10	7
Derivative financial instruments (hedge accounting) [1]	148	34
	2,981	**454**
Liabilities		
At fair value through profit or loss		
Derivative financial instruments	17	7
Derivative financial instruments (hedge accounting) [1]	25	43
	42	**50**

1) No measurement category in accordance with IFRS 9

In the following, the financial instruments recognized at fair value are allocated to the three levels of the fair value hierarchy based on the input parameters used for measurement.

in € million	Level 1	Level 2	Level 3	Dec. 31, 2019 Total
Assets				
Securities	795	1,641	140	2,576
Investments in participations	2	0	159	161
Trade receivables	0	86	0	86
Derivative financial instruments	0	79	79	158
	797	**1,806**	**378**	**2,981**
Liabilities				
Derivative financial instruments	**0**	**42**	**0**	**42**

in € million	Level 1	Level 2	Level 3	Dec. 31, 2018 Total
Assets				
Investments in participations	61	98	46	205
Financial receivables	0	0	14	14
Trade receivables	0	194	0	194
Derivative financial instruments	0	41	0	41
	61	**333**	**60**	**454**
Liabilities				
Derivative financial instruments	**0**	**50**	**0**	**50**

In the fiscal year, no reclassification took place between levels 1 and 2 of the fair value hierarchy.

For level 1 securities, the fair value is recognized directly as the quoted price on an always active market. An active market is either the stock exchange of the respective country or a comparable trading platform offering the liquidity and transparency of the underlying asset. Level 2 includes classes whose prices can be derived or modeled from parameters that can be observed on the market. This includes in particular observable interest rates, exchange rates or comparable instruments. The level 3 securities are zero-coupon bonds for which no active market exists. The market values of level 3 securities are determined on the basis of currently available information from the funds' managers. A significant change of the underlying future cash flows and the interest rate, which implies a change of the discount factor, would influence the fair values of these securities.

Investments in participations included in level 1 and traded on an active market are recognized at share prices of the stock exchange of the respective country. With level 2 investments in participations measured at fair value, measurement is based on transactions that can be observed in the market. The level 3 investments in participations concern investments in companies that are not listed on the stock exchange. In case of these investments in participations recognized at fair value through profit or loss, there is either not enough information available or only a vast range of possible values can be determined for the fair value by using a multiplier method. The acquisition costs are therefore used to appropriately estimate the fair value. In case of changes in the environment of the participations or in case of proof due to external transactions, the estimate is adjusted accordingly. A significant change regarding the future results and multipliers used for the multiplier method would affect the fair value of these investments in participations in the amount of €–11 million to €+46 million.

The measurement of level 3 financial receivables is based on information not observable on the market and for which there are no comparable transactions with market values to be derived from such transactions. The trade receivables measured at fair value are allocated to level 2 since measurement can be derived from parameters observable on the market.

Derivative financial instruments included in level 1 refer to tradable derivatives such as futures. Their fair value corresponds to the value traded on the derivatives exchange. The level 2 derivative financial instruments concern non-tradable derivatives. Fair values are determined on the basis of fixed prices quoted on approved stock exchanges discounted for the remaining term (foreign currency exchange rates, interest rates and raw material price indexes).

With respect to hedging a material portion of the purchase price of the WABCO transaction (hedged item) in the amount of approximately $7 billion against currency fluctuations, ZF concluded a transaction-related forward contract. As the forward contract is bound to the execution of the underlying transaction, this contract was classified as level 3. The fair value of this forward contract is determined based on the two components of a premium paid only in case of execution of the underlying transaction and the market value of the forward contract. The value of the premium was ascertained on the basis of the futures price observable on the market at the time of conclusion and the tender price agreed on with the contracting party at the time of maturity of the hedged items. The market value of the forward contract was determined in line with market standards from parameters observable on the market.

The following table illustrates the development of financial instruments assigned to level 3 of the fair value hierarchy:

in € million	Investments in participations 2019	Investments in participations 2018	Derivative financial instruments (assets) 2019	Derivative financial instruments (assets) 2018
As of Jan. 1	46	58	0	0
Fair value changes – recognized through profit or loss	0	77	–24	0
Fair value changes – recognized through other comprehensive income	0	0	103	0
Purchases	15	11	0	0
Sales	0	–2	0	0
Reclassifications from level 3 to level 2	0	–98	0	0
Reclassifications from level 2 to level 3	98	0	0	0
As of Dec. 31	**159**	**46**	**79**	**0**

in € million	Fixed-interest securities 2019	Fixed-interest securities 2018	Financial receivables 2019	Financial receivables 2018
As of Jan. 1	0	0	14	0
Fair value changes– recognized through profit or loss	0	0	–14	–5
Purchases	140	0	0	19
As of Dec. 31	**140**	**0**	**0**	**14**

During the fiscal year, investments in participations from level 2 of the fair value hierarchy in the amount of €98 million were reclassified to level 3 as a result of the deteriorated market availability of the relevant investments in participations in the current fiscal year compared to the prior year. The income from the measurement of participations, which had been recognized through profit or loss in the previous year, is included in the net result from participations.

The fair value changes recognized through other comprehensive income in relation to derivative financial instruments are included in the item “Mark-to-market of cash flow hedges.” The fair value changes recognized through profit or loss in relation to derivative financial instruments and financial receivables are reported in other financial income and other financial expenses, respectively.

Net gains and losses by measurement category

in € million	Interests	Impairments	Other net gains and losses	Total net gains and losses
2019				
Financial assets				
At amortized cost	26	–77	–170	–221
At fair value through profit or loss	2	0	2	4
Financial liabilities				
At amortized cost	–211	0	165	–46
2018				
Financial assets				
At amortized cost	31	–15	–76	–60
At fair value through profit or loss	2	0	97	99
Financial liabilities				
At amortized cost	–203	0	49	–154

Other net gains and losses related to “Financial assets at amortized cost” primarily contain exchange rate gains and losses from foreign currency receivables.

The other net gains and losses in the “Financial assets at fair value through profit or loss” measurement category essentially include the dividend income from participations as well as the offsetting fair value adjustments on financial receivables.

The other net gains and losses from the “Financial liabilities at amortized cost” measurement category primarily contain exchange rate gains and losses from foreign currency liabilities as well as income from derecognized liabilities.

Offsetting financial assets and financial liabilities

Financial assets and liabilities which are subject to settlement agreements, enforceable master netting arrangements and similar agreements:

in € million	Dec. 31, 2019 Gross amount	Offsetting	Net amount
Offset items			
Trade receivables (current)	5,113	72	5,041
Trade payables (current)	5,489	72	5,417
Eligible for offsetting in the event of insolvency			
Derivative financial instruments (assets)	158	18	140
Derivative financial instruments (liabilities)	42	18	24

in € million	Dec. 31, 2018 Gross amount	Offsetting	Net amount
Offset items			
Trade receivables (current)	5,274	113	5,161
Trade payables (current)	5,580	113	5,467
Eligible for offsetting in the event of insolvency			
Derivative financial instruments (assets)	41	23	18
Derivative financial instruments (liabilities)	50	23	27

The framework contracts concluded with the banks for financial futures regulate, among other things, that in the event of insolvency of a contracting party, existing contracts will have to be terminated and settled at the respective market value. Provided that several transactions are settled for a contracting party, positive and negative market values are offset and only the remaining difference is settled. As of December 31, 2019, no risk arises from this regulation due to the excellent credit rating of our banks.

35 Risks from financial instruments

Management of financial risks

The risk management system of ZF's Finance Department covers counterparty and credit risks with customers and suppliers, liquidity and interest rate risks as well as currency and raw material price risks.

Reports on the essential risk positions of the consolidated ZF Group are presented to the Board of Management and the Supervisory Board on a regular basis. Compliance with the guidelines is audited by the internal auditors. The foreign currency risk is measured based on a value-at-risk analysis. The value-at-risk indicates only the potential risk of loss, which with defined probability will not be exceeded within a specifically determined time frame (holding period). However, the method does not provide any information as to the time such a threshold might be crossed or the amount of the expected loss in case the value-at-risk is exceeded. As a result, the actual development may deviate from the result of the value-at-risk analysis.

The companies of the consolidated ZF Group (excluding TRW companies) hedge their interest rate, foreign currency and raw material price risks at prevailing market conditions either through ZF Cash Management at ZF Friedrichshafen AG or directly with banks. In general, derivative financial instruments with plain vanilla character are used. These are used exclusively to hedge existing hedged items or forecast transactions. At the TRW companies, the above-mentioned risks are hedged with banks via the responsible treasury hub based on predetermined rules. Only derivative financial instruments with plain vanilla character are used here as well.

Risk items of ZF Cash Management are hedged externally at banks with excellent credit rating taking into account prescribed risk limits. Hedging transactions are concluded in accordance with uniform corporate policies and in line with bank regulations on the operating of trading business. They are subject to stringent monitoring, which is ensured in particular by the strict separation of duties between trading, settlement and control.

Credit and counterparty risk

Credit risk is the risk that contractual partners in the areas of financial investments, financial receivables and trade receivables will not meet their payment obligations. This risk is defined based on calculated probabilities of default or information about the insolvency to contracting parties.

In order to reduce the counterparty risk for financial investments and derivatives, all financial transactions are carried out only with banks with a first-class credit rating within the framework of defined limits. These limits are reviewed monthly and adjusted, if necessary. Input parameters for taking into account counterparty risk are Credit Default Swaps (CDS) observable on the markets that are issued by the financial institutions participating in the respective transaction.

The financial assets of the consolidated Group lead to a maximum credit risk if one counterparty defaults, amounting to the carrying amount of the respective financial line item without considering collaterals received (plus the maximum utilization for financial guarantees as well as loan commitments to third parties).

The amount of outstanding trade receivables mainly concerns passenger car, commercial vehicle, off-road machinery and wind turbine manufacturers worldwide.

The creditworthiness of our strategic suppliers is constantly monitored in order to secure our value added chain. By concentrating new contract awarding decisions on creditworthy suppliers, the portfolio quality of our suppliers is continuously improved.

In order to reduce the credit risk, the creditworthiness of customers as well as our receivables are subject to continuous monitoring in the context of an SAP-based credit management. In some instances, credit risks are reduced by appropriate hedging measures such as trade credit insurances. The carrying amount of trade receivables covered by trade credit insurances is €164 million (2018: €378 million). In addition, trade receivables are sold to a small extent. The major risks are transferred to the purchaser upon the assignment of such receivables, and the receivables are therefore derecognized.

The following table illustrates the credit risk existing per risk category for trade receivables and contract assets as of the reporting date:

in € million **Risk category**	Trade receivables in € million	Contract assets in € million
1	2,028	310
2	2,594	18
3	540	0
4	14	1
Receivables (gross)	**5,176**	**329**
Specific loss allowances	77	0
Credit-based loss allowances	58	1
Receivables (net)	**5,041**	**328**

A specific loss allowance on receivables is recognized if there is an existing credit risk. The amount of the allowance mainly depends on the risk category and how long the receivable is overdue, and may be up to 100% in individual cases. A distinction is made between credit risk and business risk in assessing the recoverability of receivables.

Liquidity risk

The expected future outflow of funds due to principal and interest payments for financial liabilities and trade payables is contained in the medium-term liquidity planning.

The following table lists the maturity structure of principal and interest payments for the financial liabilities and trade payables:

	Carrying amount Dec. 31, 2019	Cash outflow		
in € million	**Total**	2020	2021 to 2025	2026 and beyond
Bonds	5,771	647	3,727	2,332
Bonded loans	2,456	453	1,528	614
Liabilities to banks	646	100	565	7
Other financial liabilities	13	13	1	0
Trade payables	5,462	5,417	45	0
	14,348	**6,630**	**5,866**	**2,953**

	Carrying amount as of Dec. 31, 2018	Cash outflow		
in € million	Total	2019	2020 to 2024	2025 and beyond
Bonds	3,067	119	2,529	963
Bonded loans	916	66	895	0
Liabilities to banks	965	441	61	501
Other financial liabilities	37	37	3	0
Trade payables	5,507	5,467	40	0
Lease liabilities	35	8	15	20
	10,527	**6,138**	**3,543**	**1,484**

The solvency and the liquidity reserves within the consolidated ZF Group are managed on the basis of short-, medium- and long-term liquidity and financing planning. A sufficient amount of cash and cash equivalents as well as securities that can be converted to cash and confirmed credit lines is held so that the solvency of the consolidated ZF Group is ensured at all times. Cash and cash equivalents amounted to €2,302 million as of the reporting date.

The carrying amount of short-term securities was €2,576 million. The syndicated loan in the amount of €3,073 million entered into in connection with the WABCO acquisition was not utilized as of December 31, 2019. The syndicated loan refinanced in 2016 with a remaining amount of €3,000 million in the form of a revolving credit line was also unused. The credit line has a residual term until July 2023.

Market price risk from securities

The market price risk is the risk that the fair value of securities decreases.

These securities mainly are investments in interest-bearing securities. Due to the conservative portfolio composition, the risk from market price fluctuations is considered immaterial. Therefore, a sensitivity analysis is dispensed with.

Foreign currency risk

The foreign currency risk is the risk that the fair values or future cash flows of monetary items are negatively influenced due to exchange rate changes.

As a result of its international orientation, the ZF Group carries out transactions in different currencies. Hedging measures for planned foreign currency sales from the volume production business are carried out in the consolidated ZF Group within the framework of prescribed hedging ranges and within defined maximum limits. The net principle applies to foreign currency hedging, i.e., hedging takes place for the net items from bilateral cash flows. Foreign currency hedging is carried out mainly via forward exchange options. The hedging relationship between the designated amount of the hedged item and the designated amount of the hedging instrument in the case of foreign currency sales from the volume production business does not exceed 80%.

Individual hedging is generally carried out for the project business (gross principle). As a rule, the hedged item of project-related individual hedges is hedged in the full amount. There were no project-related hedging measures in the current fiscal year.

Fair value hedges are primarily used to hedge foreign currency loans. The hedged items are hedged against foreign currency risks in the full amount.

The translation risk from the measurement of line items is not hedged – the risks thereof will be controlled and gradually reduced via consistent localization of our main activities.

The economic relationship between the hedging instrument and the hedged item can be determined in terms of quality and quantity, and ZF assesses the effectiveness of this hedging relationship using the hypothetical derivatives method. Ineffectiveness is largely expected to occur through changes in credit risk or from timing adjustments regarding the hedged item.

The expected cash outflow from derivative financial instruments results from the following presentation:

in € million	Market values as of Dec. 31, 2019	Nominal value	Cash outflow Within a year	Cash outflow 1 to 5 years
Derivatives excl. hedge accounting				
Assets	10	887	873	14
Liabilities	−17	1,014	1,012	2
Cash flow hedge				
Assets	148	7,991	7,492	499
Liabilities	−22	614	490	124
Fair value hedge				
Assets	0	0	0	0
Liabilities	−3	93	93	0

in € million	Market values as of Dec. 31, 2018	Nominal value	Cash outflow Within a year	Cash outflow 1 to 5 years
Derivatives excl. hedge accounting				
Assets	7	403	393	10
Liabilities	−7	348	347	1
Cash flow hedge				
Assets	31	1,234	797	437
Liabilities	−41	1,423	1,031	392
Fair value hedge				
Assets	3	154	154	0
Liabilities	−2	102	102	0

For the purposes of hedging foreign currency risk, the hedging rates for the material currency pairs are as follows: 1.14 EUR/USD; 0.89 EUR/GBP; 20.42 USD/MXN.

in € million	Change in value of hedging instrument	Change in value of hedged item
Dec. 31, 2019		
Cash flow hedge	127	−151
Fair value hedge	−3	3
Dec. 31, 2018		
Cash flow hedge	−20	20
Fair value hedge	2	−2

The hedged item from the fair value hedges is primarily reported in the line item “Trade receivables.”

Sensitivity analysis

In the ZF Group, the currency risk is currently monitored using a value-at-risk analysis, without taking into account TRW. At the end of the fiscal year 2019, the largest amount of the hedging volume was allocated to the U.S. dollar, so the value at risk analysis is limited to exchange rate fluctuations of the U.S. dollar as a substantial currency risk.

With no change in relation to the prior year, the value-at-risk is calculated based on a variance-covariance method under the assumption of a confidence level of 84.1% with a holding period of twelve months. Based on the analysis available as of the reporting date, the potential maximum risk of loss in relation to the target rate amounts to €1 million (2018: €5 million). The calculation was based on an average exchange rate volatility of 6.4% (2018: 7.6%). The method applied does not account for effects from favorable exchange rate changes and assumes a uniform open U.S. dollar position. Deviating from the maximum potential risk of loss in relation to the target rate, the average maximum potential risk of loss based on the average U.S. dollar exchange rate in fiscal year 2019 amounted to €22 million.

The maximum risk of loss is calculated taking into account the average exchange rate volatility of the past twelve months in relation to the open U.S. dollar position from operational business. The open U.S. dollar position is calculated based on the amount of cash and loans in U.S. dollars as of the closing date that are administered by ZF Cash Management and net incoming payments expected to be received in the following twelve months based on current corporate planning, taking into account the hedged amounts. To limit the risk of loss, an upper limit was agreed upon with the Board of Management.

Since the open U.S. dollar positions include, as of the reporting date, the net incoming payments expected based on the current corporate planning, the analysis is not representative for the U.S. dollar balance as of the reporting date.

The Active Safety Systems, the Passive Safety Systems and the Electronics and ADAS Divisions (previously TRW) follow a central and systematic approach to hedge foreign currency sales using defined hedging targets based on a quarterly rolling 2-year forecast of foreign currency cash flows.

The following table shows the hypothetical effects on equity and profit or loss (in both cases excluding tax effects) if the U.S. dollar increases or decreases in value by 10% against the division's major currencies:

in € million	Effect on equity	Effect on profit or loss
Appreciation of the U.S. dollar by +10%	−54	0
Devaluation of the U.S. dollar by −10%	+54	0

Raw material price risk

The raw material price risk is the risk that the acquisition cost from the purchase of production equipment and operational materials will change.

The risk of changes in raw material prices is considered immaterial in the year under review; therefore, no hedging transactions were concluded.

Interest rate risk

The interest rate risk is the risk that the fair values or future cash flows of financial instruments will fluctuate due to changes in the market interest rate. The interest rate risk is hedged on a case-by-case basis. No hedging transactions were entered into in the current fiscal year.

An increase by 100 (2018: 70) base points in the average interest rate for financial liabilities in U.S. dollars on a floating rate basis, which are not covered by interest hedging transactions, would influence the net profit or loss before income tax in the amount of €–1 million (2018: €–3 million). A decrease of the average interest rate by 100 (2018: 70) base points would raise the net profit or loss before income tax by €1 million (2018: €3 million). With financial liabilities denominated in euros, neither an increase nor a decrease by 30 base points would have a material effect on the net profit or loss before income tax.

The following table shows the effect on net profit or loss before income tax of an increase or decrease of the average interest rate on financial investments in the corresponding currency:

Currency	Change in basis points	Effect on net profit or loss before income tax (in € million)
EUR	+30 −30	+1 −1
USD	+100 −100	+1 −1
CNY	+20 −20	+1 −1

The sensitivity analysis was drawn up under the assumption that the amount of loans from banks and of financial investments as well as the ratio of fixed and variable interest rates will remain at the same level.

36 Government grants

In the fiscal year 2019, €27 million (2018: €42 million) in government grants were received. They were divided as follows:

in € million	2019	2018
Investment grants	18	31
Expense subsidies	9	11

Investment grants were basically received for investments at various locations in Germany, India, China, South Africa and the USA.

Expense subsidies mainly comprise research subsidies and subsidies for education and vocational training.

37 Related party transactions

In accordance with IAS 24, persons or companies that control or are controlled by the consolidated ZF Group have to be disclosed to the extent that they are not already included in the consolidated financial statements of ZF Friedrichshafen AG as a consolidated company. Here, control is exercised if a shareholder holds more than half of the voting rights or is able, by virtue of terms in the by-laws or contractual agreements, to govern management's financial and operating policies. In addition, the disclosure obligations under IAS 24 extend to transactions with associates and transactions with persons who exercise a significant influence over the financial and operating policies, including close members of the family or interposed companies. A significant influence on the financial and operating policies of the consolidated ZF Group can be based on a shareholding of 20% or more in ZF Friedrichshafen AG, a seat on ZF Friedrichshafen AG's Board of Management or Supervisory Board, or another key position in management.

Accordingly, the related parties of ZF Friedrichshafen AG include joint ventures, associates and enterprises in which ZF Friedrichshafen AG holds at least 20% of the shares, the Zeppelin Foundation as a special fund of the City of Friedrichshafen, the Dr. Jürgen and Irmgard Ulderup Foundation as well as its affiliated companies.

Transactions with related companies and the receivables and liabilities existing on the reporting date result without exception from the ordinary business activities and are displayed as follows:

in € million 2019	Joint ventures	Associates	Other participations
Supplies and services rendered			
Sale of goods	70	1	13
Services	2	4	0
Other services	0	7	15
Supplies and services received			
Sale of goods	16	105	6
Services	1	21	68
Other services	0	3	5
Receivables	6	31	21
Liabilities	0	29	5
2018			
Supplies and services rendered			
Sale of goods	98	0	12
Services	6	2	4
Other services	5	5	23
Supplies and services received			
Sale of goods	19	149	11
Services	0	12	55
Other services	0	4	7
Receivables	21	64	12
Liabilities	0	23	9

38 Board of Management and Supervisory Board compensation

The current emoluments of the active members of the Board of Management for the fiscal year 2019 amount to €8.5 million (2018: €9.7 million). Payments for pension rights acquired in the fiscal year for the active members of the Board of Management total €3.7 million (2018: €3.2 million). The claim to contingent other long-term benefits attributable to the year under review amounts to €4.1 million (2018: €8.9 million).

Total emoluments thus amount to €16.3 million (2018: €21.8 million).

The emoluments of former members of the Board of Management and their surviving dependents amount to €4.8 million (2018: €6.6 million). The pension provisions for former members of the Board of Management and their surviving dependents amount to €93.0 million (2018: €79.8 million).

The emoluments of the Supervisory Board for the fiscal year 2019 amount to €2.5 million (2018: €2.5 million).

Moreover, the companies of the consolidated ZF Group have not carried out any reportable transactions whatsoever with members of the Board of Management or the Supervisory Board of ZF Friedrichshafen AG and other members of management in key positions, or with companies in whose management or supervisory bodies these persons are represented. This also applies to close family members of this group of persons.

39 Personnel

The annual average number of employees was 149,046 (2018: 147,332), of whom 76,289 were direct employees (2018: 78,461) and 72,757 were indirect employees (2018: 68,871). At the end of the year, the consolidated ZF Group had 147,797 (2018: 148,969) employees. Direct employees are employees whose activities depend on the production volume and can be allocated directly to the products.

40 Appointed auditor fees

Fees of the consolidated Group's auditing firm, Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, recorded in the consolidated statement of profit or loss amount to €3 million for auditing services. The total consolidated Group-wide fees of Ernst & Young amount to €11 million for auditing services and €2 million for tax advisory services. Apart from Ernst & Young, other auditing companies work for the consolidated Group.

41 Listing of the shares held as of December 31, 2019

Consolidated subsidiaries

National	Share of capital in %
Brake Force One GmbH, Tübingen, Germany	100.0
FTU Beteiligungsverwaltung GmbH, Auerbach, Germany	100.0
GAT - Gesellschaft für Antriebstechnik mbH, Alsdorf, Germany	100.0 [1)]
Lemförder Electronic GmbH, Espelkamp, Germany	100.0 [1)]
Lucas Automotive Grundstücksverwaltungs AG & Co. KG, Friedrichshafen, Germany	100.0 [1)]
Lucas Varity Grundstücksverwaltungs AG & Co. KG, Friedrichshafen, Germany	100.0 [1)]
TRW Airbag Systems GmbH, Aschau am Inn, Germany	100.0 [1)]
TRW Airbag Systems Grundstücksverwaltungs AG & Co. KG, Friedrichshafen, Germany	100.0 [1)]
TRW Automotive GmbH, Alfdorf, Germany	100.0 [1)]
TRW Automotive Grundstücksverwaltungs AG & Co. KG, Friedrichshafen, Germany	100.0 [1)]
TRW Automotive Holding Verwaltungs GmbH, Alfdorf, Germany	100.0
TRW Automotive Mexico GmbH, Alfdorf, Germany	100.0
TRW Automotive Safety Systems GmbH, Aschaffenburg, Germany	100.0 [1)]
TRW Automotive Safety Systems Grundstücksverwaltungs AG & Co. KG, Friedrichshafen, Germany	100.0 [1)]
TRW Deutschland Holding GmbH, Koblenz, Germany	100.0 [1)]
TRW KFZ Ausrüstung GmbH, Neuwied, Germany	100.0 [1)]
TRW Receivables Finance GmbH, Eschborn, Germany	100.0 [1)]
ZF Active Safety GmbH, Koblenz, Germany	100.0 [1)]
ZF Asia-Pacific Holding GmbH, Friedrichshafen, Germany	100.0 [1)]
ZF Aurelia GmbH, Friedrichshafen, Germany	100.0 [1)]
ZF Auslandsverwaltungs GmbH, Friedrichshafen, Germany	100.0
ZF Car eWallet GmbH, Berlin, Germany	98.0
ZF Cassiopeia GmbH, Friedrichshafen, Germany	100.0 [1)]

National	Share of capital in %
ZF Europa Beteiligungs GmbH, Friedrichshafen, Germany	100.0 [1)]
ZF Gastronomie Service GmbH, Friedrichshafen, Germany	100.0 [1)]
ZF Getriebe Brandenburg GmbH, Brandenburg, Germany	100.0 [1)]
ZF Gusstechnologie GmbH, Nuremberg, Germany	100.0 [1)]
ZF Industrieantriebe Witten GmbH, Witten, Germany	100.0 [1)]
ZF Luftfahrttechnik GmbH, Calden, Germany	100.0 [1)]
ZF NewCo II GmbH, Friedrichshafen, Germany	100.0
ZF Nürnberg Trading and Asset GmbH & Co. KG, Nuremberg, Germany	100.0 [1)]
ZF Pegasus GmbH, Friedrichshafen, Germany	100.0 [1)]
ZF RACE ENGINEERING GmbH, Schweinfurt, Germany	100.0 [1)]
Zukunft Ventures GmbH, Friedrichshafen, Germany	100.0 [1)]

1) The company lays claim to exemption from disclosing the annual financial statements according to Section 264, para. 3, and Section 264b HGB (German Commercial Code).

International	Share of capital in %
2 Getthere B.V., Utrecht, Netherlands	60.0
2 Getthere Holding B.V., Utrecht, Netherlands	60.0
Advanced Cargo Transhipment B.V., Utrecht, Netherlands	60.0
Alfaro Brakes S.L.U., Corella, Spain	100.0
Autocruise S.A.S., Plouzane, France	100.0
Automotive Holdings (Spain) S.L.U., Vigo, Spain	100.0
Beespeed Technical Engineering Center S.R.L., Timișoara, Romania	100.0
Compagnie Financière de ZF SAS, Andrézieux-Bouthéon, France	100.0
Dalphi Metal España, S.A., Vigo, Spain	100.0
Dalphi Metal Internacional, S.A., Madrid, Spain	100.0
Dalphi Metal Portugal, S.A., Vila Nova de Cerveira, Portugal	100.0
Dalphi Metal Seguridad, S.A., Vigo, Spain	100.0
DalphiMetal Tunisie S.A.R.L., Ben Arous, Tunisia	100.0
Eurofren Investment, S. de R.L. de C.V., Cienega de Flores, Mexico	100.0
Eurofren Systems S.L.U, Mutliva Baja, Spain	100.0
Fortuna Assurance Company, Burlington, USA	100.0
Frenos y Mecanismos, S. de R.L. de C.V., Santa Rosa de Jarequi, Mexico	100.0
Friction Materials Group North America, Inc., Livonia, USA	100.0
ID Information Systems Limited, Shirley, United Kingdom	100.0
Kelsey-Hayes Holdings Inc., Livonia, USA	100.0
Kelsey-Hayes Mexico LLC, Reynosa, Mexico	100.0
KH Holdings, Inc., Livonia, USA	100.0
Liuzhou ZF Machinery Co., Ltd., Liuzhou, China	51.0
LucasVarity (Thailand) Co., Ltd., Rayong, Thailand	100.0
LucasVarity Automotive Holding Company, Livonia, USA	100.0
LucasVarity Langzhong Brake Company Limited, Langfang, China	70.0
LucasVarity, Shirley, United Kingdom	100.0
Mercant Comércio e Serviços Ltda., Sorocaba, Brazil	100.0

International	Share of capital in %
Midwest Lemförder Limited, Darlaston, United Kingdom	100.0 [2)]
OOO ZF Kama, Naberezhnye Chelny, Russia	51.0
OOO ZF Russia, Saint Petersburg, Russia	100.0
PT. ZFAG Aftermarket Jakarta, Jakarta, Indonesia	100.0
Qingdao FMG Asia Pacific Co., Ltd., Qingdao, China	100.0
Revestimientos Especiales de México, S. de R.L. de C.V., Cienega de Flores, Mexico	100.0
Roadster Automotive B.V., Amsterdam, Netherlands	100.0
Roadster Holdings (Canada) ULC, Toronto, Canada	100.0
Safebag - Industria Componentes de Seguranca Automovel S.A., Ponte de Lima, Portugal	94.9
Safe-Life – Industria de Componentes de Seguranca Automovel S.A., Ponte de Lima, Portugal	94.9
Shanghai Sachs Huizhong Shock Absorber Co., Ltd., Shanghai, China	60.0
Shanghai TRW Automotive Safety Systems Co., Ltd., Shanghai, China	100.0
SISTEMAS DE CHASSIS IRACEMÁPOLIS LTDA., Iracemápolis, Brazil	100.0
TRW (Suzhou) Automotive Electronics Co., Ltd., Suzhou, China	74.2
TRW Aftermarket Asia Pacific Pte Ltd., Singapore, Singapore	100.0
TRW Airbag Systems S.R.L., Roman, Romania	100.0
TRW Asiatic (M) SDN BHD, Selangor, Malaysia	51.0
TRW Asiatic Co., Ltd., Bangkok, Thailand	51.0
TRW Australia Holdings Pty Ltd, Zetland, Australia	100.0
TRW Australia Pty Ltd, Zetland, Australia	100.0
TRW Auto B.V., Amsterdam, Netherlands	100.0
TRW Auto Holdings Inc., Livonia, USA	100.0
TRW Automotive (LV) Corp., Livonia, USA	100.0
TRW Automotive (Slovakia), s.r.o., Nove Mesto nad Vahom, Slovakia	100.0
TRW Automotive Bonneval S.A.S., Bonneval, France	100.0
TRW Automotive China Holdings Ltd., Ebene, Mauritius	100.0
TRW Automotive Components Technical Service Shanghai Co. Ltd., Shanghai, China	100.0

International	Share of capital in %
TRW Automotive Distribution France S.A.S., Paris La Défense, France	100.0
TRW Automotive España S.L.U., Pamplona, Spain	100.0
TRW Automotive Holding Mexico LLC, Reynosa, Mexico	100.0
TRW Automotive Holdings (France) S.A.S., Paris La Défense, France	100.0
TRW Automotive Inc., Livonia, USA	100.0
TRW Automotive India Private Limited, Haryana, India	100.0
TRW Automotive J.V. LLC, Livonia, USA	100.0
TRW Automotive LLC, Moscow, Russia	100.0
TRW Automotive Portugal Lda., Santos Domingos de Rana, Portugal	100.0
TRW Automotive Research and Development (Shanghai) Co. Ltd., Shanghai, China	100.0
TRW Automotive Safety Systems SRL, Timisoara, Romania	100.0
TRW Automotive Sweden AB, Arvidsjaur, Sweden	100.0
TRW B.V., Amsterdam, Netherlands	100.0
TRW Brazil LLC, Livonia, USA	100.0
TRW China Holdings Ltd., Grand Cayman, Cayman Islands	100.0
TRW Delplas, S. de R.L. de C.V., El Marqués, Mexico	100.0
TRW Dongfang (Xi’an) Airbag Inflator Co., Ltd., Xi'an, China	90.0
TRW FAWER Automobile Safety Systems (Changchun) Co., Ltd., Changchun, China	60.0
TRW FAWER Commercial Vehicle Steering (Changchun) Co., Ltd., Changchun, China	55.0
TRW Intellectual Property Corp., Livonia, USA	100.0
TRW International Holdings B.V., Amsterdam, Netherlands	100.0
TRW Limited, Solihull, United Kingdom	100.0
TRW LucasVarity Limited, Shirley, United Kingdom	100.0 [2)]
TRW Occupant Restraints de Chihuahua, S. de R.L. de C.V., Chihuahua, Mexico	100.0
TRW Odyssey Mexico LLC, Reynosa, Mexico	100.0
TRW Otomotiv Dagitim ve Ticaret A.S., Istanbul, Turkey	99.7
TRW Paris S.A.S., Paris, France	100.0

International	Share of capital in %
TRW Safety Systems Mexico LLC, Reynosa, Mexico	100.0
TRW Sistemas de Direcciones, S. de R.L. de C.V., El Marqués, Mexico	100.0
TRW Sistemas de Frenado S. de R.L. de C.V., El Marqués, Mexico	100.0
TRW Steering & Suspension Co., Ltd., Rayong, Thailand	100.0
TRW Steering Co. Ltd., Ansan, Korea (Republic)	71.0
TRW Steering Wheel Systems de Chihuahua, S. de R.L. de C.V., Chihuahua, Mexico	100.0
TRW Systems Limited, Solihull, United Kingdom	100.0 [2)]
TRW U.K. Limited, Shirley, United Kingdom	100.0 [2)]
TRW Vehicle Safety Systems de Mexico, S. de R.L. de C.V., Reynosa, Mexico	100.0
Verona Holding Corp., Wilmington, USA	100.0
Verona Merger Sub Corp., Wilmington, USA	100.0
ZF (China) Investment Co., Ltd., Shanghai, China	100.0
ZF (Thailand) Limited, Bangkok, Thailand	100.0
ZF Active Safety and Electronics US LLC, Livonia, USA	100.0
ZF Active Safety France SAS, Bouzonville, France	100.0
ZF Active Safety US Inc., Livonia, USA	100.0
ZF Aftermarket Iberica S.L.U., Pamplona, Spain	100.0
ZF Aftermarket Japan Co., Ltd., Tokyo, Japan	100.0
ZF Aftermarket Malaysia Sdn. Bhd., Senai, Malaysia	100.0
ZF ANSA Lemförder S.L. (Sociedad Unipersonal), Burgos, Spain	100.0
ZF AP Holdings Inc., Livonia, USA	100.0
ZF Argentina S.A., San Francisco, Argentina	100.0
ZF Asia B.V., Amsterdam, Netherlands	100.0
ZF Asia Pacific Group Co., Ltd., Shanghai, China	100.0
ZF Asia Pacific Pte. Ltd., Singapore Central, Singapore	100.0
ZF Automotive Canada Limited, Woodstock, Canada	100.0
ZF Automotive Components & Systems (Shanghai) Co., Ltd., Shanghai. China	100.0
ZF Automotive Czech s.r.o., Jablonec nad Nisou, Czech Republic	100.0

International	Share of capital in %
ZF Automotive Holding Italia S.r.l., Torino, Italy	100.0
ZF Automotive Holdings (UK) Limited, Shirley, United Kingdom	100.0 [2)]
ZF Automotive Italia S.r.l, Torino, Italy	100.0
ZF Automotive Japan Co. LTD., Yokohama, Japan	100.0
ZF Automotive Ltda., Limeira, Brazil	100.0
ZF Automotive Malaysia Sdn Bhd., Bukit Beruntung, Malaysia	100.0
ZF Automotive Systems (Shanghai) Co., Ltd., Shanghai, China	100.0
ZF Automotive Systems Poland Sp. z o.o., Czestochowa, Poland,	100.0
ZF Automotive Technologies (Shanghai) Co., Ltd., Shanghai, China	100.0
ZF Automotive Technologies (Zhangjiagang) Co., Ltd., Zhangjiagang, China	100.0
ZF Automotive Vietnam Co., Ltd., Haiphong, Vietnam	100.0
ZF Axle Drives Marysville, LLC, Marysville, USA	100.0
ZF Boge Elastmetall España S.A. (Sociedad Unipersonal), Santa Perpètua de Mogoda, Spain	100.0
ZF Bouthéon SAS, Andrézieux-Bouthéon, France	100.0
ZF Braking Systems Poland Sp. z o.o., Gliwice, Poland	100.0
ZF Chassis Components, LLC, Newton, USA	100.0
ZF Chassis System (Rayong) Co., Ltd., Rayong, Thailand	100.0
ZF Chassis Systems (Beijing) Co., Ltd., Beijing, China	100.0
ZF Chassis Systems Chicago, LLC, Chicago, USA	100.0
ZF Chassis Systems Duncan, LLC, Duncan, USA	100.0
ZF Chassis Systems Sdn. Bhd., Padang Serai, Malaysia	100.0
ZF Chassis Systems Tuscaloosa, LLC, Tuscaloosa, USA	100.0
ZF Chassis Systems Zatec s.r.o., Plzeň, Czech Republic	100.0
ZF Chassis Technology S.A. de C.V., Toluca, Mexico	100.0
ZF Chassistech Commercial Vehicles (Shanghai) Co., Ltd., Shanghai, China	100.0
ZF Danmark ApS, Tåstrup, Denmark	100.0
ZF do Brasil Ltda., Sorocaba, Brazil	100.0
ZF Dongfeng Shock Absorber Shiyan Co., Ltd., Shiyan, China	51.0

International	Share of capital in %
ZF Drivetech (Hangzhou) Co., Ltd., Hangzhou, China	100.0
ZF Drivetech (Suzhou) Co., Ltd., Suzhou, China	100.0
ZF Electronic Systems Juárez, S.A. de C.V., Juárez, Mexico	100.0
ZF Electronic Systems Pleasant Prairie, LLC, Pleasant Prairie, USA	100.0
ZF Electronics (Zhuhai) Co., Ltd., Zhuhai, China	100.0
ZF Electronics Klášterec s.r.o., Klásterec nad Ohrí, Czech Republic	100.0
ZF Engineering Plzeň s.r.o., Plzeň, Czech Republic	100.0
ZF Europe B.V., Amsterdam, Netherlands	100.0
ZF Europe Finance B.V., Amsterdam, Netherlands	100.0
ZF Faster Propulsion Systems Co., Ltd., Kaohsiung, Taiwan	100.0
ZF FAWER Chassis Technology (Changchun) Co., Ltd., Changchun, China	51.0
ZF FOTON Automated Transmission (Jiaxing) Co., Ltd., Jiaxing, China	51.0
ZF Gainesville, LLC, Gainesville, USA	100.0
ZF Heli Drivetech (Hefei) Co., Ltd., Hefei, China	51.0
ZF Holding Austria GmbH, Steyr, Austria	100.0
ZF Holdings Australia Pty. Ltd., Dingley Village, Australia	100.0
ZF Holdings B.V., Amsterdam, Netherlands	100.0
ZF Hungária Ipari és Kereskedelmi Korlátolt Felelösségú Társaság, Eger, Hungary	100.0
ZF India Pvt. Ltd., Pune, India	100.0
ZF Inmobilaria S.A. de C.V., Saltillo, Mexico	100.0
ZF International B.V., The Hague, Netherlands	100.0
ZF International UK Limited, Shirley, United Kingdom	100.0
ZF Italia Holding S.p.A., Selvazzano Dentro, Italy	100.0
ZF Italia S.r.l., Assago, Italy	100.0
ZF Japan Co., Ltd., Tokyo, Japan	100.0
ZF Lemforder (Thailand) Co., Ltd., Rayong, Thailand	100.0
ZF Lemförder Achssysteme Ges.m.b.H., Lebring, Austria	100.0
ZF Lemförder Aks Modülleri Sanayi ve Ticaret Anonim Sirket, Izmir, Turkey	100.0
ZF Lemforder Australia Pty. Limited, Edinburgh, Australia	100.0

International	Share of capital in %
ZF Lemforder Automotive Systems (Shenyang) Co., Ltd., Shenyang, China	100.0
ZF Lemförder Chassis Technology Korea Co., Ltd., Gumi, Korea (Republic)	59.3
ZF Lemförder Métal France S.A.S., Florange, France	100.0
ZF Lemförder SA (Pty.) Ltd., Rosslyn, South Africa	100.0
ZF Lemforder Shanghai Chassistech Co., Ltd., Shanghai, China	76.0
ZF Lemförder TLM Dış Ticaret Limited Şirketi, Izmir, Turkey	100.0
ZF Lemförder TVA, S.A.U., Ermua, Spain	100.0
ZF Lemforder UK Limited, Darlaston, United Kingdom	100.0
ZF Marine Krimpen B.V., Krimpen aan de Lek, Netherlands	100.0
ZF Marine Propulsion Systems Miramar, LLC, Miramar, USA	100.0
ZF México, S.A. de C.V., Guadalajara, Mexico	100.0
ZF Middle East FZE, Dubai, United Arab Emirates	100.0
ZF North America Capital, Inc., Northville, USA	100.0
ZF North America, Inc., Northville, USA	100.0
ZF Occupant Safety Systems de la Laguna, S. de R.L. de C.V., Durango, Mexico	100.0
ZF OPENMATICS s.r.o., Plzeň, Czech Republic	100.0
ZF Österreich Gesellschaft m.b.H., Vienna, Austria	100.0
ZF Overseas Inc., Livonia, USA	100.0
ZF Padova S.r.l., Selvazzano Dentro, Italy	100.0
ZF Passive Safety Czech s.r.o., Stara Boleslav, Czech Republic	100.0
ZF Passive Safety Korea Co., Ltd., Ansan, Korea (Republic)	100.0
ZF Passive Safety South Africa Inc., Livonia, USA	100.0
ZF Passive Safety Systems US Inc., Washington, USA	100.0
ZF Passive Safety US Inc., Livonia, USA	100.0
ZF Philippines, Inc., Manila, Philippines	100.0
ZF Powertrain Modules (Shanghai) Co., Ltd., Shanghai, China	100.0
ZF Powertrain Modules Saltillo, S.A. de C.V., Ramos Arizpe, Mexico	100.0
ZF Powertrain Systems (Beijing) Co., Ltd., Beijing, China	100.0
ZF Restraints US Inc., Livonia, USA	100.0

International	Share of capital in %
ZF Sachs España S.A. (Sociedad Unipersonal), Bilbao, Spain	100.0
ZF Sachs Italia S.p.A., Candiolo, Italy	100.0
ZF Sachs Korea Co., Ltd., Changwon, Korea (Republic)	91.5
ZF Sachs South Africa Proprietary Limited, Alberton, South Africa	100.0
ZF Sachs Süspansiyon Sistemleri Sanayi ve Ticaret A.Ş., Gebze, Turkey	100.0
ZF Sales and Service (Malaysia) Sdn. Bhd., Petaling Jaya, Malaysia	100.0
ZF Serbia d.o.o., Pancevo, Serbia	100.0
ZF Services (China) Co., Ltd., Shanghai, China	100.0
ZF Services (Shanghai) Co., Ltd., Shanghai, China	100.0
ZF Services Australia Pty. Ltd., Sydney, Australia	100.0
ZF Services Belgium N.V.- SA, Brussels, Belgium	100.0
ZF Services España, S.L.U., Sant Cugat del Vallès, Spain	100.0
ZF Services France S.A.S., Antony, France	100.0
ZF Services Hong Kong Limited, Hong Kong, China	100.0
ZF Services Korea Co., Ltd., Incheon, Korea (Republic)	100.0
ZF Services Middle East Limited Liability Company, Dubai, United Arab Emirates	49.0 [3)]
ZF Services Nederland B.V., Delfgauw, Netherlands	100.0
ZF Services Schweiz AG, Volketswil, Switzerland	100.0
ZF Services South Africa (Proprietary) Ltd., Johannesburg, South Africa	100.0
ZF Services Türk San. ve Tic. A.Ş., Istanbul, Turkey A.Ş., Istanbul, Turkey	100.0
ZF Services UK Limited, Nottingham, United Kingdom	100.0
ZF Services, LLC, Vernon Hills, USA	100.0
ZF Services, S.A. de C.V., Guadalajara, Mexico	100.0
ZF Slovakia a.s., Trnava, Slovakia	100.0
ZF South America Holdings B.V., Amsterdam, Netherlands	100.0
ZF Staňkov s.r.o., Stankov, Czech Republic	100.0
ZF Steering Active Safety US Inc., Livonia, USA	100.0
ZF Steering Systems Poland Sp. z o.o., Czechowice-Dziedzice, Poland	100.0
ZF Steyr Ges.m.b.H., Steyr, Austria	100.0

International	Share of capital in %
ZF Steyr Präzisionstechnik GmbH, Steyr, Austria	100.0
ZF Suspension Technology Guadalajara, S.A. de C.V., Guadalajara, Mexico	100.0
ZF Taiwan Ltd., Taipei, Taiwan	100.0
ZF Transmissions Gray Court, LLC, Gray Court, USA	100.0
ZF Transmissions Shanghai Co., Ltd., Shanghai, China	51.0
ZF TRW Automotive Holdings Corp., Livonia, USA	100.0
ZF Wind Power (Tianjin) Co., Ltd., Tianjin, China	100.0
ZF Wind Power Antwerpen NV, Lommel, Belgium	100.0
ZF Wind Power Coimbatore Private Limited, Coimbatore, India	100.0
ZF Wind Power Singapore Pte. Ltd, Singapore Central, Singapore	100.0
ZF YTO (Luoyang) Axle Co., Ltd., Luoyang, China	51.0

2) In accordance with Section 479C of the Companies Act 2006, ZF Friedrichshafen AG has provided a guarantee to the subsidiary. This guarantee has exempted the subsidiary from the requirement of having an audit of their individual financial statements in accordance with Section 479A of the Companies Act 2006.
3) 100% voting rights

Consolidated companies accounted for using the equity method

National	Share of capital in %
ASAP Holding GmbH, Gaimersheim, Germany	35.0
Astyx GmbH, Ottobrunn, Germany	44.5
doubleSlash Net-Business GmbH, Friedrichshafen, Germany	40.0
e.GO MOOVE GmbH, Aachen, Germany	46.4
Ibeo Automotive Systems GmbH, Hamburg, Germany	40.0
ZF Sachs Micro Mobility GmbH, Tübingen, Germany	64.0

International	Share of capital in %
2getthere Asia Pte. Ltd., Singapore Central, Singapore	29.4
2gt Mechanical Equipment LLC, Abu Dhabi, United Arab Emirates	29.4
Brakes India Private Limited, Chennai, India	49.0
CSG TRW Chassis Systems Co., Ltd., Chongqing, China	50.0
Evercast, S.A. de C.V., Saltillo, Mexico	30.0
FOTON ZF LCV Automated Transmission (Jiaxing) Co. Ltd., Jiaxing, China	40.0
Rane TRW Steering Systems Private Limited, Chennai, India	50.0
S.M. Sistemas Modulares Ltda., Taubate, Brazil	50.0
SOMIC ZF Components Private Limited, New Delhi, India	50.0
TRW Sun Steering Wheels Private Limited, New Delhi, India	49.0
ZF Fonderie Lorraine S.A.S., Grosbliederstroff, France	49.0
ZF Hero Chassis Systems Private Limited, New Delhi, India	50.0
ZF PWK Mécacentre S.A.S., Saint-Étienne, France	50.0

42 Company bodies

The members of the Supervisory Board and the Board of Management are listed on page 6. Dr. Franz Kleiner stepped down from the ZF Friedrichshafen AG Board of Management effective from January 1, 2020.

Friedrichshafen, March 2, 2020

ZF Friedrichshafen AG
The Board of Management

Wolf-Henning Scheider
Chief Executive Officer

Dr. Konstantin Sauer

Sabine Jaskula

Michael Hankel

Wilhelm Rehm

Dr. Martin Fischer

Dr. Holger Klein

FURTHER INFORMATION

INDEPENDENT AUDITOR’S REPORT

To ZF Friedrichshafen AG

Report on the audit of the consolidated financial statements and of the group management report

Opinions

We have audited the consolidated financial statements of ZF Friedrichshafen AG, Friedrichshafen and its subsidiaries (the Group), which comprise the consolidated statement of profit or loss and consolidated statement of comprehensive income for the fiscal year January 1 to December 31, 2019, consolidated statement of financial position as at December 31, 2019, the consolidated statement of cash flows and the consolidated statement of changes in equity for the fiscal year from January 1 to December 31, 2019, and notes to the financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of ZF Friedrichshafen AG for the fiscal year from January 1 to December 31, 2019. The opinion does not comprise the information of the Company that is not included in its annual financial statements, which is referred to in the management report (Sustainability Report www.zf.com).

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Sec. 315e HGB and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at December 31, 2019 and of its financial performance for the fiscal year from January 1 to December 31, 2019, and
- the accompanying group management report as a whole provides an appropriate view of the Group’s position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development.

Pursuant to Sec. 322 (3) Sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the “Auditor’s responsibilities for the audit of the consolidated financial statements and of the group management report” section of our auditor’s report. We are independent of the Group entities in accordance with the requirements of German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Other information

The supervisory board is responsible for the “report of the supervisory board” included in the annual report. In all other respects, the board of management is responsible for the other information. The other information comprises the other parts of the annual report, with the exception of the audited consolidated financial statements and group audit report as well as our auditor’s report. A version of the other information has been provided until the date of our auditor’s report.

Our opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

Responsibilities of the board of management and the supervisory board for the consolidated financial statements and the group management report

The board of management is responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec 315e (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the board of management is responsible for such internal control it has determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the board of management is responsible for assessing the Group's ability to continue as a going concern. It also has the responsibility for disclosing, as applicable, matters related to going concern. In addition, it is responsible for financial reporting based on the going concern basis of accounting, unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the board of management is responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. In addition, the board of management is responsible for such arrangements and measures (systems) as it has considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Sec. 317 HGB and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the board of management and the reasonableness of estimates made by the board of management and related disclosures.

- Conclude on the appropriateness of the board of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Sec. 315e (1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with [German] law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the board of management in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the board of management as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Stuttgart, March 2, 2020

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Meyer	Scheufele
Wirtschaftsprüfer	Wirtschaftsprüfer

IMPRINT

This Report is available in English and German; both versions can also be downloaded from www.zf.com

In cases of doubt, the German version of this Report is binding.

Published by
ZF Friedrichshafen AG
88038 Friedrichshafen
Germany

Investor Relations
investor.relations@zf.com
zf.com/ir

Corporate Communications
presse@zf.com
zf.com/press

Photos
ZF Friedrichshafen AG
Pages 3, 5: Markus Altmann

Concept and layout
Berichtsmanufaktur GmbH, Hamburg

ZF Friedrichshafen AG
88038 Friedrichshafen
Germany
www.zf.com