ANNUAL REPORT

2019

Leadership in Filtration

MANN+HUMMEL

MANN+HUMMEL AT A GLANCE

Sales	4.2	billion euros
EBIT	153	million euros
EBIT margin	3.6%	
Locations	80+	on 5 continents
Total assets	4.1	billion euros
Investments in research and development	134	million euros
Employees	22,013	worldwide

All figures are rounded. This may lead to minor discrepancies when totaling sums and when determining percentages.

KEY FIGURES[1]

in EUR million	2019	2018
Sales	**4,213**	3,955
Operating profit or loss (EBIT)	**153**	94
As % of sales	3.6%	2.4%
Net profit or loss before income tax (EBITDA)	**387**	327
As % of sales	9.2%	8.3%
Net profit or loss before income tax and changes in capital economically attributable to the shareholders	**90**	16
As % of sales	2.1%	0.4%
Consolidated net income	**– 1**	– 21
As % of sales	– 0.03%	– 0.5%
Free-Cashflow	**232**	– 37
As % of sales	5.5%	– 0.9%
Total assets	**4,128**	3,938
Investments in tangible assets	**143**	154
Depreciation of tangible assets	**159**	118
Value added per employee in EUR thousand	**89**	83
Average number of employees	**22,013**	21,149

1 All figures are rounded. This may lead to minor discrepancies when totaling sums and when determining percentages.

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FOREWORD BY THE MANAGEMENT BOARD

Dear ladies & gentlemen,
dear business partners,

In 2019, we announced a restructuring effort to better position us for the future based on both the market potential and challenges for our **Transportation** and **Life Sciences & Environment** business segments.

In addition to these restructuring efforts, a renewed focus on sales growth and a stronger focus on efficient processes and cost savings controls enabled us to execute improvements to our results.

After a decline in sales in 2018, we had positive growth of 6.5% and, for the first time in the company's history, we achieved sales of over 4 billion EUR. We achieved an EBIT of 153 million EUR, which represents an increase of 63.9% compared to 2018. We would like to thank the entire organization for their efforts in contribution to these results.

Our aftermarket brands **MANN-FILTER, WIX, FILTRON** and **PUROLATOR** all achieved increases in the market share of their respective market segments.

In our Original Equipment business unit, we are well prepared for the future as we support filtration solutions within all drive technologies.

Despite the challenging situation in the transportation market, with a deeper understanding of what our customers value and need from their supplier partners, along with a sharper focus on profitable business growth, we were able to grow faster than the market.

In our business segment Life Sciences & Environment, we are constantly bringing new filtration solutions for air and water to the market. We are able to quickly capitalize on new market opportunities thanks to our existing knowledge combined with the digital transformation and the need for sustainability.

Digitalization is already changing the way we live and work. It will continuously influence our core business, giving us the opportunity to bring our products and technologies to the next level, as well as develop new service solutions and business models. Sensors will be connected to the Internet of Things, while 3D printing processes and Industry 4.0 technologies will become an integral part of our production. At MANN+HUMMEL, we see digital transformation as one of the biggest drivers of competitiveness and growth opportunities. It has been the focus of our research and development for many years, and we are confident that we have laid the necessary foundation in order to make the most of this mega-trend.

We were also able to complete exciting acquisitions last year, including the purchase of Hardy Filtration, as well as a 25% stake in **Seccua Holding**. Seccua Holding is a worldwide innovation and technology leader in drinking water treatment with ultrafiltration systems and is a partner for drinking water suppliers, public buildings and private households. Hardy Filtration is a provider of a full-line of HVAC filtration products and services, dust collectors, compressed air treatment systems and residential filters. These acquisitions strengthen our position in these markets.

With the December 2019 announcement of a new management board committee (MBC) – Kurk Wilks, CEO, Emese Weissenbacher, CFO, and Nic Zerbst, COO, look positively into the future and have defined the strategy "going forward" with five main group priorities.

These group priorities are:

1. **Profitable business growth**
2. **Operational excellence**
3. **Financial performance**
4. **High performance teams**
5. **Transform for the future**

Group priorities are also aligned with our Filter Values, which are:

Focusing on our customer needs and profitable growth, transforming for the future through Innovation, inspiring Leadership and Trust through high performance teams, driving Empowerment to ensure operational excellence, delivering Results and contributing to our financial performance. These are the FILTER values we live by every day.

Our 20,000+ employees can be found at more than 80 locations on five continents. As one team, we remain committed to our Vision of Leadership in Filtration through our mission of separating the useful from the harmful, giving us great confidence in our future.

The results we achieved in 2019 were meaningful and we thank our employees for their dedication and effort, the employee representatives for their constructive support of the upcoming transformation, the shareholders and supervisory board for their support, and our business partners for their trustful cooperation. We look forward to our continued path together with all of you as one team.

Ludwigsburg, June 2020

MANN+HUMMEL International GmbH & Co. KG

The Management Board

Kurk Wilks	Emese Weissenbacher	Nicolaas Zerbst
CEO	EVP & CFO	COO

REPORT OF THE SUPERVISORY BOARD

The Supervisory Board of MANN+HUMMEL Verwaltungs GmbH met three times in the year under review.

In addition to the current business performance and the 2019 cost restructuring program, the meetings also focused on discussions about the possible impacts of global economic developments, such as Brexit and the trade war between the USA and China.

We also considered in depth the capital investment and human resources policy, the quality situation, as well as the strategic alignment of the company and of the Group.

In the 2019 fiscal year, the Supervisory Board once again continuously supported the Management Board by examining and discussing the verbal and written reports of the Management Board in detail at the Supervisory Board meetings. The Chairman of the Supervisory Board also maintained constant contact with the Management Board.

The Supervisory Board was satisfied as to the legality, appropriateness and regularity of the activities of the Management Board at all times.

The audit of the annual financial statements of MANN+HUMMEL International GmbH & Co. KG and the consolidated annual financial statements as well as the Group status report of the MANN+HUMMEL Group were audited by Ernst & Young GmbH, Wirtschaftsprüfungsgesellschaft, Flughafenstraße 61, 70629 Stuttgart. All documents were issued with an unqualified audit opinion. The Supervisory Board examined the annual financial statements, proposal for the appropriation of earnings, consolidated financial statements and Group status report in detail and was provided with a comprehensive report by the auditors regarding the results of their audits. The Supervisory Board approves the audit results without any reservations.

We can look back on a positive business year: In 2019 we launched numerous leading filtration solutions on the market. We are particularly proud of the MANN+HUMMEL Filter Cubes, which counteract increased concentrations of particulate matter and nitrogen dioxide pollution on highly frequented road sections and polluted hotspots in cities. A large number of new filter solutions and services were also developed and presented in the transportation sector. In our Life Sciences & Environment business segment, we have completed several promising acquisitions and are optimistic about the future.

In the 2019 fiscal year, the Supervisory Board dealt in particular with the personnel structure within the Management Board and the extended management circle.

The new Management Board Committee, consisting of Kurk Wilks (President & Chief Executive Officer), Emese Weissenbacher (Executive Vice President & Chief Financial Officer) and Nic Zerbst (Chief Operating Officer), was appointed as of January 1, 2020. Werner Lieberherr has prematurely stepped down from his office as Chairman of the Management Board. The Supervisory Board would like to thank you for your commitment to MANN+HUMMEL.

Together with our new Management Board Committee, we have further defined and confirmed our future direction based on our vision "Leadership in Filtration" and our "Separate the Useful from the Harmful" mission: We see filtration and especially the results of our filtration solutions – clean air, clean water and clean mobility – as a human right. With regard to global developments, we also see an increasing relevance of our mission and thus of our core activities.

Filtration is a key technology for today and for the future – and the filtration market offers almost inexhaustible possibilities and potential for further development. This development is driven by external factors from the economy and from the socio-demographic, technological and political spheres.

For MANN+HUMMEL, we have identified three drivers in particular from these influencing factors, which will have a high relevance for our lives and our society: **Sustainability, mobility and digitalization**.

These transformation drivers challenge us as a company today to help shape the world of tomorrow. They challenge us to act quickly instead of waiting. **Because being passive is not an option for a market leader.**

In the area of **sustainability**, our goal is to make a short-term and long-term contribution towards a cleaner and healthier world. For this reason, we have defined sustainability as a permanent and integral part of our corporate responsibility.

We therefore place a special emphasis on:

- Clear management and clear structures,
- a comprehensive concept regarding our rules and regulations,
- strict compliance of our environmental standards,
- the joint pursuit of our sustainability goals at all MANN+HUMMEL locations worldwide.

Our customers are also closely focused on sustainable products, solutions and services. And this is precisely our added value – because filtration is sustainable by nature.

Another of our goals is to be a driver of tomorrow's clean **mobility** ourselves – by seeing and understanding rules and changes in the field of mobility solutions and finding solutions for alternative drive technologies. We promise that we will continue to adhere 100% to our vision and mission to achieve the best possible results for our customers. And we are certain: Filtration will have its place in all mobility and drive technology developments.

We also see **digitalization** as an opportunity to create added value. By expanding our digital portfolio, we are supporting our customers with new services at the customer interface in their digitalization processes. In turn, we increase our added value by constantly offering new services: From filters to smart filters, from smart filters to filtration as a service. This is consistent solution development that focuses on the customer – be it a seamless digital customer experience that creates "wow" moments through simple and effective smart filtration solutions, or the intelligent use of IIoT for future-oriented production to manufacture smart filters in smart factories.

In addition to all these drivers, we have also had to contend with a completely new challenge since the end of 2019. The coronavirus pandemic is forcing humanity and the global economy to undergo a rethink. Thanks to the consistent implementation of Project 2019, we were able to achieve an economically stable starting position and were thus able to react quickly: We developed a comprehensive concept to protect our employees and safeguard our business. In the short term, we have converted production lines at various locations worldwide and initiated activities to effectively support contamination control strategies in view of the spread of the coronavirus SARS-CoV-2. In addition to a production facility for mouth-nose masks and filter inserts for textile masks, MANN+HUMMEL is collaborating with Ford Motor Company, one of its most important automotive customers, in the rapid production of HEPA filters for active respiratory equipment.

We are convinced that we will emerge from this crisis together and stronger.

The families continue to stand clearly behind the company and have complete confidence in the management, the company structure and its development.

Thank you

The Supervisory Board also thanks the employees of MANN+HUMMEL Verwaltungs GmbH and its subsidiaries, the Management Board and the employee representatives for their successful efforts in the past fiscal year.

Ludwigsburg, June 2020

MANN+HUMMEL International GmbH & Co. KG

Thomas Fischer
Chairman of the Supervisory Board

OUR PLUS FOR CLEANER MOBILITY:

Forward-looking filtration solutions for mobility today and in the future – in Original Equipment and Aftermarket.

OUR PLUS FOR CLEANER AIR:

Innovative filtration solutions for indoor and outdoor spaces, cleanrooms and industrial applications.

OUR PLUS FOR CLEANER WATER:

Pioneering membrane solutions for water and wastewater treatment and special applications from our Water Solutions business.

Consolidated status report of MANN+HUMMEL International GmbH & Co. KG, Ludwigsburg and the Group for the 2019 fiscal year[1]

1 All figures are rounded. This may lead to minor discrepancies when totaling sums and when determining percentages.

1. GROUP BUSINESS MODEL

MANN+HUMMEL is a leading global expert in filtration technology. The Group, which is based in Ludwigsburg, Germany, and has more than 80 locations on five continents, provides filtration solutions in the business to business sector internationally.

Our current business model is divided into two business segments: **Transportation** and **Life Sciences & Environment**.

These business segments are structured as follows:

- **Transportation** is comprised of the **Original Equipment** (OE) and **Aftermarket** (AA) business units. Through these business units, we serve the needs of the automotive industry (Automotive Solutions) with air filter systems, intake systems, liquid filter systems and plastic components. In addition to applications in vehicles, we also supply high-performance filter systems in construction machinery, agricultural machinery, lawnmowers, rail vehicles, ships and in power engineering.
- **Life Sciences & Environment** (LS&E) is divided into the **Air Filtration** and **Water Solutions** business units. In LS&E we work on pioneering solutions for air and water filtration. Our air filtration portfolio includes filters for indoor and outdoor spaces, cleanrooms and industrial applications. In the area of cabin air filtration we also provide **anti-allergy** and **anti-microbial** functions. We provide solutions for offices, schools, commercial and industrial buildings as well as for potentially explosive atmospheres such as offshore oil rigs. Stationary systems for the filtration of particulate matter and nitrogen dioxide further expand our product offering for improving outdoor air quality. Our expertise in water filtration includes wastewater treatment as well as special applications in the food sector.

For all our business areas, we are also increasingly offering digital services and intelligent solutions that meet the individual needs of our customers: Networking of our products via the Internet (Internet of Things, IoT), cloud connectivity for data analysis, algorithms and user-friendly apps.

The Transportation segment accounts for approximately 93% of our sales, while LS&E generates about 7%. From a strategic perspective, both business segments serve the growing demand for innovative filtration products. In the future, our **vision of "Leadership in Filtration" and our mission of "Separate the useful from the harmful"** will in future also apply to all possible applications that can be combined under the umbrella of sustainability.

Our company will continue to focus heavily on customer needs and will become even more competitive through efficient growth.

To achieve this, we will standardize processes in order to consolidate them in our Global Business & Technology Solutions (GBTS). We are confident this will reduce costs and establish a strong service culture at MANN+HUMMEL. Customer orientation will be the focus of all activities in this area. The standardization of corporate processes is a necessity for driving digitalization.

In addition to our business units and the GBTS, we have also bundled production organizationally. Our aim is to ensure that our global production supplies the segments with products of the best possible quality and in the necessary quantities at the lowest possible cost.

Thanks to our Group-wide management system, decisions can be made faster and our company can act more dynamically. This also includes clear assignment of Group-wide responsibilities. This allows us to utilize global synergies and best practices, in order to work more efficiently and better serve our current and future markets.

2. RESEARCH AND DEVELOPMENT

Demand for filtration solutions will continue to grow worldwide in the future. This opens up opportunities for our company in both existing and new markets. We have our sights set on both. We are constantly working to strengthen our product portfolio and apply our filtration expertise to new areas of business. In the area of alternative drive technologies, for example, we are already offering our customers pioneering solutions for **fuel cell and high-volt battery systems**, including **filter elements and systems for air and fluid circuits in battery systems**. We are increasingly working on products that are linked with digital services and networked via the Internet, as well as **cloud connectivity** or user-friendly **apps**, where a focus on the customer is the benchmark for all development activity.

We are also driving the development of **components** and **entire systems** in existing business units. We integrate numerous functions in these systems and make them intelligent through the use of sensors, actuators and controllers. Connectivity to cloud solutions is also possible. We are therefore working on intelligent products and solutions that can identify or even prevent problems. And it is thanks to these options, coupled with our system expertise, that we are winning more and more technically challenging customer projects in all areas of filtration and thereby strengthening our position in the market.

Over 1,100 people worldwide are working on the research and development of innovative products for the MANN+HUMMEL Group. In 2019, the company spent EUR 134 million (3.2% of sales) on research and development activities. During the year under review, the Group submitted over 100 patent applications.

The MANN+HUMMEL Group's research and development locations are divided into Centers of Competence, which have the authority to issue guidelines, as well as regional clusters (Engineering Centers) and local research and development locations (Application Centers). In addition, the Group set up the Internet of Things Lab (IoT Lab) in Singapore in 2016, which develops digital products and services.

Transportation

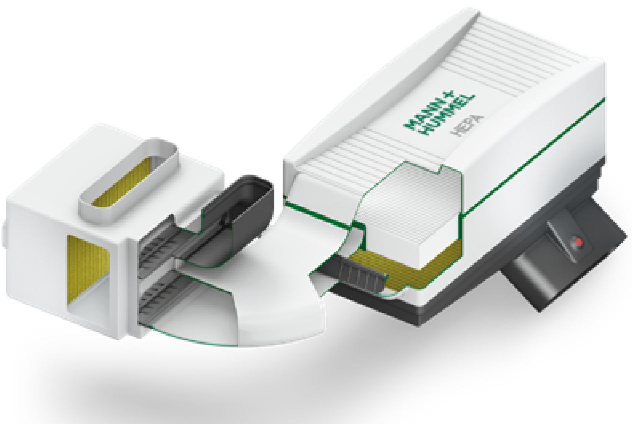
We develop products and innovations for conventional drives, as well as for new forms of drive, in order to make **future mobility cleaner and reduce emissions**. MANN+HUMMEL has positioned itself as a leading supplier of filters and filter systems in the field of **electromobility** and was able to acquire new orders in this area during the year under review.

In addition to already established **products for battery electric vehicles**, such as filters for battery air drying and venting, the portfolio was expanded by further products. One example is the **oil filter system for E-axles and hybrid transmissions, which was presented to the specialist public for the first time at the IAA in September**. In addition to an oil reservoir, the oil filter system converted into plastic also contains a suction and pressure-side oil filter element and an oil dryer. Furthermore, humidity, pressure and temperature sensors, a switchable electric pump and an oil cooler with optional thermostat control have all been integrated. The high degree of functional integration allows for a compact design.

Fuel cell technology also requires a wide range of filtration solutions. In 2019, customer interest in components for fuel cell systems rose, including in the commercial vehicle sector. We were able to illustrate our system competence in a comprehensive system demonstrator. The innovative air intake system for the cathode path and our products for the coolant circuit protect the fuel cell efficiently. The fully integrated system of perfectly matched components guarantees the performance of the fuel cell over its entire service life. Individual components of the system are modular in design. This means that MANN+HUMMEL can quickly provide efficient filters such as cathode air filters or **ion exchanger** filters for the current increasing number of customer projects and small series start-ups.

A large proportion of the particulate matter generated by road traffic is generated during braking. Break dust is produced each time a vehicle breaks, and is the result of the wear and tear of the break disc and pads. MANN+HUMMEL has developed a passive brake dust particle filter to reduce brake dust emissions. It sits directly on the brake caliper and captures the particle emission directly at the brake. It fits into diverse installation spaces and can be adjusted to different brake sizes and concepts. Together with a strategic development partner, MANN+HUMMEL was able to complete extensive pre-series testing and confirm the technical performance and robustness of the innovative filter.

MANN+HUMMEL **fine dust particle filters** capture fine dust from the ambient air as well as tire, brake and road abrasion, and can improve the fine dust emission balance of vehicles. The integrated fine dust particle filter, developed together with a leading manufacturer



of front-end modules, was showcased at the IAA as a world first. The flexible and formable filter elements can be installed in the space between the engine cooler and bumper, which was previously kept free due to crash requirements. In this way, the air flow generated by the cooling fan is simultaneously used to increase the performance of the particle separation.

In the area of **sustainability**, cabin air filters also offer outstanding options for improving health protection in traffic. Without effective filtration, the level of pollutants in vehicle interiors is many times higher than in the environment. Ultrafine particles (< 0.1 µm) from road traffic in particular pose an increased risk to human health. Our cabin air filters use innovative, highly efficient filter media with nanofiber technology. They achieve the highest separation efficiency at HEPA level (High Efficiency Particulate Air Filter) and thus offer high-quality passenger protection against the finest particles. In **intelligent cabin air filter systems**, the indoor and outdoor air quality is continuously monitored by sensors and activates optimum filtration levels based on the results. This increases the service life of the filter elements and simultaneously reduces **energy consumption**. In addition to particle separation, efficient gas adsorption is crucial for cabin filters.

We are actively working on new solutions to further optimize our portfolio of filtration products. In the area of **air filtration**, our Exalife air filter concept makes optimum use of the limited installation space in modern commercial vehicles while offering good filtration performance. The main advantage of this innovative solution, which is already established on the market, is a low pressure loss at low cost. This enabled us to win further orders in the year under review, in addition to various series applications.

The IQORON VP series with three different sizes offers a flexible filtration concept that shows its strengths, especially in extremely dusty environments. The two-stage air filters with nominal flows of 14 to 33 cubic meters per minute offer the necessary flexibility for numerous applications as a space-optimized supplement to classic circular filters. The core element of the compact air filter series is the innovative filter element concept VarioPleat. This offers a particularly high power density in axial flow filter systems. In addition, the main and secondary elements are patented.

In the field of liquid filtration, we were able to acquire numerous series orders in the Heavy Duty & Industrial segment. To ensure the efficiency and durability of an engine, it is essential to filter harmful particles from all fluids flowing through it. MANN+HUMMEL is demonstrating its expertise in liquid filtration with various series start-ups at Asian commercial vehicle manufacturers. Our **oil filters** as well as **fuel pre-filters** and **main filters** with three-stage water separation and numerous integrated functions make an important contribution to this.

Our innovative **spin-on filter concept with bayonet lock** enables simple, fast and clean service and is already in series production with several customers. With its new design, the filter can be changed without tools and thus offers maximum functionality combined with user-friendly handling.

We focus on digital solutions for the **development of filter media** and elements across all areas. MANN+HUMMEL has successfully used user-defined simulation software for virtual filter media development for many years. Here, the simulation runs map filtration processes and loading procedures at a microstructure level. This allows an insight into the media structure and the evaluation of the filter media performance. With the help of virtually conducted extensive parameter studies, new filter media concepts can be evaluated and thus new, innovative media can be developed.

Life Sciences & Environment

Air Filtration

We utilize our decades of experience and our extensive knowledge in the areas of filtration and air purity in our **Life Sciences & Environment Air Filtration** business unit. This business unit provides filtration solutions for indoor spaces, cleanrooms, energy generation and industrial applications as well as solutions for clean outdoor air in public areas (Public Air Solutions).

The Public Air Solutions technology platform consolidates competencies across multiple segments: In addition to products for the Transportation segment, it also develops stationary solutions for the LS&E segment – for example the Filter Cube, the brake dust particle filter and the roof or underbody box. The **Filter Cube** – like the mobile solution from the Transportation segment – draws around 80% of the particulate matter from the ambient air. Together with energy-efficient fans, the fine dust particle filters are installed in stationary units known as **Filter Cubes**. The next generation now contains a combined filter medium with an activated carbon layer and, in addition to fine dust, now also binds 80% of the NO_2 and O_3 from the ambient air drawn in. The new Filter Cubes are installed in adapted designs for outdoor use as well as for large closed and semi-closed spaces, for example in digital billboards or in subway stations. With these newly developed technologies, we are contributing to a significant reduction in particulate matter, NO_2 and O_3 pollution in public spaces.

Our newly developed ePM10 50% and ePM10 70% media take our energy-saving synthetic bag filters to a new level with their A+ ratings and offer market-leading technologies for greater energy efficiency.

The introduction of a new micro glass medium allows us to produce ISO16890 M5/ePM10 55% pleated products with low pressure drop and high dust holding capacity to serve this new upcoming market series.

In 2019, technical solutions from the Transportation segment were successfully transferred to applications for **home appliances** via the **"Gas Adsorption"** technology platform. Filters for odor reduction based on specially developed activated carbons are now sold to various household appliance manufacturers for cleaning kitchen exhaust air.

In the area of **smart digital solutions** we bring together our experience and our expertise from various digital projects and concepts for interior filtration: We market this concept under the name "Tri-Dim Digital Suite", mainly in North America.

+ In the LS&E Air Filtration business unit, 2019 was marked by accelerating innovation. Our expanded carboactive product portfolio (filter media with activated carbon layer) offers a variety of new functionalities to complement our extensive range of gas phase filtration products. +

+ Tri-Dim Digital Suite combines years of experience and valuable filtration knowledge with Artificial Intelligence (AI) to provide a complete clean air management solution. +

Water Solutions

MICRODYN-NADIR, a global manufacturer of membranes and modules for water filtration, has been a member of the MANN+HUMMEL Group since 2015. Its activities are focused on **water filtration** and **wastewater treatment** as well as on **processes** and **special applications**, for example in the **food sector**.

+

Recycling and wastewater treatment are among the greatest challenges facing us today. We use advanced products and innovative technologies in our efforts to achieve the goal of sustainable water management in industry and at municipal level.

+

During the year under review, we invested considerable effort in the further improvement of our new **MICRODYN BIO-CEL® L MBR module (membrane bioreactor)** – with success.

We are also in the process of developing a cloud-based platform that will provide our customers and us with real-time information on the status and possible malfunctions of individual systems. In addition, this platform will provide us with recommendations for further operational and cleaning optimization.

There is growing awareness of the problem of **micro plastics** and multi-resistant germs in **wastewater**. One solution is our BIO-CEL® Activated Carbon Process and the associated product and service solution. This is currently under development and will be piloted in the coming year together with partners from local government, other businesses, the Research and Technology department at the Darmstadt University of Applied Sciences and the IWAR Institute at the Technical University of Darmstadt, in order to test and demonstrate the effectiveness of this approach.

Corporate Ventures

In 2019, MANN+HUMMEL Corporate Ventures expanded its portfolio with the acquisition of two further holdings: **Retromotion** and **SecondNature** (formerly known as FilterEasy). These investments reflect the wide range of areas in which MANN+HUMMEL supports start-ups on the road to growth.

Retromotion is an online platform that sells and sources spare parts. It has its own middleware that is used to offer supplier portfolios on various eCommerce channels with channel-specific settings. In addition, Retromotion has several logistical options to make Tier 1 suppliers ready for eCommerce and provides its suppliers with insight and services to improve their eCommerce performance. MANN+HUMMEL now has a shareholding of 9.56%.

In November 2019, MANN+HUMMEL invested in SecondNature, formerly known as FilterEasy. The company is based in Raleigh, USA, with distribution centers in Wilson and Oklahoma. With this acquisition, MANN+HUMMEL now holds a 2% share in the company. SecondNature offers homeowners a smooth subscription service for the replacement air filters for home use. The simple online subscription process gives users control over the size, quantity and frequency of delivery. SecondNature will use the investment to continue its current growth trajectory, launch its first unique product and start expanding into other products.

3. OVERALL ECONOMIC AND INDUSTRY-SPECIFIC CONDITIONS

Global economic development 2019

Global economic performance was again rather modest in the first half of 2019. The pace of expansion in the developed economies slowed down, while the previously very weak economies of the emerging markets picked up somewhat. Overall, the global downturn in the industry is being felt strongly. The downward trend is particularly pronounced in the euro area and the United Kingdom. Since the beginning of 2019, world trade has been declining[1], with global production rising by only 3.0% in 2019 (3.7% in 2018).[2] The trade conflicts stemming from the USA and also uncertainty about the effects of populist governments in the emerging markets are dampening prospects.

In Europe, uncertainty about the timing and conditions of Brexit is an additional disruptive factor.[3] The German economy grew by only 0.5% in 2019. In the euro zone, economic expansion remained very weak over the course of 2019. An average growth of 1.2% was achieved.[4]

In the USA, the economy lost momentum and the growth rate of gross domestic product slowed over the course of 2019. The yearly average is now 2.3%.

Despite the trade conflicts with the USA, the overall economic performance in China is robust. China recorded growth of 6.1%. At the end of the year, the first phase of trade negotiations with the USA was successfully concluded.[5] Russia can report growth of 1.4% and Brazil's gross domestic product is growing by 0.8%.

Automotive market situation

The international automotive industry can look back on a challenging year in 2019. A total of 15.8 million new passenger cars were registered in Europe. This figure even exceeded the previous year's level. In the USA, approximately 17 million light vehicles were sold. This is 1% less than in the previous year and for the first time since 2014 the USA was unable to exceed the 17 million mark.

Only 21 million new vehicles were registered in China, a drop of almost 10%. In India, Japan and Russia, demand was below the previous year's level.[6]

The Brazilian market for light vehicles grew by an impressive 8%. As such, Brazil recorded its third consecutive year of growth.

Non-automotive air filtration market situation

The global market for non-automotive air filtration grew by 4% in 2019, with the Asia-Pacific region being the fastest growing region at 5%.[7] Key growth drivers in the HVAC air filtration market include the increasing demand for HVAC filter systems, growing awareness of indoor air quality and tighter regulatory requirements for efficient air filtration. In addition, rising investment in the construction sector and technological advances in HVAC filters led to increased demand.[8,9] Industrial air filtration was driven by favorable government emission standards and enforcement of employee health and safety regulations. In addition, the increasing demand for highly efficient and environmentally friendly products is a key factor for market growth.[10]

Membrane market situation

The global membrane market grew by 4% compared to 2019. At 5%, Asia Pacific was the fastest growing region. Globally, desalination was the fastest growing market[11]. While global megatrends were a strong growth driver overall, regional markets were influenced by unique and granular business factors.[12]

1 https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/-ifw/Konjunktur/Prognosetexte/deutsch/2019/KKB_57_2019-Q3_Welt_DE.pdf
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11 McIlvaine Air Filtration Market Data Set
12 https://www.grandviewresearch.com/industry-analysis/industrial-air-filtration-market

4. BUSINESS TRENDS

Transportation

Original Equipment

In the Original Equipment business unit, sales in 2019 declined slightly compared to the previous year.

In Europe, sales figures declined despite a positive first half-year. The economy was weak in this area in 2019, with the majority of market segments falling short of expectations. In the Passenger Car business area, the impact of the reduced diesel share is visible. The trend in sales was unsatisfactory especially in the middle of the year, but stabilized towards the end of the year. Our Heavy Duty On-Road business performed well in 2019, recording a sales increase above target. Towards the end of the year, however, a significant slowdown in the market situation was observed. There is a risk of further weakening in the coming year. In the Heavy Duty Off-Road segment, sales performance was below target in all segments. The construction and agricultural machinery segment fell most clearly short of expectations.

Our activities in various market segments as well as new projects partially cushioned this effect.

In the Asia-Pacific region (APAC), we were unable to achieve our plan due to sales development falling short of expectations, especially in China and India.

Our Asian business was dominated by the downward trend in the Chinese market. The passenger car market declined significantly compared to the previous year. Thanks to the new start-ups gained in recent years, we were able to increase our market share with almost all customers in 2019. Unfortunately, this did not result in the expected sales growth due to the market downturn. Overall, the market in the Heavy Duty On-Road business area proved to be more stable and at a higher level than expected. For the upcoming new "China VI" emission standard, we have won further important orders from key customers, which will drive growth in the coming years. In particular, having leading technology in the field of oil and fuel filtration as well as the strong local implementation competence were the keys to this success. The Heavy Duty Off-Road business area was stable overall and recorded slight year-on-year growth despite the challenging market environment.

On the American continent, we achieved satisfactory sales growth. Broken down by segment, there was a declining market trend in the Passenger Car business area, while sales in Heavy Duty On-Road and Off-Road developed positively. In North America, car production was slightly down in 2019. Fortunately, we were able to increase our sales despite the market downturn thanks to our strong positioning with our core products and are represented in some of the best-selling vehicles and SUVs. The Brazilian automobile market continues to recover modestly. This trend is expected to continue, but inflation remains a potential risk. In Brazil, the market share of our core products was significantly improved, among other things thanks to a large newly won air filter order. In the Heavy Duty On-Road segment, we increased order acquisition compared with the previous year. The Heavy Duty Off-Road business remains one of our main focuses in America. For this reason we are working with several customers on numerous new projects.

Overall, customers continue to attach great importance to alternative drive technologies, which is leading many automakers to postpone or reduce investments in their current product portfolio. Due to the high demand in the market, we increased our business activities with new filtration solutions for alternative drives and low-emission mobility in 2019.

We were again pleased to receive numerous customer awards, confirming our commitment and customer focus in the year under review.

Aftermarket

In the Independent Aftermarket (IAM) business area, we successfully expanded our business for the MANN-FILTER, WIX Filters and Filtron product brands, despite continuing market consolidation in Europe.

Our MANN-FILTER product range was expanded to include over 285 new types, thus consolidating market coverage to over 97% for the European passenger car and van segment.

In Asia, we again achieved growth with MANN-FILTER and WIX Filters. In the MEA (Middle East and Africa) region, we recorded growth despite continuing political crises.

In the USA, we entered into a new partnership with Febreze, a Procter & Gamble brand, and jointly launched a cabin air filter range with triple-layer protection under the Purolator BOSS product brand.

The replacement business with automobile manufacturers (OES) stagnated compared to the previous financial year. The increasing uncertainty with regard to the overall economic trend led our customers, particularly in Europe, to reduce their replacement inventories, in some cases significantly.

In China, the weaker overall economic performance also affected the OES replacement business. The Heavy Duty business area in particular saw a significant slowdown, although we are optimistic about the future due to the successes in the original equipment sector in this business area.

The effects of the negative overall economic trend were also felt in the rest of Asia, particularly in India.

In North America, there was a stable trend in the past fiscal year. We were also able to extend the supply contract with a major customer for another 5 years. In Brazil, the business recovery that began in 2018 continued, while the economic crisis in Argentina also had a negative impact on our business.

Life Sciences & Environment

In the year under review, the Life Sciences & Environment segment recorded an increase in sales of more than 50%. This significant increase can be attributed primarily to the acquisition of the Tri-Dim Filter Corporation in August of the previous reporting year and its full-year consolidation, but also to the organic growth of this segment.

The acquisition of the Canadian air filter company **Hardy Filtration** by MANN+HUMMEL was a milestone in 2019. Hardy specializes in air filtration solutions for a variety of commercial and industrial applications such as hospitals, schools, automobile plants and paint shops, data centers as well as the food and beverage industry.

In the area of air filtration we are concentrating on our key accounts and on winning major projects. Due to our customer proximity and our product competence we are often chosen as a supplier.

In data center applications especially, our business has developed positively since the expansion of our product portfolio. Our new product developments and optimizations in the area of HVAC filtration, above all the improved energy efficiency values with optimized separation performance, are making a positive contribution to business development.

In the power generation area, we are achieving successful results through partnerships and exports. In the Operating Theater segment, in addition to the cooperation with two leading medical equipment manufacturers for hybrid OPs, we were also able to win the largest hospital project for TAV ceilings in South East Asia, in Singapore.

The Public Air Solutions division is developing very positively. We are working on numerous international projects ranging from busy road junctions to underground stations and amusement parks. Since the official start at the end of 2017, we have been able to increase sales to a low 7-digit figure and expect positive developments again in 2020.

The new Home Appliances division, which is also a positive example of successful technology transfer between the Transportation and LS&E segments within the Group, is also showing extremely positive developments. Since the official start of our involvement in this area of business at the beginning of the previous reporting year, we have increased our sales many times over and generated incoming orders in the low 8-digit range over the next 8 years. Thanks to a strong product pipeline, we expect similar developments and growth rates in the coming years. We are working on numerous projects with leading household appliance manufacturers worldwide, for example for kitchen appliances such as extractor hoods, vacuum cleaners and interior air cleaners.

In the year under review MICRODYN-NADIR acquired shares in the company SECCUA based in Steingaden. SECCUA is a manufacturer of Point of Use or Point of Entry water treatment systems. This investment gives us access to this rapidly growing market for the first time.

The company OLTREMARE, which was acquired last year, was able to increase its turnover by over 45% compared to the previous year.

In spring 2019, the strategic decision was made to carry out the following consolidations in the Water business:

The production sites in Xiamen, China, Singapore and Austin, USA, will be combined in our new Life Sciences & Environment Center of Manufacturing Operations in Kunshan, China. The investment in Fluid Brazil was sold at the end of the year. This leaves four locations worldwide for the Water Solutions business: Wiesbaden, Germany; Fano, Italy; Goleta, USA; and Kunshan, China.

TRIDIM
A MANN+HUMMEL Company

TRIDIMHARDY
A MANN+HUMMEL Company

MICRODYNNADIR
A MANN+HUMMEL Company

OLTREMARE
LIQUID SEPARATION

5. NET ASSETS, FINANCIAL POSITION AND RESULTS OF OPERATIONS

Results of operations of the MANN+HUMMEL Group

MANN+HUMMEL was able to increase its sales in the year under review by 6.5% to EUR 4,213.2 million (previous year EUR 3,955.3 million). In contrast to the previous year, exchange rate effects had a positive impact on the development of sales in the past fiscal year. This alone led to an increase in sales of 1.3%. This means that sales growth was slightly below the sales forecast of the previous year. Sales growth in the upper single-digit range was expected. While sales in the Original Equipment segment were slightly down on the previous year, sales in the Aftermarket segment were up on the previous year. A significant increase in sales resulted from the Life Sciences & Environment business segment. In addition to organic growth, this is due to the first-time inclusion of the Tri-Dim companies in the consolidated financial statements for a full fiscal year (previous year four months). The resulting increase in sales amounted to EUR 100.5 million. In addition, another company in Canada, Hardy Filtration, was acquired in 2019. This made an additional sales contribution of EUR 3.2 million.

Our EBIT – earnings before interest and taxes – in 2019 was significantly higher than in the previous fiscal year. It rose by EUR 59.7 million or 63.9% to EUR 153.3 million. The operating margin achieved (EBIT in relation to sales) was 3.6% (previous year 2.4%). However, it should be noted that the previous year had significant special effects such as impairment losses on intangible assets (EUR 40 million) and restructuring measures (EUR 13.6 million). The past reporting year was also influenced by significant expenses from restructuring measures. MANN+HUMMEL had already begun implementing a far-reaching cost-cutting program at the beginning of the fiscal year. In addition to the planned savings of EUR 40 million in nonpersonnel costs, this also included a sustainable initiative to reduce personnel costs by EUR 60 million and 1,200 jobs worldwide. In this context, expenses for severance payments amounting to EUR 44.9 million were incurred. Adjusted for these expenses, adjusted operating results amounted to EUR 198.2 million. The operating adjusted EBIT margin amounted to 4.7%. MANN+HUMMEL thus almost reached its forecast for the year. Here we had assumed an EBIT margin in the mid-single-digit range.

In addition to EBIT, ROCE (Return on Capital Employed) also serves as a key performance indicator for the Group. ROCE is defined as the return on capital employed to generate the reported EBIT. The return on capital employed was 6.9% in the year under review (previous year 4.2%). In both the past and the previous fiscal year, it was adversely affected by the aforementioned special effects. However, thanks to the improved earnings quality, ROCE rose substantially over the previous year, though again below the previous-year forecast for 2018, with ROCE adjusted for restructuring amounting to 9.0%.

As a consequence of the inadequate earnings situation, the Management Board decided to implement a EUR 60 million cost restructuring program in 2019.

The open order backlog amounts to approximately EUR 1,032 million (previous year EUR 1,058 million), or EUR 26 thousand less than in the previous year.

The cost of sales increased by EUR 127.1 million compared with the previous year. In percentage terms, they decreased from 78.2% to 76.5%. As a result, the gross profit as % of sales improved to 23.5% in 2019 (previous year 21.8%). In addition to an increased share of sales in the Aftermarket business unit, which reports higher margins, the Company also succeeded in eliminating inefficiencies at its German locations in the previous year, thus optimizing the production process.

Research and development costs amounted to EUR 134.4 million in the year under review (previous year EUR 139.8 million). In relation to sales, they decreased slightly from 3.5% to 3.2%. Thus, research and development expenses remain at a high level. This demonstrates the importance of investing in new technologies and the associated strategic orientation of our company in existing and new business areas.

Selling expenses rose to EUR 429.3 million in the year under review (previous year EUR 402.9 million). The ratio of selling expenses to sales thus remained unchanged at 10.2%.

General administrative expenses decreased by EUR 8.0 million year on year to EUR 172.5 million. As a percentage of sales, general administrative expenses decreased from 4.6% to 4.1%. This is primarily due to the sustainable cost-cutting measures in 2019.

Other operating income was almost unchanged from the previous year at EUR 53.3 million (previous year EUR 53.1 million).

A significant increase was recorded in other operating expenses. These rose by EUR 58.3 million to EUR 156.0 million. In relation to sales, these amounted to 3.7% (previous year 2.5%). A key driver for this cost increase was the severance payments of EUR 44.9 million in connection with the global job cuts.

The net financial result improved from EUR –78.0 million in the previous year to EUR –63.8 million. Among other things, this is due to the positive change in the result from the disposal of financial assets, securities and hedging transactions amounting to EUR 23.6 million. In addition, there was a positive effect from the sale of an investment in a French subsidiary amounting to EUR 6.6 million. Negative effects compared with the previous year resulted from the first-time application of IFRS 16 in the amount of EUR 5.3 million and the measurement of hedging transactions in the amount of EUR 12.5 million.

The tax expense decreased by EUR 40.8 million compared to the previous year. Among other things, this resulted from the capitalization of tax loss carryforwards in the USA in the amount of EUR 33.7 million. It should also be noted that in the previous year, tax expenses included a write-down of deferred tax assets on temporary differences and existing loss carryforwards in Germany in the amount of EUR 32.1 million. On the other hand, the improvement in the result for the 2019 fiscal year led to higher tax expenses of approx. EUR 6 million. In addition, impairments on deferred tax assets, the recognition of tax charges on future equity distributions within the MANN+HUMMEL Group and the allocation to a provision for an external tax audit also led to higher tax expenses in 2019.

Financial position of the MANN+HUMMEL Group

MANN+HUMMEL's equity ratio, taking into account the capital economically attributable to the shareholders, fell slightly from 21.6% to 20.8% in the 2019 fiscal year. In absolute terms, economic equity (sum of equity and economic capital attributable to shareholders) rose from EUR 850.0 million to EUR 859.6 million.

In 2019, MANN+HUMMEL issued a green bond (Green SSD) with a volume of EUR 150 million and terms of five to ten years. This new green bond was used exclusively for the early repayment of parts of the EUR 342.5 million tranche of the existing bond due in 2020.

In addition, a further EUR 15 million from cash and cash equivalents was used for an early repayment of the tranche due in 2019 for the existing bond.

In addition to this early repayment, EUR 70 million in bilateral loans were repaid from cash and cash equivalents during the year under review. Overall, there were no significant changes in significant credit terms compared with the previous year.

In this way, the Group conservatively finances itself with financial instruments that have a long maturity and essentially fixed interest rates. Most of the loans taken out are denominated in euros. In addition, we have also taken out foreign currency loans in US dollars.

Most of the loans are set to mature over the next ten years. Additional instruments that we use – our green bond (Green SSD) as well as registered bonds (NSV) – have substantial amounts and terms up to 2034. The interest rates are predominantly fixed.

As at the balance sheet date, MANN+HUMMEL had credit lines amounting to EUR 855 million (previous year EUR 853 million). Of this amount, EUR 811 million (previous year EUR 832 million) had not been used as at the balance sheet date. The MANN+HUMMEL Group balance sheet shows the maturity structure of liabilities to banks, broken down into non-current and current liabilities. The loan repayments due in 2020 were reclassified from non-current to current liabilities in these financial statements. This led to a significant increase in current financial liabilities in 2019.

Off-balance sheet commitments and contingencies have decreased significantly compared to the previous year. This is mainly due to the fact that with the first-time application of IFRS 16 "Leases", all obligations from lease transactions must be recorded in the balance sheet. The individual items of other financial obligations are presented under note 34 in the notes to the consolidated financial statements.

Investments in tangible assets amounted to EUR 143.3 million in the past fiscal year (previous year EUR 154.1 million), EUR 10.8 million down on the previous year. In relation to sales, the Group thus invested 3.4% (previous year 3.9%) in tangible assets. These investments include the construction of a new Chinese site in Kunshan for the Life Sciences & Environment segment. Production for the segment will be further centralized here in order to be able to map the planned growth accordingly.

During the year under review, there was sufficient liquidity for our investments in new customer projects. We financed them with operational cash flow.

In addition to capital expenditure on tangible assets, EUR 6.5 million (previous year EUR 12.0 million) was invested in intangible assets and related primarily to patents, licenses and capitalized development costs.

Cash flow from operating activities improved by EUR 137.8 million year on year to EUR 370.8 million. This is due, among other things, to the significantly improved earnings before income taxes and before changes in the economic capital attributable to the shareholders in the amount of EUR 114.7 million. In addition, the amount of income taxes paid was significantly lower than in the previous year at EUR 30.7 million, which is due to significantly lower tax payments or tax refunds in the USA and Germany. A significant effect of EUR 52.6 million was the compounding of interest on pension obligations and provisions for partial retirement at the German locations. The change in net working capital resulted in a lower outflow of cash and cash equivalents of EUR 40.7 million compared with the previous year and is due to a slight reduction in inventories and the increase in other liabilities. This was offset by an increase in trade receivables and other assets and a reduction in trade payables.

Cash flow from investment activities totaled EUR –138.7 million, up EUR 131.5 million on the previous year. In the previous year, this figure had amounted to EUR –270.2 million. The reason for the improvement was lower investments in tangible and intangible assets. Whereas a total of EUR 166.1 million was invested here in the previous fiscal year, investments in 2019 were only EUR 149.8 million. A positive effect of EUR 9.0 million was realized from the sale of 60% of the shares in a newly established company in France. This company includes a product line that was separated from the French subsidiary. A further sale of the remaining investment is planned in the coming years. On the other hand, various investments were acquired in the 2019 fiscal year. These primarily serve the strategic alignment to new business areas. In addition, MANN+HUMMEL has acquired the shares in the Bosnian subsidiary which were previously still outstanding and traded. In total, payments for investments in non-current financial assets amounted to EUR –7.0 million. Payments for the acquisition of consolidated companies were significantly lower than in the previous year. Whereas MANN+HUMMEL spent EUR 127.2 million in 2018 on the acquisition of Tri-Dim in the USA and Oltremare in Italy, in 2019 the payments for the acquisition of a Canadian company amounted to only EUR 5.2 million.

The cash flow from financial activities in 2019 amounted to EUR –253.0 million and was thus EUR 227.5 million lower than in the previous year. This was mainly due to the repayment of liabilities from existing bonds. In 2019, MANN+HUMMEL reduced its total liabilities by EUR 249.3 million (previous year EUR 77.5 million). To finance these repayments, MANN+HUMMEL had issued a green bond of EUR 150 million. A total of EUR 177.6 million (previous year EUR 116.6 million) was raised from banks.

The Group recorded an outflow of EUR 75.6 million from the acquisition of financial assets. However, it should be noted that, as at the end of the previous fiscal year, parts of the existing securities portfolio were not invested and were therefore included in cash and cash equivalents.

There were no liquidity shortfalls in the year under review and none are expected in the future. MANN+HUMMEL has a stable, adequate liquidity position. In addition, as described above, the Group has sufficient credit lines at its disposal to completely fulfill financial liabilities on their maturity.

There are no early repayment obligations. These would only arise in the event of a breach of contractual provisions, which thus involves no risk for MANN+HUMMEL.

In our view, there are currently no constraints with respect to the availability of capital.

For additional information, we refer to the details in the notes.

Net asset position of the MANN+HUMMEL Group

Total assets increased by 4.8% or EUR 190.1 million to EUR 4,127.6 million (previous year EUR 3,937.5 million).

Intangible assets decreased by EUR 54.5 million to EUR 1,005.7 million. This is mainly due to amortization from the acquisition of intangible assets from corporate acquisitions such as WIX-Filtron in 2016 or Tri-Dim Filter Corporation in the past fiscal year. In addition to investments in intangible assets such as licenses, software and similar rights and in development costs amounting to EUR 6.5 million, MANN+HUMMEL acquired goodwill of EUR 3.9 million and other intangible assets of EUR 1.9 million in connection with the acquisition of Hardy Filtration, a Canadian air filter company, in 2019.

Tangible assets rose by EUR 127.2 million to EUR 1,090.3 million. The total investment volume in tangible assets included in this figure amounted to EUR 143.3 million (previous year EUR 154.1 million). As a result of the first-time application of IFRS 16, a total of EUR 119.4 million was added to the Group's tangible assets as at January 1, 2019. These relate to EUR 91.5 million in rented buildings, land and leasehold rights, EUR 0.9 million in technical equipment and machinery and EUR 17.0 million in other equipment, operational and office equipment.

Despite further growth in business volume, MANN+HUMMEL was able to reduce inventories slightly compared to the previous year through consistent inventory management and the implementation of appropriate measures to reduce inventory levels. Inventories fell by EUR 6.1 million to EUR 549.2 million (previous year EUR 555.3 million). In contrast to inventories, trade receivables rose by EUR 32.6 million year on year to EUR 674.4 million. This is mainly due to the increase in sales.

The MANN+HUMMEL Group's cash and cash equivalents in 2019 amounted to 245.3 million euros, 16.7 million euros less than in the previous year. However, it should be noted that a shift from financial assets to cash and cash equivalents amounting to EUR 51.7 million was made in 2018. This shift was allocated to financial assets again in 2019.

As at January 1, 2016, MANN+HUMMEL International GmbH & Co. KG became the ultimate parent company of the MANN+HUMMEL Group. Here, in accordance with German commercial law, there exist non-excludable termination rights for shareholders who do not fulfill the prerequisites for disclosure as shareholders' equity under the International Financial Reporting Standards (IFRS). Consequently, this item, as already in the previous year, is now shown in borrowed capital under "Capital economically attributable to the shareholders." The equity reported in the balance sheet includes the shares of other shareholders of MANN+HUMMEL International GmbH & Co, KG during the year under review. KG, who have a direct participation of 16.67% in MANN+HUMMEL Holding GmbH, but without voting rights. This includes the non-controlling interests of CHANGCHUN MANN+HUMMEL FAWER FILTER CO. LTD., Changchun/PR of China, and the US shareholder totaling EUR 122.0 million (previous year EUR 149.6 million). The non-controlling shares in MANN+HUMMEL BA J.S.C., Tesanj/Bosnia-Herzegovina were transferred to the MANN+HUMMEL Group in the past fiscal year through the complete takeover by MANN+HUMMEL Filtration GmbH, Ludwigsburg/Germany.

Non-current and current financial liabilities rose by EUR 86.1 million year on year to EUR 1,661.1 million. Due to the taking up of, among other things, the green bond of EUR 150 million and offsetting early repayments of promissory note tranches, financial obligations to banks decreased by EUR 67.8 million. Liabilities from rebates developed in the opposite direction, due to the higher business volume in the Aftermarket. These rose by EUR 21.6 million compared with the previous year. However, financial liabilities were significantly affected by the first-time application of IFRS 16 on the accounting of leases. The lease liabilities shown in this item increased by a total of EUR 128.3 million.

Due to the sustained low level of interest rates, the discount factor on which the calculation of pension provisions is based was reduced from 1.75% to 1.05% for the 2019 fiscal year. This resulted in a significant increase in pension obligations, which rose by a total of EUR 50.5 million to EUR 503.1 million.

The increase in other current and non-current provisions of EUR 32.5 million is due to the recognition of the provisions for restructuring measures. At the beginning of the 2019 fiscal year, MANN+HUMMEL announced that sustainable cost savings of EUR 60 million were to be achieved through job cuts. This was associated with a reduction in jobs of approximately 1,200 jobs worldwide.

Due to the ongoing tax audit in Germany, MANN+HUMMEL has assessed the associated risk and taken it into account in the annual financial statements as at December 31, 2019. This is one of the reasons for the increase in other current liabilities. In addition, liabilities to employees increased.

Consolidated balance sheet structure

Overall, the MANN+HUMMEL Group has a balanced balance sheet structure. The existing current financing obligations can be serviced with the existing cash and the available credit lines. The Group has an equity ratio of 20.8%. In addition to a further improvement in the operating margin, the focus in the coming financial years will be increasingly on a further reduction in net working capital, a further optimization of cash flows and, at the same time, an additional strengthening of the equity ratio.

Overall statement on business trends

Compared to the previous fiscal year, the operating profit in 2019 was much more positive, and was thus again closer to the actual margin expectations for the MANN+HUMMEL Group. Operating improvements at various production sites enabled us to partially eliminate the negative impact on earnings resulting from inefficiencies. In addition, a slight shift in the product mix towards the Aftermarket business unit led to an improvement in the operating margin. The cost-cutting measures initiated in 2019 are also beginning to show results. The Life Sciences & Environment segment is currently still in a start-up phase. We expect sustained improvements in earnings in the coming financial years. In addition, in connection with the operating result in the past fiscal year, it should be noted that this figure included restructuring expenses of EUR 44.9 million. Adjusted for this effect, the EBIT margin achieved would be 4.7%.

Development and situation of MANN+HUMMEL International GmbH & Co. KG

All the following figures refer to the individual financial statement of MANN+HUMMEL International GmbH & Co. KG in accordance with the accounting regulations of the German Commercial Code (HGB).

MANN+HUMMEL International GmbH & Co. KG is the parent company of the MANN+HUMMEL Group. The company's registered office is in Ludwigsburg. MANN+HUMMEL International GmbH & Co. KG employed an average of 130 staff in 2019 (previous year 129). These are mainly in the Group administrative departments Legal, Treasury, Reporting, Finance, Human Resources and Communications.

The company's main income results from its function as the parent company of the MANN+HUMMEL Group. The services plus an appropriate profit margin are charged to the domestic affiliated companies within the scope of a business, service and management contract. There is also a profit-and-loss transfer agreement with MANN+HUMMEL East European Holding GmbH.

In the 2019 fiscal year, MANN+HUMMEL International GmbH & Co. KG generated sales of EUR 37.9 million (previous year EUR 39.0 million), which primarily resulted from the invoicing of intra-Group services. In addition, the company achieved income of EUR 78.2 million (previous year EUR 81.3 million) from the profit-and-loss transfer agreements with its Group subsidiaries and from the dividend distribution by MANN+HUMMEL Holding GmbH. Other operating expenses totaling EUR 14.2 million (previous year EUR 14.9 million) mainly include costs for services provided by affiliated companies, business and legal consultancy costs and IT expenses.

Personnel expenses rose slightly by EUR 0.1 million year on year to EUR 22.9 million (previous year EUR 22.8 million).

The net interest result was EUR –0.5 million (previous year –EUR 1.2 million) and includes the reduction of the discount rate for pensions as well as interest income on IC loans.

Taking into account taxes on income of EUR 0.2 million (previous year –EUR 1.4 million), MANN+HUMMEL International GmbH & Co. KG achieved a net income for the year of EUR 80.8 million (previous year EUR 81.4 million), of which an amount of EUR 75.6 million (previous year EUR 76.1 million) was allocated to the special reserves.

The total assets was EUR 502.0 million (previous year EUR 425.5 million). This is due to the increase in loans to affiliated companies to EUR 206.8 million (previous year 0 EUR) and concerns an IC loan from MANN+HUMMEL East European Holding GmbH.

Receivables from affiliated companies fell by EUR 126.7 million to EUR 21.9 million (previous year EUR 148.6 million). The main components are cash pooling credit balances at MANN+HUMMEL Holding GmbH and trade receivables from MANN+HUMMEL GmbH. The other assets amount to EUR 7.0 million (previous year EUR 10.4 million) and mainly include input tax refunds.

Equity amounts to EUR 467.9 million (previous year EUR 395.4 million).

Provisions amount to EUR 24.2 million (previous year EUR 21.3 million). Pension provisions and similar commitments amount to EUR 13.8 million (previous year EUR 12.1 million). The adjustment of the actuarial interest rate for pension provisions from 3.21% to 2.71% resulted in an increase of EUR 1.1 million. The other assets amount to EUR 9.5 million (previous year EUR 7.7 million) and mainly include provisions for performance-related additional payments and indemnities.

Liabilities to affiliated companies amount to EUR 7.9 million (previous year EUR 4.2 million) and mainly comprise VAT liabilities and intercompany charges for services and costs passed on within the Group. The shareholder loan accounts amount to EUR –1.3 million (previous year EUR 2.1 million).

In summary, sales fell slightly in the past fiscal year. This was in line with our expectations. Due to the lower expenses, however, earnings before interest and tax nevertheless increased slightly. As already predicted, the financial result in 2019 was slightly lower than in the previous year, due to the slight decline in profit transfers from subsidiaries.

For the fiscal year 2020, we have so far also been predicting for MANN+HUMMEL International GmbH & Co. KG, as the highest company in the MANN+HUMMEL Group, a slight reduction in turnover and therefore also in EBIT. In addition, we had expected that the profit transfers from the subsidiaries would be at the previous year's level and that the financial result, the company's largest earnings item, would therefore also be almost at the previous year's level. However, the current uncertainty due to the current severe economic crisis, which is also explained in the Group's forecast, will lead to a significant reduction in the business performance of MANN+HUMMEL International GmbH & Co. KG.

6. OPPORTUNITIES AND RISK REPORT

The global economic situation is characterized by unsteady markets and structural risks. Trade tensions between the USA and China pose a considerable risk, as they no longer affect only these two parties. Increased tariffs on both sides are having a negative impact on the global economy. Uncertainty and worry among the population weakens consumption and in turn economic development. Companies today are connected globally, with complex supply and production chains. Companies that operate globally are therefore also suffering. Every business decision is therefore made against the background of the risks and opportunities involved.

Risks are defined in our internal risk reporting as possible future events that could lead to the non-achievement of our forecast (financial) goals. Mirroring this, we define opportunities as possible events or developments that are expected to have a positive effect on our planned (financial) targets.

As a globally operating company, we counter these risks through diversification – in other words, a diverse range of products – on the one hand, and by continuously improving our products and processes on the other.

We create opportunities by continuously enhancing our competitiveness. We continuously develop our products, expand our development expertise and drive the establishment and expansion of new locations. Future-oriented and innovative products, digital and intelligent business models and various service solutions also open up new opportunities for us.

We have created synergy effects and new market access through the acquisitions that we made in the Life Sciences & Environment (LS&E) segment. With such acquisitions we are preparing ourselves for this future market.

Corporate growth in recent years has led to increasing complexity in internal processes. With the PACE project, we simplified both the group-wide business model and the decision-making and control processes.

Sustainability is a key driver of our business. Through our core competence in filtration, we are contributing to cleaner air, cleaner water and cleaner mobility. On this basis, we developed a strategic approach to sustainable corporate action and published it in a Corporate Responsibility Report in 2018. Our sustainability report signals our intention to consistently align our vision of "Leadership in Filtration" and our mission of "Separate the useful from the harmful" with applications in the LS&E segment in the future.

In the course of the political discussions about alternative drives, various opportunities have resulted; but there are risks too. The Group must prepare for these developments through various scenarios and precautions. The product portfolio in the Transportation segment is focused mainly on the drivetrain of the internal combustion engine. The replacement of combustion engines with alternative drive technologies would mean a risk of lost sales and market share. We are therefore investing in the development of innovative filtration solutions for new drive systems. This opens up opportunities for providing new products for future technologies and for tapping into this market and has the potential to compensate or even overcompensate for the expected decline in sales in the area of combustion engines. Increased environmental awareness – supported by the new drive systems – also opens up opportunities for providing new products beyond the drive or powertrain segment. These include, for example, all products that can be categorized under the Fine Dust Eater concept: brake dust particle filters, particulate filters for vehicle interiors or stationary particulate and nitrogen oxide filter columns. These innovative products are opening up new market segments and customers and offer enormous growth potential.

Risk management

MANN+HUMMEL's risk management aims to recognize all major risks for the Group at an early stage, to evaluate these and assess their consequences (including countermeasures). In order to comprehensively respond to the rapidly changing market conditions and corporate changes (e.g. establishment of plants and expansion to include the L&SE segment), a project to further develop the existing risk management system was carried out in 2019. The risk management system at MANN+HUMMEL is based on current standards such as COSO and ISO and is adapted to MANN+HUMMEL's conditions.

Risk management is integrated into the existing MANN+HUMMEL organization and covers all organizational units, functions and processes. A company-wide planning, reporting and controlling system supports all those responsible. Responsibilities as well as goals and processes of risk management are defined. The risk officers are responsible for identification, evaluation, management and reporting, reassess the risk situation annually and report their risk portfolio to Group Risk Management.

The Group Treasury & Risk Management Group function provides the organizational framework for risk management and reports directly to the Group Chief Financial Officer. Group Risk Management determines the Group's current risk portfolio on the basis of the information reported. This is made available twice a year to the Management Board and the Supervisory Board in a report with detailed explanations. This also includes the mathematical aggregation of risks at Group level. In addition, significant changes in the assessment of already known risks as well as new significant risks are reported at any time and reported to the Management Board on an ad hoc basis.

The risks are classified according to two criteria: the probability of occurrence and the extent of the risk. The extent of the risk is in turn divided into five categories – classified on the basis of possible effects on the operating result within two years: Existence-threatening risk (potential costs of more than EUR 60 million), significant risk (potential costs of up to EUR 60 million), high risk (discernible effect on business activity, potential costs of up to EUR 40 million), moderate risk (potential costs of up to EUR 20 million) and low risk (potential costs of up to EUR 5 million).

Risk limiting measures (mitigation measures) are also reported and evaluated. The effectiveness and the planned implementation of these measures over time are monitored by the central risk management department.

The remaining risk after implementation of the measures is presented in the internal risk report as net risk.

A lower value limit of EUR 5 million is set for the reporting of risks with regard to potential negative effects in the standard process and a lower value limit of EUR 25 million is set for the ad-hoc process. Risks below these value limits are managed independently in the segments. The time frame relevant for internal risk reporting is a maximum of 2 years. The effects of the risks presented in the opportunities and risk report are presented as annual figures.

The assessment of the risks presented refers to November 30, 2019. There were no relevant changes after the balance sheet date that would have required a different presentation of the Group's risk situation. Compared to the previous year, the risk structure of our company has not changed significantly, with the exception of current developments due to the economic crisis in connection with the coronavirus.

In the course of audits, the internal audit department regularly checks the functionality of the internal risk management processes and at the same time the information transfer of relevant risks from the operating business units to Group Risk Management.

Financial risks

For our Group, the financial risks include exchange rate fluctuations and interest rate changes. We continuously monitor currency risks, evaluate them and hedge them using derivative financial instruments, taking into account a risk limit. We generally use derivative financial instruments to cover underlying transactions resulting from the operating activity of the Group. We continuously review the interest rate risk and minimize it with as high a proportion as possible of financial liabilities with long-term fixed interest rates.

The MANN+HUMMEL Group Treasury department is responsible for limiting financing and liquidity risks. The external financing required for our business activity includes the inherent risk of having to pay higher interest expenses for future loans. In the short to medium term, we do not expect any interest rate adjustment risk on the market side.

Along with currency and interest risks, we regularly review the default risks of financial partners and derive appropriate measures.

The adequate provision of financial resources will be the foundation upon which MANN+HUMMEL can drive its future strategic direction.

Our financial risks are low thanks to solid financing, a stable liquidity position and sufficient reserve liquidity. With regard to our liquidity, consistent monitoring of cash is an effective risk minimization tool. We continuously monitor receivables, liabilities and inventories. We implement necessary measures for risk avoidance at short notice.

Part of our reserve liquidity is invested in a multi-segment master fund (four sub-funds and one overlay) in order to comply with the defined return and risk parameters. The investment guidelines stipulate that the sub-funds are equipped with a risk limitation system. Accordingly, one fund has a fixed lower value limit of –5% and another fund has a risk control system without a fixed lower limit. The two remaining funds are absolute return funds, which may not fall below a performance of –10% due to a corresponding risk overlay. In 2018, the overlay did not have to compensate for negative returns due to the funds' exclusively positive returns.

We continuously monitor the tied-up current assets and adapt them to sales performance if required. The increase in current assets is due primarily to business combinations.

Operating opportunities and risks

Market environment

We have predefined scenarios for responding to a weakening or decline in economic development in relevant markets. We use these scenarios to draw up measures for adapting the cost level to falling sales as far as possible to prevent even greater erosion of profits. This adjustment reduces the significant market risks to an acceptable level for us. The continuing high dependence on the automotive industry that has evolved over the years also entails risks. We are experiencing particularly intense cost pressure in production as a Tier 1 supplier. This is partly due to the advance of alternative drives such as electric motors and concerns with regard to the end of the combustion engine. However, with this risk we also see opportunities for our company: We are applying our core expertise to new business sectors to diversify our product range and thus open up new markets.

Patent law conditions are to be taken into account. This is ensured by internal processes for reviewing any third-party rights.

In the digital age, change and transformation are faster and more far-reaching than ever before. This is equally challenging for MANN+HUMMEL as a company, for our management and for each and every one of our employees.

Transport solutions beyond the combustion engine, the digital transformation of the economy and society, as well as growing requirements or sustainable business are presenting us with new challenges. At the same time, this is opening up great opportunities. Our core competence in filtration from over 78 years of experience gives us a competitive advantage when it comes to the development of innovative products in new business areas. The best example of this is the Life Sciences & Environment segment. We aim to achieve greater independence from the automotive sector through greater diversification. In addition, we continue to open our company to new technologies and innovations.

The labor market continued to suffer from a shortage of skilled workers in 2019. Meeting the demand for qualified employees in particular posed challenges for companies worldwide. MANN+HUMMEL meets this challenge with active personnel management, which is geared towards recruiting and retaining skilled personnel. In particular, the retention of employees is carried out, for example, by means of employee surveys regarding satisfaction and possibilities for improvement, and is accompanied by appropriate measures in the HR area.

Purchasing

In our procurement markets, price fluctuations for raw materials and other materials are particular risks that we must take into account. We offset the risk of cost increases for the most part with long-term contracts, global, strategically diverse suppliers as well as our Group-wide Category Management. Our central purchasing controlling also contributes to transparency, control and risk minimization. One instrument of risk minimization is the permanent monitoring and control of our suppliers.

Quality

Product quality and customer satisfaction are key goals for our company. Quality problems and the ensuing customer complaints and warranty claims would represent a considerable risk with consequences for the reputation and financial situation of our company.

To counter this, high quality standards are applied within the framework of the IATF 16949 certified MANN+HUMMEL Management System – for product and process development as well as for production at all of the other plants. We are already utilizing the greatest opportunity to identify and prevent errors through balanced and conscientious planning.

Moreover, customer quality and warranty teams work closely with our customers, development departments and production plants. We thereby assure the quality of our products and can respond swiftly in the event of warranty claims.

We also cover warranty risks by setting aside appropriate financial provisions. Furthermore, we have relevant insurance cover for possible damages owing to recalls and for product liability claims.

We mainly regard the high quality of our products as an opportunity because it gives us a decisive competitive edge over other manufacturers.

Information technology

The worldwide digital networking of our organization forms the basis of our Group's global presence. Fast and secure data provides opportunities to continuously optimize processes and improve cooperation with customers and suppliers. However, the need for permanent availability of secure data also places high demands on our information technology. To rule out the high risks posed by interruptions to the data supply, there is a secondary data center in Ludwigsburg, in addition to the primary one.

April 2019 marked the start of a three-year IT security project. In the first phase, the goal was to establish a Security Operation Center (SOC) in Bangalore, India. The worldwide firewall and antivirus operations were consolidated and standardized and transferred to the SOC. All related safety processes and operational tasks are handled by a team working in shifts and possible problems or hazards are solved directly. The division went into operation in December 2019 and will be expanded in a second phase with additional security services, such as active vulnerability management.

In another project, MANN+HUMMEL is introducing an Identity and Access Management (IAM) system. Compromised login data and access authorizations often serve as a gateway into the company network. The IAM is used to manage the roles, access authorizations and requirements of individual users and thus protect them effectively.

Fraud and breach of code of conduct

Increasingly, antitrust authorities are conducting investigations in many countries. This can result in penalties due to competition law infringements or other unlawful conduct. Our company guidelines and our Code of Conduct regulate the correct procedure with respect to antitrust issues, export control, corruption and other violations of the law. We are making all employees worldwide aware of these topics through ongoing training. Through this training we can reduce the risk, though not avoid it entirely.

Process controls and corresponding guidelines serve to reduce compliance violations to a minimum. The "Whistleblowing System" also offers every employee the appropriate platform to address compliance suspicions and risks at any time.

Economic performance risks

The economic performance risks include possible damage due to operational interruptions and possible damage due to loss of tangible assets.

Natural disasters, terrorist activities or other disruptions in the production facilities or within the supply chains – at customers and suppliers – can cause significant damage and losses. To limit these risks, we have taken out insurance cover on a scale appropriate from a commercial perspective.

Taxes

As an international Group, MANN+HUMMEL operates in a large number of different country-specific tax systems. This represents a high level of complexity within the Group. Compliance with the respective local tax regulations is ensured through the additional appointment of local tax consultants at the individual subsidiaries. In addition, the Group is optimizing its Group-wide internal tax control system, for example in the area of indirect taxes and cross-border relations. The optimization of tax processes and the adjustment of ongoing controls form a key element in the early detection and reduction of potential tax risks. We constantly update Group-wide established guidelines, for example on the transfer pricing system, and immediately inform our employees worldwide. In addition, in the area of transfer pricing documentation, the Group is pursuing a Group-wide approach in order to meet the increased requirements of the tax authorities worldwide.

Default by key customers

As a Tier 1 Supplier and in the aftermarket business, our company has always focused on long-term cooperation with its customers. We continuously monitor our risks and adapt our credit limits dynamically to the payment behavior and credit rating of our customers. If one of our major customers were to default, this would in all likelihood hamper the development of our Group, but would not jeopardize its future. Even though we may not have any cause for concern at present, a small risk remains.

We are in the process of reducing such dependencies by means of our diversification strategies and the broad range of products on different filtration markets.

Consequences of Brexit

With the withdrawal of the United Kingdom from the European Union on January 31, 2020 ("Brexit"), a transition solution ending on December 31, 2020 was agreed in the withdrawal agreement. Until then, the United Kingdom will remain part of the EU single market and the EU customs union. At the same time, the EU and the UK will negotiate on the shape of future relations up to this point. The outcome of these negotiations is not yet fully predictable and continues to create uncertainty for companies. In order to reduce the risk for MANN+HUMMEL, a project team was formed in the previous fiscal year to develop preparatory measures for the period after the temporary transitional solution. Should it emerge in the course of the negotiations that there will be significant trade restrictions after January 1, 2021, this will naturally have a long-term negative effect on the situation of the MANN+HUMMEL Group's British locations. However, this cannot be fully assessed at the moment.

Effects of COVID-19

The OECD currently sees the spread of the coronavirus (COVID-19) as the greatest threat to the world economy since the global financial crisis of 2008/09. It is to be assumed that the spread of COVID-19, which was classified as a pandemic by the WHO on March 11, 2020, will lead to a significant deterioration in overall economic development. The full extent of the impact on the economic development of Germany and on the automotive industry is not yet foreseeable. Thus, it must be assumed that a global economic slump or even a recession will occur as a result of the spread of the coronavirus. However, we still expect the economy in Germany, the euro zone and worldwide to recover next year at the latest. For MANN+HUMMEL, this poses particular risks as a result of the interruption of existing supply chains, bad debts on receivables from our customers and our key employees falling ill. However, the company introduced measures to protect its employees and customers at an early stage, and in doing so is guided in each case by the orders and recommendations of international, national and local authorities. At the same time, suitable measures were introduced to fully secure the company's existence and liquidity. It can be assumed at present that these measures are effective and that the continued existence of MANN+HUMMEL is not threatened by the current crisis.

Overall statement regarding the opportunity and risk situation

We continuously monitor and assess opportunities and risks in an iterative process. to minimize risks and identify opportunities at an early stage. No risks that could jeopardize the future of the Group can be identified at present.

7. FORECAST REPORT

Before the outbreak of the coronavirus crisis and the associated collapse of the global economy, the German economy was growing. For example, the Federal Government expected price-adjusted gross domestic product to grow by 0.9% in 2020.[13]

In the USA (1.8%), Europe (1.0%) and China (5.8%) economic growth was expected to be slower than in 2019. For the year 2020 as a whole, growth of 1.8% was forecast for Brazil and 2.2% for Russia.[14]

However, these forecasts must be put into perspective against the background of the current crisis situation and the associated global economic restrictions. The full impact on economic development in Germany and throughout the world is not yet foreseeable.

Originally, we had expected currency-adjusted sales growth of approximately 3% for the entire MANN+HUMMEL Group. The expected EBIT margin was in the mid single-digit range. The increase in the expected EBIT margin compared with the past fiscal year is due, among other things, to the cost-cutting measures already implemented in 2019. The expected ROCE for the year 2020 was around 10% and thus above the 2019 fiscal year, although we are already seeing significant declines in sales in all regions of the world.

Depending on the duration of the coronavirus crisis, these effects will also have a longer-term impact on customer orders. MANN+HUMMEL will implement suitable measures to counteract this development as far as possible. Overall, however, we will see a significant decline in sales in 2020. This will be accompanied by a marked decline in operating profit (EBIT) and ROCE, which is important for the management of MANN+HUMMEL, both compared to the previous year and in comparison to the original planning.

Ludwigsburg, June 2020

MANN+HUMMEL International GmbH & Co. KG

The Management Board

Kurk Wilks	Emese Weissenbacher	Nicolaas Zerbst
CEO	EVP & CFO	COO

13 VDA Konjunkturbarometer [VDA Economic Barometer], December 2019
14 VDA Konjunkturbarometer [VDA Economic Barometer], December 2019

MANN+HUMMEL CONSOLIDATED FINANCIAL STATEMENTS IN ACCORDANCE WITH IFRS[1]

1 All figures are rounded. This may lead to minor discrepancies when totaling sums and when determining percentages.

CONSOLIDATED PROFIT AND LOSS STATEMENT JANUARY 1 TO DECEMBER 31, 2019

EUR million	Notes	2019	2018
Sales	(10)	4,213.2	3,955.3
Cost of sales	(11)	3,221.0	3,093.9
Gross margin on sales		**992.2**	**861.4**
Research and development costs	(11)	134.4	139.8
Selling expenses	(11)	429.3	402.9
General administrative expenses	(11)	172.5	180.5
Other operating income	(12)	53.3	53.1
Other operating expenses	(13)	156.0	97.7
Operating profit or loss (EBIT)		**153.3**	**93.6**
Share in the result from associates		0.6	0.5
Financial expenses	(14)	147.2	135.3
Financial income	(14)	82.8	56.8
Net financial result		**– 63.8**	**– 78.0**
Net profit or loss before income tax and changes in capital economically attributable to the shareholders		**89.5**	**15.6**
Income taxes	(15)	41.0	81.8
		48.5	– 66.2
Changes in capital economically attributable to the shareholders		**49.7**	**– 45.2**
Consolidated net income		– 1.2	– 20.9
Result attributable to non-controlling interests		– 1.2	– 20.9

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME JANUARY 1 TO DECEMBER 31, 2019

EUR million	Notes	2019	2018
Consolidated net income		**– 1.2**	**– 20.9**
thereof attributable to non-controlling interests		– 1.2	– 20.9
Items that may be reclassified to profit/loss			
Exchange rate differences from the conversion of foreign business operations			
Exchange rate differences occurring during the fiscal year		12.1	–13.5
Equity and borrowing instruments			
Changes in fair value of financial assets available for sale		– 0.2	– 1.7
Reclassifications to profit and loss		0.6	0.0
Cash flow hedge (currency hedging)			
Gains/losses recorded during the fiscal year		– 0.2	0.5
Income taxes attributable to these components		–0.1	0.2
Items that will not be reclassified to profit/loss			
Revaluation of defined benefit obligations and similar commitments		–48.4	3.7
Income taxes attributable to these components		11.4	– 20.3
Equity and borrowing instruments			
Changes in fair value of financial assets available for sale		0.8	0.0
Changes in other income attributable to shareholders		20.0	25.3
Other comprehensive income		**– 3.9**	**– 5.9**
Total consolidated comprehensive income		**– 5.1**	**– 26.8**
thereof attributable to non-controlling interests		– 5.1	– 26.8

The MANN+HUMMEL Group has applied the new standard IFRS 16 for the first time since January 1, 2019. For the transition to the new regulations, the modified retrospective method was applied in each case, according to which the previous year's figures are not adjusted.

CONSOLIDATED BALANCE SHEET AS AT DECEMBER 31, 2019

EUR million	Notes	12/31/2019	12/31/2018
Assets			
Non-current assets			
Intangible assets	(17)	1,005.7	1,060.2
Tangible assets	(19)	1,090.3	963.1
Investments in associates	(20)	7.8	3.6
Trade receivables	(24)	0.0	0.7
Financial assets	(21)	21.1	21.0
Income tax receivables		0.4	0.4
Other assets	(22)	24.3	18.4
Deferred tax assets	(15)	86.8	67.0
		2,236.4	**2,134.4**
Current assets			
Inventories	(23)	549.2	555.3
Trade receivables	(24)	674.4	641.8
Financial assets	(25)	314.7	228.3
Income tax receivables		13.3	24.5
Other assets	(22)	94.3	91.2
Cash		245.3	262.0
		1,891.2	**1,803.1**
		4,127.6	**3,937.5**

EUR million	Notes	12/31/2019	12/31/2018
Liabilities			
Equity			
Non-controlling interests	(26)	140.5	149.6
		140.5	**149.6**
Non-current liabilities			
Capital economically attributable to the shareholders	(26)	719.1	700.4
Financial liabilities	(28)	1,241.2	1,348.1
Pension provisions	(31)	503.1	452.6
Other provisions	(30)	31.0	28.4
Trade payables		0.0	0.1
Other liabilities	(29)	5.5	5.3
Income tax liabilities		1.2	1.5
Deferred tax liabilities	(15)	74.9	81.0
		2,576.0	**2,617.4**
Current liabilities			
Financial liabilities	(28)	419.9	226.9
Trade payables		601.2	613.5
Other liabilities	(29)	205.0	182.6
Other provisions	(30)	150.5	120.6
Income tax liabilities		34.5	26.9
		1,411.1	**1,170.5**
		4,127.6	**3,937.5**

CONSOLIDATED CASH FLOW STATEMENT JANUARY 1 TO DECEMBER 31, 2019

EUR million	Notes	2019	2018
1. Cash flow from operating activities			
Consolidated net income		– 1.2	– 20.9
Changes in capital economically attributable to the shareholders		49.8	– 45.2
Income tax expense		41.0	81.8
Net profit or loss before income tax and changes in capital economically attributable to the shareholders		**89.6**	**15.7**
Paid (–)/refunded (+) taxes on income		– 35.1	– 65.8
Depreciation (+) of fixed assets		233.2	236.9
Increase (+)/reduction (–) in long-term provisions		4.8	0.6
Other expenditure (+)/income (–) not affecting payments		1.2	3.3
Financial expenses (+)/financial income (–)		64.3	78.5
Increase (+)/reduction (–) in current provisions		29.0	26.5
Profit (–)/loss (+) from disposal of assets		0.1	– 5.5
Increase (–)/reduction (+) in inventories, trade debtors and other assets		– 20.3	– 89.6
Increase (+)/reduction (–) in trade creditors and other liabilities		3.9	32.5
Cash flow from operating activities	(32)	**370.8**	**233.0**
2. Cash flow from investment activities			
Receipts (+) from the disposal of tangible assets		11.3	15.1
Payments (–) for investment in tangible assets		143.3	– 154.1
Receipts (+) from the disposal of intangible assets		0.1	0.3
Payments (–) for investment in intangible assets		– 6.5	– 12.0
Receipts (+) from the disposal of non-current financial assets		9.0	1.0
Payments (–) for investment in non-current financial assets		– 7.0	– 3.3
Payments (–) for the acquisition of consolidated companies, less cash and cash equivalents acquired		– 5.2	– 127.2
Receipts (+) from loans granted		0.0	4.9
Payments (–) for loans granted		– 5.7	– 3.6
Interest received (+)		8.6	8.7
Cash flow from investment activities	(32)	**– 138.7**	**– 270.2**
Free cash flow		**232.1**	**– 37.2**

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CONSOLIDATED CASH FLOW STATEMENT JANUARY 1 TO DECEMBER 31, 2019 (CONTINUED)

EUR million	Notes	2019	2018
3. Cash flow from financing activities			
Payments (–) to company shareholders		– 10.1	– 9.9
Receipts (+) from acceptance of (financial) credits and sale of monetary financial assets		177.6	116.6
Repayment (–) of (financial) credits and payments to acquire monetary financial assets		– 327.0	– 77.5
Payments (–) from the repayment of lease liabilities		– 34.1	0.0
Interest paid (–)		– 59.4	– 54.7
Cash flow from financing activities	(32)	**– 253.0**	**– 25.5**
4. Cash funds at end of period			
Payment-effective change to cash funds (subtotal 1–3)		– 20.9	– 62.7
Changes in cash funds from exchange rate movements, valuation differences and changes in Group structure		4.2	– 3.2
Cash funds at the beginning of period		262.0	327.9
Cash funds at end of period		**245.3**	**262.0**
5. Composition of cash funds			
Cash	(32)	245.3	262.0
Composition of cash funds		**245.3**	**262.0**

CONSOLIDATED CHANGES IN EQUITY JANUARY 1 TO DECEMBER 31, 2019

							Parent Company	**Non-controlling interests**	**Total equity**
	Revenue reserves					**Total other shareholders' equity**	**Total equity of the partners of M+H International GmbH & Co. KG**		**Total**
EUR million		**Financial assets available for sale**	**Equity and borrowing instruments**	**Fair value measurement of cash flow hedges**	**Actuarial gains and losses**	**Difference from foreign currency translation**			
As at 12/31/2017	**0.0**	**0.0**		**0.0**	**0.0**	**0.0**	**0.0**	**176.2**	**176.2**
First-time application effect from IFRS 9 and IFRS 15	9.5	-2.6	1.1				8.0	1.7	9.7
Reclassification to borrowed capital	-9.5	2.6	-1.1				-8.0		-8.0
Adjusted 1/1/2018								177.9	177.9
Changes in capital economically attributable to the shareholders	-46.2		-1.2	0.4	-13.3	-11.1	-71.4		-71.4
Reclassification to borrowed capital	46.2		1.2	-0.4	13.3	11.1	71.4		71.4
Other comprehensive income								-5.9	-5.9
Consolidated net income								-20.9	-20.9
Total consolidated comprehensive income								-26.8	-26.8
Paid dividends								-1.4	-1.4
Changes in consolidated Group								-0.9	-0.9
Other								0.8	0.8
As at 12/31/2018								**149.6**	**149.6**
First-time application effect of IFRS 16	-8.9						-8.9	-2.1	-11.0
Reclassification to borrowed capital	8.9						8.9		8.9
Adjusted 1/1/2019								**147.5**	**147.5**
Changes in capital economically attributable to the shareholders	51.9		0.9	-0.1	-31.0	10.2	31.9		31.9
Reclassification to borrowed capital	-51.9		-0.9	0.1	31.0	-10.2	-31.9		-31.9
Other comprehensive income								-3.9	-3.9
Consolidated net income								-1.2	-1.2
Total consolidated comprehensive income								**-5.1**	**-5.1**
Paid dividends								-1.1	-1.1
Changes in consolidated Group								-1.8	-1.8
Other								**1.0**	**1.0**
As at 12/31/2019								**140.5**	**140.5**

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS OF MANN+HUMMEL INTERNATIONAL GMBH & CO. KG 2019

FUNDAMENTAL PRINCIPLES

1. Corporate structure

MANN+HUMMEL International GmbH & Co. KG (hereinafter also referred to as “company”, “parent” or “MH International Holding”) has the legal form of a partnership. The company is based at Schwieberdinger Straße 126, 71636 Ludwigsburg, Germany and is registered under commercial register number HRA 730217 in the commercial register of the Stuttgart district court. The company has been the highest-level parent of the MANN+HUMMEL Group (hereinafter also “Group”, “MANN+HUMMEL” or “MANN+HUMMEL Group”) since January 1, 2016.

The product portfolio includes filtration solutions for automotive and industrial applications, clean indoor and outdoor air and sustainable water use.

The products manufactured by the MANN+HUMMEL Group include air filter systems, intake systems, liquid filter systems, plastic components, filter media as well as cabin air filters and industrial filters.

In the areas of process engineering, industrial applications and water filtration, we are expanding our portfolio with high-performance membranes, membrane bioreactors as well as reverse osmosis technologies. Stationary and mobile systems for the filtration of particulate matter and nitrogen dioxide further expand the product offering for improving outdoor air quality.

Increasingly, the Group is also offering digital services and intelligent solutions that meet the specific needs of our customers.

The MANN+HUMMEL Group is represented at more than 80 locations on five continents.

2. General information

The items in the consolidated profit and loss statement, the consolidated statement of comprehensive income, the consolidated balance sheet, the consolidated cash flow statement and the consolidated statement of changes in equity are listed or explained in the notes to the consolidated financial statements.

The fiscal year of MANN+HUMMEL corresponds to the calendar year. The Group currency is the euro. Unless noted otherwise, all amounts are stated in millions of euros (EUR million).

The Management Board of the company approved the consolidated financial statements for referral to the Supervisory Board on May 14, 2020.

The consolidated financial statements prepared as at December 31, 2019 and the Group status report are announced in the Federal Gazette.

The consolidated balance sheet is structured in accordance with terms. Balance sheet items are broken down into non-current and current assets or liabilities if they have a remaining term of more than one or up to one year respectively.

Assets and debts belonging to a disposal group that is classified as held for sale or assets held for sale are reported separately from the other assets and debts in the balance sheet.

The assets and debts are recognized in accordance with the historical cost convention. Excluded from this are derivative financial instruments, securities and holdings in companies that were recognized at fair value, insofar as they can be reliably determined.

3. Application of IFRS

As a non-publicly listed company, the business uses the option under Section 315e(3) HGB (German Commercial Code) to prepare the consolidated financial statements in accordance with the IFRS.

The consolidated financial statements are consistent with the standards and interpretations of the International Accounting Standards Board (IASB), London, valid at the end of the reporting and as applicable in the European Union (IFRS) and additionally in accordance with the commercial law regulations applicable under Section 315e(1) HGB.

4. Adjustment of the accounting methods as well as new standards and interpretations

The applied accounting policies correspond to the methods used in the previous year, with the following exceptions. In the current fiscal year, the following new and amended standards were to be applied for the first time, which with the exception of IFRS 16 did not have any effects on the consolidated financial statements.

- 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 Investments in Associates and Joint Ventures,
- Improvements to IFRS 2015-2017,
- IFRIC 23 Uncertainty over Income Tax Treatments.

IFRS 16

For lessees, IFRS 16 introduces a uniform approach to the balance-sheet recognition of lease agreements, according to which assets are to be recognized in the balance sheet for the rights of use to the leased property and liabilities for the payment obligations entered into, for all leases.

For current leases and leasing of low-value leased assets, MANN+HUMMEL makes use of the options to facilitate application. Lease payments under these agreements are recognized on a straight-line basis over the term of the lease as other operating expense as a rule.

Furthermore, with the exception of car leasing agreements, the option to separate lease and non-lease components (service) is used. Non-lease components are therefore as a rule not included in the right-of-use asset to be recognized.

With the first-time application of IFRS 16, the Group recognized lease liabilities for leases previously classified as operating leases under IAS 17. The liabilities include fixed payments less any lease incentives to be received as well as variable lease payments linked to an index. These liabilities are valued as at January 1, 2019 at the cash value of the remaining lease payments, discounted at the lessee's incremental borrowing rate. As at January 1, 2019, depending on the currency area, this was between 1.0% to 47.3% p. a.

The switch to IFRS 16 was made in accordance with the modified retrospective method, whereby the cumulative effect from the adjustment at the time of the first application was recognized in the revenue reserves without any impact on result. The corresponding figures of the previous-year period will not be adjusted. Past periods are therefore only comparable to the 2019 fiscal year to a limited extent.

The adjustments due to IFRS 16 are recorded in the opening balance sheet as at January 1, 2019 and result in the following changes to the individual balance sheet items:

Consequences for the consolidated balance sheet

All figures in EUR million	12/31/2018[1]	Effects of IFRS 16	1/1/2019
Assets			
Tangible assets	963.1	119.4	1,082.5
Current financial liabilities	226.9	33.1	260.0
Non-current financial liabilities	1,348.1	98.7	1,446.8
Deferred tax assets	67.0	2.6	69.6

1 As at December 31, 2018, the balance sheet already included the following values in connection with finance leases pursuant to IAS 17: Tangible assets EUR 12.8 million, current financial liabilities EUR 1.0 million and non-current financial liabilities EUR 14.1 million.

The recognition of rights of use in the amount of the corresponding lease liabilities results in a reduction of the revenue reserve in the equity capital in the amount of EUR 11.0 million at the time of the first application. The revenue reserve includes the difference of the rights of use and lease liabilities from IFRS 16 in the amount of EUR 9.8 million and the disposal of the IAS 17 items in the amount of EUR 1.2 million.

Of the rights-of-use assets from operating leases included in the item tangible assets as at January 1, 2019, EUR 100.9 million relates to rented buildings, land and leasehold land, EUR 0.9 million to technical equipment plant and machinery and EUR 17.6 million to other equipment, operational and office equipment. There were no leases in the MANN+HUMMEL Group in the area of intangible assets and liabilities.

With the first-time application of IFRS 16, payments for the repayment portion of lease liabilities are now included in cash flow from financing activities.

Measurement of the lease liabilities

All figures in EUR million	
Liabilities from operating leases specified as at December 31, 2018	149.1
Discounted at the lessee's incremental borrowing rate at the time of the first application of IFRS 16	131.9
Current leases recognized as an expense on a straight-line basis	–5.7
Leases of low-value assets recognized as an expense on a straight-line basis	–2.2
Plus liabilities from finance leases according to IAS 17	15.1
Other adjustments	7.8
Lease liability included on the balance sheet as at January 1, 2019	146.9

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The interpretation is to be applied to the accounting for income taxes in accordance with IAS 12 Income Taxes if there are uncertainties regarding the income tax treatment. It does not apply to taxes or duties that are not within the scope of IAS 12 and does not include provisions for interest and penalties for late payment associated with uncertain tax treatment. The interpretation deals in particular with the following issues:

- Determining whether an entity should assess uncertain tax treatments on an individual basis,
- assumptions that an entity makes in relation to the review of tax treatments by the tax authorities,
- determining taxable profit (tax loss), the tax book values, the unused tax losses, of unused tax credits and tax rates,
- taking account of changes in facts and circumstances.

The Group must determine whether to assess each uncertain tax treatment separately or together with one or more other uncertain tax treatments. In doing so, it chooses the method that is more suitable for predicting the resolution of the uncertainty.

The Group makes significant judgments in identifying uncertainties regarding income tax treatment. As it operates in a complex international environment, it examined whether the interpretation had an impact on its consolidated financial statements.

When applying the interpretation for the first time, the Group took into account whether uncertain tax positions existed, particularly in connection with transfer prices. Transfer pricing deductions have been made in the tax returns of the Company and its subsidiaries filed in various jurisdictions and the relevant tax authorities may question these tax treatments. Based on its analysis of tax compliance and transfer pricing, the Group concluded that the tax treatments applied by the Group (and its subsidiaries) are likely to be accepted by the tax authorities. The interpretation had no effect on the consolidated financial statements.

The following new or revised standards and interpretations were published, but did not yet have to be applied on a mandatory basis for the fiscal year starting January 1, 2019 and were not applied prematurely:

General	Changes to references to the Framework in IFRS[1]
Amendment to IAS 1 and IAS 8	Definition of materiality[1]
Amendments to IFRS 3	Definition of a business operation[1,3]
Changes to IFRS 9, IAS 39 and IFRS 7	Interest Rate Benchmark Reform[1,3]
IFRS 17	Insurance contracts[2,3]

1 To be applied for fiscal years starting on or after January 1, 2020.
2 To be applied for fiscal years starting on or after January 1, 2023.
3 An EU endorsement is still pending.

MANN+HUMMEL has not prematurely applied standards and interpretations which have already been issued but have not yet come into force. The Group will apply the new or amended standards and interpretations at the latest when they become mandatory following adoption by the EU.

5. Consolidated Group

Within the framework of the rearrangement of the corporate structure, MANN+HUMMEL International GmbH & Co. KG was established on January 1, 2016 as the managing holding company. This company holds 83.3% of the shares of MANN+HUMMEL Holding GmbH, Ludwigsburg, and as the highest-level parent company prepares the consolidated financial statements for the MANN+HUMMEL Group.

The consolidated financial statements include 19 (previous year 19) German and 72 (previous year 74) foreign Group companies. The consolidated Group includes, in addition to the parent, all domestic and foreign companies that the parent company controls directly or indirectly or on which it has a major influence. Subsidiaries are companies where the parent company controls the business and financial policies thanks to the actual or constructive majority of votes in order to benefit from its activities, meaning that it has the possibility to control. In addition, the parent company is exposed to fluctuating returns from its investments in holdings and has the ability to influence the returns. Associated companies are businesses where the parent company has a major influence on the business and financial policies, but which are neither subsidiaries nor joint ventures.

	1/1/2019	First-time consolidations	Deconsolidations	12/31/2019
Group companies	93	3	-5	91
of which in Germany	19	0	0	19
of which abroad	74	3	-5	72
Associates	1	1	0	2

	1/1/2018	First-time consolidations	Legal changes	Deconsolidations	12/31/2018
Group companies	95	6	-6	-2	93
of which in Germany	21	0	-2	0	19
of which abroad	74	6	-4	-2	74
Associates	1	0	0	0	1

Changes in consolidated Group

Company foundations and first-time inclusion

MANN+HUMMEL Ventures Pte. Ltd, Singapore, was included in the scope of consolidation in the 2019 fiscal year after it had been established in the previous year.

In addition, MANN+HUMMEL Life Sciences and Environment Co, Ltd, Kunshan/China was founded in 2019 and therefore included in the consolidated financial statements for the first time.

Company acquisitions

As at July 31, 2019, 100% of the shares in Hardy Filtration Inc. Quebec, Canada ("Hardy").

With this acquisition, the MANN+HUMMEL Group is expanding its range of innovative air filtration solutions. Hardy has been developing, producing and marketing a wide range of filtration products for various applications, suchas air filters, paint booth filters and dust collectors for more than 25 years. The MANN+HUMMEL Group is thus improving its support for customers all over the world and accelerating growth in the Life, Science and Environment business area, especially in the air sector.

Based on the preliminary purchase price allocation, goodwill of EUR 3.9 million and net assets of EUR 2.4 million were acquired. This includes the disclosure of hidden reserves of EUR 1.9 million, which essentially comprises the takeover of the existing customer base and patents. The values will be adjusted if necessary when the purchase price allocation is completed.

Goodwill cannot be claimed for tax purposes. MANN+HUMMEL expects that the goodwill actually acquired consists of the expected synergy potentials and the know-how of the employees. The following pro forma key financial indicators represent the consolidated sales and consolidated operating profit or loss of the MANN+HUMMEL Group in such a way as if Hardy had already been acquired at the start of the 2019 fiscal year.

EUR million	2019
Pro forma sales (Group)	4,217.7
Pro forma consolidated operating profit or loss	153.6

In fact, the acquired Hardy contributed to the Group sales and consolidated net income 2019 as follows:

EUR million	2019
Sales (Group) since acquisition due date	3.2
Operating profit or loss since acquisition due date	0.0

Deconsolidations

In the current fiscal year MANN+HUMMEL FINANCE UK LTD, Wolverhampton/UK, Fluid Brasil Sistemas e Tecnologia Ltda, Jundiai/Brazil, MANN+HUMMEL Trading (Shanghai) Co, Ltd, Shanghai/PR China, MANN and HUMMEL Filtration (Hong Kong) Ltd, Hong Kong/PR China and MANN AND HUMMEL INDONESIA, PT, Bekasi/Indonesia were deconsolidated. A gain of EUR 2.1 million resulted from these deconsolidations.

6. Principles of consolidation

The capital consolidation is carried out in accordance with the purchase method. The subsidiaries are fully consolidated from the time of purchase, i.e. from the time of the parent company obtaining a controlling influence. The inclusion in the consolidated financial statements ends as soon as the parent loses its controlling influence. At the time of obtaining control, the newly measured assets and liabilities of the subsidiary as well as contingent liabilities, unless dependent on a future event, are offset against the fair value of the return consideration provided for the shares. Contingent considerations are carried as a liability at fair value.

Subsequent adjustments to contingent considerations are recognized in income. The ancillary costs incurred during the purchase are recognized as an expense at the time of being incurred.

Any debt difference remaining after capital consolidation is capitalized as good will and recognized under the intangible assets. The goodwill is verified for its value on the balance sheet date within the framework of an impairment test. A verification is carried out during the year if there are indications of an impairment. Negative debt differences arising during capital consolidation are recognized under other income in the consolidated profit and loss statement, unless the new audit of the valuations yields a different result.

If not all shares are purchased during a company acquisition, non-controlling interests can be applied in the amount of the pro rata newly measured net assets or at their total pro rata company value, including the business or company value made up by them. The option can be newly exercised for every company acquisition. Non-controlling interests were predominantly reported at the proportionate net assets (partial goodwill approach) and only in one case were they reported at the fair value of the shares (full goodwill approach).

In the event of a gradual purchase of shares, the already existing shares in the company to be consolidated are newly measured at the fair value at the time of obtaining control. The difference to the equity holding's carrying amount is recognized in income.

The purchase of additional shares of already pre-consolidated subsidiaries is accounted for as an equity capital transaction. In this process, the difference between the acquisition costs of the shares and the carrying amount of the non-controlling stake is offset against the revenue reserves. The effects of share sales, which do not result in the loss of control of a subsidiary, are recognized directly in equity by offsetting the capital gains or losses against revenue reserves and increasing the non-controlling interests in the amount of the pro rata net assets.

The deconsolidation of subsidiaries takes place at the time of losing control or the time of liquidation. The result of the deconsolidation is recognized in the net financial result. Remaining shares are capitalized at fair value under the investments in holdings.

Receivables, liabilities, provisions, sales as well as other income and expenses between the companies included in the consolidated financial statements are consolidated. Interim profits from internal transactions that were not realized from the sale to external third parties are excluded from the calculation. Internal sureties and guarantees are eliminated.

7. Foreign currency translation

The conversion of the annual financial statements prepared in foreign currency of the Group companies included is carried out on the basis of the concept of the functional currency using the modified spot rate on reporting date method in EUR. As the subsidiaries conduct their business independently from a financial, economic and organizational perspective, the functional currency is identical to that of the company's relevant national currency as a rule. For that reason, the expenses and income from financial statements of subsidiaries, which are prepared in a foreign currency, are converted in the consolidated financial statements at the annual average rate of exchange, while assets and liabilities are converted at the spot rate on the reporting date. The currency difference resulting from the conversion of equity at historic rates and the conversion differences resulting from the conversion of the consolidated profit and loss statement at the annual average rate of exchange are recognized in the accumulated other equity without affecting income.

In the individual financial statements, foreign currency receivables and payables are measured on first-time recognition at the rate valid on the transaction date. The balance sheet date rate is used for subsequent measurement. Currency gains and losses from the due date valuation of the trade receivables and trade payables are recognized in other income and expenses. Currency gains and losses, which are made up of financial assets and liabilities, are recognized in other financial income and financial expenses. The underlying exchange rates for the currency conversion with a major impact on the consolidated financial statements have changed in relation to the euro as follows:

	Spot rate on reporting date		Annual average rate of exchange	
	12/31/2019	12/31/2018	2019	2018
Argentine peso [ARS]	67.22650	43.16270	55.11838	34.25559
Brazilian real [BRL]	4.52980	4.43830	4.41047	4.32328
Renminbi yuan [CNY]	7.81720	7.84730	7.72513	7.81410
Czech koruna [CZK]	25.41000	25.72500	25.65892	25.67667
Pound sterling [GBP]	0.85070	0.89593	0.87570	0.88640
Indian rupee [INR]	80.15800	79.83300	78.79167	80.62325
Japanese yen [JPY]	121.92800	125.83750	121.95946	129.98700
South Korean won [KRW]	1,297.00000	1,277.06000	1,303.52000	1,296.14000
Mexican peso [MXN]	21.12230	22.65270	21.57287	22.66994
Russian ruble [RUB]	69.34060	79.46050	72.11065	74.06108
Singapore dollar [SGD]	1.51068	1.55823	1.52552	1.59031
Thai baht [THB]	33.73105	37.12520	34.64091	38.11886
US dollar [USD]	1.12300	1.14420	1.11963	1.17967

8. Accounting policies

The financial statements of the companies included in the consolidated financial statements are prepared as at December 31 of each fiscal year in accordance with accounting policies that are standard across the Group in line with IFRS.

Realization of expense and income

Sales is realized when control of delimitable goods or services transfers to the customer, i.e. when the customer is able to determine how to use the goods or services transferred and essentially to exploit the remaining benefit arising from them. The prerequisite for this is that a contract exists setting out enforceable rights and obligations and, inter alia, that the receipt of a return consideration – taking into account the creditworthiness of the customer – is likely. Sales corresponds to the transaction price, to which the Group is expected to be entitled. Variable return considerations are included in the transaction price if it is highly unlikely that there will be a significant redemption of sales as soon as the uncertainty relating to the variable return consideration no longer exists. The amount of the variable return consideration is determined using either the expected value method or the probably amount, depending on which value most accurately assesses the variable return consideration. If the period between the transfer of the goods or services and the time of payment exceeds twelve months and a significant benefit results from the financing for the customers or the MANN+HUMMEL Group, the return consideration is adjusted by the fair value of the money. If a contract encompasses several delimitable goods or services, the transaction price is distributed to the performance obligations on the basis of the relative individual sales prices. If individual sales prices cannot be observed directly, the Group assesses them at an appropriate level. For every performance obligation, sales is realized either at a specific point in time or over a specific period of time.

Sales from the sale of goods is realized at the point in time at which the control of the goods transfers to the acquiring party, generally on delivery of the goods. Invoices are issued at this time; in these, the payment conditions generally require payment within thirty days of the invoice date.

For license agreements, which grant the customer a right to use the intellectual property of the MANN+HUMMEL Group, invoices are issued in accordance with the contractual conditions; here the payment conditions generally require payment within thirty days of the invoice date.

Sales from the provision of services is recognized on a straight-line basis over a certain period of time. Invoices are issued in accordance with the contractual conditions; in these, the payment conditions generally require payment within thirty days of the invoice date.

The **cost of sales** includes the cost of making the products and the initial costs of the merchandise sold. In addition to the directly attributable costs for materials and production, they also include the indirect, production-related overheads, including the depreciations on the tangible assets used and amortizations on intangible assets. The costs of sales also contain expenses from the depreciation of inventories to the lower net revenue.

The **research** costs and the **development costs** that cannot be capitalized are recognized immediately in income.

Borrowing expenses that can be attributed directly to the purchase or production of an asset, for which a considerable amount of time is required to put it into the intended usable or sellable status, are capitalized as part of the costs of procurement or production. All other borrowing expenses are immediately recognized as expenditure.

Interest income is recognized in income at the time of generation.

Dividend income is recognized on the occurrence of the legal entitlement.

Income taxes

The **actual income tax receivables and income tax liabilities** for the current and previous periods are measured with the sum in whose amount a refund from or a payment to the tax authorities is expected. The calculation of the amount is based on the tax rates and tax laws valid at the time of the balance sheet date.

Deferred tax assets and liabilities are formed on temporary differences between the recognition of tax rates and the IFRS carrying amounts. The deferred tax assets also include tax reduction entitlements that result from the expected use of existing loss carryforwards and tax credits in the subsequent years. The deferred taxes are determined on the basis of tax rates that apply according to the current legal situation in the individual countries at the time of realization or are expected with sufficient likelihood.

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

The carrying amount of the deferred tax assets is audited on every balance sheet date and reduced to the extent to which it is no longer likely that a sufficient result to be reported for tax purposes will be available against which the deferred tax asset can be utilized at least partially. Non-recognized deferred tax assets are audited on every balance sheet date and recognized to a degree to which it has become likely that a future result to be reported for tax purposes will enable the realization of the deferred tax asset.

Furthermore, no deferred tax assets and liabilities are recognized if they result from the initial recognition of goodwill, an asset or a liability within the framework of a business case, which is a company merger and if this initial recognition influences neither the balance sheet net profit or loss before income tax nor the result to be reported for tax purposes.

Deferred taxes that relate to items that are recognized in equity capital directly are also recognized in equity capital and not in the consolidated profit and loss statement.

Deferred tax assets and deferred tax liabilities are offset against one another if the MANN+HUMMEL Group has a claimable entitlement to offsetting the actual tax rebate claims against actual tax liabilities and these refer to income taxes of the same taxpayer, which are levied by the same tax authority.

Intangible assets

Acquired and internally generated intangible assets are capitalized if it is likely that a future economic benefit is associated with the use of the asset and the costs of the asset can be determined reliably.

As regards the accounting and measurement of the **goodwill**, reference is made to the explanations of the principles of consolidation and the impairment tests.

The intangible assets, that were identified within the framework of the material company acquisitions, comprise primarily customer relationships and brand names. The fair values of the customer lists/relationships were determined using the residual value method based on corporate planning with a usage period of 6 to 15 years.

Tooling cost contributions made to suppliers are recognized if they constitute a right granted by the supplier or a remuneration to be provided for the service of the supplier. Tooling cost contributions received are written off over a period of one to six years.

Development costs are capitalized at cost given the requirements of IAS 38 if, in addition to other criteria, the technical feasibility and marketing are ensured. Furthermore, the development activities must generate a future economic benefit with sufficient likelihood. The capitalized development costs include all costs directly attributable to the development process. Capitalized development costs are written off as planned over an expected product lifecycle of five years from the start of production.

Other intangible assets are recognized at cost and amortized on a straight-line basis, and, as with the previous year, in application of the following usage periods:

	in years
Independently developed software	4
Software – general (individual licenses)	4
Software – version change, e.g. product data management (PDM) and CAD (CATIA, ProEngineer, NX, etc.)	8
Patents	10

Intangible assets with an uncertain usage period are only available as at the balance sheet date in the form of goodwill.

Tangible assets

All **tangible assets** are subject to operational use and is measured at cost or manufacturing cost, less planned usage-related depreciation. Depreciation is charged on tangible assets using the straight-line method. As in the previous year, depreciation is based on the following useful lives, which are uniform throughout the Group:

	in years
Buildings	20 to 40
Components	20 to 25
Building parts	15 to 33
Outdoor facilities	20 to 33
Machines	8 to 20
Operating equipment	12 to 20
Vehicles	6 to 10
Tools	5
Machines/devices general	8 to 15
Tools and equipment	6 to 10

For machines used in multiple shifts, the depreciations are increased by shift additions accordingly.

The residual values, depreciation methods and usage periods of the assets are verified annually and adjusted as applicable.

Government grants

Government grants are only recognized if there is sufficient security that the associated terms will be met and the grants extended. Investment subsidies are deducted from the assets in the period they occurred. Cost subsidies are recognized as earnings over the same period in which the expenses, for whose compensation they were granted, are incurred.

Standard market interest rates are used for the measurement of non-interest-bearing and low-interest-bearing loans from the state. The difference between the deducted amount and repayment amount is deferred and recognized under other liabilities. The deferred amount is dissolved over the term of the loan agreement, which largely corresponds to the usage period of the asset, and is recognized in the interest expense.

Investments in associates and joint ventures

Investments in associates and joint ventures are generally accounted for using the equity method with the pro rata equity capital and initially with the acquisition costs, including transaction costs. If there are objective indications of an impairment of the shares on the balance sheet date, an impairment test is carried out. The share of the Group in the net profit or loss for the period of the associates or joint ventures is recognized separately as part of the net financial result in the consolidated profit and loss statement. Earnings and expenses recognized directly in the equity capital of the associates or joint ventures are also recognized in equity at the MANN+HUMMEL Group and presented separately in the statement of comprehensive income. The accumulated changes after the time of purchase increase or reduce the equity holding's carrying amount of the associate/joint venture accordingly. Profits and losses from transactions between the MANN+HUMMEL Group and associates/joint ventures are eliminated in accordance with the holding share.

Impairment tests

For **shares in associates and joint ventures**, for already used **intangible assets** and for assets in the **tangible assets**, it is verified as at the balance sheet due date whether there are any indications of a possible impairment. In the event of such indications, the value is verified (impairment test). Intangible assets not yet ready for use and intangible assets with undefined usage periods are subjected to an impairment test every year.

To carry out the impairment test, the recoverable amount is determined. This is the higher amount from the fair value of the asset or the smallest cash-generating unit less costs to sell and its value in use. The smallest units whose cash flows are forecasted within the framework of the corporate planning are defined as cash-generating units.

The fair value is the amount obtainable from the sale of an asset in an arm's length transaction less the costs of disposal.

The value in use was determined as the present value of future cash flows. The future cash flows were derived from the planning of the Group. The calculation of the cash value of the estimated future cash flows is based largely on assumptions regarding future sales prices or quantities and costs, taking into account changed economic framework conditions, if applicable. Net cash flows beyond the detailed planning phase are determined by applying individual growth rates derived from the relevant market information on the basis of long-term business expectations. The planning for the Original Equipment and Aftermarket business units is based on a detailed planning period for the 2020 to 2022 fiscal years and for the Life Sciences & Environment – Air and Water business units for the 2020 to 2026 fiscal years.

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

The carrying amount of each business unit is determined by assigning the assets and liabilities, including attributable goodwill and intangible assets. An impairment must always be performed if the recoverable amount of a business unit is less than its carrying amount.

If the grounds for an impairment carried out earlier no longer apply, an addition takes place, but as a maximum at the amortized acquisition or manufacturing costs. Impairments and reversals of impairments of intangible assets and tangible assets are allocated to the functional areas of the consolidated profit and loss statement.

Goodwill from company mergers is allocated to those groups of cash-generating units that benefit from the mergers.

In accordance with IAS 36, goodwill is not written off as planned over its usage period, but is instead subject to a value test once yearly at the end of the year, in accordance with the above-described methods, which can lead to an impairment (impairment-only approach).

Impairments on goodwill are recognized if the recoverable amount of the corresponding cash-generating unit is below its carrying amount. Impairments on goodwill are reported in other expenses. An addition to goodwill is not carried out.

In order to comply with the regulations of IFRS 3 in conjunction with IAS 36 and to determine any impairments of goodwill, cash-generating units were stipulated in accordance with the internal reporting. Goodwill is therefore allocated to the business segments (= cash-generating units) Original Equipment, Aftermarket, Life Sciences & Environment – Air and Life Sciences & Environment – Water. To audit the value, the carrying amount of each business unit is determined by assigning the assets and liabilities, including attributable goodwill and intangible assets. An impairment must always be performed if the recoverable amount of a business unit is less than its carrying amount. The recoverable amount is determined as the fair value less disposal costs or the value in use of a cash-generating unit, whichever is higher. The impairment tests to be performed for fiscal year 2019 determine the recoverable amount on the basis of the value in use of the relevant cash-generating unit.

Financial instruments

The financial assets are categorized according to IFRS 9 into three measurement categories:

(1) financial assets that are valued at amortized cost (AC),
(2) financial assets that are valued at fair value through other comprehensive income (FVOCI) and
(3) financial assets that are valued at fair value through profit or loss (FVPL).

Financial assets are classified in accordance with the underlying business model and the contractual cash flows of the financial assets. The fundamental business model of MANN+HUMMEL comprises holding financial assets in order to collect the contractual cash flows.

Financial assets are valued at amortized cost (AC) if they correspond to the “Hold” business model and their contractual cash flows comprise exclusively payments of principal and interest.

Financial assets, the cash flows of which do not exclusively comprise payments of principal and interest, such as for example in the case of shares in investment funds and derivatives, are valued at fair value through profit or loss (FVPL). At the MANN+HUMMEL Group, equities, investment funds and derivatives not included in hedge accounting do not satisfy the cash flow characteristic criterion and are valued at fair value through profit or loss. Further information is provided under Item 36 of the Notes to the consolidated financial statements. For shareholders' equity instruments, IFRS 9 optionally permits valuation at fair value through other comprehensive income (FVOCI). The MANN+HUMMEL Group makes use of this option to value at fair value through other comprehensive income for its investments.

The impairment model under IFRS 9 includes expectations about the future and is based on expected credit losses. The impairment model under IFRS 9 provides for three levels and is applicable to all financial assets (debt instruments) that are measured either at amortized cost or at fair value through profit or loss:

Level 1: Contains all contracts without a significant increase in credit risk since initial recognition. The impairment is measured on the basis of the expected credit losses within the next twelve months.

Level 2: Contains financial assets that have experienced an increase in the credit risk, but whose creditworthiness has not yet been impacted. The impairment is measured on the basis of the expected credit losses over the remaining lifetime. The Group considers a deterioration in rating by at least two rating grades compared to the forward rating and a rating that is no longer in the investment grade range to be an increase in credit risk.

Level 3: Contains financial assets that display objective indications of an impairment or hold a default status. A value adjustment is recognized for the expected credit losses over the entire lifetime of the financial asset, along with other qualitative information that indicates material financial difficulties on the part of the debtor.

The MANN+HUMMEL Group uses the simplified approach (loss rate approach) for trade receivables, i.e. these receivables are directly allocated to level 2. A grouping or reallocation to level 3 takes place if the rating is no longer in the investment grade range, or if there are objective indications of an impairment of creditworthiness.

MANN+HUMMEL applies a uniform impairment model that takes into consideration the probability of the failure of the business partner or of a group of comparable business partners.

This is determined using a credit risk parameter approach.

Accordingly, the expected credit loss (ECL) is determined by multiplying the credit risk parameters, exposure at default (EAD), probability of default (PD) and the loss given default (LGD). The parameters are determined so that they reflect relevant events in the past, the current situation and future-oriented information. In principle, this can be done using an economic model that contains all the information listed or by amending existing parameters so that the current economic environment and forecasts as to how it might change in the future are taken into consideration. This information encompasses macroeconomic factors, e.g. growth in gross domestic product, unemployment rate and forecasts of future economic framework conditions.

In the simplified approach for receivables, the impairment is determined using external default probabilities according to customer group. In the general approach, the determination is based on the credit ratings of the relevant business partners.

A financial instrument is derecognized, if according to an appropriate assessment it cannot be assumed that a financial asset is realizable in whole or in part, e.g. after the end of insolvency proceedings or after court decisions. Currently, insignificant modifications are made to a minor extent only. In these cases, the contract amendment does not lead to a derecognition of the asset. The difference determined between the gross carrying amount of the original and the cash value of the modified contract is recognized in income in the profit and loss statement.

Financial liabilities are, in principle, valued after first recognition using the effective interest method with the amortized acquisition costs. Profits or losses are recognized in profit and loss, during derecognition and within the framework of amortization. Financial liabilities valued at fair value through profit or loss are measured after their first recognition at their fair value. Profits or losses arising from the change in fair value are recognized in income.

Hedge accounting

Derivative financial instruments are used at the MANN+HUMMEL Group for hedging purposes in order to reduce currency and interest risks. According to IFRS 9, all derivative financial instruments are accounted for at market value.

Hedging relationships are presented in accordance with the hedge accounting regulations. Accounting is carried out as a cash flow hedge or a fair value hedge.

Cash flow hedges are used to hedge against risks of changes in the value of future cash flows. In the event of changes to the market value of financial instruments used within the framework of cash flow hedges, the unrealized profits and losses in the amount of the effective portion are initially recognized in the revenue reserves without an impact on income. A transfer to the consolidated profit and loss statement takes place at the same time as the impact on results from the hedged item. The non-effective portion of the changes in market value is recognized directly in the consolidated profit and loss statement.

Fair value hedges are used to hedge against risks of changes in the value of balance sheet items. In the event the criteria are fulfilled, the results from the fair value measurement of derivative financial instruments are recognized in income at the same time as the associated underlying transactions.

Effects with an impact on results arising from hedging transactions concluded to hedge against risks from commodity price changes are recognized in the cost of sales. Gains and losses from currency hedging transactions are reported in sales or the financial result or are recognized as part of the acquisition costs. Profits and losses from derivative financial instruments that serve to hedge against interest-change risks and price risks from securities are recognized in the other net financial result.

Inventories

Raw materials, consumables and supplies and merchandise are measured using the standard cost method, taking into account lower net realizable values at the balance sheet date. Work in progress and finished goods are recognized at cost of production in observance of lower net sales values and taking into account consumption as at the balance sheet date. Cost of production includes all costs directly attributable to the production process as well as appropriate portions of the production-related overheads. They include production-related depreciations, pro rata administration costs and pro rata expenses of the social area.

Leases

For lessees, IFRS 16 introduces a uniform approach to the balance-sheet recognition of lease agreements, according to which assets are to be recognized in the balance sheet for the usage rights to the leased property and liabilities for the payment obligations entered into, for all leases. The rights-of-use assets are included in land, land rights and buildings, in technical equipment and in other equipment, operational and office equipment. The lease liability is reflected in the financial liabilities to third parties.

The key tenancy agreements relate to production, warehouse and office buildings as well as land plots with terms of up to 30 years. Some agreements contain price adjustment clauses that specify a fixed percentage increase annually. Some agreements contain extension options, termination options, automatic agreement extensions or purchase options.

Other lease agreements relate to the vehicle fleet, machines, hardware and software as well as other tools and equipment with terms of up to five years. For some of these agreements, extension options or automatic agreement extensions as well as options to purchase the rental properties at the end of the agreement term at market value exist. The lease rates are partly linked to the service used.

For leased property of a low value (under EUR 5,000) or for current leases (less than 12 months), recognition reliefs are utilized. Furthermore, the option to separate lease and non-lease components (service) is used. Non-leasing components are not included in the right-of-use asset to be recognized.

Assets and liabilities from leases are initially recognized at present value. The lease liabilities correspond to the present value of the following lease payments not yet made for the right to use the underlying asset:

- Fixed payments including de facto fixed (insubstance fixed) payments, less any lease incentives,
- variable lease payments linked to an index or (interest rate), initially valued at the index interest (rate) at the provision period,
- expected payments by the Group from the utilization of residual value guarantees,
- the exercise price of a call option or an extension option whose exercise or utilization by the Group is reasonably certain,
- penalties in connection with the termination of a lease, provided that the lease term takes into account the fact that the Group will exercise the termination option in question.

The interest rate on which the lease is based is used for discounting purposes, provided that this can be determined without difficulty. Otherwise – and this is usually the case in the Group – the discount rate used is the lessee's incremental borrowing rate, i.e. the interest rate that the respective lessee would have to pay if it were required to borrow funds on a comparable scale for a comparable term with comparable security under comparable conditions.

The rights-of-use assets are measured at cost on the date of provision, which is made up as follows:

- The amount of the initial measurement of the lease liability,
- any lease payments made at or before the provision, less any lease incentives received,
- all initial direct costs incurred by the lessee,
- estimated costs incurred by the lessee in dismantling or removing the underlying asset, restoring the site on which it is located, or restoring the underlying asset to the condition required by the lease.

The rights-of-use assets are subsequently measured at amortized cost. Depreciation is calculated using the straight-line method over the shorter of the useful life and the term of the underlying lease. If the exercise of a purchase option is sufficiently certain from the Group's perspective, the asset is depreciated over the useful life of the underlying asset.

In particular, leases for buildings and office space contain extension and termination options. The measurement of the lease liability requires an assessment of whether it is sufficiently certain that these options will be exercised. In doing so, the Group takes into account all facts and circumstances that have an influence on the exercise or non-exercise of these options.

For the disclosure of leases in the balance sheet, we refer to our comments in Notes 19, 28 and 34. In the profit and loss statement, lease expenses are shown under depreciation and amortization and other interest expenses.

The Group is exposed to possible future increases in variable lease payments that may result from changes in an index or interest (rate). These possible changes in lease payments are not included in the lease liability until they become effective. However, as soon as changes in an index or interest (rate) affect the lease payments, the lease liability is adjusted against the right of use. Lease installments are divided into principal and interest payments.

The MANN+HUMMEL Group does not act as lessor.

Cash

Cash in hand and bank balances currently available and current overnight cash are recognized under cash.

Assets held for sale and disposal groups

Assets and liabilities are recognized as disposal groups if they are to be sold as a group in a transaction that is highly likely. Individual assets are recognized in the balance sheet as assets held for sale. The relevant assets and liabilities are reported in the balance sheet within current assets and liabilities as assets of asset groups held for sale or liabilities of disposal groups. The earnings and expenses of the affected assets and liabilities are included in the result from continued activities until sale if they do not fulfill the definition of a discontinued business unit.

On initial classification of the disposal Group, the measuring is initially carried out in accordance with the relevant IFRS standards; the resulting carrying amount of the disposal Group is then compared with the fair value less sales costs in order to determine the lower value to the applied.

Financial and other liabilities

The capital economically attributable to the shareholders is shown within the non-current liabilities. In accordance with German commercial regulations, exclusive termination rights for shareholders do not arise in business partnerships like MANN+HUMMEL International GmbH & Co. KG. According to IAS 32.16, an equity instrument only exists for the most subordinate class of shareholders however if and only if a company has neither an unconditional nor a conditional obligation to deliver cash or another financial asset. On the basis of the regulations in the articles of association pertaining to the compensation of shareholders, the shares in MANN+HUMMEL International GmbH & Co. KG do not meet the requirements of IAS 32.16A for the disclosure of puttable shares as equity; they are thus disclosed within non-current liabilities as "Capital economically attributable to the shareholders". Insofar as the IFRS demand a presentation of the facts under other comprehensive income, this also applies to partnerships which do not have equity according to the IFRS. Such facts are therefore not disclosed in the result of the relevant period, even for the MANN+HUMMEL Group.

The capital economically attributable to the shareholders is measured based on the fair value of the obligation. In this case, this corresponds to the pro rata carrying amount of the respective shareholder in the IFRS Group equity.

The financial and other liabilities are applied on the initial recognition at cost, which corresponds to the fair value of the return services received. Transaction costs are also taken into account in this process. Subsequently, the liabilities are evaluated with the amortized acquisition costs under application of the effective interest method. If financial liabilities have not yet been claimed, the transaction costs are deferred within other assets. Collection in income takes place within other financial expenses. Derecognition of financial liabilities and other liabilities takes place as soon as the underlying liabilities have been fulfilled, canceled or expired.

For financial guarantees given by the company, the risk of being claimed is assessed as best possible inasmuch as such exist as at the balance sheet date. In so far as their being claimed is likely, a liability in the amount of the cash outflow to be expected is recognized under financial liabilities.

The application of the fair value option, financial assets and liabilities on their initial recognition in the at fair value through profit or loss category is not utilized at the MANN+HUMMEL Group as a rule.

Tooling cost contributions received

Tooling cost contributions received constitute the return service for rights granted to the subsidizing party or services to be provided. The subsidies are deferred as tooling cost contributions received under other liabilities. The dissolution is carried out over the project period.

Other provisions

Other provisions are formed if a liability toward a third party exists from a past event which will likely be claimed and the expected amount of the necessary provision amount can be reliably assessed.

When measuring the provisions from the sale area, in particular for guarantees and expected losses from open transactions, all cost components are integrated that are also capitalized in the inventories as a rule. The measurement is carried out at the amount of the best possible estimate of the expenses required to fulfill the liability on the balance sheet date. The measurement of the guarantee provisions is carried out on the basis of the guarantee expenses actually incurred, taking into account guarantee periods and periods of grace as well as sales performance of the products affected in the period considered.

The staff-related liabilities relate, in particular, to anniversary benefits and partial retirement working hours obligations. Provisions for anniversaries of years of service are determined in accordance with actuarial principles. The provisions for partial retirement working hours obligations include the amounts set aside for the pension insurance under individual or pay-scale agreements as well as the remuneration payments to be made during the release phase. The accumulation takes place pro rata from the start of the obligation.

The partial retirement working hours obligations are hedged against insolvency via a trust model. To this end, shares in a special fund were assigned to a trustee. The shares in the special fund are measured at fair value. The assets used exclusively for the fulfillment of the old-age part-time working hours obligations and removed from the access of all other creditors are offset against the provisions (plan assets). If they exceed the provision value, the excess amount is recognized in the non-current other financial assets. The earnings from the plan assets are recognized as offset against the expense from the accrued interest of the provisions in the profit and loss statement.

Long-term provisions with a remaining term of more than one year are recognized at their fulfillment amount discounted on the balance sheet due date. Discounting is carried out at an interest rate that corresponds to the risk and the maturity of the fulfillment inasmuch as the interest effect is relevant.

Pension provisions

The provisions for pensions are formed in accordance with the projected unit credit method. In this method, not only the pensions known as at the balance sheet date and the unit credits known, but also increases in expected pensions and current withdrawals are considered. The calculation is based on actuarial expert reports taking into account current biometric calculation bases. Actuarial gains and losses are recognized in the period of being generated in the full amount in other comprehensive income. The expenses from accrued interest and the expected earnings from fund assets are offset and recognized in interest expense. All other expenses from the allocation of pension obligations are allocated to the affected functional areas in the consolidated profit and loss statement.

9. Judgments and uncertainties in connection with estimates

The preparation of the consolidated financial statements requires that assumptions are made and estimates used that have an effect on the amount and reporting of the recognized assets and liabilities, earnings and expenses as well as the contingent liabilities. Key assumptions and estimates that are used when recognizing and measuring the balance sheet items are explained below.

When **capitalizing costs of development** (Item 17 of the Notes to the consolidated financial statements), assessments of the management regarding the technical feasibility and commercial viability of the development projects are included in the recognition decision. The measurement of the capitalized development costs depends on assumptions about the amount and period of the inflow of the expected future cash flow and on the discounting rates to be applied.

Some leases contain extension, termination or purchase options. The measurement of the lease liability requires an assessment of whether it is sufficiently certain that these options will be exercised. If the interest rate on which the lease is based cannot be determined, the marginal capital rate is to be used for discounting. This is derived from country-specific interest rate swaps for different maturities and adjusted by a risk premium. Long-term leases are considered over a maximum period of 15 years.

When accounting for other **intangible assets and tangible assets** (items 17 and 19 of the Notes to the consolidated financial statements), assumptions and estimates largely relate to the definition of useful lives. With respect to intangible assets that are being recognized for the first time within the framework of a company acquisition (Item 5 of the Notes to the consolidated financial statements), (e.g. customer base), the fair value of these assets is determined as part of a purchase price allocation according to IFRS 3. If a market price oriented method cannot be applied, the Group shall in principle determine the fair value of the intangible assets using capital value oriented methods. The value of an asset results, in this case, from the sum of the cash values of the cash flows achievable in the future as at the measurement date. The forecast of measurement-relevant cash flows and the derivation of the capital cost rates that reflect the risk of the respective intangible asset have a significant influence on the measurement. As part of the capital value oriented method, the Group has essentially applied the relief-from-royalty method (e.g. for brand names) and the residual value method (inter alia for the customer base).

Intangible assets were identified within the framework of purchase price allocations. With respect to the newly acquired companies, these essentially include know-how and customer relationships. The fair values of the identified customer lists/relationships were determined using the residual value method and corporate planning with a usage period of 6 to 15 years. The brands were measured using the relief-from-royalty method. The expected brand sales and the expected license rates were key assumptions here. The usage period was set at 10 years.

Within the framework of the **impairment tests** (item 18 of the Notes to the consolidated financial statements), assumptions and estimates are used to determine the expected future cash flow and to define the discounting rates. In particular in the area of intangible assets and liabilities, an influence on the relevant value may occur.

The assessment of the value of **trade receivables** (Item 24 of the Notes to consolidated financial statements) is subject to a judgment about the assessment of the future solvency of the debtors.

The determination of the fair value of the **securities** (Item 36 of the Notes to consolidated financial statements) allocated to level 3 of the fair value hierarchy are based on basic data that cannot be observed in the market. The calculation carried out in accordance with the discounted cash flow method is based on estimates about the expected cash flow and discounting rates used.

The amount of the impairment expenses for **financial assets** (Item 36 of the Notes to the consolidated financial statements) is influenced by judgments, e.g. regarding the assessment as to whether the price losses are significant or longer-lasting and about the assessment of the issuer's credit rating.

When recognizing the **deferred tax assets** (Item 15 of the Notes to the consolidated financial statements), the assumptions and estimates refer to the likelihood of the expected tax reductions actually occurring in the future.

The actuarial measurement of the **provisions for pensions** (Item 31 of the Notes to consolidated financial statements) is carried out, in particular, on the basis of assumptions on the discounting rates, future pension performance, age deferrals and the performance of the general living expenses.

The determination of **warranty provisions** (Item 30 of the Notes to the consolidated financial statements) is subject to assumptions and estimates that refer to the period between time of delivery and entry of the warranty event, warranty period and period of grace as well as the future warranty charges.

The determination of long-term **provisions for onerous contracts** (Item 30 of the Notes on the consolidated financial statements) is subject to judgments about the interpretation of supply agreements. Significant decision-making criteria are here the binding definition of the period, quantities and prices of delivery.

For the **realization of sales**, assumptions are made and discretion exercised when an assessment must be made as to whether these are sales specific to a time frame or a point in time. Furthermore, the determination of the amount of the sales in the case of variable transaction prices is discretionary and is subject to certain assumptions (Items 10 and 22 of the Notes to the consolidated financial statements).

For **tax risks arising from current company audits**, provisions were formed insofar as the facts are sufficiently concrete and their occurrence is probable.

Further material judgments and estimates were not made.

The actual values may differ from the assumptions and estimates made in individual cases. Changes are considered in income at the time of better knowledge.

At the time of preparing the annual financial statements the underlying estimates were not exposed to any significant risks, for which reason no major adjustment to the assets and liabilities recognized in the consolidated financial statements is to be expected.

Hyperinflation

Argentina has been classified as a hyperinflationary economy with effect from July 1, 2018. The IAS 29 regulations therefore apply to our subsidiaries in Argentina. Accordingly, the financial statements of an entity whose functional currency is the currency of a hyperinflationary economy, whether they are based on a historical cost approach or a current cost approach, must be stated in terms of the measuring unit current at the balance sheet date. Certain methods must be applied for the restatement of financial statements. Balance sheet amounts not already expressed in terms of the measuring unit current at the balance sheet date are restated by applying a general price index. Monetary items are not restated, as they are already stated in the monetary unit current at the balance sheet date. Monetary items are money held and items to be received or paid in money. Assets and liabilities linked by agreement to changes in prices, such as index linked bonds and loans, are adjusted in accordance with the agreement in order to ascertain the amount outstanding at the balance sheet date. These items are carried at this adjusted amount in the restated balance sheet. All other assets and liabilities are non-monetary. Some non-monetary items are carried at amounts current at the balance sheet date, such as net realizable value and market value, so they are not restated. All other non-monetary assets and liabilities are restated. Most non-monetary items are carried at cost or cost less depreciation; hence they are expressed at amounts current at their date of acquisition. The restated cost, or cost less depreciation, of each item is determined by applying to its historical cost and accumulated depreciation the change in a general price index from the date of acquisition to the balance sheet date. Hence, tangible assets, inventories of raw materials and merchandise, goodwill, patents, trademarks and similar assets are restated from the dates of their purchase. Inventories of partly-finished and finished goods are restated from the dates on which the costs of purchase and of conversion were incurred. The restated amount of a non-monetary item is reduced accordingly when it exceeds the recoverable amount. Hence, in such cases, restated amounts of tangible assets, goodwill, patents and trademarks are reduced to recoverable amount and restated amounts of inventories are reduced to net realizable value.

All items in the profit and loss statement must be expressed in terms of the measuring unit current at the balance sheet date. Therefore all amounts need to be restated by applying the change in the general price index from the dates when the items of income and expenses were initially recorded in the financial statements.

NOTES TO THE CONSOLIDATED PROFIT AND LOSS STATEMENT

The consolidated profit and loss statement is prepared using the cost of sales method.

10. Sales

EUR million	2019	2018
Europe	1,981.5	1,953.9
America	1,634.8	1,367.1
Asia	537.1	562.6
Rest of the world	59.8	71.7
	4,213.2	**3,955.3**

Of sales, EUR 4,162.0 million (previous year EUR 3,921.9 million) is attributable to the sale of goods and EUR 51.2 million (previous year EUR 33.4 million) to the provision of services. All sales are revenue from contracts with customers.

11. Cost of sales and other costs

EUR million	2019	2018
Material costs	2,337.2	2,275.0
Personnel costs	597.5	572.2
Depreciation and amortization	161.1	183.5
Other operating expenses	125.2	63.2
	3,221.0	**3,093.9**

The **research and development costs** include expenses for the in-house research department and expenses for external research and development services and test activities. The activities in this area serve to develop products to generate sales. The expenses recognized in the fiscal year for research and development amount to EUR 134.4 million (previous year EUR 139.8 million).

The **selling expenses** largely include expenses for outbound logistics, advertising and customer support as well as for commissions and licenses.

The **general administrative expenses** largely include the expenses for information technology, finance and controlling, taxes, legal and for human resources.

12. Other operating income

EUR million	2019	2018
Income from foreign currency translation	15.8	18.5
Income from sale of tangible assets	2.9	7.4
Other	34.6	27.2
	53.3	**53.1**

13. Other operating expenses

EUR million	2019	2018
Expenditure from restructuring	44.9	4.1
Expenditure from foreign currency translation	15.9	22.9
Expenditure from sale of tangible assets	3.0	2.0
Guarantee expenditure	8.6	8.4
Other	83.6	60.3
	156.0	**97.7**

Other expenses include impairment losses on goodwill of EUR 0.0 million (previous year EUR 20.7 million), costs in connection with consulting services of EUR 33.8 million (previous year EUR 17.1 million), expenses for provisions for impending losses of EUR 0.7 million (previous year EUR 7.1 million) and expenses of EUR 4.3 million (previous year EUR 3.7 million) from the write-off or write-down of receivables. It also includes impairment losses of EUR 5.3 million (previous year EUR 0.2 million) on PP&E.

14. Net financial result

EUR million	2019	2018
Share in the result from associates	**0.6**	**0.5**
Accrued interest of non-current items	19.0	8.6
Distribution from “Capital economically attributable to the shareholders”	5.3	5.3
Interest and similar expenses	77.7	72.0
Currency losses	18.0	30.1
Depreciation on lending, financial assets and securities	0.2	0
Losses from sale of financial assets, securities and hedging transactions	27.0	19.3
Financial expenses	**147.2**	**135.3**
Interest and similar income	20.1	13.4
Currency gains	11.2	34.5
Income from lending, financial assets and securities	27.9	8.1
Income from sale of financial assets, securities and hedging transactions	23.6	0.8
Financial income	**82.8**	**56.8**
Net financial result	**– 63.8**	**– 78.0**

The restatement of the balance sheet and profit and loss statement of our subsidiary in Argentina due to hyperinflation had a negative effect on earnings in the amount of EUR 3.8 million (previous year EUR 2.5 million) in the fiscal year, which was recognized in the net financial result.

15. Income taxes

EUR million	2019	2018
Current tax expenses	55.8	68.4
Tax revenues previous years	– 2.5	– 0.3
Tax expenses previous years	– 0.7	1.1
Deferred taxes from temporary differences	20.8	– 3.6
Deferred taxes from loss carryforwards and tax credits	– 32.6	16.2
	41.0	**81.8**

For the MANN+HUMMEL Group, a weighted Group tax rate was calculated based on the profit contributions and tax rates of the individual Group companies. The Group tax rate is 21.8% (previous year 24.0%). This income tax rate is used as the applicable tax rate for the tax reconciliation account. The tax rates applicable abroad in the fiscal year are unchanged at between 9% and 36.9% (previous year 9% and 35%).

The inventory of deferred tax assets and liabilities results from the following balance sheet items:

EUR million	12/31/2019		12/31/2018	
	Assets	Liabilities	Assets	Liabilities
Intangible assets	5.3	63.9	10.0	71.5
Tangible assets	0.7	63.4	0.0	25.1
Financial assets	2.5	5.0	0.5	1.3
Inventories	11.1	1.9	9.8	2.1
Trade receivables	5.6	0.7	8.9	0.0
Other current assets	6.4	2.1	3.1	3.3
Pension provisions	25.1	1.1	5.5	0.2
Other provisions	23.1	0.9	19.2	0.3
Current financial liabilities	5.1	1.2	0.0	0.1
Trade payables	1.5	0.0	1.2	0.0
Other liabilities	16.7	2.9	9.4	0.1
Deferred taxes related to shares in subsidiaries	0.0	6.3	0.0	3.9
Other	1.3	2.0	0.4	0.4
	104.4	**151.4**	**68.0**	**108.3**
Tax losses and tax credits carried forward	58.9		26.3	
Offsetting	–76.5	–76.5	–27.3	–27.3
	86.8	**74.9**	**67.0**	**81.0**

Deferred tax liabilities of EUR 1.0 million (previous year EUR 0.8 million) from the fair value measurement of securities and EUR 0.0 million (previous year EUR 0.1 million) from cash flow hedges are recognized directly in equity as at the balance sheet date. The recognition of the actuarial gains and losses for pension obligations directly in equity results in a deferred tax asset of EUR 18.4 million (previous year EUR 7.0 million).

In addition, all other changes, with the exception of changes due to initial consolidations, were recognized in income.

The amount for the deductible temporary differences and the tax losses and tax benefits not yet utilized, for which no deferred tax assets were recognized in the balance sheet, amount to EUR 251.8 million (previous year EUR 152.4 million). Of this figure, EUR 14.9 million (previous year EUR 23.1 million) consists of loss carryforwards, which can be utilized with a time limitation (in the period from 5 to 20 years). As regards the measurement of deferred tax assets, the expected future business performance at the time of preparing the consolidated financial statements is, as a rule, based on the corporate planning for the following three fiscal years. In the fiscal year, the deferred tax expense due to the use of previously non-considered tax losses, tax benefits or as a result of a temporary difference of a previous period previously not utilized was reduced by the amount of EUR 37.0 million (previous year EUR 3.3 million). As at the balance sheet date, deferred tax assets of EUR 5.5 million (previous year EUR 2.8 million) were recognized for Group companies, which had suffered losses in the reporting period or the previous period.

The retained profits at foreign subsidiaries amounting to EUR 1,794.4 million (previous year EUR 1,872.6 million) should remain reinvested based on the current planning. On distribution, profits would be subject to German taxation at 5%; where applicable, foreign withholding tax would be levied. In addition, on distribution of the profits of a foreign subsidiary to a foreign intermediate holding, further income tax consequences would need to be considered. Distributions would therefore result in an additional tax burden as a rule. Determining the deferred tax liabilities attributable to the taxable temporary differences would be associated with a disproportionately high level of effort.

Reconciliation from expected to actual income tax expense recognized:

EUR million	2019	2019
Net profit or loss before income tax and changes in capital economically attributable to the shareholders	89.5	15.6
Expected income tax expense	19.4	3.7
Tax effects due to different national tax rates and Group taxation systems	−0.1	−2.4
Effects of tax rate changes	−0.3	−2.3
Tax effects due to the non-application and value adjustment due to deferred taxes or their reversal	−8.6	60.2
Tax effects due to permanent differences	21.7	19.0
Tax effects due to facts of past periods	5.7	−0.4
Tax effects related to shares in subsidiaries	2.5	−4.4
Deductible taxes	−0.7	3.3
Other tax effects	1.4	0.5
Recognized income tax expense	**41.0**	**81.8**

16. Other disclosures to the consolidated profit and loss statement

The consolidated profit and loss statement includes the following material expenses:

EUR million	2019	2018
Expenditure on raw materials, consumables, supplies and trading goods	2,318.9	2,146.8
Expenditure on purchased services	70.6	62.9
	2,389.5	**2,209.7**

The staff costs break down as follows:

EUR million	2019	2018
Direct and indirect remuneration	831.7	788.6
Social duties and expenses for support	215.4	151.6
Expenses for pension provisions	23.7	23.1
	1,070.8	**963.3**

The staff costs include amounts for a defined contribution plan in the amount of EUR 31.2 million (previous year EUR 29.6 million). The expenses included in it for state plans in the amount of EUR 29.6 million (previous year EUR 28.8 million) include predominantly the employer contributions to the pension insurance, which are included in the social dues.

The amortization, depreciation and impairments on intangible assets and tangible assets are included in the following items of the consolidated profit and loss statement:

EUR million	2019	2018
Cost of sales	161.2	183.5
Research and development costs	7.9	7.3
Selling expenses	9.8	5.1
General administrative expenses	47.2	16.3
Other operating expenses	7.1	20.9
	233.2	**233.1**

NOTES TO THE CONSOLIDATED BALANCE SHEET

17. Intangible assets

EUR million	Goodwill	Patents, licenses, software and similar rights and values	Development costs	Down payments made	Total
Acquisition and manufacturing costs as at 1/1/2019	**723.3**	**708.9**	**8.5**	**0.1**	**1,440.8**
Exchange rate effects	12.0	12.9	0.1	0.0	25.0
Changes in consolidated Group	3.9	1.9	0.0	0.0	5.8
Additions	0.0	4.2	2.3	0.0	6.5
Transfers	0.0	– 12.1	0.8	0.0	– 11.3
Disposals	0.0	– 2.3	– 5.1	– 0.1	– 7.5
Acquisition and manufacturing costs as at 12/31/2019	**739.2**	**713.5**	**6.6**	**0.0**	**1,459.3**
Accumulated amortization as at 1/1/2019	**58.3**	**317.0**	**5.3**	**0.0**	**380.6**
Exchange rate effects	0.1	4.3	0.1	0.0	4.5
Changes in consolidated Group	0.0	0.0	0.0	0.0	0.0
Additions	0.0	72.0	1.0	0.0	73.0
Impairment	0.0	0.0	0.0	0.0	0.0
Transfers	0.0	0.1	0.0	0.0	0.1
Disposals	0.0	– 2.3	– 2.3	0.0	– 4.6
Accumulated amortization as at 12/31/2019	**58.4**	**391.1**	**4.1**	**0.0**	**453.6**
Carrying amount as at 12/31/2019	**680.8**	**322.4**	**2.5**	**0.0**	**1,005.7**

EUR million	Goodwill	Patents, licenses, software and similar rights and values	Development costs	Down payments made	Total
Acquisition and manufacturing costs as at 1/1/2018	**636.3**	**673.1**	**11.7**	**0.1**	**1,321.2**
Exchange rate effects	4.5	8.2	0.1	0.0	12.8
Changes in consolidated Group	82.5	24.9	0.0	0.0	107.4
Additions	0.0	10.0	2.0	0.0	12.0
Transfers	0.0	7.9	0.0	0.0	7.9
Disposals	0.0	– 15.2	– 5.3	0.0	– 20.5
Acquisition and manufacturing costs as at 12/31/2018	**723.3**	**708.9**	**8.5**	**0.1**	**1,440.8**
Accumulated depreciation as at 1/1/2018	**37.3**	**239.6**	**4.7**	**0.0**	**281.6**
Exchange rate effects	0.3	2.0	0.1	0.0	2.4
Changes in consolidated Group	0.0	1.3	0.0	0.0	1.3
Additions	0.0	71.6	1.1	0.0	72.7
Impairment	20.7	17.7	0.0	0.0	38.4
Transfers	0.0	0.0	0.0	0.0	0.0
Disposals	0.0	– 15.2	– 0.6	0.0	– 15.8
Accumulated depreciation as at 12/31/2018	**58.3**	**317.0**	**5.3**	**0.0**	**380.6**
Carrying amount as at 12/31/2018	**665.0**	**391.9**	**3.2**	**0.1**	**1,060.2**

Intangible assets in the area of patents, licenses, software and similar rights and assets include customer relationships amounting to EUR 252.8 million (previous year EUR 306.9 million), which have a remaining useful life of between 2 and 8 years.

In the context of the impairment tests performed, the value of the intangible assets acquired within the framework of company acquisitions, such as customer relationships, brands and existing technology, was also determined. There was no need to write down individual assets in the past fiscal year.

EUR million	12/31/2019	12/31/2018
Original Equipment	0.0	0.0
Aftermarket	0.0	0.0
Life Sciences & Environment – Air	0.0	– 15.7
Life Sciences & Environment – Water	0.0	– 1.7
	0.0	**– 17.4**

Goodwill

The goodwill from company acquisitions is reported as follows:

EUR million	12/31/2019	12/31/2018
Original Equipment	4.6	4.6
Aftermarket	597.5	587.0
Life Sciences & Environment – Air	78.7	73.4
Life Sciences & Environment – Water	0.0	0.0
	680.8	**665.0**

In connection with the impairment tests carried out on the cash-generating units, no need for impairment was identified for goodwill in the past fiscal year.

EUR million	12/31/2019	12/31/2018
Life Sciences & Environment – Air	0.0	10.4
Life Sciences & Environment – Water	0.0	10.4
	0.0	**20.8**

18. Impairment tests

The goodwill included in the consolidated financial statements relates to the differences in the respective purchase prices for the newly measured net assets of the acquired business operations, which arose within the framework of the company mergers.

In each case, the goodwill is to be assigned in full to the smallest cash-generating unit.

The respective achievable amount is determined in all cases by determining the value in use, using the discounted cash flow method.

When conducting the impairment tests, the Group performed various sensitivity analyses for changes to the WACC or to the planned sales performance considered to be possible.

For this process, cash flows from the three-year plan (2020 to 2022) prepared by the responsible management for the Original Equipment and Aftermarket business units and from the seven-year plan (2020 to 2026) for the Life Sciences & Environment – Air and Water business units are used as a basis. For the calculation of the impairment tests, assumptions were made about the sales performance, among other things. The average sales increases assumed over the detailed planning period were between 2.8% and 31.8% (previous year 5.3% and 21.7%).

To measure perpetuals, growth rates of 1.0% to 1.3% (previous year 1.3% to 1.5%) were taken as a basis. The cash flows determined were discounted at weighted capital cost rates after tax of 8.8% to 9.2% (previous year 9.3% to 10.5%); before tax, the figure was 9.1% to 9.4% (previous year 9.6% to 10.7%). The weighting of the equity capital and borrowing costs was carried out with a capital structure that was derived from a Group of comparable companies. For the determination of the equity and borrowing costs, capital market data and data of comparable companies were applied as the basis.

in %		2019		2018
	Weighted capital costs	Growth rate	Weighted capital costs	Growth rate
Original Equipment	9.0	1.0	9.8	1.3
Aftermarket	9.2	1.3	10.1	1.4
Life Sciences & Environment – Air	8.8	1.0	9.3	1.3
Life Sciences & Environment – Water	8.9	1.0	9.4	1.5

As a result of the impairment test performed, no goodwill allocated to the various cash-generating units had to be adjusted.

The value in use of the Original Equipment cash-generating unit exceeds the carrying amount by EUR 162.3 million (previous year EUR 2 million). If the WACC increases by 3.2 percentage points or the sustainable EBIT margin reduces by 1.2 percentage points, the value in use corresponds to the carrying amount. If the WACC increases by 0.5 percentage points or the sustainable EBIT margin reduces by – 0.5 percentage points, there would be an additional EUR 29.7 million and EUR 63.4 million would need to be written down respectively.

The value in use of the Aftermarket cash-generating unit exceeds the carrying amount by EUR 973.5 million (previous year EUR 691.8 million). If the WACC increases by 5.2 percentage points or the sustainable EBIT margin reduces by 5.1 percentage points, the value in use corresponds to the carrying amount. As in the previous year, an increase in the WACC by 0.5 percentage points or a reduction in the sustainable EBIT margin by – 0.5 percentage points would not result in any write-downs.

In the case of the cash-generating unit Life Sciences & Environment – Air, the value in use exceeds the carrying amount by EUR 100.3 million (previous year EUR 0.0 million). If the WACC increases by 2.9 percentage points or the sustainable EBIT margin reduces by 2.9 percentage points, the value in use corresponds to the carrying amount. If the WACC increases by 0.5 percentage points or the sustainable EBIT margin reduces by – 0.5 percentage points, no write-down would be needed (previous year EUR 43.0 million and EUR 40.7 million, respectively).

In the case of the cash-generating unit Life Sciences & Environment – Water, the value in use exceeds the carrying amount by EUR 62.8 million (previous year EUR 0.0 million). If the WACC increases by 3.9 percentage points or the sustainable EBIT margin reduces by 3.7 percentage points, the value in use corresponds to the carrying amount. If the WACC increases by 0.5 percentage points or the sustainable EBIT margin reduces by – 0.5 percentage points, no write-down would be needed (previous year EUR 17.1 million and EUR 17.5 million, respectively).

For the Original Equipment cash-generating unit the value in use is EUR 623.1 million (previous year EUR 529.3 million) and for the Aftermarket cash-generating unit EUR 2,299.3 million (previous year EUR 2,166.7 million). For the cash-generating unit Life Sciences & Environment – Air the value in use is EUR 243.8 million (previous year EUR 169.0 million) and for the cash-generating unit Life Sciences & Environment – Water EUR 101.8 million (previous year EUR 58.3 million).

19. Tangible assets and leases

EUR million	Land and buildings[1]	Technical equipment, plant and machinery	Other equipment, operational and office equipment	Advance payments and construction in progress	Total
Acquisition and manufacturing costs as at 1/1/2019	**544.0**	**1,403.7**	**216.8**	**116.3**	**2,280.8**
Transitional accounting from IAS 17 to IFRS 16	91.5	0.9	17.0	0.0	109.4
Exchange rate effects	3.5	10.2	0.7	0.8	15.2
Changes in consolidated Group	0.0	0.0	2.8	0.0	2.8
Additions	23.5	48.8	14.1	79.4	165.8
Transfers	8.1	62.9	5.9	-65.5	11.4
Disposals	-0.6	-44.5	-7.1	-10.1	-62.3
Acquisition and manufacturing costs as at 12/31/2019	**670.0**	**1,482.0**	**250.2**	**120.9**	**2,523.1**
Accumulated depreciation as at 1/1/2018	**235.0**	**937.4**	**145.3**	**0.0**	**1,317.7**
Transitional accounting from IAS 17 to IFRS 16	-9.4	0.0	-0.6	0.0	-10.0
Exchange rate effects	1.7	6.3	0.4	0.0	8.4
Changes in consolidated Group	0.0	0.0	0.0	0.0	0.0
Additions	40.8	89.7	27.4	0.9	158.8
Impairments	0.6	0.8	0.0	0.0	1.4
Transfers	0.0	3.2	-3.3	0.0	-0.1
Additions	-0.6	0.0	0.0	0.0	-0.6
Disposals	-3.1	-32.1	-7.6	0.0	-42.8
Accumulated depreciation as at 12/31/2019	**265.0**	**1,005.3**	**161.6**	**0.9**	**1,432.8**
Carrying amount as at 12/31/2019	**405.0**	**476.7**	**88.6**	**120.0**	**1,090.3**

1 Adjusted due to the transitional accounting from IAS 17 to IFRS 16.

The line "Transitional accounting from IAS 17 to IFRS 16" contains in the acquisition and production costs the additions of rights-of-use assets in accordance with IFRS 16. The assets from finance leases, which were already capitalized in the previous year in accordance with IAS 17 and shown as a separate column in the statement of changes in assets, are now included in the opening balance of the acquisition and production costs of land and buildings. The disposal of the depreciation and amortization recognized up to December 31, 2018 for finance leases under IAS 17 is included in the line "Transitional accounting from IAS 17 to IFRS 16".

EUR million	Land and buildings	Land and buildings finance leases	Technical equipment, plant and machinery	Other equipment, operational and office equipment	Advance payments and construction in progress	Total
Acquisition and manufacturing costs as at 1/1/2018	**512.9**	**17.3**	**1,286.5**	**201.8**	**120.3**	**2,138.8**
Exchange rate effects	0.6	0.3	6.1	-1.7	0.1	5.4
Changes in consolidated Group	7.1	2.8	12.0	3.0	0.2	25.1
Additions	4.0	0.0	55.6	11.1	83.4	154.1
Transfers	6.7	0.0	64.5	8.5	-87.6	-7.9
Disposals	-7.7	0.0	-21.0	-5.9	-0.1	-34.7
Acquisition and manufacturing costs as at 12/31/2018	**523.6**	**20.4**	**1,403.7**	**216.8**	**116.3**	**2,280.8**
Accumulated depreciation as at 1/1/2018	**207.9**	**7.2**	**858.3**	**130.5**	**0.0**	**1,203.9**
Exchange rate effects	0.4	0.1	4.3	-1.0	0.0	3.8
Changes in consolidated Group	2.4	0.6	8.1	1.9	0.0	13.0
Additions	16.8	1.6	80.8	19.1	0.0	118.3
Impairments	2.0	0.0	1.4	0.2	0.0	3.6
Transfers	-0.1	0.1	0.1	-0.1	0.0	0.0
Disposals	-4.0	0.0	-15.6	-5.3	0.0	-24.9
Accumulated depreciation as at 12/31/2018	**225.4**	**9.6**	**937.4**	**145.3**	**0.0**	**1,317.7**
Carrying amount as at 12/31/2018	**298.2**	**10.8**	**466.3**	**71.5**	**116.3**	**963.1**

Impairments of EUR 0.6 million (previous year EUR 2.0 million) were recognized for land and buildings, EUR 0.8 million (previous year EUR 1.4 million) for technical equipment, plant and machinery and EUR 0.0 million (previous year EUR 0.2 million) for other equipment, operational and office equipment. These mainly related to the Life Sciences & Environment business unit and were determined in the value test performed.

From 2019, the following items relating to leases are shown in the balance sheet under tangible assets and financial liabilities:

EUR million	12/31/2019	1/1/2019
Rights-of-use assets		
Land and buildings	112.0	111.9
Technical equipment, plant and machinery	1.0	0.9
Other equipment, operational and office equipment	14.7	19.3
	127.7	**132.1**
Lease liabilities		
Short term	33.2	34.1
Long term	110.2	112.8
	143.4	**146.9**

Additions to the rights-of-use assets during the 2019 fiscal year amounted to EUR 21.3 million.

The profit and loss statement contains the following amounts relating to leases:

EUR million	2019	2018
Amortization of rights-of-use assets		–
Land and buildings	20.8	–
Technical equipment, plant and machinery	0.5	–
Other equipment, operational and office equipment	8.5	–
	29.8	**–**
Interest expenses (included in finance expenses)	5.3	–

Payments for leases accounted for in accordance with IFRS 16 amounted to EUR 39.4 million in 2019. Of this amount, EUR 5.3 million was incurred for interest and EUR 34.1 million for the repayment of financial liabilities.

Tangible assets include leased land and buildings in the amount of EUR 10.8 million as at December 31, 2018 that are to be attributed to the MANN+HUMMEL Group as the commercial owner (finance lease) due to the structure of the leases. The lease agreements partly include purchase rights. As at December 31, 2018, tangible assets included EUR 1.9 million in tools and equipment classified as finance leases. The minimum lease payments of the relevant leases as at December 31, 2018 were as follows:

EUR million	12/31/2019	12/31/2018
Sum of the future minimum lease payments		
due within one year	–	4.7
due between one and five years	–	9.7
due after more than five years	–	5.5
	–	**19.9**
Interest share included in the future minimum lease payments		
due within one year	–	1.1
due between one and five years	–	1.7
due after more than five years	–	2.0
	–	**4.8**
Cash value of the future minimum lease payments		
due within one year	–	3.6
due between one and five years	–	8.0
due after more than five years	–	3.5
	–	**15.1**

20. Investments in associates

The MANN+HUMMEL Group holds a share of 25% in ABC S. A., Cordoba, Argentina. The pro rata annual profit made up by the MANN+HUMMEL Group is EUR 0.6 million (previous year EUR 0.7 million). Furthermore, a dividend pay-out of EUR 0.0 million (previous year EUR 0.1 million) was received on the investment.

In addition, a 60% stake in Thermal Control Systems Automotive, Changé, France, was sold. The MANN+HUMMEL Group thus held a 40% share (EUR 6.4 million) in the company as at December 31, 2019. The MANN+HUMMEL Group's share of net profit for the year amounts to EUR 0.0 million. The company's total non-current assets amount to EUR 17.3 million and current assets to EUR 11.5 million. Provisions and liabilities amount to EUR 14.3 million.

21. Non-current financial assets

EUR million	12/31/2019	12/31/2018
Other holdings	11.8	4.8
Other financial assets	9.3	5.7
Derivative financial instruments	0.0	10.5
	21.1	**21.0**

The change in other investments results from the acquisition of a strategic interest in Seccua Holding AG, based in Steingaden in southern Germany (EUR 2.8 million). This allows us to expand our portfolio in the field of water filtration and our range of solutions for drinking water applications for point-of-entry & point-of-use applications.

In addition, EUR 4.8 million was invested in new venture capital investments.

The derivative financial instruments in the previous year were in the form of an interest currency swap, which was concluded in the context of long-term financing.

22. Other assets

EUR million			12/31/2019			12/31/2018
	Total	Of which non-current	Of which current	Total	Of which non-current	Of which current
Other assets	81.5	6.0	75.5	78.1	5.2	72.9
Contractual assets	23.0	18.0	5.0	17.6	12.9	4.7
Deferred income	12.7	0.3	12.4	12.2	0.3	11.9
Other	1.4	0.0	1.4	1.7	0.0	1.7
	118.6	**24.3**	**94.3**	**109.6**	**18.4**	**91.2**

The other assets contain predominantly sales tax refund entitlements and down payments made. The other assets do not contain any overdue amounts that are not impaired.

The MANN+HUMMEL Group has capitalized the following contractual assets from contracts with customers in accordance with IFRS 15:

EUR million			12/31/2019			12/31/2018
	Total	Of which non-current	Of which current	Total	Of which non-current	Of which current
Carrying amount as at 1/1/	**17.6**	**12.9**	**4.7**	**12.4**	**8.6**	**3.8**
Exchange rate effects	0.1	0.1	0.0	0.0	0.0	0.0
Additions	10.3	9.4	0.9	9.9	6.1	3.8
Utilization	–5.0	–4.4	–0.6	–4.7	–1.8	–2.9
Carrying amount as at 12/31/	**23**	**18**	**5**	**17.6**	**12.9**	**4.7**

In the fiscal year, there was no sales that was realized in 2019 and based on performance obligations fulfilled in previous years. Once again, there were no costs capitalized arising from the fulfillment or initiation of contracts with customers. As before, there was no adjustment of the return considerations by the fair value of the financing component, as the period between the transfer of goods and the time of payment was less than 12 months. Furthermore, there were again no significant take-back obligations or warranty obligations exceeding the minimum period as required by law.

23. Inventories

EUR million	12/31/2019	12/31/2018
Raw materials, consumables and supplies	168.5	167.9
Unfinished products	69.2	88.2
Finished products and goods	307.7	295.7
Down payments made	3.8	3.5
	549.2	**555.3**

In the 2019 fiscal year, write-ups of EUR 0.3 million were made and recognized in inventories (previous year reversal of EUR 8.7 million).

24. Trade receivables

In the current fiscal year, the trade receivables were EUR 674.4 million (previous year 642.5).

The value adjustments on short- and long-term receivables from deliveries and services developed as follows:

EUR million	2019	2018
Carrying amount as at 1/1/	**10.7**	**7.8**
Exchange rate effects	0.1	–0.2
Changes in consolidated Group	0.0	0.5
Additions	4.5	3.9
Utilization	–1.3	–0.2
Reversals	–1.1	–1.1
Carrying amount as at 12/31/	**12.9**	**10.7**

In the fiscal year, trade receivables were reclassified from Level 2 and Level 3 of the impairment model in the amount of EUR 26.5 million (previous year EUR 0.0 million) and reclassified from Level 3 to Level 2 in the amount of EUR 7.8 million (previous year EUR 0.0 million).

There were no impaired financial assets for which enforcement proceedings were performed.

25. Current financial assets

EUR million	12/31/2019	12/31/2018
Derivative financial instruments	4.8	3.4
Receivables and loans	26.0	28.5
Securities	283.9	196.4
	314.7	**228.3**

The securities are equities, loans and fund units. For further information, see Note 36 of the Notes to the consolidated financial statements.

The financial assets do not contain any overdue amounts that are impaired.

26. Equity

Total other shareholders' equity

The accumulated other equity essentially includes the following components that are described below:

Differences from foreign currency translation

The item contains the differences from the foreign currency translation directly in equity of financial statements of foreign subsidiaries (non-eurozone) from the time of the first-time adoption of IFRS.

Fair value measurement of securities and cash flow hedges

This item includes the effects of measuring directly in equity financial instruments and cash flow hedges after tax.

Equity instruments

This item includes the effects of measuring directly in equity investments in non-consolidated components and securities after tax.

Actuarial gains and losses

This item contains the actuarial gains and losses from pension obligations after tax recognized directly in equity.

Deferred taxes on items recognized directly in equity

EUR million			2019			2018
	Before income taxes	Income taxes	After taxes	Before income taxes	Income taxes	After taxes
Differences from foreign currency translation	12.1	0.0	12.1	–13.5	0.0	–13.5
Fair value measurement of securities				0.0	0.0	0.0
Equity and borrowing instruments	1.2	–0.1	1.1	–1.7	0.3	–1.4
Fair value measurement of cash flow hedges	–0.2	0.0	–0.2	0.5	–0.1	0.4
Actuarial gains and losses	–48.4	11.4	–37.0	3.7	–20.3	–16.6
Other income	**–35.3**	**11.3**	**–24.0**	**–11.0**	**–20.1**	**–31.1**

The deferred tax effects from the first-time application of the new IFRS 16 standard are not presented in other comprehensive income but offset against the other effects from the first-time application in the revenue reserves.

Non-controlling interests
The non-controlling interests share of equity amounted to EUR 140.5 million (previous year EUR 149.6 million).

Capital economically attributable to the shareholders
As the shares in MANN+HUMMEL International GmbH & Co. KG do not meet the requirements of IAS 32.16A for the disclosure of puttable shares as equity due to regulations in the partnership agreement on the compensation of shareholders, they were reported as liabilities in "Capital economically attributable to the shareholders". This item amounted to EUR 719.1 million as at the end of the fiscal year (previous year EUR 700.4 million). The capital economically attributable to the shareholders is measured based on the fair value of the obligation. In this case, this corresponds to the pro rata carrying amount of the respective shareholder in the IFRS Group equity.

In the annual financial statements, prepared subject to German commercial law, of MANN+HUMMEL International GmbH & Co. KG, the equity, in the amount of EUR 467.9 million (previous year EUR 395.4 million), comprises capital shares of the limited partners and reserves.

27. Capital management disclosures

Group management primarily pursues the aim of ensuring stable capital backing to support the continuation of the business activities and maintain the benefit of the shareholders. To determine the ratio of the sum of capital economically attributable to the shareholders and the equity to total assets, the economic equity is used. This encompasses the balance sheet equity and the capital economically attributable to the shareholders disclosed within non-current liabilities.

	12/31/2019	12/31/2018
Capital economically attributable to the shareholders and equity in millions of euros	859.6	850.0
Capital economically attributable to the shareholders and equity relative to total assets	20.8%	21.6%

The MANN+HUMMEL Group is not subject to any capital requirements according to the articles of association or to the articles of incorporation, only contractually fixed capital requirements (see Note 28).

28. Financial liabilities

EUR million	Carrying amount as at 12/31/2019			Carrying amount as at 12/31/2018		
	Total	Of which non-current	Of which current	Total	Of which non-current	Of which current
Liabilities to banks	1,266.9	1,030.3	236.6	1,334.7	1,234.7	100.0
Bonds	98.4	98.4	0.0	98.3	98.3	0.0
Payables from finance leases	143.4	110.2	33.2	15.1	14.1	1.0
Derivative financial instruments	6.8	2.3	4.5	4.3	0.5	3.8
Other	145.6	0.0	145.6	122.6	0.5	122.1
	1,661.1	**1,241.2**	**419.9**	**1,575.0**	**1,348.1**	**226.9**

The other financial liabilities consist largely of customer bonuses and exchange rate liabilities.

The increase in other financial liabilities is due to the increase in liabilities from customer bonuses and exchange rate liabilities.

Repayments of the long-term loans are reported in the current financial liabilities. Furthermore, the liabilities that serve current financing are recognized in this item. The country-specific interest rate on these current loans ranges from 1.83% (previous year 0.90%) to 9.26% (previous year 5.18%).

The country-specific interest rate on the loans recognized in the long-term financial liabilities ranges from 0.00% (previous year 1.00%) to 5.75% (previous year 5.26%). More than 86.0% (previous year 90%) of the loans have fixed interest rates. The loans are predominantly due at the end of the term. Some of the loan agreements include clauses relating to the calculation of key financial indicators. One of these involves the degree of debt that is defined as the ratio of the net financial position to the EBITDA. A change to the degree of debt has an impact on the risk premium to be newly defined annually for some of the loans.

No contractual repayment obligations result based on the calculation of the key financial indicators.

29. Other liabilities

EUR million	Carrying amount as at 12/31/2019			Carrying amount as at 12/31/2018		
	Total	Of which non-current	Of which current	Total	Of which non-current	Of which current
Staff liabilities	105.0	0.0	105.0	90.0	0.0	90.0
Down payments received	12.4	0.0	12.4	11.8	0.5	11.3
Taxes	35.3	0.1	35.2	38.9	0.0	38.9
Other	57.7	5.4	52.4	47.2	4.8	42.4
	210.4	**5.5**	**205.0**	**187.9**	**5.3**	**182.6**

The tax liabilities largely contain sales tax liabilities. Other liabilities contain, among other things, outstanding charges, accrued liabilities for open liabilities as well as license and commission liabilities.

30. Other provisions

EUR million	Carrying amount as at 12/31/2019			Carrying amount as at 12/31/2018		
	Total	Of which non-current	Of which current	Total	Of which non-current	Of which current
Liabilities from the operating area	84.2	4.8	79.4	86.5	4.0	82.5
Liabilities from the staff area	73.2	24.9	48.3	40.3	23.3	17.0
Other liabilities	24.1	1.3	22.8	22.2	1.1	21.1
	181.5	**31.0**	**150.5**	**149.0**	**28.4**	**120.6**

EUR million	1/1/2019	Exchange rate effects	Addition	Changes in consolidated Group	Accrued interest	Transfers	Offsetting plan assets	Utilization	Reversal	12/31/2019
Liabilities from the operating area	86.5	0.5	53.5	0.0	0.0	0.0	0.0	-51.4	-4.9	84.2
Liabilities from the staff area	40.3	0.0	56.0	0.0	1.6	0.0	-1.3	-19.4	-4.0	73.2
Other liabilities	22.2	0.3	14.3	0.0	0.0	0.0	0.0	-8.8	-3.8	24.1
	149.0	**0.8**	**123.8**	**0.0**	**1.6**	**0.0**	**-1.3**	**-79.6**	**-12.7**	**181.5**

EUR million	1/1/2018	Exchange rate effects	Addition	Changes in consolidated Group	Accrued interest	Transfers	Offsetting plan assets	Utilization	Reversal	12/31/2018
Liabilities from the operating area	76.0	-0.4	51.6	0.0	0.0	-0.1	0.0	-36.1	-4.5	86.5
Liabilities from the staff area	39.6	-0.4	27.9	0.0	0.1	-0.1	-1.5	-22.4	-2.9	40.3
Other liabilities	12.4	0.1	14.9	0.1	0.0	0.2	0.0	-4.8	-0.7	22.2
	128.0	**-0.7**	**94.4**	**0.1**	**0.1**	**0.0**	**-1.5**	**-63.3**	**-8.1**	**149.0**

The provisions for obligations from the operating area predominantly include provisions for warranty obligations and for potential losses from delivery obligations as well as to a small degree provisions for litigation risks.

The liabilities from the staff area largely contain profit sharing, restructuring measures, old-age part-time working hours agreements and anniversary expenses. The provisions for restructuring measures contain above all expenses for severance payments, which will be incurred within the framework of site closures and relocations. According to IAS 37.72 et seq., the requirements for the formation of a provision for restructuring costs (i. e. existence of a corresponding restructuring plan) are given.

The other liabilities include other individual risks and uncertain liabilities.

The current liabilities are expected to be consumed over the period of the next 12 months.

Usage of about 93% (previous year 92%) of the long-term liabilities from the operating area is expected within the coming five years. Similarly, approximately 77% (previous year 78%) of the provisions included in non-current personnel obligations and approximately 99% (previous year 98%) of the provisions included in other non-current obligations are expected to be used in the next five years.

31. Pension provisions

Provisions for pensions are formed for liabilities from entitlements and from current benefits and former employees of the MANN+HUMMEL Group as well as their survivors. According to legal, economic and tax circumstances of the relevant country, there are different systems of old age provisions that are based on the duration of employment and remuneration as a rule. Defined contribution and benefit plans must be distinguished for occupational pension provision.

For defined contribution plans, the MANN+HUMMEL Group does not enter into any obligations in addition to the payment of contributions to purpose-bound funds or private pension providers.

For defined benefit plans, the obligation of the MANN+HUMMEL Group is to fulfill the promised benefits to active and former employees, while funded and unfunded pension systems are distinguished.

Approx. 98% (previous year 98%) of the defined benefit obligations of the MANN+HUMMEL Group are based on pension plans for the active and former employees of the German sites. The active employees were and are given indirect pension promises in different pension schemes. Depending on the type of the pension scheme, the promises stipulate old-age, incapacity for work and widow/widower pensions, the payment of a promised lump sum or benefits in the form of a lump sum with an annuity option. The amount of the benefits depends, in particular, on the salary and length of service of the employee.

There are no legal or regulatory minimum endowment obligations in Germany.

The main risks for the company are in the actuarial parameters, in particular the interest rate and the pension trend, the risk of long life expectancy and the development of the general cost of living (inflation).

The changes to the cash value of the defined benefit obligation and the fair value of the fund asset can be based on actuarial gains and losses. Their causes can, among other things, be changes to the calculation parameters, amendments to the articles of association regarding the risk procedure of the pension obligations and deviations between the actual and the expected income from the fund assets.

The amount of the pension obligations (entitlement cash value of the pension promises or defined benefit obligation) was calculated using actuarial methods, for which the estimates are unavoidable. In addition to the assumptions on life expectancy, fluctuation, the following assumptions have a major impact on the amount of the liability:

in %	2019	2018
Discount factor	1.05	1.75
Pensions dynamics	1.48	1.48
Pay rises	3.00	3.00

The assumptions on life expectancy are still based on the "Mortality Tables 2018 G" by Prof. Dr. Heubeck.

In the funded pension scheme, the pension obligations resulting from the projected benefit obligation method are offset against the fund assets measured at fair value. If the pension obligations exceed the fund assets, a liability item results that is recognized in the provisions for pensions.

The pension obligations have the following funded status:

EUR million	12/31/2019	12/31/2018
Present value of the unfunded defined benefit obligations	486.2	435.7
Present value of the funded defined benefit obligations	56.6	52.7
Present value of the defined benefit obligation	**542.8**	**488.4**
Fund assets	39.7	35.8
Net liabilities	**503.1**	**452.6**

The fund assets consist of the following:

EUR million	12/31/2019	12/31/2018
Cash	0.0	0.4
Securities	29.2	25.1
Shareholders' equity instruments	4.8	2.9
Debt instruments	10.2	10.3
Fund shares	14.2	11.9
Other	10.5	10.3
	39.7	**35.8**

The securities are recognized at prices listed in active markets.

Present value of defined benefit obligations and the fair value of the fund assets is as follows:

EUR million	2019	2018
Opening balance of defined benefit obligations (DBO)	**488.4**	**487.3**
+/– Exchange rate effects from abroad	0.4	0.0
+ Company acquisitions	0.0	1.1
+ Current service costs	15.4	14.6
+ Past service costs to be calculated	– 0.2	0.3
+ Interest expense	8.8	9.0
– Settlements/curtailments	0.0	0.0
+/– Actuarial gains and losses from the change in demographic assumptions	– 0.5	– 3.3
+/– Actuarial gains and losses from the change in financial assumptions	51.1	– 0.4
+/– Actuarial gains and losses from experience-based adjustments	– 1.0	– 0.3
+ Contributions from the participants of the plan	0.0	0.0
– Pension payments made	– 19.7	– 19.8
+/– Other changes	0.1	– 0.1
Closing balance of defined benefit obligations (DBO) as at 12/31/	**542.8**	**488.4**
Opening balance of fair value of fund assets	**35.8**	**35.1**
+/– Exchange rate effects from abroad	0.5	– 0.1
– Settlements/curtailments	0.0	0.0
+ Expected income from the fund assets	0.8	0.8
+/– Actuarial gains and losses from the change in financial assumptions	1.2	– 0.4
+/– Actuarial gains and losses from experience-based adjustments	0.0	0.0
+ Contributions made by the participants of the plan	2.4	0.1
+ Contributions made by the employer to the plan	0.0	2.9
– Pension payments made	– 1.6	– 1.8
– Effects of the asset ceiling	0.0	– 0.8
+/– Other changes	0.6	0.0
Fair value of fund assets as at 12/31/	**39.7**	**35.8**
Pension provisions as at 1/1/	**452.6**	**452.2**
Pension provisions as at 12/31/	**503.1**	**452.6**

The pension obligations yield expenses recognized in income from pension obligations in the amount of EUR 23.7 million (previous year EUR 22.8 million), which consist of the following components:

EUR million	2019	2018
Current service costs	15.4	14.6
Past service costs to be calculated	–0.2	0.3
Settlements and curtailments	0.0	0.0
Accrued interest of the net liabilities	8.5	7.9
	23.7	**22.8**

With the exception of the interest portions, all components of the pension expenses recognized in income are included in the functional areas.

The actuarial losses (previous year gains) in the amount of EUR –48.4 million (previous year EUR 3.7 million) are recognized directly in the accumulated other equity.

In reality, the fund assets posted a profit of EUR 3.4 million (previous year EUR 0.3 million). The difference between the actual and the expected income of the external pension fund is recognized in equity within the framework of the actuarial gains and losses.

The contributions to external pension funds will be EUR 1.2 million in the following year, according to the best estimates. The estimate in the previous year for the 2019 fiscal year amounted to EUR 1.3 million.

The pension payments of subsequent years are as follows:

EUR million	2019	2018
within the next fiscal year	18.0	18.0
between 2 and 5 fiscal years	85.5	82.4
between 5 and 10 fiscal years	141.2	132.8
due after more than 10 years	1,395.1	1,334.5

During calculation, the actual pension payments were presented and not only the pension components earned, i.e. the pension components to be allocated in the future have also already been considered. It was also assumed that the number of active employees remains unchanged. The same parameters were used for the other calculation assumptions as used for determining the defined benefits obligation.

The average term of the defined benefits obligations ranges between 8 and 30 years.

The effect of a change to the key assumptions on the defined benefits obligation is presented below:

	Change to pension entitlement cash value	
EUR million	**2019**	**2018**
Discount factor		
– 1.0%-points	96.3	83.7
+ 1.0%-points	–73.4	–64.5
Pensions dynamics		
– 0.5%-points	–4.0	–6.5
+ 0.5%-points	4.2	7.1
Life expectancy		
– 1 year	–16.9	–16.7
+ 1 year	17.0	18.1

The parameters for the sensitivity of the discount factor as well as the pensions dynamics of the entitlement cash value were adjusted in comparison to the previous year.

The pension obligations were newly determined for the sensitivity analysis. In this process, it was assumed that the other factors remain unchanged. When calculating the sensitivity of life expectancy, it was assumed that the average life expectancy of a 65-year-old person is shortened or extended by one year.

NOTES TO THE CONSOLIDATED CASH FLOW STATEMENT

32. General

In the year under review, the MANN+HUMMEL Group has at its disposal credit lines worth EUR 854.7 million (previous year EUR 853.4 million), which were not utilized in the amount of EUR 810.5 million (previous year EUR 832.3 million) as at the end of the fiscal year.

The fund considered in the consolidated cash flow statement includes cash recognized in the consolidated balance sheet, i.e. cash on hand and in bank accounts, inasmuch as the Group can dispose of these freely.

Dividends received and interest are allocated to the cash flow from investment activities. Interest and transaction costs paid to raise financial debt are reported in the cash flow from financial activities.

Within the framework of the indirect determination, the changes to balance sheet items considered are adjusted for effects from foreign currency translation and from changes to the consolidated Group in connection with the current business activities. The changes to the relevant balance sheet item can therefore not be aligned with the corresponding values on the basis of the consolidated balance sheet published.

OTHER DISCLOSURES

33. Contingent liabilities

For the contingent liabilities applied below at nominal rates, no provisions were formed because it is considered unlikely that they would be used:

EUR million	12/31/2019	12/31/2018
Guarantees	1.2	1.3
Other	2.4	1.6
	3.6	**2.9**

The sureties are due in full within one year on being claimed. Other contingent liabilities relate predominantly to potential liabilities to tax authorities.

34. Other financial liabilities

In addition to liabilities, provisions and contingent liabilities, other financial liabilities exist from initiated investment plans and acquisition agreements.

EUR million	12/31/2019	12/31/2018
Rental and lease obligations	10.1	149.1
Purchase obligations	62.5	70.9
	72.6	**220.0**

Leases have been accounted for in accordance with IFRS 16 since January 1, 2019. The rental and lease obligations are comprised of expenses for current leases, expenses for low-value leased assets and expenses for variable lease payments. In the fiscal year under review, expenses for current leases totaling EUR 5.7 million, for low-value leased assets of EUR 2.2 million and for variable lease payments of EUR 2.2 million were incurred.

The purchase obligation is EUR 50.2 million (previous year EUR 54.0 million) for inventories, EUR 10.1 million (previous year EUR 13.7 million) for tangible assets and EUR 2.2 million (previous year EUR 3.2 million) for other services.

The sum of future minimum lease payments from non-cancelable tenancy agreements and operating leases consists of the following by due date as at December 31, 2018:

EUR million	12/31/2018
Nominal sum of the future minimum lease payments	
due within one year	33.1
due between one and five years	89.4
due after more than five years	26.6
	149.1

35. Legal disputes

The MANN+HUMMEL Group is confronted with claims and court proceedings within the framework of its usual business activities, which relate largely to labor law, product liability and warranty law, tax law and to intellectual property. Provisions for such cases are formed in which it is likely that an obligation exists that arose from an event in the past, that can be reliably estimated and whose fulfillment will likely result in the outflow of resources with a commercial benefit. For all legal disputes pending as at December 31, 2019, a provision of EUR 3.7 million (previous year EUR 7.5 million) was formed. The Management Board of the MANN+HUMMEL Group believes that the outcome of all claims and proceedings brought against the MANN+HUMMEL Group, both individually and in aggregate, will not have any major detrimental impact on the business activities, the asset position, results of operation and the cash flow. The results of currently pending or future proceedings are nevertheless not foreseeable, for which reason expenses may be incurred due to court or official rulings or under agreement of settlements that are not or not fully covered by insurance and that may have major impacts on the business of the MANN+HUMMEL Group or its results.

36. Disclosures on financial instruments

Carrying amounts of the financial instruments by categories

The balance sheet items for financial instruments are broken down into classes and categories. The parent company of the Group is MANN+HUMMEL International GmbH & Co. KG. Insofar as the shares in this business partnership do not meet the requirements of IAS 32.16A, these amounts which had previously been disclosed in equity were reclassified as "Capital economically attributable to the shareholders". This item was thus included in the notes to the carrying amounts of the financial instruments.

The financial assets and financial liabilities are categorized according to IFRS 9 into the following categories based on a uniform model:

- Financial assets that are valued at amortized cost (AC),
- financial assets that are valued at fair value through other comprehensive income (FVOCI) and
- financial assets that are valued at fair value through profit or loss (FVPL),
- financial liabilities that are valued at amortized cost (AC),
- financial liabilities that are valued at fair value through profit or loss (FVPL).

The carrying amounts for each category are presented in the following table:

Carrying amounts of financial assets

12/31/2019 **EUR million**	**(Amortized) cost**	**Fair value through other comprehensive income with recycling (FVOCI)**	**Fair value through other comprehensive income without recycling (FVOCI)**	**Fair value through profit or loss (FVPL)**
Cash and current deposits	245.3			
Trade receivables	674.4			
Trade receivables (factoring)	0.0			
Other financial assets	35.2			
Securities				
of which debt instruments of the category FVOCI with recycling		144.6		
of which debt instruments of the category FVPL				61.8
of which shareholders' equity instruments of the category FVOCI without recycling			0.0	
of which shareholders' equity instruments of the category FVPL				77.5
Holdings			11.8	
Derivative financial instruments				
Part of a hedging relationship				3.5
Freestanding				1.3

Carrying amounts of financial liabilities

12/31/2019 **EUR million**	**(Amortized) costs**	**Fair value through profit or loss**
Capital economically attributable to the shareholders	719.1	
Trade payables	601.2	
Liabilities to banks	1,266.9	
Other financial liabilities	244.0	
Lease liabilities	143.4	
Derivative financial instruments		
Part of a hedging relationship		6.3
Freestanding		0.5

Carrying amounts of financial assets

12/31/2018 **EUR million**	**(Amortized) cost**	**Fair value through other comprehensive income with recycling (FVOCI)**	**Fair value through other comprehensive income without recycling (FVOCI)**	**Fair value through profit or loss (FVPL)**
Cash and current deposits	262.0			
Trade receivables	642.5			
Trade receivables (factoring)	0.0			
Other financial assets	34.3			
Securities				
of which debt instruments of the category FVOCI with recycling		132.3		
of which debt instruments of the category FVPL				28.8
of which shareholders' equity instruments of the category FVOCI without recycling			0.0	
of which shareholders' equity instruments of the category FVPL				35.3
Holdings			4.8	
Derivative financial instruments				
Part of a hedging relationship				12.2
Freestanding				1.7

Carrying amounts of financial liabilities

12/31/2018 **EUR million**	**(Amortized) costs**	**Fair value through profit or loss**
Capital economically attributable to the shareholders	700.4	
Trade payables	613.5	
Liabilities to banks	1,334.7	
Other financial liabilities		
Lease liabilities	15.1	
Derivative financial instruments		
Part of a hedging relationship		2.6
Freestanding		1.7

The MANN+HUMMEL Group holds its equity instruments for strategic reasons in order to expand operational business activities. The focus is not on achieving significant short-term proceeds from disposals.

In the current fiscal year, the fair value of equity instruments whose changes are reported in other comprehensive income was EUR 11.7 million (previous year EUR 4.8 million). No dividends were paid to MANN+HUMMEL companies from these holdings during the fiscal year. There were no reclassifications to Other comprehensive income or dividend pay-outs from investments that were sold in the fiscal year.

The fair values of the financial assets and liabilities are assigned to the three levels of the fair value hierarchy depending on the input parameters used for measurement. The rating and requirement to make reclassifications are audited on the balance sheet date. Level 1 includes the financial instruments for which prices listed on active markets are available for identical assets and liabilities. An assignment to level 2 takes place if input parameters are used for the measurement of the financial instruments that can be observed directly (for instance prices) or indirectly (derived from prices for instance) in the market. Financial instruments whose measurement is based on information that cannot be observed in the market are recognized in level 3.

Due to the current maturities of cash and cash equivalents, trade receivables and other current financial assets, their carrying amount generally corresponds to nearly the fair value at the end of the reporting period.

The market values of the long-term financial assets, trade receivables, liabilities to banks and other financial liabilities were calculated using the present value techniques. The future payments were discounted with the current maturity-congruent risk-free interest rates, plus a standard market credit risk surcharge. The allocation is made to level 2.

Financial liabilities from financial lease agreements are applied in observance of the contractual agreed interest rate. The fair value was determined in observance of the standard market interest rate (level 2).

The fair values of the financial instruments measured at fair value are allocated to the three levels of the fair value hierarchy as follows:

EUR million				12/31/2019
	Level 1	Level 2	Level 3	Total
Assets				
Holdings	0.0	0.0	11.7	11.7
Securities				
Shares	77.5	0.0	0.0	77.5
Bonds	138.8	10.1	5.0	153.9
Fund shares	52.4	0.0	0.0	52.4
Derivative financial instruments	0.0	4.8	0.0	4.8
Liabilities				
Derivative financial instruments	0.0	6.8	0.0	6.8

EUR million				12/31/2018
	Level 1	Level 2	Level 3	Total
Assets				
Holdings	0.0	0.0	4.8	4.8
Securities				
Shares	35.3	0.0	0.0	35.3
Bonds	107.6	18.4	10.0	136.0
Fund shares	25.1	0.0	0.0	25.1
Derivative financial instruments	0.0	13.9	0.0	13.9
Liabilities				
Derivative financial instruments	0.0	4.3	0.0	4.3

The fair values of the financial instruments measured at amortized cost are allocated to the three levels of the fair value hierarchy as follows:

EUR million				12/31/2019
	Level 1	Level 2	Level 3	Total
Liabilities				
Liabilities to banks	0.0	1,266.9	0.0	1,266.9
Other financial liabilities	0.0	244.0	0.0	244.0
Payables from finance lease	0.0	143.4	0.0	143.4

EUR million				12/31/2018
	Level 1	Level 2	Level 3	Total
Liabilities				
Liabilities to banks	0.0	1,358.8	0.0	1,358.8
Other financial liabilities	0.0	254.0	0.0	254.0
Payables from finance lease	0.0	15.1	0.0	15.1

For level 1 securities, the fair value of the directly listed price on a market active at all times is applied. An active market is either the stock exchange of the relevant country or a comparable trading platform, where the liquidity and transparency of the underlying assets are given. An active market is characterized by the fact that largely homogenous assets are traded at publicly accessible prices and buyers and sellers willing to conclude an agreement can be found at all times as a rule, for instance securities and commodities exchanges.

Financial instruments whose prices can be derived or modeled using parameters observable in the market are rated as level 2. Observable interest rates, exchange rates or comparable instruments are stated here as examples. Interest-bearing securities with moderately time-delayed direct price listing are also included in level 2.

As in the previous year, level 3 securities are variable-interest-bearing fixed-income bonds and derivatives whose liquidity was not given on the due date in the public market and were for that reason allocated to level 3. In addition, the investments were added to the fair value hierarchy from the current fiscal year. The market values of level 3 securities were determined on the basis of currently available information from fund managers and measurement procedures conducted internally. A significant change to the interest rate and the associated change to market prices would influence the fair value of the securities. A sale of holdings assigned to level 3 is not planned in the short term.

The performance of the securities, derivatives and holdings allocated to level 3 of the fair value hierarchy is presented in the following table:

EUR million	2019	2018
Last revised 1/1/	**14.8**	**14.7**
Fair value changes – recognized directly in equity	0.9	– 0.8
Price gains/losses	0.0	0.1
Purchases	8.5	2.1
Sales	– 4.3	– 1.2
Changes in consolidated Group	0.0	1.0
Restructuring in level 3	– 3.2	– 1.1
Reclassification of plan assets	0.0	0.0
Last revised 12/31/	**16.7**	**14.8**

Other profits and losses are recognized in other financial income and financial expenses.

Derivative financial instruments in level 1 are tradable derivatives, such as futures. Their fair value corresponds to the value on the traded futures exchange.

The level 2 derivative financial instruments are non-tradable derivatives. The determination of the fair values is carried out on the basis of prices of permitted stock exchanges discounted on the remaining maturity (exchange rates, interest rates and commodities price indices).

Net profits and losses by measurement categories

EUR million	Total net profits and losses
2019	
Assets at (amortized) cost	– 38.0
Liabilities at (amortized) cost	– 20.1
Shareholders' equity instruments of the category FVOCI without recycling	0.0
Shareholders' equity instruments of the category FVPL	10.2
FVOCI debt instruments with recycling	1.9
Debt instruments FVPL	0.6
Derivative financial assets with hedge relationships (FVPL)	1.0
Derivative financial liabilities with hedge relationships (FVPL)	0.1
	– 44.3

EUR million	Total net profits and losses
2018	
Assets at (amortized) cost	– 9.3
Liabilities at (amortized) cost	– 31.7
Shareholders' equity instruments of the category FVOCI without recycling	– 0.7
Shareholders' equity instruments of the category FVPL	– 6.2
Derivative financial assets with hedge relationships (FVPL)	– 3.1
Derivative financial liabilities with hedge relationships (FVPL)	– 0.7
	– 51.7

Other net profits and losses of assets at amortized cost and liabilities at amortized cost largely include currency gains and losses from foreign currency receivables, costs resulting from impairments on trade receivables as well as interest expenses.

Other net profits and losses in the measurement category "FVOCI debt instruments with recycling" are the offsetting of the realized profits and losses from the disposal of such assets, reduced by the unrealized changes already recognized for this in the equity, and the unrealized profits or losses of the existing assets recognized in equity in the current fiscal year. This also includes the currency profits and losses.

Other net profits and losses in the measurement category "Holdings FVOCI without recycling" include predominantly impairments of the investees on the fair value within equity.

Offsetting of financial assets and liabilities

Below are the financial assets and liabilities, the settlement agreements, claimable global settlement agreements and similar agreements:

EUR million			12/31/2019
	Gross amount	Offsetting	Net amount
Trade receivables	682.4	8.0	674.4
Trade payables	609.2	8.0	601.2

EUR million			12/31/2018
	Gross amount	Offsetting	Net amount
Trade receivables (current)	651.0	8.5	642.5
Trade payables	622.1	8.5	613.6

The master agreements for financial futures contracts concluded with our banks stipulate, among other things, that in the event of the insolvency of a contracting party, the existing contracts must be terminated and settled at the respective market value. If several transactions are settled for one contractual partner, positive and negative market values are netted and only the remaining peak is settled. As at December 31, 2019, the following nettable amounts existed:

EUR million			12/31/2019
	Balance sheet value	Offsetting	Net amount
Derivative assets	4.8	3.1	1.7
Derivative liabilities	6.8	3.1	3.7

37. Risks from financial instruments

Management of financial risks

The risk management system of the MANN+HUMMEL Group covers, among other things, the contractor and default risks with customers, banks and suppliers, liquidity, raw material and interest rate change risks and currency risks.

The measurement of the price risk from securities and the currency risk is carried out on the basis of a value-at-risk analysis. The value at risk specifies exclusively the potential risk of loss that is not exceeded with a set likelihood within a defined period (holding period). However, the method does not provide any information on the time of occurrence or the expected amount of loss in the event that the value at risk is exceeded. As a result, the actual performance may differ from the result of the value-at-risk analysis.

The companies of the MANN+HUMMEL Group assure their interest rate change and currency risks at market-compliant terms either via the cash management of the MANN+HUMMEL Group or directly with banks. It employs original transactions, such as loans with a long-term fixed interest rate, but also – in particular in the currency area – derivative financial instruments with plain vanilla character. They conclude exclusively to hedge existing underlying transactions or planned transactions.

The risk positions of the cash management are hedged externally at banks with impeccable credit ratings, taking into account set risk limits. Hedging transactions are concluded in accordance with policies applicable across the Group and in accordance with the regulations applicable for banks to conduct trading.

Default and contractor risk

The default risk is the risk that contracting parties fail to fulfill their payment obligations in the area of cash investments, financial assets and the trade receivables.

To reduce the contractor risk for cash investments, all financial transactions are only conducted with top-rate credit rating within the framework of defined limits.

In the event of the contractor defaulting, the financial assets of the Group result in a maximum default risk in the amount of the carrying amount of the corresponding balance sheet item without taking into account collaterals received (plus the maximum utilization for any financial guarantees and credit promises for third parties).

To reduce the default risk, the credit rating of the customers with whom the transactions were concluded on a loan basis and our receivables are subjected to an ongoing audit. Default risks are selectively reduced with corresponding hedging instruments, such as trade credit insurance. The carrying amount of the trade receivables covered by the trade credit insurances is EUR 19.5 million (previous year EUR 14.6 million).

The impairments on cash and current deposits developed as follows in the fiscal year:

EUR million	2019	2018
Carrying amount as at 1/1/	**0.3**	**0.8**
Reversals	0.0	–0.5
Carrying amount as at 12/31/	**0.3**	**0.3**

The following table contains information on the credit quality of the Group's financial assets by credit rating:

EUR million	Gross carrying amount (on-balance) as at 12/31/2019		
Rating	Level 1 impairment model (EL)	Level 2 impairment model (LEL)	Level 3 impairment model (LEL)
Investment grade	236.6	656.5	0.0
Non-investment grade	0.0	23.5	31.2

EUR million	Gross carrying amount (on-balance) as at 12/31/2018		
Rating	Level 1 impairment model (EL)	Level 2 impairment model (LEL)	Level 3 impairment model (LEL)
Investment grade	259.3	642.3	0.0
Non-investment grade	0.0	24.9	10.4

Liquidity risk

The liquidity risk describes the risk that a company cannot fulfill its financial liabilities on maturity. At MANN+HUMMEL, major liquidity matters and developments are regularly discussed in a liquidity planning. The subsidiaries are included in a central financing of the Group. For all potential fluctuations, the company holds reserve liquidity and credit lines of several hundred million euros, which is also available to cover M&A activities.

The maturity structure of the repayments and interest payments for the financial liabilities and liabilities from deliveries and services is presented in the following table:

EUR million	Carrying amount as at 12/31/2019			Cash outflows
	Total	2020	2021 to 2025	2026 et seq,
Liabilities to banks	1,266.9	243.9	782.6	390.7
Lease liabilities	143.4	45.6	67.0	30.8
Derivative financial instruments	6.8	5.0	9.8	0.9
Other financial liabilities	244.0	145.4	16.3	129.3
Trade payables	601.2	600.9	0.4	0.0
	2,262.3	**1,040.7**	**876.1**	**551.7**

EUR million	Carrying amount as at 12/31/2018			Cash outflows
	Total	2019	2020 to 2024	2025 et seq,
Liabilities to banks	1,334.7	120.8	902.7	426.3
Payables from finance leases	15.1	4.5	8.6	1.2
Derivative financial instruments	4.3	4.6	12.5	2.2
Other financial liabilities	220.9	122.7	13.0	135.8
Trade payables	613.6	612.7	0.4	0.0
	2,188.6	**787.7**	**937.2**	**565.5**

Price risk from securities

The price risk means the risk that the fair value of the securities drops.

Investments in securities are largely investments in interest-bearing securities, equities and fund units. A risk reduction follows from this risk reduction that is a requirement for a value increase that has as little fluctuation and is as continuous as possible.

The ultimate decision on the strategic asset allocation and the oversight of all investment results and risk budgets for the special funds is taken by an especially established committee (investment committee). The basis for the investment decisions of the external portfolio managers are the investment policies defined by the investor. When defining these policies, a solid issuer credit rating (minimum rating requirement), strong marketability of the securities and a broad industry diversification, among other things, are observed in order to achieve a further risk reduction.

The company receives a monthly report on the performance of the current market prices and of the individual asset classes. The performance is measured using, among other things, comparable values, key risk indicators and attribution and allocation analyses of the portfolio managers.

In addition to the qualitative diversification tools to reduce risk, such as diversification of investments in various asset classes, risk-driven design of the investment policies, analysis of the investment results and assessment of the changes in capital markets, quantitative control methods and investment styles are applied as a preference.

Based on a value-at-risk calculation, it can be assumed that with a probability of 99% and a holding period of 10 days, the reduction in market value in the master fund, which pools the funds with the various fund providers, will not exceed EUR 5.6 million (previous year EUR 1.4 million). The calculations were made on the basis of the assumption that asset allocation does not change and no additions are made during the year that would then need to be reallocated. The historical correlations of the relevant funds and securities were taken into account.

Financial investments "at fair value through equity" include investments of EUR 11.8 million (previous year EUR 4.8 million). The measurement is carried out using the multiplier method. The proportionate enterprise value is determined using sales multipliers. Uncertainty with regard to determination of the fair value of these holdings is due mainly to the change in the multipliers used, as there is no price listed on an active market. If the multiples used were to increase by 10.0 percentage points, the fair values of these investments would rise by EUR 0.3 million (previous year EUR 0.2 million). A reduction would accordingly result in a reduction of EUR 0.2 million (previous year EUR 0.1 million).

Currency risk

The MANN+HUMMEL Group makes transactions in different currencies due to its international setup. The currency risk means the risk that the fair values or future cash flows of monetary items are affected by exchange rate changes.

In the MANN+HUMMEL Group, hedging measures are conducted for planned foreign currency cash flows within defined maximum limits. The hedging ratio is 50% for cash flow hedges and 100% for fair value hedges. To hedge prices, the net principle applies, i.e. the hedging is carried out for net items from reverse cash flows. Prices are mainly hedged via foreign exchange futures. As in the previous year, of the hedging volume, more than 50% was made up by the currencies USD, SGD, EUR, CZK and RUB in the fiscal year.

To finance the Affinia acquisition, an interest-currency swap of USD 400 million was concluded in 2015, which has a nominal amount of EUR 229.8 million (previous year EUR 265.0 million) at the reporting date and is designated as a fair value hedge with a fair value of EUR –2.3 million (previous year EUR 9.9 million) as at December 31, 2019.

To determine the exposure to be hedged, cash flow planning for the following fiscal year is drawn up annually. On the basis of this planning, exposures are then hedged by forward exchange transactions within the approved risk limit.

A the MANN+HUMMEL Group, the value at risk is determined without change on the previous year on the basis of the variance-covariance method on the assumption of a confidence level of 95% with a holding period of 12 months.

As at the balance sheet date, a potential risk of loss of EUR 19.5 million (previous year EUR 28.8 million), with reference to the next 12 months, is not exceeded with a unilateral confidence level of 95%. The determination was based on an average price volatility of 6.9% (previous year 8.2%).

The maximum risk of loss is calculated from the average price volatility of the past twelve months with reference to the outstanding foreign currency position from the operating business. This results from the inventories of cash and loans in foreign currency on the due date, which are managed via cash flow management, and the net incoming and outgoing payments expected over the coming twelve months on the basis of the current corporate planning, taking into account the hedged inventories.

The following hedging instruments are held as at December 31, 2019:

EUR million		Maturity				
Nominal amounts of hedging instruments	**Total**	**Up to 3 months**	**Over 3 months to 1 year**	**Over 1 year to 2 years**	**Over 2 years to 5 years**	**Over 5 years**
Currency hedging	330.7	162.2	168.5	32.5	0.0	0.0
Interest rate/currency hedging	229.8	0.0	0.0	0.0	0.0	229.8
	560.5					

12/31/2018:

EUR million		Maturity				
Nominal amounts of hedging instruments	**Total**	**Up to 3 months**	**Over 3 months to 1 year**	**Over 1 year to 2 years**	**Over 2 years to 5 years**	**Over 5 years**
Currency hedging	327.3	145.9	148.8	32.5	0.0	0.0
Interest rate/currency hedging	265.1	0.0	0.0	0.0	0.0	265.1
	592.4					

Hedging as at the end of the year relates predominantly to the currencies USD, CZK and SGD. The average hedging rates amounted to:

Average rate of exchange	
EUR/USD	1.1122
EUR/CZK	25.9784
EUR/SGD	1.5267

Annual average rate of exchange 2018:

Average rate of exchange	
EUR/USD	1.1491
EUR/CZK	26.3076
EUR/SGD	1.5732

Cash flow hedges

2019:

EUR million		Fair value of hedging instruments		Change in fair value	Balance sheet item for hedging transactions
Cash flow hedges	Nominal amount	Assets	Liabilities		
Currency hedging	40.6	0.5	–1.2	0.1	Financial assets/ financial liabilities

2018:

EUR million		**Fair value of hedging instruments**		**Change in fair value**	**Balance sheet item for hedging transactions**
Cash flow hedges	Nominal amount	Assets	Liabilities		
Currency hedging	39.5	0.5	– 0.2	0.5	Financial assets/ financial liabilities

At the MANN+HUMMEL Group, the spot-to-spot method is used for designation. Effectiveness measurement is performed cumulatively.

Cash flow hedges were formed for the first time as at December 31, 2018. There was therefore no reclassification in 2018.

The following amounts were reclassified in 2019:

EUR million	Reclassified/recycled amount of OCI in profit and loss statement			
Cash flow hedges	From prematurely terminated underlying transactions	Expired underlying transactions	Profit and loss statement position for reclassified amounts	Profits/losses from hedges of net positions
Currency hedging	0.0	1.4	Sales Net financial result	

The ineffectiveness amounts to EUR 0.0 million (previous year EUR 0.0 million) due to the spot-to-spot method applied.

2019:

EUR million		
Cash flow hedges	Change in fair value (for effectiveness calculation) of underlying transaction	Cash flow hedge reserve
Currency hedging	– 0.1	0.1

2018:

EUR million		
Cash flow hedges	Change in fair value (for effectiveness calculation) of underlying transaction	Cash flow hedge reserve
Currency hedging	– 0.5	0.5

2019:

EUR million	Hedging cost total	Of which cost of hedging – fair value	Of which cost of hedging – forward component	Of which cost of hedging – cross currency basis spread	Cash flow hedge reserve – internal values	Spot component – FX deriva-tives	Interest rate swaps	Other com-prehensive income (OCI) total (cash flow hedge reserve and cost of hedging)
Other comprehensive income (OCI) as at 1/1/2019	**–0.1**	**0.0**	**–0.1**	**0.0**	**0.0**	**0.4**	**0.0**	**0.3**
Additions	–1.1	0.0	–1.0	–0.1	0.0	–0.7	0.0	–1.7
Basis adjustments	1.1	0.0	1.0	0.1	0.0	0.3	0.0	1.4
Reclassification to profit and loss statement	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Other comprehensive income (OCI) as at 12/31/2019	**–0.1**	**0.0**	**–0.1**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**

2018:

EUR million	Hedging cost total	Of which cost of hedging – fair value	Of which cost of hedging – forward component	Of which cost of hedging – cross currency basis spread	Cash flow hedge reserve – internal values	Spot component – FX deriva-tives	Interest rate swaps	Other com-prehensive income (OCI) total (cash flow hedge reserve and cost of hedging)
Other comprehensive income (OCI) as at 1/1/2018	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Additions	–0.2	0.0	–0.2	0.0	0.0	0.5	0.0	0.3
Basis adjustments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reclassification to profit and loss statement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other comprehensive income (OCI) as at 12/31/2018	**–0.2**	**0.0**	**–0.2**	**0.0**	**0.0**	**0.5**	**0.0**	**0.3**

Fair value hedges

2019:

EUR million		Fair value of hedging instruments		Change in fair value of hedging instruments	Balance sheet item for hedging transactions	Ineffectiveness (result) in profit and loss statement	Item profit and loss statement for hedge accounting
Fair value hedges	**Nominal amounts**	**Assets**	**Liabilities**				
Currency hedging	290.1	3.1	–1.6	1.5	Financial assets/financial liabilities	0.1	Financial expenses/ financial income
Interest rate/currency hedging	229.8	0.0	–2.3	–2.3	Financial assets	0.0	

2018:

EUR million		Fair value of hedging instruments		Change in fair value of hedging instruments	Balance sheet item for hedging transactions	Ineffectiveness (result) in profit and loss statement	Item profit and loss statement for hedge accounting
Fair value hedges	**Nominal amounts**	**Assets**	**Liabilities**				
Currency hedging	287.8	1.9	–2.4	–0.5	Financial assets/financial liabilities	–1.9	Financial expenses/ financial income
Interest rate/currency hedging	265.1	9.9	0.0	9.9	Financial assets	0.0	

MANN+HUMMEL makes use of the exception in accordance with IFRS 9.6.3.5 and designates internal loans as underlying transactions in the context of hedge accounting. Gains and losses from foreign currency translation are not fully eliminated at Group level, as the internal loans between two companies of the Group are handled with different functional currencies. The fair value changes of underlying transactions largely corresponded to the fair value changes of hedging instruments. Ineffectiveness between the fair value changes of underlying transactions and hedging instruments occurred in particular in transactions with longer terms.

Interest rate change risk

The interest rate change risk is the risk that the fair value or future cash flows of financial instruments fluctuate due to market interest rate changes.

MANN+HUMMEL monitors the interest rate change risk at monthly intervals and measures it against a defined loss limit as the basis for any necessary hedging measures.

An increase/reduction in the average interest rate on variable-interest-bearing financial liabilities by 50 basis points would have an effect on the net profit or loss before income tax of +/– EUR 1.0 million (previous year +/– EUR 0.5 million).

In the event of an increase in the average interest rate on variable-interest-bearing financial assets by 50 basis points, the net profit or loss before income tax would rise by +/– EUR 0.15 million (previous year +/– EUR 0.06 million).

Commodities price risk

In the MANN+HUMMEL Group, hedging transactions were carried out in a non-material scope in the area of steel during the reporting period. MANN+HUMMEL minimizes the existing risks with long-term contracts, a selection of strategic, globally positioned suppliers and the monitoring of exchange rates.

38. Government grants

EUR 1.2 million (previous year EUR 4.3 million) in government grants was received in the fiscal year. This is broken down as follows:

EUR million	2019	2018
Grants for investments	0.6	3.2
Cost subsidies	0.6	1.1
Government grants	**1.2**	**4.3**

Expense subsidies comprise largely state subsidies for job creation, for environmental innovation and the purchase of recycled materials.

The conditions required for the granting of cost subsidies are fulfilled.

39. Related party disclosures

Under IAS 24, persons or companies that control the MANN+HUMMEL Group or are controlled by it must be disclosed, unless they are already included in the consolidated financial statements as a consolidated company. Control exists if a shareholder holds more than half the voting rights or if it is possible, under the articles of association or contractual agreement, to control the financial and business policy of the management. In addition, the reporting obligation extends under IAS 24 to transactions with associates and holdings, in which the MANN+HUMMEL Group holds at least 20% and to transactions with persons who have a considerable influence on the financial and business policies, including close family members or intermediate companies. A major influence on the financial and business policy can hereby be based on a stake in the parent of 20% or more, sitting on the Management Board or on the supervisory board of the parent or holding another key role in the management. Accordingly, only the members of the Supervisory Board and the Management Board are close persons. There are no other close persons.

The Mann Familien-Beteiligungsgesellschaft mbH & Co. KG and Hummel Familien-Beteiligungsgesellschaft mbH & Co. KG, which together hold 83.3% of MANN+HUMMEL International GmbH & Co KG, exercise a significant influence as related companies. Transactions with these shareholders are limited to the distribution of dividends for 2019 in the amount of EUR 5.3 million (previous year EUR 5.2 million). Furthermore, the other shareholders received dividends for the current fiscal year in the amount of EUR 1.1 million (previous year EUR 1.4 million). In addition, further withdrawals by the shareholders in the amount of EUR 6.0 million (previous year EUR 4.6 million) were made in the fiscal year.

The transactions with related companies and the receivables and payables existing as at the balance sheet date essentially result from the usual business activities and are the following:

EUR million	Joint venture	Associates	Other investees
2019			
Deliveries made and services provided			
Sale of goods	0.0	4.9	0.0
Services	0.0	0.0	0.0
Other services	0.0	0.0	0.0
Deliveries received and services procured			
Sale of goods	0.1	3.9	0.0
Services	0.0	1.0	0.3
Other services	2.3	0.1	0.4
Receivables	0.0	2.2	0.0
Liabilities	4.2	2.0	0.0

EUR million	Joint venture	Associates	Other investees
2018			
Deliveries made and services provided			
Sale of goods	0.0	5.1	0.0
Services	0.0	0.0	0.0
Other services	0.0	0.0	0.0
Deliveries received and services procured			
Sale of goods	0.0	0.0	0.1
Services	0.0	0.0	0.4
Other services	0.0	0.0	2.7
Receivables	0.0	0.6	0.0
Liabilities	0.0	0.0	1.4

40. Remuneration of the Management and Supervisory Boards

Management Board

Werner Lieberherr, Switzerland
Chairman (up to October 9, 2019)

Nicolaas Zerbst, Stuttgart
(from October 9, 2019)

Emese Weissenbacher,
Bietigheim-Bissingen

Kurk Wilks, Portage, MI, USA
President & Chief Executive Officer
(from January 1, 2020)

Supervisory Board of MANN+HUMMEL Verwaltungs GmbH

Thomas Fischer, Schalksmühle
Chairman

Ralph Kraut, Kirchheim am Neckar
Works Council Chairman MANN+HUMMEL
Ludwigsburg

Helga Huber, Taufkirchen/Vils
Vice-Chairman
Works Council Chairman MANN+HUMMEL Marklkofen

Jens Michael Hummel, Stuttgart

Bernhard Wimmer, Rimbach
Plant Head Marklkofen

Johannes Winklhofer, Stockdorf
Managing Partner
iwis Group

Susanne Thomas, Ludwigsburg
Trade Union Secretary IG Metall,
Ludwigsburg office

Gerhard Weis, Römerberg
Works Council Chairman MANN+HUMMEL Speyer

Dr. Johannes Fritz, Bad Soden
Managing Director Seedamm Vermögensverwaltung GmbH
(up to October 31, 2019)

Robert Grashei, Altdorf
1st authorized representative of IG Metall, Landshut

Dr. Karin Exner-Wöhrer, Vienna
Chairwoman of the Board of Directors
Salzburg Aluminium AG
(since November 1, 2019)

Dr. Rolf Heintzeler, Munich
Insurance company executive

Walter Gehl, Frankfurt/Main
(up to April 30, 2020)

Dr. Klaus Peter Fouquet, Vaihingen/Enz
(from May 1, 2020)

The current salaries of the active members of the Management Board for the 2019 fiscal year are EUR 3.6 million (previous year EUR 3.0 million). The expenses for the pension entitlements of the active members of the Management Board earned in the current fiscal year amount to EUR 0.3 million (previous year EUR 0.6 million).

The provisions for pensions for former members of the Management Board and their survivors is EUR 17.3 million (previous year EUR 15.1 million).

The salaries of the Supervisory Board for the 2019 fiscal year amount to EUR 0.5 million (previous year EUR 0.5 million).

In addition, companies of the MANN+HUMMEL Group have not conducted any transactions subject to contributions with members of the management or the Supervisory Board of the MANN+HUMMEL Group as well as other members of the management in key roles or with companies on whose management or supervisory committees these persons sit. This also applies to close family members of this Group of persons.

41. Staff

The workforce at the MANN+HUMMEL Group was an annual average of 22,013 (previous year 21,149), of whom 7,282 (previous year 7,081) are employees and 14,731 (previous year 14,068) wage earners.

42. Fees of the auditor

The fee of the auditor of the consolidated financial statements, Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft, Stuttgart, reported in the consolidated financial statements is EUR 2.3 million (previous year EUR 2.3 million) and consists of auditing services in the amount of EUR 0.7 million (previous year EUR 0.6 million), tax advisory services of EUR 1.3 million (previous year EUR 1.4 million) and other services of EUR 0.3 million (previous year EUR 0.3 million).

43. Indication of Section 264 (3) and Section 264b No. 3 HGB

The companies, MANN+HUMMEL East European GmbH & Co. KG, Ludwigsburg, MANN+HUMMEL Vokes Air GmbH & Co. OHG, Sprockhövel and MANN+HUMMEL Innenraumfilter GmbH & Co. KG, Himmelkron/Germany, MANN+HUMMEL Automotive GmbH, Bad Harzburg/Germany, Microdyn-Nadir GmbH, Wiesbaden/Germany, have made use of the exemption in accordance with Section 263(3) or Section 264b(3) of the German Commercial Code (HGB).

44. Events after the balance sheet date

In light of the global economic crisis in connection with the spread of the novel coronavirus (COVID-19), the company is confronted with challenges that cannot yet be fully assessed. This will have a significant impact on the expected business development in 2020. MANN+HUMMEL is trying to counteract this development with suitable countermeasures. We refer to our comments in the status report.

45. List of shareholdings

Company name and domicile	Consolidation status[1]	Equity interest %
1. Subsidiaries		
Germany		
MANN+HUMMEL Holding GmbH, Ludwigsburg	F	83.3
MANN+HUMMEL Verwaltungs GmbH, Ludwigsburg	F	83.3
MANN+HUMMEL Beteiligungs- und Verwaltungsgesellschaft mbH, Ludwigsburg	F	83.3
MANN+HUMMEL Filtration GmbH, Ludwigsburg	F	83.3
MANN+HUMMEL GmbH, Ludwigsburg	F	83.3
MANN+HUMMEL AUTOMOTIVE GmbH, Bad Harzburg	F	83.3
MANN+HUMMEL Innenraumfilter GmbH & Co. KG, Himmelkron	F	83.3
MANN+HUMMEL Innenraumfilter Verwaltungs GmbH, Himmelkron	F	83.3
MANN+HUMMEL Komplementär GmbH, Ludwigsburg	F	83.3
MANN+HUMMEL East European Holding GmbH, Ludwigsburg	F	83.3
MANN+HUMMEL East European GmbH & Co. KG, Ludwigsburg	F	83.3
MANN+HUMMEL East European Verwaltungs GmbH, Ludwigsburg	F	83.3
MANN+HUMMEL Vokes Air GmbH & Co. OHG, Sprockhövel	F	83.3
MANN+HUMMEL MRH Filter Beteiligungsgesellschaft mbH, Sprockhövel	F	83.3
MANN+HUMMEL Atex Filter Verwaltungsgesellschaft mbH, Sprockhövel	F	83.3
MN Beteiligungsgesellschaft mbH, Wiesbaden	F	83.3
MICRODYN-NADIR GmbH, Wiesbaden	F	83.3
I2M GmbH, Alzenau	N	83.3
Europe		
MANN+HUMMEL (UK) Ltd., Wolverhampton/UK	F	83.3
INDUSTRIAL FILTERS Ltd., Wolverhampton/UK	F	83.3
MANN+HUMMEL HYDROMATION N. V., Hasselt/Belgium	F	83.3
MANN+HUMMEL (CZ) v.o.s., Nová Ves/Czech Republic	F	83.3
MANN+HUMMEL Service s.r.o., Nová Ves/Czech Republic	F	83.3
MANN+HUMMEL Innenraumfilter s.r.o., Uherský Brod/Czech Republic	F	83.3
MANN+HUMMEL IBERICA S.A.U., Saragossa/Spain	F	83.3
MANN+HUMMEL FRANCE SAS, Laval/France	F	83.3
MANN+HUMMEL ITALIA S.r.l., Turin/Italy	F	83.3
MANN+HUMMEL OOO, Moscow/Russian Federation	F	83.3
MANN+HUMMEL Filtration Technology Ukraine Ltd., Krasiliv/Ukraine	F	83.3
MANN+HUMMEL BA J.S.C., Tesanj/Bosnia-Herzegovina	F	97.2

1 F: Consolidated Group; E: Accounted for at equity;
N: No inclusion due to irrelevance in accordance with Section 296(2) HGB or Section 311(2) HGB

Company name and domicile	Consolidation status[1]	Equity interest %
MANN VE HUMMEL FİLTRE SANAYİ VE TİCARET LİMİTED ŞİRKETİ, Istanbul/Turkey	F	83.3
MANN+HUMMEL Vokes Air Treatment Holdings Ltd., Burnley/UK	F	83.3
MANN+HUMMEL Vokes-Air Limited, Burnley/UK	F	83.3
MANN+HUMMEL Filtration Technology UK Ltd., Riverside/UK	F	83.3
MANN+HUMMEL Vokes Air Filtration Ltd., Burnley, UK	F	83.3
MANN+HUMMEL Wheway Plc, Burnley, UK	F	83.3
MANN+HUMMEL Vokes Air BV, Ijsselstein/Netherlands	F	83.3
MANN+HUMMEL Vokes Air AS, Hvidovre/Denmark	F	83.3
MANN+HUMMEL Vokes Air AG, Uster/Switzerland	F	83.3
MANN+HUMMEL Vokes Air GmbH, Vösendorf/Austria	F	83.3
MANN+HUMMEL Vokes Air Holding AB, Svenljunga/Sweden	F	83.3
MANN+HUMMEL Vokes Air AB, Svenljunga/Sweden	F	83.3
MANN+HUMMEL FT Poland Spolka z Ograniczona Odpowiedzialnoscia sp.k., Gostyn/Poland	F	83.3
MANN+HUMMEL FT Poland Spolka z Ograniczona Odpowiedzialnoscia, Gostyn/Poland	F	83.3
Jack Filter Lufttechnik GmbH/Steindorf, Austria	F	83.3
Jack Filter Hungaria Kft., Polgárdi/Hungary	F	83.3
JFI Service Kft., Polgárdi/Hungary	F	83.3
MICRODYN-NADIR Oltremare S.p.A.	F	83.3
America		
MANN+HUMMEL INC., Wilmington, DE/USA	F	83.3
MANN+HUMMEL USA, INC., Portage, MI/USA	F	83.3
MANN+HUMMEL Purolator Filters LLC, Fayetteville/USA	F	83.3
I2M LLC, Raleigh NC, USA	N	83.3
MICRODYN TECHNOLOGIES INC., Raleigh, NC/USA	F	83.3
MANN+HUMMEL Filtration Technology US LLC, Gastonia, NC/USA	F	83.3
MANN+HUMMEL Filtration Technology Products Corp LLC, Gastonia, NC/USA	F	83.3
MANN+HUMMEL Filtration Technology Southern Holdings LLC, Gastonia, NC/USA	F	83.3
MANN+HUMMEL Filtration Technology International INC., Gastonia, NC/USA	F	83.3
MANN+HUMMEL Filtration Technology Canada ULC, Ayr, Ontario/Canada	F	83.3
MANN+HUMMEL MEXICO S.A. d. C. V., Santiago de Querétaro/Mexico	F	83.3
MANN+HUMMEL MEXICO SERVICIOS S.A. d. C. V., Santiago de Querétaro/Mexico	F	83.3
MANN+HUMMEL Filtration Technology Mexico S, de R.L.de C.V. , Ramos Arizpe/Mexico	F	83.3
MANN+HUMMEL Filtration Technology Distribution Mexico S.A. de C.V., Ramos Arizpe/Mexico	F	83.3
MANN+HUMMEL BRASIL LTDA., Indaiatuba/Brazil	F	83.3
MANN+HUMMEL ARGENTINA S.A., Buenos Aires/Argentina	F	83.3
MANN+HUMMEL Filtration Technology Venezuela C.A., Maracay/Venezuela	N	83.3

1 F: Consolidated Group; E: Accounted for at equity;
N: No inclusion due to irrelevance in accordance with Section 296(2) HGB or Section 311(2) HGB

Company name and domicile	Consolidation status [1]	Equity interest %
MANN+HUMMEL Filtration Technology Distribution Venezuela C.A., Maracay/Venezuela	N	83.3
MANN+HUMMEL Filtration Technology Commercial Distribution C.A., Maracay/Venezuela	N	83.3
MANN+HUMMEL COLOMBIA S.A.S., Bogotá, D.C./Columbia	F	83.3
MANN+HUMMEL LS+E HOLDING INC, Wilmington, DE/USA	F	83.3
Tri-Dim Filter Corporation, Louisa, VA/USA	F	83.3
Tri-Dim Canada Inc., Saint John, New Brunswick/Canada	F	83.3
BVCA Breton, Verrechia, Goyetta, Environment, Quebec/Canada	F	83.3
Hardy Filtration Inc., Trois Rivières/Canada	F	83.3
Asia		
MANN+HUMMEL WATER SOLUTIONS HOLDING PTE. LTD., Singapore/Singapore	F	83.3
MANN+HUMMEL FILTER TECHNOLOGY (S.E.A.) PTE. LTD., Singapore/Singapore	F	83.3
MICRODYN-NADIR Singapore Pte. Ltd., Singapore/Singapore	F	83.3
MANN+HUMMEL Middle East FZE, Dubai/United Arab Emirates	F	83.3
MANN and HUMMEL Thailand Ltd., Bangkok/Thailand	F	83.3
MANN+HUMMEL KOREA CO. LTD., Wonju/South Korea	F	83.3
MANN+HUMMEL JAPAN Ltd., Shin-Yokohama/Japan	F	83.3
MANN AND HUMMEL FILTER PRIVATE LTD., Bangalore/India	F	83.3
CHANGCHUN MANN+HUMMEL FAWER FILTER CO. LTD., Changchun/PR China	F	50.0
MANN+HUMMEL Filter (CHONGQING) CO., LTD., Chongqing/VR China	F	83.3
MANN+HUMMEL FILTER (SHANGHAI) CO. LTD., Shanghai/PR China	F	83.3
MANN+HUMMEL FILTER TRADING (SHANGHAI) CO. LTD., Shanghai/PR China	F	83.3
MANN+HUMMEL (CHINA) CO. LTD., Shanghai/PR China	F	83.3
MANN+HUMMEL FILTER (JINAN) CO. LTD., Jinan/PR China	F	83.3
MANN+HUMMEL Haoye Filter (Bengbu) Co., Ltd., Bengbu/PR China	F	83.3
MICRODYN-NADIR (Xiamen) Co., Ltd., Xiamen/PR China	F	83.3
MANN+HUMMEL Filtration (Longkou) Co., Ltd., Longkou City/PR China	F	83.3
MANN+HUMMEL Ventures Pte. Ltd., Singapore/Singapore	F	83.3
MANN+HUMMEL (CHINA) LIFE SCIENCES AND ENVIRONMENTAL CO., LTD., Kunshan, China	F	83.3
Australia		
MANN AND HUMMEL AUSTRALIA (PTY) LTD., Arndell Park NSW, Australia	F	83.3
Africa		
MANN AND HUMMEL Filters South Africa (Pty) Ltd., Boksburg/South Africa	F	83.3

1 F: Consolidated Group; E: Accounted for at equity;
N: No inclusion due to irrelevance in accordance with Section 296(2) HGB or Section 311(2) HGB

Company name and domicile	Consolidation status [1]	Equity interest %
2. Associates		
ABC S.A., Cordoba/Argentina	E	25.0
Thermal Control Systems Automotive, Changé, France	E	33.3
3. Associates		
Seccua Holding AG, Steingaden/Germany	N	16.7

1 F: Consolidated Group; E: Accounted for at equity;
N: No inclusion due to irrelevance in accordance with Section 296(2) HGB or Section 311(2) HGB

Ludwigsburg, May 14, 2020

MANN+HUMMEL International GmbH & Co KG

The Management Board

Kurk Wilks
Emese Weissenbacher
Nicolaas Zerbst

INDEPENDENT AUDITOR'S REPORT

To MANN+HUMMEL International GmbH & Co. KG

Opinions

We have audited the consolidated financial statements of MANN+HUMMEL International GmbH & Co. KG, Ludwigsburg, and its subsidiaries (the Group), which comprise the consolidated profit and loss statement and consolidated statement of comprehensive income for the fiscal year from 1 January to 31 December 2019, the consolidated balance sheet as of 31 December 2019, the consolidated cash flow statement and the consolidated changes in equity for the fiscal year from 1 January to 31 December 2019, and the notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group status report of MANN+HUMMEL International GmbH & Co. KG, which has been combined with the status report of the Company, for the fiscal year from 1 January to 31 December 2019.

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 (1) 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 31 December 2019 and of its financial performance for the fiscal year from 1 January to 31 December 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 status report.

Basis for the opinions

We conducted our audit of the consolidated financial statements and of the group status 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.

Responsibilities of the executive directors and the supervisory board for the consolidated financial statements and the group management report

The executive directors are responsible for the preparation of 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 executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are 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 executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's responsibilities for the audit of the consolidated financial statements and of the group management report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with 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 executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' 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 audit 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 executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors 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, 15 May 2020

Ernst & Young GmbH
Wirtschaftsprüfungsgesellschaft

Meyer	Heubach
Wirtschaftsprüfer	Wirtschaftsprüfer
[German Public Auditor]	[German Public Auditor]

IMPRINT

Publisher
MANN+HUMMEL
International GmbH & Co. KG
Ludwigsburg / Germany

Layout and production
wob AG
Viernheim / Deutschland

Photo credits
Michael Fuchs
Remseck / Germany