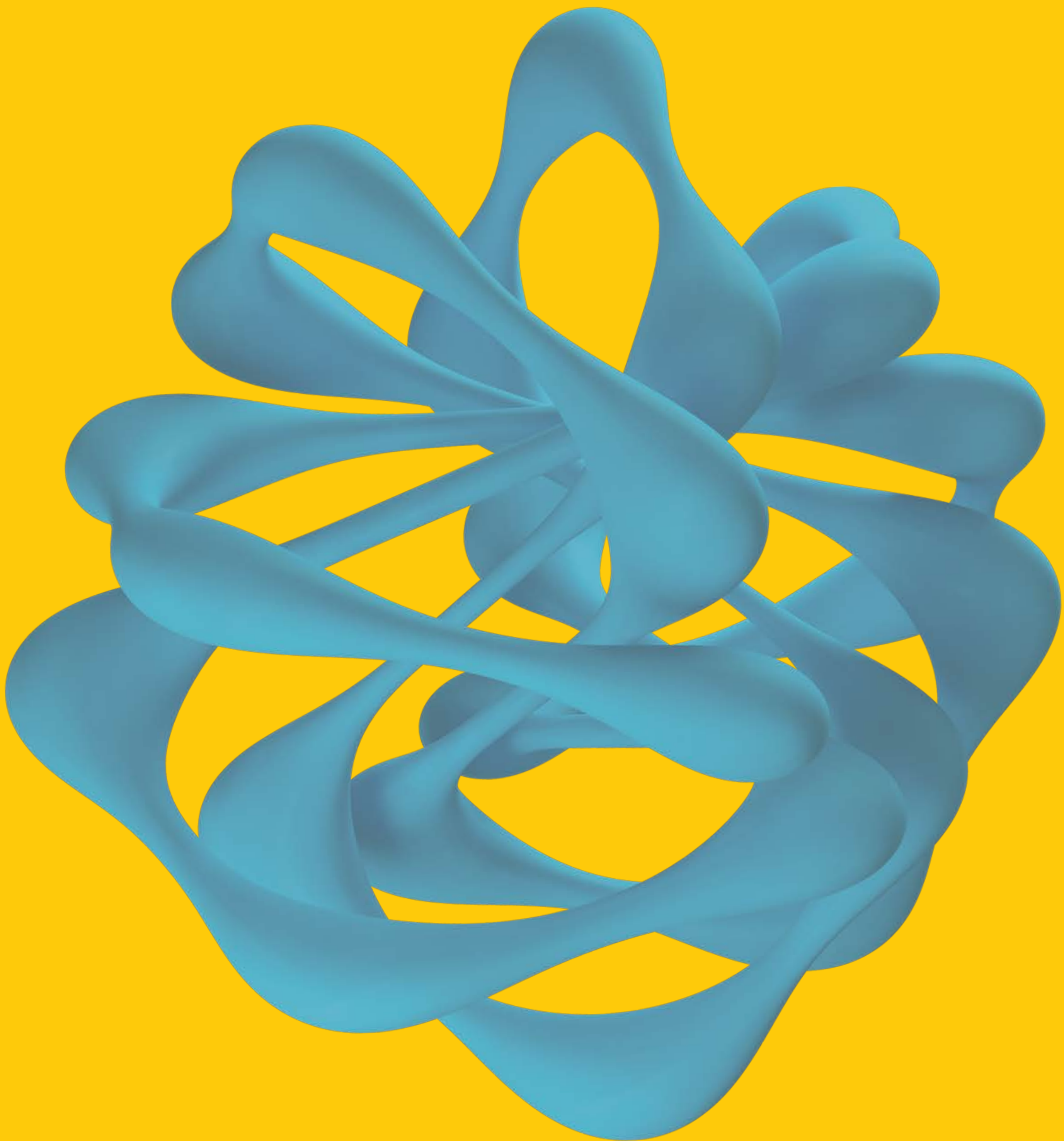
MERCK



2020

HALF-YEARLY FINANCIAL REPORT

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This half-yearly financial report contains certain financial indicators such as operating result (EBIT), EBITDA, EBITDA pre, business free cash flow (BFCF), free cash flow, net financial debt and earnings per share pre, which are not defined by International Financial Reporting Standards (IFRS). These financial indicators should not be taken into account in order to assess the performance of Merck in isolation or used as an alternative to the financial indicators presented in the consolidated financial statements and determined in accordance with IFRS.

The figures presented in this half-yearly financial report have been rounded. This may lead to individual values not adding up to the totals presented.

The Annual Report for 2019 has been optimized for mobile devices and is available on the Web at **ar.merckgroup.com/2019/**.

Merck – In brief

MERCK GROUP

Key figures

€ million	Q2 2020	Q2 2019	Change	Jan.–June 2020	Jan.–June 2019	Change
Net sales	4,119	3,971	3.7%	8,489	7,717	10.0%
Operating result (EBIT)[1]	491	618	–20.6%	1,207	997	21.0%
Margin (% of net sales)[1]	11.9%	15.6%		14.2%	12.9%	
EBITDA[2]	1,048	1,074	–2.5%	2,195	1,927	13.9%
Margin (% of net sales)[1]	25.4%	27.0%		25.9%	25.0%	
EBITDA pre[2]	1,074	1,139	–5.7%	2,256	2,068	9.1%
Margin (% of net sales)[1]	26.1%	28.7%		26.6%	26.8%	
Profit after tax	289	471	–38.6%	747	660	13.1%
Earnings per share (€)	0.67	1.08	–38.0%	1.72	1.52	13.2%
Earnings per share pre (€)[1]	1.30	1.54	–15.6%	2.80	2.67	4.9%
Business free cash flow[1]	813	701	16.0%	1,474	1,246	18.3%

[1] Not defined by International Financial Reporting Standards (IFRSs).

MERCK GROUP

Net sales by quarter

€ million

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EBITDA pre[1] by quarter

€ million

[1] Not defined by International Financial Reporting Standards (IFRSs).

Developments within the Group and R&D

Merck

We are Merck, a vibrant science and technology company. Science is at the heart of everything we do. It drives the discoveries we make and the technologies we create. Our work makes a positive difference to millions of people's lives every day.

In Healthcare, we discover unique ways to treat the most challenging diseases such as multiple sclerosis and cancer. Our Life Science experts empower scientists by developing tools and solutions that help deliver breakthroughs more quickly. And in Performance Materials, we develop science that sits inside technologies and changes the way we access and display information.

Everything we do is fueled by a belief in science and technology as a force for good. A belief that has driven our work since 1668, and will continue to inspire us to find more joyful and sustainable ways to live. We are curious minds dedicated to human progress.

We hold the global rights to the Merck name and brand. The only exceptions are Canada and the United States. In these countries, we operate as EMD Serono in the Biopharma business, as MilliporeSigma in the Life Science business and as EMD Performance Materials in the high-tech materials business.

We had 57,523 employees worldwide on June 30, 2020 compared with 53,051 on June 30, 2019.

Changes in Merck Executive Board

On July 13, we announced that the Board of Partners of E. Merck KG appointed Belén Garijo as Vice Chairman of the Executive Board of Merck KGaA with immediate effect. She maintains her current responsibility as CEO Healthcare along with responsibility for the Group functions Human Resources and Environment, Health, Safety, Security, Quality. Udit Batra, CEO Life Science and responsible for Information Technology, has decided to pursue other opportunities outside Merck. Effective July 13, Mr. Batra ceased to be General Partner of Merck KGaA, E. Merck KG and Executive Board Member of Merck KGaA.

This section of the present half-yearly report summarizes the highlights of the first half of 2020 at Merck including those in research in development. A detailed description of Merck and its business sectors can be found in the Annual Report for 2019 (*ar.merckgroup.com/2019*).

Our efforts in the fight against Covid-19

For several months now, the world has been facing an unprecedented pandemic. We do everything possible to protect the health and safety of our employees and their families. At the same time, we ensure the continuation of our business activities for the benefit of many patients, scientists and customers who rely on us. Even before the global spread of Covid-19, we had supported renowned local aid organizations in China with donations of money and supplies.

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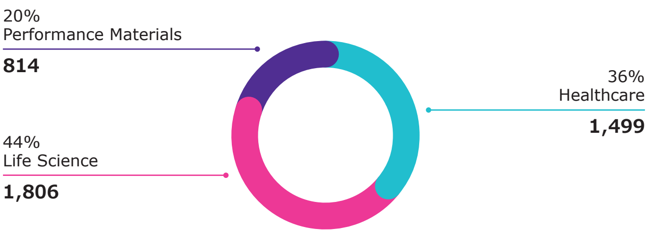
Net sales by business sector – Q2 2020

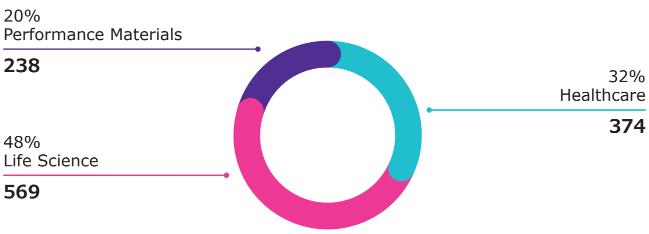
€ million / in % of net sales



MERCK GROUP

EBITDA pre[1] by business sector[2] – Q2 2020

€ million / in %



[1] Not defined by International Financial Reporting Standards (IFRSs).

[2] Not presented: Decline in Group EBITDA pre by € −107 million due to Corporate and Other.

We are convinced that as a science and technology company, we can contribute to meeting the global challenges posed by Covid-19 and are taking action in many different ways:

- On March 26, a consortium of healthcare and life sciences companies together with the Bill & Melinda Gates Foundation announced an important collaboration to accelerate the development, manufacture, and delivery of vaccines, diagnostics, and treatments for Covid-19. All partners contribute a range of assets, resources, and expertise needed to identify effective and scalable solutions to the pandemic, which is affecting billions worldwide. We are part of this group.
- On April 2, we announced that due to the shortage of disinfectant caused by the Covid-19 pandemic, we have built up our own capacities to produced disinfectant at our Darmstadt and Wiesbaden sites and are donating 150,000 liters of this to the state of Hesse.
- On April 7, we announced that, as part of our global efforts to investigate potential therapies for Covid-19 and our support of independent research by the World Health Organization (WHO), we are donating 290,000 units of our active ingredient interferon beta-1a (Rebif®) as a clinical trial drug for the WHO SOLIDARITY study*. The SOLIDARITY study is investigating various potential treatments for Covid-19.
- On April 14, we announced that with our help, the Jenner Institute in Oxford, UK, has laid the foundation for the industrial production of its Covid-19 vaccine candidate ChAdOx1 nCoV-19. A joint team reduced the process development time from one year to two months – a critical step to manufacturing a vaccine on an industrial scale.
- On May 12, we announced that we would be donating a total of two million FFP2 masks, including to Germany, France and the United States. Merck is covering the costs of purchasing and transporting the personal protective equipment. The donation is mainly intended to support healthcare workers; the relevant authorities and organizations will handle the distribution of the masks.
- On May 27, we announced an extension of our ongoing collaboration with Baylor College of Medicine in Houston, Texas, USA. Together we are working on a process development approach to accelerate the production of Baylor's Covid-19 vaccine candidates, including the vaccine candidate RBD219-N1, which is expected to enter clinical trials later this year. We will help to accelerate their suitability for large-scale manufacturing. The collaboration will focus on improvements to production efficiency, yield, robustness, scalability and costs.
- On June 25, we announced the U.S. Food and Drug Administration (FDA) has cleared the investigational new drug application (IND) for our investigational compound M5049 for the treatment of patients with Covid-19 pneumonia. We will now initiate a Phase II randomized, controlled clinical study to evaluate the safety and efficacy of M5049 in this patient population. More information on this can be found under "Healthcare".

Healthcare

BIOPHARMA

Neurology and Immunology

- At the European Academy of Neurology 2020 Virtual Congress that took place from May 23–26, we presented late-breaking data from the Phase II open-label extension study on the long-term efficacy and safety profile of evobrutinib, an investigational, oral, highly selective Bruton's Tyrosine Kinase (BTK) inhibitor in adult patients with relapsing multiple sclerosis. It is the first and only BTK inhibitor to demonstrate high and sustained efficacy through 108 weeks in clinical studies. No new safety signals were identified in the 60-week open-label extension, which is consistent with data seen in more than 1,200 patients who have received evobrutinib to date, across MS and other conditions.

* Rebif® (interferon beta-1a, solution for subcutaneous injection in pre-filled syringe) is indicated for the treatment of relapsing multiple sclerosis. To date, Rebif® is not approved by any regulatory authority for the treatment of Covid-19 or for use as an antiviral agent.

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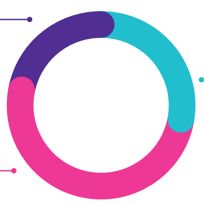
Business free cash flow[1] by business sector[2] – Q2 2020
€ million / in %



MERCK GROUP

Employees by region as of June 30, 2020
Number / in%

[1] Not defined by International Financial Reporting Standards (IFRSs).

[2] Not presented: Decline in Group business free cash flow by € –125 million due to Corporate and Other.

- On May 27, we announced that the U.S. Food and Drug Administration (FDA) has approved the inclusion of new safety data on pregnancy and breastfeeding in the prescribing information for Rebif® (interferon beta 1a). The label will no longer have the pregnancy category C designation and contains additional data to assist healthcare providers in assessing benefit versus risk and support counseling of pregnant women and nursing mothers living with MS. The label update is based on data from a large register-based study, as well as other published studies over several decades. More than 50 countries world-wide have now updated the Rebif® label, including the countries in the European Union (EU).
- Mavenclad® (cladribine tablets), the only disease-modifying MS treatment that can deliver and sustain up to 4 years of disease control with a maximum of 20 days of oral dosing in the first 2 years, was approved in Morocco, Thailand, Oman, Russia, Macau, Kosovo and El Salvador during the first half of 2020, bringing the number of Mavenclad® approvals world-wide up to a total of 79 countries, including countries in the EU, Canada, Australia and the U.S.
- On June 25, we announced that the FDA has cleared our investigational new drug application (IND) for M5049 for the treatment of patients with Covid-19 pneumonia, and that we will initiate a Phase II randomized, controlled clinical study evaluating the safety and efficacy of M5049 in this patient population. The aim of the study is to investigate if M5049 intervention at a critical point in the course of Covid-19 disease may prevent or ameliorate the hyper-inflammatory response in patients with Covid-19 pneumonia and prevent progression to ‘cytokine storm’. Successful intervention with the investigational drug may reduce life-threatening complications of Covid-19, including severe respiratory symptoms that often necessitate further medical interventions such as mechanical ventilation.

Oncology

- On January 6, we and our Alliance partner Pfizer announced topline results from the Phase III JAVELIN Bladder 100 trial, which showed that patients with previously untreated locally advanced or metastatic urothelial carcinoma (UC) whose disease did not progress on induction chemotherapy and who were randomized to receive first-line maintenance therapy with Bavencio® (avelumab) and best supportive care (BSC) lived significantly longer than those who received BSC only.
  - On April 9, Merck and Pfizer announced that the FDA granted Breakthrough Designation for Bavencio® in first-line maintenance treatment of locally advanced or metastatic UC, and that the companies had submitted a supplemental Biologics License Application for review under the FDA’s Real-Time Oncology Review pilot program.
  - On June 22, we announced that the European Medicines Agency has validated for review the Type II variation application for Bavencio® for this proposed indication. A supplemental application has also been submitted in Japan.
  - These applications were based on the Phase III JAVELIN Bladder 100 data, which were featured in the official press program for the ASCO20 Virtual Scientific Program (Abstract #LBA1). The data showed that Bavencio® as first-line maintenance significantly improved overall survival in the primary population of all randomized patients by 7.1 months, with a 31% reduction in the risk of death compared with induction chemotherapy followed by BSC alone.
- On March 2, Erbitux® (cetuximab) was approved by the National Medical Products Administration of China for the first-line treatment of Chinese patients with recurrent and/or metastatic squamous cell carcinoma of the head and neck (SCCHN) in combination with platinum-based therapy with fluorouracil.
- On March 25, tepotinib was approved by the Japanese Ministry of Health, Labour and Welfare (MHLW) for the treatment of patients with unresectable, advanced or recurrent non-small cell lung cancer (NSCLC) with METex14 skipping alterations. The treatment, known as Tepmetko® in Japan, was the first MET inhibitor to have received a regulatory approval for NSCLC with MET gene alterations.
- On May 29, The New England Journal of Medicine published the primary analysis of the Phase II VISION study of tepotinib in advanced NSCLC with METex14 skipping alterations.
- In June, the MHLW granted SAKIGAKE ’fast-track’ designation for the investigational bifunctional fusion protein bintrafusp alfa (M7824) as a potential treatment for patients with biliary tract cancer.
- On June 30, the FDA approved Bavencio® for the maintenance treatment of patients with locally advanced or metastatic UC that has not progressed with first-line platinum-containing chemotherapy, based on the results of JAVELIN Bladder 100. The FDA also converted the accelerated approval of Bavencio® for the treatment of patients with locally advanced or metastatic UC who have disease progression during or following platinum-containing chemotherapy, or who have disease progression within 12 months of neoadjuvant or adjuvant treatment with platinum-containing chemotherapy, based on tumor response rate and duration of response, to full approval.

ASCO 2020

- We had a significant presence at the ASCO20 Virtual Scientific Program. Data from more than 30 abstracts across multiple tumor types highlight our biology-driven approach with breakthrough innovations and significant advances in cancer care across our oncology assets. Potential first-in-class / best-in-class early- and late-stage pipeline compounds, and investigational uses of our approved medicines were featured at the meeting.
  - Data from the Phase III JAVELIN Bladder 100 study (abstract# LBA1) of Bavencio® in the first-line maintenance treatment of patients with locally advanced or metastatic UC were highlighted in the ASCO presscast on May 26 and at the plenary session on May 31.
  - In addition, a late-breaking oral presentation of results of the investigator-sponsored, multicenter Phase II TROPHIMMUN study of Bavencio® for the treatment of chemotherapy-resistant gestational trophoblastic tumors (cohort A), was also featured in the ASCO press program.
  - Several oral presentations for both the TPExtreme ISS and the independent BEACON-CRC study data featuring Erbitux® demonstrated its continued legacy as the cornerstone in the treatment of SCCHN and reinforce its value across the continuum of care in metastatic colorectal cancer.
  - For tepotinib, results from primary analysis of the Phase II VISION study and the first patient-reported outcomes of health-related quality of life for patients with METex14 skipping NSCLC were shared at the meeting.
  - For bintrafusp alfa, an investigational bifunctional fusion protein targeting TGF-β and PD-L1, two-year follow-up from a Phase I global study in second-line NSCLC was presented. These data continue to highlight the value of this first-in-class bifunctional supposed mode of action in NSCLC and additionally, the potential to offer new ways to fight difficult-to-treat cancers beyond PD-1 / PD-L1 in the future.

Fertility

- The Pergoveris® pen, a convenient and ready-to-use fertility combination treatment option for women with severe follicle-stimulating hormone and luteinizing hormone deficiency, was successfully introduced in several countries in Europe, Asia-Pacific and Latin America by the end of 2019. Additional launches in Slovakia, Indonesia and Panama followed in the beginning of 2020, and more launches are scheduled for the second half of the year. To date, an estimated three million babies have been born with the help of our Fertility portfolio.
- During the challenging situation in the face of the Covid-19 pandemic, we supported patients with advancing their treatment at home with the release of our Gonal-f® 150 IU pen. Recently launched in Germany, the 150 IU pen will soon be available in other countries. Studies conducted with nurses highlighted both the ease of use and the patient-friendliness of our comprehensive pen portfolio.
- Our Fertility franchise launched the Merck Digital Congress Center in March supporting a seamless switch to digital interactions with customers. The platform provides relevant scientific information for healthcare professionals. As of today, the center has over 11,000 registered users (physicians) and is free of charge for all healthcare professionals.

General Medicine and Endocrinology

- Our new formulation of Euthyrox® (levothyroxine) for the treatment of hypothyroidism received further regulatory approvals in the second quarter, resulting in a total of 39 countries in which it has been approved.
- Glucophage®, containing the active ingredient metformin, is now approved in more than 58 countries for prediabetes when lifestyle intervention is not enough to control the condition.
- We continued to pursue selected patient solutions that go beyond the pill in areas such as medication adherence (via our partner Medisafe) where we are observing strong and consistent adherence rates higher than 80%. We are also exploring partnerships for offering digital solutions to support prediabetic patients' lifestyle changes. In China, we provide education on disease awareness via our partnership with Ali Health.
- In the second quarter, the number of new patients using the Easypod® electromechanical injection device for treatment with Saizen® (somatropin) continued to grow, bringing the total number of patients enrolled on Easypod® Connect to 23,006. Saizen® is our main endocrinology product and is indicated for the treatment of growth hormone deficiency in children and adults.
- We continued the roll-out of Aluetta®, our new pen for the injection of Saizen®, taking the total number of countries where it is currently available to 21.

ALLERGOPHARMA

- On February 19, we signed an agreement to sell our allergy business Allergopharma to Dermapharm Holding SE. The transaction closed on March 31. By divesting Allergopharma, we are further sharpening the focus of the Healthcare business sector on the development of innovative medicines for difficult-to-treat diseases.

Life Science

- In the first half of 2020, we continued to focus on meeting customer needs by launching some 7,700 products across the Research Solutions, Process Solutions and Applied Solutions business units, including those launched through our "faucet program" for antibodies, reference materials, chemicals and nanomaterials.
- In March, we launched a dedicated Covid-19 webpage on our e-Commerce platform, providing a one-stop-shop of approximately 200 products and corresponding information for academic labs and biopharmaceutical companies working to combat the virus.
- In April, we announced our grant to Beyond Benign, a green chemistry education nonprofit with which we have collaborated since 2019. This support will allow Beyond Benign to continue developing laboratory resources for universities looking to include green chemistry in their courses and programs.

Research Solutions

- In January, we announced our opening of a non-profit, high-tech skill development center in collaboration with the Council of Scientific and Industrial Research's Institute of Microbial Technology (CSIR-IMTECH) to help Indian students build life science skills.

Process Solutions

- In February, we announced a global licensing agreement with ReForm Biologics, a pharmaceutical technology company in Woburn, Massachusetts, USA, for excipient development and commercialization.
- In April, we were awarded our second U.S. patent for CRISPR-chrom technology, making us the only provider with a patent covering the fusion of chromatin modulating peptides to CRISPR proteins. This gene-editing technology improves access to the genome for more efficient editing.
- Additionally, we joined The Jenner Institute, Oxford, United Kingdom, in their announcement that they laid the foundation for large-scale production of the Covid-19 vaccine candidate, ChAdOx1 nCoV-19, which leveraged our previous collaborative work to develop the manufacturing process for a rabies vaccine candidate. Our support empowered the development of the manufacturing process, which would normally take at least six months to a year, to take place in just two months' time.
- Also in April, we announced an expansion to include a second facility at our site in Carlsbad, California, USA, for our BioReliance® viral and gene therapy service offering. This € 100 million, 140,000-square-foot manufacturing facility will support viral and gene therapy production at the 1,000-liter scale using the Mobius® single-use equipment and is expected to open next year.
- Further, we unveiled Bio4C™ Software Suite, a first-of-its-kind digital ecosystem that combines process control, analytics and plant-level automation. As the next component of our BioContinuum™ Platform, this technology allows users to look across the entire manufacturing process versus individual operational units.
- In May, we were awarded two U.S. patents for foundational CRISPR-Cas9 technology. These grants, which support scientists and researchers in their work to advance gene therapy development programs, mark our 25th and 26th CRISPR patents worldwide and third and fourth in the U.S.
- Also in May, we announced an extension of our ongoing collaboration with Baylor College of Medicine in Houston, Texas, USA, which previously focused on vaccine development for tropical disease outbreaks, to now advance a vaccine manufacturing platform for Covid-19. Our joint work supports the accelerated transition to Phase 1 clinical trials, optimizing the production process to advance two Covid-19 vaccine candidates, including the CoV RBD219-N1 vaccine candidate originally developed to target SARS.
- In June, we joined 10x Genomics, a single cell and spatial genomics technologies company, in announcing our development of two linked technologies: single cell transcriptomics and pooled CRISPR screening. This is the first solution for simultaneous gene perturbation measurement and unbiased single-cell gene expression.

Applied Solutions

- In February, we introduced the BrightLab™ platform, our cloud-based software solution bringing inventory management and instrument connectivity functionalities to research scientists.
- Also in February, we announced that our business was selected by Elypta, a molecular diagnostics firm in Sweden, as the contract manufacturer for their research use only clinical diagnostic liquid biopsy kits.
- In March, we launched the LANEXO™ system for lab inventory, safety and compliance management. This first-to-market digital lab informatics solution offers radio-frequency identification (RFID) labels and cloud-based integration.
- In May, we launched the Milli-Q® IX 7003/7005/7010/7015 Type 2 water purification system, a redesigned version of our benchtop pure water system that provides laboratories with a reliable and consistent source of high-quality pure water. This is a smaller and more intuitive and ergonomic device than previous generations of the water purification system.

Performance Materials

- Performance Materials is advancing digital living. Our main focus is on the electronics market with our materials and solutions changing the way we access, store, process, and display information. In addition, our highly specialized, science-driven Surface Solutions business makes life more colorful.
- The business sector consists of three business units: Semiconductor Solutions, Display Solutions and Surface Solutions.
- We are well on track with the execution of our five-year Bright Future transformation program announced in 2018, focusing on adapting to new market realities and customer requirements. With the completion of the Intermolecular and Versum Materials acquisitions, we achieved two major milestones to transform Performance Materials into a strong solutions provider and leading player in the electronic materials market. The newly integrated organization went live on June 1, 2020.

Semiconductor Solutions

- Semiconductor Solutions is the largest business unit within Performance Materials. It consists of Delivery Systems & Services as well as Semiconductor Materials. Our Semiconductor Materials unit supplies products for every major production step in the wafer manufacturing process – including doping, lithography, patterning, deposition, planarization, etching and cleaning. Specialty cleans, photoresists and conductive pastes for semiconductor packaging round off the portfolio.
- Delivery Systems & Services (DS&S) develops and deploys equipment that enables safe and reliable delivery of hazardous materials in the manufacturing process of our customers. This unit also supports the installation of our equipment and the safe handling of our materials through MEGASYS® Gas and Chemical Services.
- DS&S is seeing increasing demand across the product portfolio including delivery equipment for specialty gases, deposition liquid precursors and chemical mechanical planarization (CMP) slurries to support customer capacity increases and technology-driven projects across the logic, memory and foundry segments.
- At our factory in Shanghai, we successfully completed manufacturing and shipping of the first liquid delivery systems from the CHEMGUARD® 100 product line. Previously, the factory was dedicated to manufacturing the GasSTAR® line, our latest generation of gas cabinets and bulk specialty gas systems, aimed at strengthening our presence in China.
- We are continuously developing new products with increasing process control requirements, including temperature, pressure and flow to support our customers' technology roadmaps.
- We continue to develop POLYFLOW®, our line of CMP slurry delivery systems and wafer carrier and quartzware cleaners.
- In Semiconductor Materials, our Thin Film Solutions business achieved significant breakthroughs in developing new organosilanes for conformal high-performance atomic layer deposition (ALD) and chemical vapor deposition (CVD) applications. Substantial progress has been made in developing high-purity metal-containing precursor offerings enabled by new engineered container delivery systems. We continue to focus on developing new spin-on dielectric

formulations for processes with improved dielectric characteristics for faster and better processors, servers and data storage density.
- We are seeing high interest in our DSA (Directed Self Assembly) platform from leading chipmakers who are currently looking for new patterning technologies. We are actively working with the leading players to collaborate on technology development. We are also engaging with the industry to address extreme ultraviolet (EUV) lithography technical and commercial challenges in both logic and memory. Additionally, our advanced integrated circuit (IC) cleans with selective etchants for 3D-NAND applications continue to see rising orders from leading memory companies. The sensor and 5G market in China continues to drive demand, creating growth opportunities for our photoresist, wafer cleans, and Klebosol portfolios.
- Our Planarization business continues to make significant progress in new product development in memory and logic across both slurry and cleans products. To better support our customers, in late June we inaugurated a new R&D center in Korea to develop next-generation chemical mechanical planarization (CMP) materials. The facility is in close proximity to many of our Korean customers and aims to provide local collaboration support and faster time to market.
- In the first half of 2020, our Specialty Gases business generated key findings in the etch gas technology program advancing the development of new chemistries that will enable more than 100-layer single-stack etching for advanced memory devices such as V-NAND. Executing on a key tenant of our strategy, we successfully introduced a new product offering in the rare gas industry with a strategic customer.
- Our materials R&D services provider Intermolecular is seeing significant customer interest on its extensive thin film materials properties library and expertise. These libraries have been generated through internal development and unit process development during customer programs. They provide a starting point for applications in ALD processes used throughout the semiconductor industry in the most advanced logic and memory devices.

Display Solutions

- Our Display Solutions business unit consists of the Liquid Crystals, Organic Light-Emitting Diodes (OLED), Photoresists, and Liquid Crystal Windows businesses. Currently, we are supporting our display customers in the development of novel display technologies and product concepts for applications, also addressing new requirements that have emerged from the Covid-19 pandemic.
- In Liquid Crystals our newest materials help us to maintain our position as the technology leader. With our XtraBright™ products, we were able to win new projects for large-area displays as well as high-resolution mobile devices.
- With our OLED materials, the business unit is contributing to the fast-growing market of flexible displays that includes foldable smartphones and rollable TVs. Our OLED materials have qualified for all upcoming free-form display-based products that will enter the market this year. To further strengthen our capability to drive innovations in the fast-growing OLED market, the business is looking into new opportunities afforded by the OLED patents acquired in April from Konica Minolta. The acquired portfolio comprises over 700 patent families for OLED display applications and will further boost our OLED development pipeline.
- Our photoresist materials are also being used in flexible displays. Our low-temperature processable positive tone photoresists are widely used to pattern on-cell touch sensors. These sensors enable a thinner display structure which is crucial for foldable devices.
- In June, we announced that our Liquid Crystal Windows business had entered into a commercial partnership with Guardian Glass to commission sales of eyrise® dynamic liquid crystal windows. The strategic deal aims to expand the customer base of our Liquid Crystal Windows business by leveraging additional distribution channels. Our Liquid Crystals Windows business also inaugurated an experience lab at its newly transformed headquarters in Veldhoven, the Netherlands, to showcase the capabilities of our liquid crystal glass. The redesigned facility creates an interactive environment that offers solar control and privacy for employees, and a space where visitors can experience the benefits first-hand.

Surface Solutions

- The core markets for Surface Solutions are automotive coatings, cosmetics, and, to a smaller extent, industrials. We are serving these markets with functional and decorative solutions. Our focus is on expanding our portfolio through innovation in all areas and proactive solution development in close cooperation with our customers.
- Surface Solutions launched several new laser additives under the brand name Iriotec® and a new pigment Iriodin® NXT 103 for powder and coil coating applications. In March we announced the launch of RonaCare® Balmance, a new, award-winning active ingredient for anti-itching, redness reduction, and soothing relief.
- While Covid-19 has had severe negative impacts across our customer industries, we have quickly adapted to their changing needs. This includes leveraging digital concepts on a much broader scale for introducing new, situation-related solutions to our customers. One compelling example was the “Live Cosmetics Conference” format, which reached a total of more than 4,000 customers with two events.

Course of Business and Economic Position

Merck

Overview – Q2 2020

- Group sales rise by 3.7% to € 4,119 million
- Organically, Group net sales decline by −2.5%, negative foreign exchange effects amount to −0.9%, portfolio effects increase sales by 7.1%
- Group EBITDA pre down −5.7% to € 1,074 million; EBITDA pre margin declines to 26.1% (Q2 2019: 28.7%)
- Net financial debt € 12.6 billion on June 30, 2020 (December 31, 2019: € 12.4 billion)

MERCK GROUP

Key figures

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[1] Not defined by International Financial Reporting Standards (IFRSs).

DEVELOPMENT OF NET SALES AND RESULTS OF OPERATIONS

In the second quarter of 2020, the Merck Group generated net sales of € 4,119 million (Q2 2019: € 3,971 million). This represented a year-on-year increase of € 148 million or 3.7%. The rise in sales was primarily due to acquisition-related increases in the Performance Materials business sector as well as to organic growth in Life Science. Group-wide, sales declined organically by € −98 million or −2.5%. Information on the impact of the Covid-19 pandemic on Group sales can be found in the sections on the individual business sectors. At −0.9%, the impact of foreign exchange on Group sales was insignificant. Portfolio changes increased Group net sales by € 280 million or 7.1%. This primarily stemmed from the acquisition of Versum Materials, Inc., USA, (Versum), which closed on October 7, 2019, and complements the Semiconductor Solutions business of the Performance Materials business sector. The divestment of the Allergopharma allergy business on March 31, 2020 lowered the sales of the Healthcare business sector.

In the second quarter of 2020, the Life Science business sector generated a sales increase of 5.9% to € 1,806 million (Q2 2019: € 1,705 million), which was mainly due to organic sales growth (6.3%). Accounting for a 44% (Q2 2019: 43%) share of Group sales, Life Science was once again the Group's largest business sector in terms of sales. In the second quarter of 2020, net sales of the Healthcare business sector decreased by −10.6% to € 1,499 million (Q2 2019: € 1,677 million). Healthcare's share of Group net sales thus decreased by six percentage points to 36% (Q2 2019: 42%). The increase in sales of the Performance Materials business sector by a total of 38.1% to € 814 million (Q2 2019: € 589 million) was due to the successful acquisitions of Versum and Intermolecular. Organically, the business sector sustained a double-digit sales decline. The percentage contribution of the Performance Materials business sector to Group net sales rose by five percentage points to 20% (Q2 2019: 15%).

MERCK GROUP

Net sales by business sector

€ million	Q2 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Q2 2019	Share
Healthcare	1,499	36%	–7.4%	–2.3%	–0.9%	–10.6%	1,677	42%
Life Science	1,806	44%	6.3%	–0.4%	–	5.9%	1,705	43%
Performance Materials	814	20%	–13.7%	1.8%	50.1%	38.1%	589	15%
Merck Group	**4,119**	**100%**	**–2.5%**	**–0.9%**	**7.1%**	**3.7%**	**3,971**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the second quarter of 2020, the regional sales development of the Merck Group was as follows:

MERCK GROUP

Net sales by region

€ million	Q2 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Q2 2019	Share
Europe	1,118	27%	–4.2%	–0.6%	0.1%	–4.8%	1.174	30%
North America	1,093	27%	–3.2%	1.8%	6.7%	5.4%	1.037	26%
Asia-Pacific (APAC)	1,541	37%	–2.2%	0.2%	14.7%	12.7%	1.367	34%
Latin America	203	5%	–1.8%	–18.9%	0.2%	–20.5%	256	6%
Middle East and Africa (MEA)	164	4%	13.8%	–0.2%	6.1%	19.6%	137	4%
Merck Group	**4,119**	**100%**	**–2.5%**	**–0.9%**	**7.1%**	**3.7%**	**3.971**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first six months of 2020, net sales of the Merck Group rose by € 772 million or 10.0% to € 8,489 million (January-June 2019: € 7,717 million). All business sectors contributed to this positive sales development. In particular, sales growth was attributable to the organic increases in Life Science and Healthcare as well as to the acquisition-related sales in Performance Materials. The following table presents the net sales development of the business sectors in the first half of 2020:

MERCK GROUP

Net sales by business sector

€ million	Jan.–June 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Jan.–June 2019	Share
Healthcare	3,200	38%	3.2%	–1.4%	–0.5%	1.3%	3,158	41%
Life Science	3,575	42%	5.9%	0.2%	–	6.2%	3,366	44%
Performance Materials	1,714	20%	–9.5%	2.1%	51.1%	43.7%	1,193	15%
Merck Group	**8,489**	**100%**	**2.4%**	**–0.2%**	**7.7%**	**10.0%**	**7,717**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first half of 2020, the regional sales development of the Merck Group was as follows:

MERCK GROUP

Net sales by region

€ million	Jan.–June 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Jan.–June 2019	Share
Europe	2,428	29%	2.7%	–0.2%	0.7%	3.3%	2,351	31%
North America	2,243	27%	4.0%	2.5%	7.3%	13.8%	1,972	26%
Asia-Pacific (APAC)	3,077	36%	–0.5%	0.7%	15.7%	15.9%	2,654	34%
Latin America	455	5%	9.3%	–15.8%	0.2%	–6.3%	486	6%
Middle East and Africa (MEA)	285	3%	5.5%	0.4%	6.0%	12.0%	255	3%
Merck Group	**8,489**	**100%**	**2.4%**	**–0.2%**	**7.7%**	**10.0%**	**7,717**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

The consolidated income statement of the Merck Group is as follows:

MERCK GROUP

Consolidated Income Statement[1]

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
Net sales	**4,119**	**3,971**	**3.7%**	**8,489**	**7,717**	**10.0%**
Cost of sales	–1,610	–1,454	10.7%	–3,264	–2,838	15.0%
Gross profit	**2,509**	**2,517**	**–0.3%**	**5,225**	**4,879**	**7.1%**
Marketing and selling expenses	–1,035	–1,157	–10.5%	–2,094	–2,248	–6.9%
Administration expenses	–298	–269	10.8%	–587	–552	6.3%
Research and development costs	–520	–553	–6.0%	–1,099	–1,080	1.8%
Impairment losses and reversals of impairment losses on financial assets (net)	–5	2	> 100.0%	1	–2	> 100.0%
Other operating expenses and income	–160	79	> 100.0%	–240	–1	> 100.0%
Operating result (EBIT)[1]	**491**	**618**	**–20.6%**	**1,207**	**997**	**21.0%**
Financial result	–102	–61	67.4%	–201	–174	15.6%
Profit before income tax	**389**	**557**	**–30.2%**	**1,006**	**824**	**22.2%**
Income tax	–100	–136	–26.7%	–259	–203	27.5%
Profit after tax from continuing operations	**289**	**421**	**–31.4%**	**747**	**620**	**20.4%**
Profit after tax from discontinued operation	**–**	**50**	**–100.0%**	**–**	**40**	**–100.0%**
Profit after tax	**289**	**471**	**–38.6%**	**747**	**660**	**13.1%**
Non-controlling interests	1	–	–	–1	–1	14.9%
Net income	**290**	**471**	**–38.5%**	**746**	**659**	**13.1%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

Gross profit declined slightly to € 2,509 million in the second quarter of 2020 (Q2 2019: € 2,517 million). The resulting gross margin of the Group, i.e. gross profit as a percentage of sales, decreased to 60.9% (Q2 2019: 63.4%).

The decline in marketing and selling expenses as well as research and development costs compared with the year-earlier quarter was due mainly to the Healthcare business sector. In the second quarter of 2020, the Group research spending ratio (research and development costs as a percentage of net sales) was 12.6% (Q2 2019: 13.9%). Accounting for a 72% (Q2 2019: 73%) share of research and development costs of all business sectors, Healthcare is the most research-intensive business sector of Merck.

Other operating expenses and income (net) showed an expense balance of € –160 million in the second quarter of 2020; in the year-earlier quarter this item showed an income balance of € 79 million. The sharp change was primarily attributable to impairment losses on intangible assets in the Performance Materials business sector during the second quarter of 2020 (see the "Notes to the Half-Year Consolidated Financial Statements as of June 30, 2020") as well as to income from milestone payments in the year-earlier quarter in Healthcare (see explanations under "Healthcare").

In comparison with the year-earlier quarter, the negative financial result rose by 67.4% to € –102 million (Q2 2019: € –61 million). This development was mainly the result of higher interest expenses as well as expenses due to the development of the time value of Merck Share Units within the scope of the Merck Long Term Incentive Plan.

Income tax expenses of € 100 million (Q2 2019: € 136 million) led to an effective tax rate of 25.7% (Q2 2019: 24.4%).

Net income, i.e. profit after tax attributable to Merck KGaA shareholders, declined to € 290 million (Q2 2019: € 471 million), yielding earnings per share of € 0.67 in the second quarter of 2020 (Q2 2019: € 1.08).

The following table presents the composition of EBITDA pre for the reporting period in comparison with the year-earlier quarter. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

MERCK GROUP

Reconciliation EBITDA pre[1]

	Q2 2020			Q2 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**4,119**	**–**	**4,119**	**3,971**	**–**	**3,971**	**3.7%**
Cost of sales	–1,610	3	–1,608	–1,454	3	–1,451	10.8%
Gross profit	**2,509**	**3**	**2,511**	**2,517**	**3**	**2,520**	**–0.4%**
Marketing and selling expenses	–1,035	10	–1,025	–1,157	5	–1,152	–11.1%
Administration expenses	–298	33	–266	–269	11	–258	2.7%
Research and development costs	–520	–	–520	–553	17	–536	–3.0%
Impairment losses and reversals of impairment losses on financial assets (net)	–5	–	–5	2	–	2	> 100.0
Other operating expenses and income	–160	93	–67	79	29	108	> 100.0
Operating result (EBIT)[1]	**491**			**618**			
Depreciation / amortization / impairment losses / reversals of impairment losses	556	–112	445	455	–	455	–2.4%
EBITDA[1]	**1,048**			**1,074**			
Restructuring expenses	21	–21	–	39	–39	–	
Integration expenses / IT expenses	37	–37	–	22	–22	–	
Gains (–) / losses (+) on the divestment of businesses	2	–2	–	–2	2	–	
Acquisition-related adjustments	–30	30	–	–	–	–	
Other adjustments	–4	4	–	6	–6	–	
EBITDA pre[1]	**1,074**	**–**	**1,074**	**1,139**	**–**	**1,139**	**–5.7%**
of which: organic growth[1]							–11.5%
of which: exchange rate effects							–3.1%
of which: acquisitions / divestments							8.8%

[1] Not defined by International Financial Reporting Standards (IFRSs).

EBITDA pre, the most important financial indicator used to steer operating business, fell by –5.7% to € 1,074 million in the second quarter of 2020 (Q2 2019: € 1,139 million). The organic decline amounted to –11.5% and negative foreign exchange effects adversely affected the key performance indicator by –3.1%. The acquisitions of Versum and Intermolecular led to an 8.8% increase in EBITDA pre. Relative to net sales, the EBITDA pre margin was 26.1% in the second quarter of 2020 (Q2 2019: 28.7%). Earnings per share pre (earnings per share after net of tax effect of adjustments and amortization of purchased intangible assets) fell by –15.6% to € 1.30 (Q2 2019: € 1.54).

The following table presents the composition of EBITDA pre for the first half of 2020 in comparison with the year-earlier period. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

MERCK GROUP

Reconciliation EBITDA pre[1]

	Jan.–June 2020			Jan.–June 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**8,489**	**–**	**8,489**	**7,717**	**–**	**7,717**	**10.0%**
Cost of sales	–3,264	23	–3,241	–2,838	19	–2,819	15.0%
Gross profit	**5,225**	**23**	**5,248**	**4,879**	**19**	**4,899**	**7.1%**
Marketing and selling expenses	–2,094	12	–2,081	–2,248	8	–2,240	–7.1%
Administration expenses	–587	49	–538	–552	47	–505	6.5%
Research and development costs	–1,099	–2	–1,101	–1,080	33	–1,047	5.1%
Impairment losses and reversals of impairment losses on financial assets (net)	1	–	1	–2	–	–2	> 100.0%
Other operating expenses and income	–240	91	–148	–1	34	33	> 100.0%
Operating result (EBIT)[1]	**1,207**			**997**			
Depreciation / amortization / impairment losses / reversals of impairment losses	988	–114	874	929	–	929	–5.9%
EBITDA[1]	**2,195**			**1,927**			
Restructuring expenses	37	–37	–	100	–100	–	
Integration expenses / IT expenses	59	–59	–	35	–35	–	
Gains (–) / losses (+) on the divestment of businesses	–28	28	–	–	–	–	
Acquisition-related adjustments	–11	11	–	–	–	–	
Other adjustments	4	–4	–	5	–5	–	
EBITDA pre[1]	**2,256**	**–**	**2,256**	**2,068**	**–**	**2,068**	**9.1%**
of which: organic growth[1]							0.2%
of which: exchange rate effects							–0.8%
of which: acquisitions / divestments							9.7%

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first six months of 2020, EBITDA pre rose by 9.1% and amounted to € 2,256 million (January-June 2019: € 2,068 million). The increase in this key performance indicator was driven by the acquisitions of Versum and Intermolecular (9.7%). At 26.6%, the EBITDA pre margin was at the year-earlier level (January-June 2019: 26.8%). Earnings per share pre rose by 4.9% to € 2.80 in the first half of 2020 (January-June 2019: € 2.67).

NET ASSETS AND FINANCIAL POSITION

MERCK GROUP

Balance sheet structure

	June 30, 2020		Dec. 31, 2019[1]		Change	
	€ million	in %	€ million	in %	€ million	in %
Non-current assets	**34,096**	**77.8%**	**34,808**	**79.4%**	**–712**	**–2.0%**
of which:						
Goodwill	17,118		17,141		–23	
Other intangible assets	8,664		9,175		–510	
Property, plant and equipment	6,067		6,213		–146	
Other non-current assets	2,246		2,278		–32	
Current assets	**9,726**	**22.2%**	**9,003**	**20.6%**	**723**	**8.0%**
of which:						
Inventories	3,537		3,342		195	
Trade and other current receivables	3,509		3,488		21	
Other current financial assets	32		57		–25	
Other current assets	1,136		1,336		–200	
Cash and cash equivalents	1,512		781		731	
Total assets	**43,822**	**100.0%**	**43,811**	**100.0%**	**11**	**0.0%**
Equity	**18,026**	**41.1%**	**17,914**	**40.9%**	**112**	**0.6%**
Non-current liabilities	**15,716**	**35.9%**	**14,056**	**32.1%**	**1,660**	**11.8%**
of which:						
Provisions for pensions and other post-employment benefits	3,525		3,194		331	
Other non-current provisions	255		254		1	
Non-current financial debt	10,081		8,644		1,437	
Other non-current liabilities	1,856		1,965		–109	
Current liabilities	**10,080**	**23.0%**	**11,842**	**27.0%**	**–1,762**	**–14.9%**
of which:						
Current provisions	861		933		–72	
Current financial debt	4,009		4,550		–541	
Trade and other current payables / Refund liabilities	2,360		2,618		–258	
Other current liabilities	2,850		3,740		–890	
Total liabilities and equity	**43,822**	**100.0%**	**43,811**	**100.0%**	**11**	**0.0%**

[1] Previous year's figures have been adjusted, see "Notes to the Consolidated Half-Year Financial Statements as of June 30, 2020".

The total assets of the Merck Group amounted to € 43,822 million as of June 30, 2020, which was consistent with the level of December 31, 2019. Since the beginning of 2020, working capital has risen by 13.4% to € 4,474 million (December 31, 2019: € 3,944 million). This development was mainly due to higher inventories as well as to a decline in trade accounts payable.

The composition and the development of net financial debt were as follows:

MERCK GROUP

Net financial debt[1]

	June 30, 2020	Dec. 31, 2019	Change	
	€ million	€ million	€ million	in %
Bonds and commercial paper	9,556	10,059	–503	–5.0%
Bank loans	2,702	1,587	1,115	70.2%
Liabilities to related parties	1,166	809	358	44.3%
Loans from third parties and other financial liabilities	56	97	–40	–41.9%
Liabilities from derivatives (financial transactions)	86	76	10	12.9%
Lease liabilities	523	567	–44	–7.7%
Financial debt	**14,090**	**13,194**	**896**	**6.8%**
less:				
Cash and cash equivalents	1,512	781	731	93.7%
Current financial assets[2]	18	50	–33	–65.2%
Net financial debt[1]	**12,560**	**12,363**	**197**	**1.6%**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Excluding current derivatives (operational).

MERCK GROUP

Reconciliation of net financial debt[1]

€ million	2020
January 1	**12,363**
Currency translation difference	20
Dividend payments / Profit withdrawals[2]	686
Acquisitions[2]	7
Payments from other divestments[2]	–56
Free cash flow[1]	–434
Other	–25
June 30	**12,560**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] As reported in the Consolidated Cash Flow Statement.

Equity rose in the first six months of 2020 by 0.6% to € 18,026 million (December 31, 2019: € 17,914 million). Consequently, the equity ratio increased to 41.1% (December 31, 2019: 40.9%). More information on the development of equity can be found in the Consolidated Statement of Changes in Net Equity in the Consolidated Half-Year Financial Statements.

The composition of free cash flow as well as the development of the relevant items are presented in the following table:

MERCK GROUP

Free cash flow[1]

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
Cash flow from operating activities as reported in the consolidated cash flow statement	502	743	–32.4%	1,019	1,235	–17.5%
Payments for investments in intangible assets	–48	–83	–41.9%	–66	–93	–28.4%
Payments from the disposal of intangible assets	7	–	–	13	17	–22.3%
Payments for investments in property, plant and equipment	–200	–165	21.4%	–541	–374	44.8%
Payments from the disposal of property, plant and equipment	6	3	73.6%	10	6	49.3%
Free cash flow[1]	**266**	**497**	**–46.4%**	**434**	**792**	**–45.2%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

Business free cash flow of the Merck Group improved in the second quarter of 2020 by 16.0% to € 813 million (Q2 2019: € 701 million). The development of receivables had a positive effect whereas lower EBITDA pre and higher capital spending lowered business free cash flow.

MERCK GROUP

Business free cash flow[1]

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
EBITDA pre[1]	1,074	1,139	–5.7%	2,256	2,068	9.1%
Investments in property, plant and equipment, software as well as advance payments for intangible assets	–221	–193	14.3%	–396	–319	24.2%
Changes in inventories	–94	–96	–2.0%	–195	–269	–27.3%
Changes in trade accounts receivable and receivables from royalties and licenses	85	–116	> 100.0%	–77	–175	–56.2%
Lease payments[2]	–31	–33	–5.9%	–68	–59	14.2%
Elimination of changes in consolidations	–	–	–	–45	–	–
Business free cash flow[1]	**813**	**701**	**16.0%**	**1,474**	**1,246**	**18.3%**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Excluding payments for low-value leases and interest components included in lease payments.

In comparison with the year-earlier period, business free cash flow rose by 18.3% to € 1,474 million in the first six months of 2020 (January- June 2019: € 1,246 million). Higher EBITDA pre and the development of receivables in the reporting period had a positive effect in comparison with the year-earlier period.

Healthcare

HEALTHCARE

Key figures

€ million	Q2 2020	Q2 2019	Change	Jan.–June 2020	Jan.–June 2019	Change
Net sales	1,499	1,677	–10.6%	3,200	3,158	1.3%
Operating result (EBIT)[1]	269	345	–22.0%	692	473	46.2%
Margin (% of net sales)[1]	18.0%	20.6%		21.6%	15.0%	
EBITDA[1]	359	523	–31.3%	860	852	1.0%
Margin (% of net sales)[1]	23.9%	31.2%		26.9%	27.0%	
EBITDA pre[1]	374	528	–29.1%	846	860	–1.6%
Margin (% of net sales)[1]	24.9%	31.5%		26.4%	27.2%	
Business free cash flow[1]	261	346	–24.4%	638	568	12.4%

[1] Not defined by International Financial Reporting Standards (IFRSs).

DEVELOPMENT OF NET SALES AND RESULTS OF OPERATIONS

In the second quarter of 2020, the Healthcare business sector reported an organic sales decline of –7.4%. Including negative foreign exchange effects of –2.3%, net sales amounted to € 1,499 million (Q2 2019: € 1,677 million). The exchange rate effect reflects the positive impact of the increase in the value of the U.S. dollar against the euro which was offset by the negative effects of the development of individual Latin American currencies and the Chinese renminbi.

Sales of the key product lines and products developed in the second quarter of 2020 as follows:

HEALTHCARE

Net sales by major product lines / products

€ million	Q2 2020	Share	Organic growth[1]	Exchange rate effects	Total change	Q2 2019	Share
Oncology	**258**	**17%**	**6.3%**	**–2.8%**	**3.5%**	**250**	**15%**
thereof: Erbitux®	207	14%	1.1%	–3.2%	–2.1%	212	13%
thereof: Bavencio®	30	2%	29.6%	–1.3%	28.3%	23	1%
Neurology & Immunology	**372**	**25%**	**–5.1%**	**–**	**–5.1%**	**392**	**23%**
thereof: Rebif®	290	19%	–12.7%	0.3%	–12.4%	331	20%
thereof: Mavenclad®	82	5%	35.8%	–1.5%	34.2%	61	4%
Fertility	**190**	**13%**	**–38.9%**	**–0.4%**	**–39.4%**	**313**	**19%**
thereof: Gonal-f®	112	7%	–40.7%	–0.4%	–41.1%	191	11%
General Medicine & Endocrinology	**638**	**42%**	**3.9%**	**–4.1%**	**–0.2%**	**640**	**38%**
thereof: Glucophage®	226	15%	–0.6%	–4.2%	–4.8%	237	14%
thereof: Concor®	130	9%	8.9%	–3.7%	5.3%	124	7%
thereof: Euthyrox®	114	8%	22.0%	–5.3%	16.8%	97	6%
thereof: Saizen®	54	4%	–0.8%	–6.0%	–6.7%	58	3%
Other	**40**	**3%**				**82**	**5%**
Healthcare	**1,499**	**100%**	**–7.4%**	**–2.3%**	**–10.6%**	**1,677**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

The oncology drug Erbitux® generated slightly positive organic sales growth of 1.1%. Negative foreign exchange effects were responsible for a −2.1% decline in global net sales to € 207 million (Q2 2019: € 212 million). In the Asia-Pacific region, growth slowed in comparison with the previous year. In this region, sales stagnated at € 83 million (Q2 2019: € 81 million). Performance in Europe continued to be influenced by the difficult competitive environment. Organically, sales in Europe fell by −5.8% to € 93 million (Q2 2019: € 101 million. Due to negative foreign exchange effects, sales in Latin America declined to € 14 million (Q2 2019: € 18 million).

Within Immuno-Oncology, sales of the oncology medicine Bavencio® (avelumab) rose organically by 29.6% to € 30 million (Q2 2019: € 23 million) amid negative foreign exchange effects of −1.3%. This growth was mainly driven by the approvals of Bavencio® in Germany and Japan in 2019 in combination with axitinib for the treatment of patients with advanced renal cell carcinoma.

Mavenclad®, for the oral short-course treatment of highly active relapsing multiple sclerosis, generated growth of 35.8% in the second quarter of 2020. Including negative foreign exchange effects, the corresponding sales amounted to € 82 million (Q2 2019: € 61 million). The prescription rates for Mavenclad® decreased as expected in a market environment adversely impacted by the Covid-19 pandemic. This was reflected in particular by sales in Europe. An organic sales decline of −14.6% was recorded in this region. The corresponding sales amounted to € 34 million (Q2 2019: € 41 million). In North America, sales more than doubled over the year-earlier quarter to € 39 million (Q2 2019: € 15 million).

HEALTHCARE

Product sales and organic growth[1] of Rebif®, Glucophage® and Erbitux® by region – Q2 2020

		Total	Europe	North America	Asia-Pacific (APAC)	Latin America	Middle East and Africa (MEA)
Rebif®	€ million	290	72	188	3	11	16
	Organic growth[1] in %	−12.7%	−7.3%	−12.3%	3.3%	−22.4%	−30.0%
	% of sales	100%	25%	65%	1%	4%	5%
Glucophage®	€ million	226	27	–	140	31	28
	Organic growth[1] in %	−0.6%	−13.7%	–	−2.5%	23.5%	−2.2%
	% of sales	100%	12%	–	62%	14%	12%
Erbitux®	€ million	207	93	–	83	14	17
	Organic growth[1] in %	1.1%	−5.8%	–	2.2%	6.2%	47.1%
	% of sales	100%	45%	–	40%	7%	8%

[1] Not defined by International Financial Reporting Standards (IFRSs).

Sales of the drug Rebif®, which is used to treat relapsing forms of multiple sclerosis, saw an organic decline of −12.7% to € 290 million (Q2 2019: € 331 million) amid constant exchange rates. Organically, sales fell by −12.3% in North America. Including currency tailwinds of 1.8%, net sales amounted to € 188 million (Q2 2019: € 210 million). Due to the continued difficult competitive situation in the interferon market as well as competition from oral dosage forms and high-efficacy therapies, the second quarter of 2020 reflected effects of an anticipated price increase in the United States as of April 1, which partly led to a shift in sales into the first quarter of 2020. In Europe, the declining sales trend also continued, however at a slower pace. Sales in this region amounted to € 72 million (Q2 2019: € 78 million). The decline in the other regions, where Rebif® generated sales of € 30 million (Q2 2019: € 42 million), was mainly attributable to the organic sales decline in the Middle East & Africa region and in Latin America. Negative foreign exchange developments stemming from individual Latin American currencies amplified this effect.

Within the Healthcare business sector, the Fertility franchise was, as expected, affected most strongly by the effects of the Covid-19 pandemic. Gonal-f®, the leading recombinant hormone used in the treatment of infertility, saw an organic decline of −40.7% to € 112 million (Q2 2019: € 191 million). This development could be seen in all regions.

The General Medicine & Endocrinology franchise (including CardioMetabolic Care), which commercializes products to treat cardiovascular diseases, thyroid disorders, diabetes and growth disorders, among other things, generated organic growth of 3.9%. Including currency headwinds of −4.1%, sales of this franchise stagnated at € 638 million (Q2 2019: € 640 million). At 22.0%, only Euthyrox® recorded double-digit organic growth.

The diabetes medicine Glucophage® from the General Medicine franchise could not maintain sales at the level of the previous year. Including an organic decline of −0.6% and currency headwinds of −4.2%, net sales amounted to € 226 million (Q2 2019: € 237 million). Whereas it was still possible to generate double-digit organic growth in the Latin America region, sales fell organically in Europe and the Asia-Pacific region. This was partly due to the fact that owing to the Covid-19 pandemic, customers pulled orders forward into the first quarter of 2020.

Net sales of the business sector by region developed in the second quarter of 2020 as follows:

HEALTHCARE

Net sales by region

€ million	Q2 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Q2 2019	Share
Europe	452	30%	–14.9%	–1.4%	–2.7%	–19.0%	558	33%
North America	330	22%	–10.6%	1.6%	–	–9.0%	363	22%
Asia-Pacific (APAC)	442	29%	–4.7%	–0.8%	–	–5.5%	468	28%
Latin America	143	10%	0.0%	–18.7%	–	–18.7%	176	10%
Middle East and Africa (MEA)	131	9%	17.0%	0.3%	–	17.4%	112	7%
Healthcare	**1,499**	**100%**	**–7.4%**	**–2.3%**	**–0.9%**	**–10.6%**	**1,677**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first six months of 2020, the Healthcare business sector generated net sales of € 3,200 million (January-June 2019: € 3,158 million). This development reflected organic growth of 3.2% as well as negative foreign exchange effects of –1.4%. Sales performance differed between the first two quarters of the first half of 2020. While it was still possible to generate above-average organic growth in the first quarter of 2020, the second quarter of 2020 was negatively impacted by the Covid-19 pandemic. The key drivers of the nevertheless positive development in the first half of 2020 were the organic growth of Glucophage® (13.3%) and Concor® (18.7%) from the General Medicine franchise. Accounting for a steadily increasing share of sales, Mavenclad® (97.2%) and Bavencio® (39.3%), also contributed to the business sector's overall favorable performance. In terms of sales, Glucophage® has become the second-leading medicine in the product portfolio of the Healthcare business sector, generating sales of € 460 million (January-June 2019: € 418 million). Sales of Mavenclad® rose to € 206 million (January-June 2019: € 105 million) while sales of Bavencio® increased to € 63 million (January-June 2019: € 45 million). Among our fertility products, especially Gonal-f®, the effects of the Covid-19 crisis became apparent early in the year since China is a highly important market for this franchise. Amid an organic decline of –22.2%, sales of Gonal-f® totaled € 279 million (January-June 2019: € 359 million). Rebif® also suffered an organic decline (–8.3%), generating sales of € 584 million in the first six months of 2020 (January-June 2019: € 630 million).

Sales of the key product lines and products developed in the first half of 2020 as follows:

HEALTHCARE

Net sales by major product lines / products

€ million	Jan.–June 2020	Share	Organic growth[1]	Exchange rate effects	Total change	Jan.–June 2019	Share
Oncology	**518**	**16%**	**10.2%**	**–1.9%**	**8.3%**	**479**	**15%**
thereof: Erbitux®	419	13%	4.0%	–2.2%	1.9%	411	13%
thereof: Bavencio®	63	2%	39.3%	–0.4%	38.9%	45	1%
Neurology & Immunology	**790**	**25%**	**6.8%**	**0.8%**	**7.6%**	**735**	**23%**
thereof: Rebif®	584	18%	–8.3%	1.1%	–7.2%	630	20%
thereof: Mavenclad®	206	6%	97.2%	–0.8%	96.3%	105	3%
Fertility	**468**	**15%**	**–22.0%**	**–0.2%**	**–22.1%**	**601**	**19%**
thereof: Gonal-f®	279	9%	–22.2%	0.0%	–22.2%	359	11%
General Medicine & Endocrinology	**1,318**	**41%**	**11.9%**	**–2.9%**	**9.0%**	**1,209**	**39%**
thereof: Glucophage®	460	14%	13.3%	–3.2%	10.1%	418	13%
thereof: Concor®	281	9%	18.7%	–2.3%	16.4%	241	8%
thereof: Euthyrox®	228	7%	24.8%	–3.9%	20.9%	189	6%
thereof: Saizen®	118	4%	10.2%	–5.0%	5.2%	112	4%
Other	**105**	**3%**				**134**	**4%**
Healthcare	**3,200**	**100%**	**3.2%**	**–1.4%**	**1.3%**	**3,158**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first six months of 2020, net sales by region were as follows:

HEALTHCARE

Net sales by region

€ million	Jan.–June 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Jan.–June 2019	Share
Europe	1,074	33%	–	–0.6%	–1.4%	–2.0%	1,096	35%
North America	700	22%	2.5%	2.4%	–	4.9%	668	21%
Asia-Pacific (APAC)	884	28%	3.5%	–0.3%	–	3.2%	857	27%
Latin America	321	10%	12.2%	–15.9%	–	–3.6%	333	11%
Middle East and Africa (MEA)	221	7%	7.1%	0.9%	–	7.9%	204	6%
Healthcare	**3,200**	**100%**	**3.2%**	**–1.4%**	**–0.5%**	**1.3%**	**3,158**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

The following table presents the composition of EBITDA pre for the reporting period in comparison with the year-earlier quarter. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

HEALTHCARE

Reconciliation EBITDA pre[1]

	Q2 2020			Q2 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**1,499**	**–**	**1,499**	**1,677**	**–**	**1,677**	**–10.6%**
Cost of sales	–364	–	–364	–421	–	–421	–13.5%
Gross profit	**1,135**	**–**	**1,135**	**1,256**	**–**	**1,256**	**–9.6%**
Marketing and selling expenses	–409	8	–401	–599	–	–599	–33.0%
Administration expenses	–81	2	–79	–84	3	–81	–2.9%
Research and development costs	–366	–	–366	–395	–	–395	–7.3%
Impairment losses and reversals of impairment losses on financial assets (net)	–3	–	–3	2	–	2	> 100.0%
Other operating expenses and income	–7	6	–1	165	2	168	> 100.0%
Operating result (EBIT)[1]	**269**			**345**			
Depreciation / amortization / impairment losses / reversals of impairment losses	90	–	90	177	–	177	–49.4%
EBITDA[1]	**359**			**523**			
Restructuring expenses	12	–12	–	5	–5	–	
Integration expenses / IT expenses	1	–1	–	4	–4	–	
Gains (–) / losses (+) on the divestment of businesses	1	–1	–	–3	3	–	
Acquisition-related adjustments	–	–	–	–	–	–	
Other adjustments	–	–	–	–	–	–	
EBITDA pre[1]	**374**	**–**	**374**	**528**	**–**	**528**	**–29.1%**
of which: organic growth[1]							–25.9%
of which: exchange rate effects							–4.1%
of which: acquisitions / divestments							0.9%

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the second quarter of 2020, gross profit decreased to € 1,135 million (Q2 2019: € 1,256 million). The resulting gross margin increased to 75.7% (Q2 2019: 74.9%), which was due among other things to product mix changes.

After eliminating adjustments, marketing and selling expenses declined by –33.0% to € 401 million in comparison with the year-earlier quarter (Q2 2019: € 599 million). The significant reduction in costs was primarily attributable to two effects: firstly, the expiration of amortization in connection with the purchase price allocation for the Serono acquisition in 2006, and secondly lower marketing and selling expenses, partly due to the Covid-19 restrictions.

Research and development costs amounted to € 366 million in the second quarter of 2020 (Q2 2019: € 395 million). This reflects the currently somewhat lower spending requirement for our development portfolio.

The development of other operating expenses and income to € -1 million (Q2 2019: € 168 million) was mainly due to the fact that the second quarter of 2019 was positively affected by a milestone payment of € 75 million from BioMarin Pharmaceutical Inc., USA, in connection with the sale of the rights to Palynziq™ in 2016 as well as a milestone payment of € 36 million for the approval of Bavencio® in the United States as a first-line treatment in patients with advanced renal carcinoma (RCC) in combination with axitinib.

In the second quarter of 2020, EBITDA pre dropped organically by –25.9%. Including negative foreign exchange effects of –4.1%, the figure amounted to € 374 million (Q2 2019: € 528 million). The EBITDA pre margin fell to 24.9% (Q2 2019: 31.5%).

The following table presents the composition of EBITDA pre for the first six months of 2020 in comparison with the year-earlier period. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

HEALTHCARE

Reconciliation EBITDA pre[1]

	Jan.–June 2020			Jan.–June 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**3,200**	**–**	**3,200**	**3,158**	**–**	**3,158**	**1.3%**
Cost of sales	–758	–	–758	–746	–	–746	1.6%
Gross profit	**2,442**	**–**	**2,442**	**2,411**	**–**	**2,411**	**1.3%**
Marketing and selling expenses	–832	8	–824	–1,150	–	–1,150	–28.3%
Administration expenses	–160	3	–157	–172	5	–167	–5.9%
Research and development costs	–783	–	–783	–775	–	–775	1.1%
Impairment losses and reversals of impairment losses on financial assets (net)	2	–	2	–1	–	–1	> 100.0%
Other operating expenses and income	24	–23	–	159	4	163	–100.0%
Operating result (EBIT)[1]	**692**			**473**			
Depreciation / amortization / impairment losses / reversals of impairment losses	168	–2	167	379	–	379	–56.0%
EBITDA[1]	**860**			**852**			
Restructuring expenses	14	–14	–	5	–5	–	
Integration expenses / IT expenses	2	–2	–	5	–5	–	
Gains (–) / losses (+) on the divestment of businesses	–30	30	–	–2	2	–	
Acquisition-related adjustments	–	–	–	–	–	–	
Other adjustments	–	–	–	–	–	–	
EBITDA pre[1]	**846**	**–**	**846**	**860**	**–**	**860**	**–1.6%**
of which: organic growth[1]							–0.1%
of which: exchange rate effects							–2.0%
of which: acquisitions / divestments							0.6%

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first half of 2020, EBITDA pre of the Healthcare business sector decreased by −1.6% to € 846 million (January-June 2019: € 860 million). Amid stagnant organic growth (−0.1%), currency headwinds of −2.0% adversely impacted this development. Effects from the Covid-19 pandemic were largely offset by the above-average, positive performance in the first quarter of 2020. In addition, the year-earlier period was favorably affected by two milestone payments in connection with the sale of the rights to Palynziq™ as well as the approval of Bavencio® as a first-line treatment for advanced renal cell carcinoma (RCC) in combination with axitinib in the United States. The EBITDA pre margin of the business sector fell in the first six months of 2020 by 0.8 percentage points to 26.4% (January-June 2019: 27.2%).

DEVELOPMENT OF BUSINESS FREE CASH FLOW

In the second quarter of 2020, business free cash flow amounted to € 261 million (Q2 2019: € 346 million). The decrease was mainly due to the development of EBITDA pre as well as the increase in inventories. This was mitigated by the favorable development of trade accounts receivable in comparison with the year-earlier quarter.

HEALTHCARE

Business free cash flow[1]

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
EBITDA pre[1]	374	528	−29.1%	846	860	−1.6%
Investments in property, plant and equipment, software as well as advance payments for intangible assets	−70	−75	−7.0%	−143	−122	17.2%
Changes in inventories	−50	2	> 100.0%	−55	−64	−13.7%
Changes in trade accounts receivable and receivables from royalties and licenses	19	−97	> 100.0%	40	−83	> 100.0%
Lease payments[2]	−11	−12	−11.0%	−23	−23	2.3%
Elimination Allergopharma divestment	–	–	–	−26	–	–
Business free cash flow[1]	**261**	**346**	**−24.4%**	**638**	**568**	**12.4%**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Excluding payments for low-value leases and interest components included in lease payments.

In the first six months of 2020, the business sector generated business free cash flow of € 638 million (January-June 2019: € 568 million). The slight decline in EBITDA pre was mitigated by the favorable development of trade accounts receivable in comparison with the year-earlier period.

Life Science

LIFE SCIENCE

Key figures

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
Net sales	1,806	1,705	5.9%	3,575	3,366	6.2%
Operating result (EBIT)[1]	386	322	19.9%	731	635	15.1%
Margin (% of net sales)[1]	21.3%	18.9%		20.4%	18.9%	
EBITDA[1]	584	518	12.8%	1,126	1,025	9.8%
Margin (% of net sales)[1]	32.4%	30.4%		31.5%	30.5%	
EBITDA pre[1]	569	533	6.7%	1,122	1,049	6.9%
Margin (% of net sales)[1]	31.5%	31.3%		31.4%	31.2%	
Business free cash flow[1]	472	323	46.0%	718	591	21.4%

[1] Not defined by International Financial Reporting Standards (IFRSs).

DEVELOPMENT OF SALES AND RESULTS OF OPERATIONS

In the second quarter of 2020, the Life Science business sector generated strong organic sales growth of 6.3% amid a slightly negative foreign exchange impact of −0.4%, resulting in net sales growth of 5.9% compared with the year-earlier quarter. Overall, Life Science net sales increased to € 1,806 million (Q2 2019: € 1,705 million).

LIFE SCIENCE

Net sales by business unit

€ million	Q2 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Q2 2019[2]	Share
Process Solutions	892	49%	19.8%	0.4%	–	20.1%	743	44%
Research Solutions	501	28%	−7.1%	−0.9%	–	−8.0%	544	32%
Applied Solutions	413	23%	–	−1.3%	0.1%	−1.3%	418	24%
Life Science	**1,806**	**100%**	**6.3%**	**−0.4%**	**–**	**5.9%**	**1,705**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Previous year's figures have been adjusted owing to an internal realignment.

The Process Solutions business unit, which markets products and services for the entire pharmaceutical production value chain, generated organic sales growth of 19.8%, which was the highest rate within the Life Science business sector. Assisted by a slight foreign exchange effect of 0.4%, sales totaled € 892 million in the second quarter of 2020 (Q2 2019: € 743 million). Process Solutions thus accounted for 49% of Life Science net sales. Apart from Latin America, all regions saw double-digit growth within Process Solutions.

The Research Solutions business unit, which provides products and services to support life science research for pharmaceutical, biotechnology, and academic research laboratories, recorded an organic sales decline of −7.1%. Weaker demand due to the temporary closure of academic laboratories had a negative impact here. With a slightly negative foreign exchange impact of −0.9%, sales totaled € 501 million in the second quarter of 2020 (Q2 2019: € 544 million). Research Solutions thus accounted for 28% of Life Science net sales. Only Asia-Pacific generated sales growth, however, this was more than offset by weaker performance in all other regions.

The Applied Solutions business unit with its broad range of products for researchers as well as scientific and industrial laboratories accounted for a 23% share of the Life Science business sector's sales. Applied Solutions recorded flat organic sales growth in the second quarter of 2020. The Covid-19 pandemic impacted the entire product portfolio; in Lab Water Solutions clear signs of a recovery were recognizable in June 2020. Including a foreign exchange effect of −1.3%, net sales totaled € 413 million (Q2 2019: € 418 million). Applied Solutions was mainly impacted by weaker performance in North America, which was offset by higher sales in Asia-Pacific.

Net sales of the business sector by region developed in the second quarter of 2020 as follows:

LIFE SCIENCE

Net sales by region

€ million	Q2 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Q2 2019	Share
Europe	610	34%	8.3%	–	–	8.3%	563	33%
North America	648	36%	2.7%	2.0%	0.1%	4.7%	619	36%
Asia-Pacific (APAC)	471	26%	11.2%	−1.1%	–	10.1%	428	25%
Latin America	55	3%	−4.0%	−19.8%	–	−23.8%	73	4%
Middle East and Africa (MEA)	21	1%	−3.0%	−3.1%	–	−6.1%	23	2%
Life Science	**1,806**	**100%**	**6.3%**	**−0.4%**	**–**	**5.9%**	**1,705**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first half of 2020, Life Science net sales reflected strong organic sales growth of 5.9% assisted by a foreign exchange impact of 0.2%, resulting in total growth of 6.2% over the year-earlier period. Process Solutions reported double-digit sales growth, whereas Research Solutions saw a decline in sales. Net sales of Applied Solutions remained flat. Taking these developments into account, Life Science net sales increased overall to € 3,575 million (January-June 2019: € 3,366 million).

LIFE SCIENCE

Net sales by business unit

€ million	Jan.–June 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Jan.–June 2019[2]	Share
Process Solutions	1,695	48%	16.6%	0.8%	–	17.4%	1,443	43%
Research Solutions	1,047	29%	−3.6%	–	–	−3.6%	1,086	32%
Applied Solutions	834	23%	–	−0.5%	0.1%	−0.4%	837	25%
Life Science	**3,575**	**100%**	**5.9%**	**0.2%**	**–**	**6.2%**	**3,366**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Previous year's figures have been adjusted owing to an internal realignment.

In the first half of 2020, sales by region developed as follows:

LIFE SCIENCE

Net sales by region

€ million	Jan.–June 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Jan.–June 2019	Share
Europe	1,224	34%	6.7%	0.3%	–	7.0%	1,144	34%
North America	1,293	36%	5.7%	2.6%	–	8.3%	1,194	36%
Asia-Pacific (APAC)	893	25%	5.9%	−0.3%	–	5.6%	846	25%
Latin America	121	4%	4.6%	−16.4%	–	−11.9%	137	4%
Middle East and Africa (MEA)	44	1%	−0.4%	−1.7%	–	−2.1%	45	1%
Life Science	**3,575**	**100%**	**5.9%**	**0.2%**	**–**	**6.2%**	**3,366**	**100%**

LIFE SCIENCE

Net sales by region

[1] Not defined by International Financial Reporting Standards (IFRSs).

The following table presents the composition of EBITDA pre for the second quarter of 2020 in comparison with the year-earlier period. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

LIFE SCIENCE

Reconciliation EBITDA pre[1]

	Q2 2020			Q2 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**1,806**	**–**	**1,806**	**1,705**	**–**	**1,705**	**5.9%**
Cost of sales	–774	–	–774	–724	–	–723	7.0%
Gross profit	**1,033**	**–**	**1,033**	**982**	**–**	**982**	**5.1%**
Marketing and selling expenses	–488	–	–488	–490	–	–490	–0.3%
Administration expenses	–100	12	–88	–68	–1	–69	27.7%
Research and development costs	–75	–	–75	–69	–	–69	8.6%
Impairment losses and reversals of impairment losses on financial assets (net)	–1	–	–1	–	–	–	–
Other operating expenses and income	18	–27	–10	–32	15	–17	–42.5%
Operating result (EBIT)[1]	**386**			**322**			
Depreciation / amortization / impairment losses / reversals of impairment losses	199	–	199	197	–	197	1.1%
EBITDA[1]	**584**			**518**			
Restructuring expenses	1	–1	–	4	–4	–	
Integration expenses / IT expenses	14	–14	–	10	–10	–	
Gains (–) / losses (+) on the divestment of businesses	–	–	–	1	–1	–	
Acquisition-related adjustments	–30	30	–	–	–	–	
Other adjustments	–	–	–	–	–	–	
EBITDA pre[1]	**569**	**–**	**569**	**533**	**–**	**533**	**6.7%**
of which: organic growth[1]							9.7%
of which: exchange rate effects							–2.4%
of which: acquisitions / divestments							–0.6%

[1] Not defined by International Financial Reporting Standards (IFRSs).

Adjusted gross profit rose by 5.1% to € 1,033 million (Q2 2019: € 982 million). This increase was driven by organic sales growth as well as higher production capacity utilization. Marketing and selling expenses remained flat despite higher logistics costs while administration expenses increased. After eliminating adjustments, amortization and depreciation, EBITDA pre rose by 6.7% to € 569 million (Q2 2019: € 533 million). Organic earnings growth was 9.7%.

The following table presents the composition of EBITDA pre for the first half of 2020 in comparison with the year-earlier period. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

LIFE SCIENCE

Reconciliation EBITDA pre[1]

	Jan.–June 2020			Jan.–June 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**3,575**	**–**	**3,575**	**3,366**	**–**	**3,366**	**6.2%**
Cost of sales	–1,518	–	–1,518	–1,443	1	–1,442	5.3%
Gross profit	**2,057**	**–**	**2,057**	**1,924**	**1**	**1,925**	**6.9%**
Marketing and selling expenses	–986	–	–986	–959	1	–959	2.8%
Administration expenses	–189	21	–168	–156	6	–150	11.7%
Research and development costs	–151	–	–151	–131	–	–131	15.0%
Impairment losses and reversals of impairment losses on financial assets (net)	–	–	–	–	–	–	–
Other operating expenses and income	0	–26	–26	–42	16	–25	0.8%
Operating result (EBIT)[1]	**731**			**635**			
Depreciation / amortization / impairment losses / reversals of impairment losses	395	–	395	390	–	390	1.2%
EBITDA[1]	**1,126**			**1,025**			
Restructuring expenses	3	–3	–	5	–5	–	
Integration expenses / IT expenses	23	–23	–	16	–16	–	
Gains (–) / losses (+) on the divestment of businesses	–	–	–	2	–2	–	
Acquisition-related adjustments	–30	30	–	–	–	–	
Other adjustments	–	–	–	–	–	–	
EBITDA pre[1]	**1,122**	**–**	**1,122**	**1,049**	**–**	**1,049**	**6.9%**
of which: organic growth[1]							9.0%
of which: exchange rate effects							–1.5%
of which: acquisitions / divestments							–0.6%

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first half of 2020, adjusted gross profit increased by 6.9% to € 2,057 million (January-June 2019: € 1,925 million). The increase was mainly driven by the strong sales growth in the Process Solutions business unit. After eliminating adjustments, amortization and depreciation, EBITDA pre rose by 6.9% to € 1,122 million (January-June 2019: € 1,049 million) reflecting the strong resilience of the Life Science business. Organically, EBITDA pre rose by as much as 9.0% in the first six months of 2020.

DEVELOPMENT OF BUSINESS FREE CASH FLOW

In the second quarter of 2020, Life Science generated business free cash flow of € 472 million (Q2 2019: € 323 million). This was driven by an increase in EBITDA pre and a favorable development of trade accounts receivable in the second quarter of 2020 compared with the year-earlier quarter.

LIFE SCIENCE

Business free cash flow[1]

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
EBITDA pre[1]	569	533	6.7%	1,122	1,049	6.9%
Investments in property, plant and equipment, software as well as advance payments for intangible assets	–82	–79	4.1%	–140	–137	2.1%
Changes in inventories	–33	–62	–46.4%	–122	–149	–18.3%
Changes in trade accounts receivable and receivables from royalties and licenses	29	–57	> 100.0%	–115	–148	–21.7%
Lease payments[2]	–12	–13	–9.7%	–26	–24	11.5%
Business free cash flow[1]	**472**	**323**	**46.0%**	**718**	**591**	**21.4%**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Excluding payments for low-value leases and interest components included in lease payments.

In the first half of 2020, Life Science generated business free cash flow of € 718 million (January-June 2019: € 591 million). This was mainly driven by an increase in EBITDA pre and favorable developments of both inventories and trade accounts receivable in the first six months of 2020 compared with the year-earlier period.

Performance Materials

PERFORMANCE MATERIALS

Key figures

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
Net sales	814	589	38.1%	1,714	1,193	43.7%
Operating result (EBIT)[1]	–30	100	> 100.0%	86	195	–55.8%
Margin (% of net sales)[1]	–3.7%	16.9%		5.0%	16.3%	
EBITDA[1]	219	161	35.9%	470	318	47.6%
Margin (% of net sales)[1]	26.9%	27.4%		27.4%	26.7%	
EBITDA pre[1]	238	190	25.2%	524	383	36.8%
Margin (% of net sales)[1]	29.3%	32.3%		30.6%	32.1%	
Business free cash flow[1]	204	153	33.5%	389	326	19.4%

[1] Not defined by International Financial Reporting Standards (IFRSs).

DEVELOPMENT OF NET SALES AND RESULTS OF OPERATIONS

In the second quarter of 2020, the net sales of the Performance Materials business sector increased by 38.1% to € 814 million (Q2 2019: € 589 million). The key factor behind this growth was the net sales contribution from the acquisitions of Versum Materials and Intermolecular (50.1%). Sales growth was softened by an organic decrease of –13.7%. Favorable foreign exchange effects had a minor impact of 1.8% on net sales.

PERFORMANCE MATERIALS

Net sales by business unit

€ million	**Q2 2020**	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Q2 2019	Share
Display Solutions	263	32%	–20.8%	1.7%	–	–19.1%	325	55%
Semiconductor Solutions	475	59%	12.1%	3.5%	> 100.0%	> 100.0%	155	26%
Surface Solutions	76	9%	–29.6%	–0.5%	–	–30.1%	109	19%
Other	0	0%	–60.1%	0.3%	–	–59.9%	0	0%
Performance Materials	**814**	**100%**	**–13.7%**	**1.8%**	**50.1%**	**38.1%**	**589**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

The Display Solutions business unit, consisting mainly of the business with liquid crystals, photoresists for display applications as well as OLED materials, recorded an organic decrease of –20.8% in the second quarter of 2020 amid slightly positive foreign exchange effects of 1.7%. The organic sales decline was mainly driven by weaker end-user demand triggered by Covid-19, resulting in low customer production capacity utilization.

The Semiconductor Solutions business unit was transformed through the acquisitions of Versum Materials and Intermolecular in the fourth quarter of 2019. As a result, the share of Performance Materials sales attributable to Semiconductor Solutions increased from 26% to 59%. Semiconductor Solutions now comprises two new businesses, namely Semiconductor Materials and Delivery Systems & Services. Semiconductor Materials will continue to focus on the development and commercialization of material-based solutions for the semiconductor industry. Delivery Systems & Services will focus on developing and operating delivery systems for semiconductor manufacturers. Additionally, the unit will offer services to support the equipment install base and safe handling of the specialty materials that flow through it.

Excluding the effects of the Versum Materials and Intermolecular acquisitions, the Semiconductor Solutions business unit generated double-digit organic growth of 12.1% in the second quarter of 2020. A favorable change in market conditions versus the challenging environment of 2019 was a key factor. Exchange rate effects were positive at 3.5%. The Covid-19 pandemic only had a negligible impact on the Semiconductor Solutions business unit in the second quarter of 2020.

Net sales of the Surface Solutions business unit declined by a total of −30.1% in the second quarter of 2020. The organic decrease of-29.6% resulted from declining demand, primarily in the automotive and decorative cosmetic markets, which have been more severely impacted by the Covid-19 pandemic. At −0.5%, foreign exchange effects were insignificant.

Net sales of the business sector by region developed as follows:

PERFORMANCE MATERIALS

Net sales by region

€ million	Q2 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Q2 2019	Share
Europe	55	7%	−24.4%	−0.1%	30.0%	5.5%	52	9%
North America	115	14%	−20.8%	1.6%	> 100.0%	> 100.0%	55	9%
Asia-Pacific (APAC)	628	77%	−11.8%	2.3%	42.6%	33.1%	472	80%
Latin America	5	1%	−23.5%	−13.4%	6.9%	−30.0%	7	1%
Middle East and Africa (MEA)	11	1%	19.8%	−0.6%	> 100.0%	> 100.0%	2	1%
Performance Materials	**814**	**100%**	**−13.7%**	**1.8%**	**50.1%**	**38.1%**	**589**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first six months of 2020, net sales of the Performance Materials business sector increased by 43.7% to € 1,714 million (January-June 2019: € 1,193 million). The portfolio effect of the Versum Materials and Intermolecular acquisitions on net sales was 51.1%. The organic sales decrease of −9.5% was primarily driven by challenges in the Display Solutions and Surface Solutions business units, which was partially offset by growth in Semiconductor Solutions. Display Solutions saw an organic sales decrease of −15.6% in the first half of 2020, which was driven by two factors. First, Display Solutions benefited in the first half of 2019 from projects by panel manufacturers in China to ramp up production capacities. Second, the Covid-19 pandemic has led to a decrease in end-user demand, which has adversely impacted customer production capacity utilization. Surface Solutions recorded an organic sales decrease of −18.8% stemming from demand weakness in both the automotive and cosmetic markets from the uncertainty surrounding the Covid-19 pandemic. Organic growth of 10.4% in Semiconductor Solutions was primarily attributable to a rebound in market demand over 2019. Foreign exchange effects contributed 2.1% to the increase in the business sector's net sales in the first half of 2020.

PERFORMANCE MATERIALS

Net sales by business unit

€ million	**Jan.-June 2020**	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Jan.-June 2019	Share
Display Solutions	567	33%	−15.6%	2.1%	–	−13.5%	656	55%
Semiconductor Solutions	960	56%	10.4%	3.6%	> 100.0%	> 100.0%	307	26%
Surface Solutions	187	11%	−18.8%	0.1%	–	−18.7%	230	19%
Other	0	0%	−46.2%	1.2%	–	−45.0%	1	0%
Performance Materials	**1,714**	**100%**	**−9.5%**	**2.1%**	**51.1%**	**43.7%**	**1,193**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

In the first half of 2020, sales by region developed as follows:

PERFORMANCE MATERIALS

Net sales by region

€ million	Jan.–June 2020	Share	Organic growth[1]	Exchange rate effects	Acquisitions / divestments	Total change	Jan.–June 2019	Share
Europe	130	7%	–11.4%	0.1%	28.6%	17.2%	111	9%
North America	250	15%	–4.9%	2.4%	> 100.0%	> 100.0%	110	9%
Asia-Pacific (APAC)	1,300	76%	–9.8%	2.5%	43.9%	36.6%	951	80%
Latin America	13	1%	–12.5%	–9.1%	6.5%	–15.0%	16	1%
Middle East and Africa (MEA)	21	1%	–3.0%	0.2%	> 100.0%	> 100.0%	6	1%
Performance Materials	**1,714**	**100%**	**–9.5%**	**2.1%**	**51.1%**	**43.7%**	**1,193**	**100%**

[1] Not defined by International Financial Reporting Standards (IFRSs).

The following table presents the composition of EBITDA pre for the reporting period in comparison with the year-earlier quarter. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

PERFORMANCE MATERIALS

Reconciliation EBITDA pre[1]

	Q2 2020			Q2 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**814**	**–**	**814**	**589**	**–**	**589**	**38.1%**
Cost of sales	–472	2	–470	–307	3	–304	54.5%
Gross profit	**342**	**2**	**344**	**282**	**3**	**285**	**20.7%**
Marketing and selling expenses	–134	3	–131	–66	5	–62	> 100.0%
Administration expenses	–44	9	–36	–25	1	–24	47.1%
Research and development costs	–68	–	–69	–74	17	–57	19.7%
Impairment losses and reversals of impairment losses on financial assets (net)	–1	–	–1	–	–	–	–
Other operating expenses and income	–124	117	–7	–17	4	–13	–47.1%
Operating result (EBIT)[1]	**–30**			**100**			
Depreciation / amortization / impairment losses / reversals of impairment losses	249	–112	138	62	–	62	> 100.0%
EBITDA[1]	**219**			**161**			
Restructuring expenses	2	–2	–	26	–26	–	
Integration expenses / IT expenses	16	–16	–	3	–3	–	
Gains (–) / losses (+) on the divestment of businesses	–	–	–	–	–	–	
Acquisition-related adjustments	–	–	–	–	–	–	
Other adjustments	–	–	–	–	–	–	
EBITDA pre[1]	**238**	**–**	**238**	**190**	**–**	**190**	**25.2%**
of which: organic growth[1]							–29.7%
of which: exchange rate effects							3.1%
of which: acquisitions / divestments							51.8%

[1] Not defined by International Financial Reporting Standards (IFRSs).

Adjusted gross profit for the Performance Materials business sector was € 344 million in the second quarter of 2020 (Q2 2019: € 285 million). A key driver of this 20.7% increase over the year-earlier quarter was the contribution from the Versum acquisition. At 42.3%, adjusted gross margin was below the year-earlier figure (Q2 2019: 48.4%). Excluding adjustments, the operating result (EBIT) decreased by € 130 million to € −30 million in the second quarter of 2020 (Q2 2019: € 100 million). This was mainly driven by the additional amortization and impairments in the second quarter partially offset by the EBIT contribution from the acquisition of Versum.

The increase in marketing and selling expenses as well as administration expenses was attributable to the additional costs of the Versum and Intermolecular organizations. After eliminating adjustments, the decrease in research and development costs from the successful implementation of the "Bright Future" transformation program was exceeded by additional expenses from the Versum and Intermolecular organizations. EBITDA pre of the business sector grew by 25.2% to € 238 million (Q2 2019: € 190 million). Additional EBITDA pre from the acquisitions (51.8%) and positive foreign exchange effects (3.1%) more than offset the organic decline in EBITDA pre (−29.7%). The organic decline was mainly attributable to the loss of sales related to the Covid-19 pandemic as discussed above. At 29.3%, the EBITDA pre margin was below the year-earlier figure (Q2 2019: 32.3%).

The following table presents the composition of EBITDA pre for the first half of 2020 in comparison with the year-earlier period. The IFRS figures have been modified to reflect the elimination of adjustments included in the respective functional costs.

PERFORMANCE MATERIALS

Reconciliation EBITDA pre[1]

	Jan.–June 2020			Jan.–June 2019			Change
€ million	IFRS	Elimination of adjustments	Pre[1]	IFRS	Elimination of adjustments	Pre[1]	Pre[1]
Net sales	**1,714**	**–**	**1,714**	**1,193**	**–**	**1,193**	**43.7%**
Cost of sales	−987	22	−965	−645	18	−627	54.0%
Gross profit	**727**	**22**	**749**	**548**	**18**	**567**	**32.2%**
Marketing and selling expenses	−270	4	−266	−132	7	−125	> 100.0%
Administration expenses	−83	9	−74	−49	2	−46	58.9%
Research and development costs	−140	−2	−141	−146	33	−114	24.4%
Impairment losses and reversals of impairment losses on financial assets (net)	–	–	–	–	–	–	–
Other operating expenses and income	−149	132	−17	−27	5	−22	−24.2%
Operating result (EBIT)[1]	**86**		**–**	**195**			
Depreciation / amortization / impairment losses / reversals of impairment losses	384	−112	272	124	–	124	> 100.0%
EBITDA[1]	**470**			**318**			
Restructuring expenses	10	−10	–	60	−60	–	
Integration expenses / IT expenses	24	−24	–	4	−4	–	
Gains (−) / losses (+) on the divestment of businesses	–	–	–	–	–	–	
Acquisition-related adjustments	19	−19	–	–	–	–	
Other adjustments	–	–	–	–	–	–	
EBITDA pre[1]	**524**	**–**	**524**	**383**	**–**	**383**	**36.8%**
of which: organic growth[1]							−19.2%
of which: exchange rate effects							4.1%
of which: acquisitions / divestments							51.9%

[1] Not defined by International Financial Reporting Standards (IFRSs).

At € 749 million, adjusted gross profit for the Performance Materials business sector in the first half of 2020 rose by 32.2% over the previous year (January-June 2019: € 567 million). The increase is primarily due to the acquisition of Versum. At € 86 million, the operating result (EBIT) was € 109 million lower than in the year-earlier period (January-June 2019: € 195 million). The decrease was largely attributable to an increase in amortization and impairment losses partially offset by the EBIT contributed by the Versum acquisition. EBITDA pre of the business sector rose by 36.8% to € 524 million (January-June 2019: € 383 million). At 30.6%, the EBITDA pre margin was below the year-earlier figure of 32.1%.

DEVELOPMENT OF BUSINESS FREE CASH FLOW

In the second quarter of 2020, Performance Materials generated business free cash flow of € 204 million, representing an increase of 33.5% (Q2 2019: € 153 million). Cash flow contributed by the acquisition of Versum was a key factor.

PERFORMANCE MATERIALS

Business free cash flow[1]

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
EBITDA pre[1]	238	190	25.2%	524	383	36.8%
Investments in property, plant and equipment, software as well as advance payments for intangible assets	–60	–29	>100.0%	–95	–43	>100.0%
Changes in inventories	–10	–36	–71.5%	–19	–56	–65.7%
Changes in trade accounts receivable and receivables from royalties and licenses	41	31	31.4%	7	46	–84.5%
Lease payments[2]	–4	–3	59.1%	–9	–5	97.6%
Elimination first-time consolidation of Versum / Intermolecular	–	–	–	–19	–	–
Business free cash flow[1]	**204**	**153**	**33.5%**	**389**	**326**	**19.4%**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Excluding payments for low-value leases and interest components included in lease payments.

In the first six months of 2020, business free cash flow rose by 19.4% to € 389 million (January-June 2019: € 326 million). The primary reason for the increase was the cash flow contributed by the Versum acqusition.

Corporate and Other

Corporate and Other comprises Group administration expenses for Group functions that cannot be directly allocated to the business sectors, such as Finance, Procurement, Legal, Communications, and Human Resources. Corporate and Other additionally encompass expenses for central, non-allocated IT functions, including expenses related to the expansion and harmonization of IT systems within the Merck Group as well as research and development costs spanning business sectors.

CORPORATE AND OTHER

Key figures

€ million	**Q2 2020**	Q2 2019	Change	**Jan.–June 2020**	Jan.–June 2019	Change
Operating result (EBIT)[1]	–133	–148	–9.7%	–301	–305	–1.3%
EBITDA[1]	–115	–128	–10.4%	–261	–268	–2.9%
EBITDA pre[1]	–107	–112	–4.5%	–236	–224	5.5%
Business free cash flow[1]	–125	–121	2.8%	–271	–239	13.4%

[1] Not defined by International Financial Reporting Standards (IFRSs).

After eliminating adjustments, administration expenses amounted to € 63 million in the second quarter of 2020 (Q2 2019: € 84 million). Research and development costs spanning business sectors, for instance expenses for the Innovation Center were allocated to Corporate and Other in the amount of € 11 million in the second quarter of 2020 (Q2 2019: € 15 million). After eliminating adjustments, other operating expenses (net) rose to € 49 million in the second quarter of 2020 (Q2 2019: € 29 million), among other things due to higher exchange rate losses. After eliminating depreciation, amortization and adjustments, EBITDA pre totaled € –107 million in the second quarter of 2020 (Q2 2019: € -112 million). Negative business free cash flow rose by 2.8% to € –125 million (Q2 2019: € –121 million). In the first half of 2020, EBITDA pre of Corporate and Other totaled € –236 million (January-June 2019: € –224 million). Business free cash flow amounted to € –271 million in the first six months of 2020 (January-June 2019: € –239 million).

Report on Risks and Opportunities

As a global company operating a large number of highly innovative business fields, Merck is exposed to potential risks and opportunities. The risk categories presented as well as the opportunities described in the Report on Risks and Opportunities in the Annual Report for 2019 remain valid for the Merck Group in the current reporting period. At present, we are not aware of any risks that could jeopardize the continued existence of Merck.

We have a Group-wide risk management system in place to identify, control and mitigate potential risks. We continuously monitor business risks such as issues regarding liquidity, defaults on payables and receivables, currency and interest rates, market pricing, pension obligations, assessment of independent rating agencies, human resources, and information technology. Regarding legal risks, we monitor a host of potential issues such as litigation regarding product liability, antitrust law, pharmaceutical law, patent law, and environmental protection. More information on the expected impact of the Covid-19 pandemic on fiscal 2020 can be found in the “Report on Expected Developments”.

Report on Expected Developments

With the quarterly statement as of March 31, 2020, we updated our forecast for the development of net sales and EBITDA pre for the Merck Group and the individual business sectors in 2020.

The divestment of Allergopharma to Dermapharm Holding SE ("Dermapharm") closed on March 31, 2020. The allergy business of Merck in Europe was transferred to Dermapharm on March 31, 2020. The transfer of the Allergopharma business in China is expected in the second half of 2020. The following forecast reflects this divestment and correspondingly shows a portfolio effect from this transaction over 2019, which however is not expected to be material at Group level.

For fiscal 2020, we confirm the assumptions made in the context of the global outbreak of the Covid-19 pandemic which were published in the outlook of the report on the first quarter of 2020. We continue to assume that our businesses will be impacted to varying degrees. Adverse effects can be seen particularly in Healthcare and Performance Materials, whereas we do not anticipate any negative effects in Life Science. Due to the high level of uncertainty with respect to the further development of the Covid-19 pandemic, this outlook is being made with a considerably higher degree of uncertainty.

Varying dynamics of the outbreak in the different regions of the world are being presumed. Our presumptions largely remain unchanged in comparison with the most recent forecast. For China, we assume that the Covid-19 pandemic reached its peak at the end of the first quarter and that the economic recovery began in the second quarter. For Europe and the United States, we expect an economic recovery in the second half of the year, even if the situation following the initial outbreak of the pandemic has not yet normalized throughout these regions as of the beginning of the third quarter.

Moreover, this latest forecast assumes that there will be no further disease waves in any of the named regions leading to widespread lockdowns and thus considerably negative consequences for the economic recovery.

Merck Group

FORECAST FOR THE MERCK GROUP

€ million	Actual results 2019	Forecast for 2020	Key assumptions
Net sales	16,152	**~16,900 to 17,700** • Slight to moderate organic growth • Portfolio effect in the mid single-digit percentage range • Exchange rate effect –2% to +0%	• Organic growth driven by Life Science; Healthcare with a slight increase, Performance Materials with a moderate to strong organic decline • Positive portfolio effect in the mid single-digit percentage range, mainly resulting from the acquisition of Versum Materials • Negative foreign exchange effect due to emerging market currencies
EBITDA pre	4,385	**~4,450 to 4,850** • Slight to moderate organic growth • Positive portfolio effect in the mid single-digit percentage range • Negative foreign exchange effect of –4% to –2%	• Strong organic growth in Life Science, Healthcare stable, decline in Performance Materials in the low teens percentage range • Realization of synergies from the integration of Versum Materials in Performance Materials as planned • Negative foreign exchange effect due to emerging market currencies
Business free cash flow	2,732	**~2,750 to 3,250** Stable to strong increase	Rise in EBITDA pre and positive effects from working capital compensate for higher capital spending

NET SALES

Following a strong first quarter, the effects of the Covid-19 pandemic became clearly apparent in the second quarter. For the full year 2020, we expect slight to moderate organic net sales growth compared with the previous year. We continue to expect that Life Science will be a major driver of this organic growth. Against the backdrop of the Covid-19 pandemic, we forecast that the Healthcare business sector will see a slight organic increase in net sales, whereas our Performance Materials business will see a moderate to strong organic decline in net sales. In the first three quarters, the effect of the acquisition of Versum Materials will be reported as a portfolio effect, which we still forecast in the mid single-digit percentage range at Group level. With regard to exchange rate developments, we continue to expect a volatile environment due to political and macroeconomic developments. Overall, we forecast a foreign exchange effect of –2% to +0% that can be attributed to the currencies of numerous growth markets, especially in Latin America. Overall, we therefore forecast Group net sales of € 16.9 billion to € 17.7 billion for 2020.

EBITDA PRE

According to our expectations, in 2020 Group EBITDA pre will be in a corridor between € 4.45 billion and € 4.85 billion (2019: € 4.38 billion). Contrary to our expectations in the first quarter, we now expect slight to moderate organic growth. Nevertheless, earnings show significant adversity stemming from strong government restrictions of public life in the context of the Covid-19 pandemic.

For the full year, we expect strong organic growth in Life Science and a stable development in Healthcare, whereas we forecast an organic decline in the low teens percentage range in Performance Materials.

The portfolio effect from the acquisition of Versum Materials is still likely to be in the mid single-digit percentage range and will have a slightly positive impact on the margin of the Merck Group. The expected foreign exchange development is forecast to have a negative effect of between −4% and −2% on Group EBITDA pre; it will be seen particularly in the Healthcare and Life Science businesses. In particular, currency developments in multiple growth markets will have an adverse impact on earnings.

Healthcare

FORECAST FOR THE HEALTHCARE BUSINESS SECTOR

€ million	Actual results 2019	Forecast for 2020	Key assumptions
Net sales	6,714	• Slight organic growth • Adverse portfolio effect in the mid double-digit million range • Slight to moderately adverse foreign exchange effect	• Decline in the core business owing to strong impacts of the Covid-19 pandemic particularly on the Fertility business • Substantial growth contribution by our newly approved products, particularly Mavenclad® • Slight adverse portfolio effect from the divestment of Allergopharma • Adverse foreign exchange effect due to the currency developments in multiple growth markets
EBITDA pre	1,922	• Organic stable • Significantly negative foreign exchange effect	• Significant negative effects of the Covid-19 pandemic, particularly in the Fertility business, as well as the continued expected decline in sales of Rebif® will lead to negative mix effects. These will be softened by the expected significant earnings contributions from our new products, particularly Mavenclad®. • Marketing and selling expenses as well as research and development costs, which are decreasing both as a percentage of sales and in absolute terms due to rigorous cost management and strict pipeline prioritization, can partly offset the decline in sales • Adverse foreign exchange effect due to the currency developments in multiple growth markets
Business free cash flow	1,252	Stable to slight decline	• Decline in EBITDA pre, higher investments in property, plant and equipment • Partly offset by positive effects from working capital management

NET SALES

For the Healthcare business sector, we now expect a slightly positive organic development of net sales in 2020. Here we expect significantly negative effects from the Covid-19 pandemic on the core business, particularly in the Fertility business. We confirm the previously communicated decline in Rebif® sales. Positive contributions to sales growth by the products from General Medicine & Endocrinology, primarily attributable to performance in growth markets, cannot fully compensate for the decline. We expect our new products to contribute significantly to organic sales. For 2020, we believe that both Mavenclad® and Bavencio® will each generate a further significant increase in sales, however due to the effects of the Covid-19 pandemic, these will not be as high as assumed before the outbreak of the pandemic. The divestment of Allergopharma will result in a slightly negative portfolio effect in the mid double-digit million range. Unfavorable foreign exchange developments in multiple growth markets are expected to lead to a slight to moderately adverse foreign exchange effect.

EBITDA PRE

Based on the stated impacts of the Covid-19 pandemic, we forecast an organically stable development for EBITDA pre of the Healthcare business sector in 2020 (previously slight organic decline).

The negative earnings effects in the core business owing to the expected decline in sales of Rebif® will now amplify due to the additional sales decline in the Fertility business. Since the highly profitable business with fertility medicines is among those most strongly affected by the pandemic, this will also lead to a negative mix effect. However, significant earnings contributions from our new products, particularly Mavenclad®, will still have a mitigating effect, albeit to a lower extent owing to the negative impact of the Covid-19 crisis here as well. In addition, we will continue our rigorous cost management and continuous pipeline prioritization. We therefore expect marketing and selling expenses as well as research and development costs to decline both as a percentage of sales and in absolute terms. Research and development costs will remain heavily dependent on the development of clinical data and further expected study results. As of 2020, the upfront cash payment from the global strategic alliance with Pfizer for Bavencio® and Xalkori® will no longer be reflected in profit and loss. Furthermore, the previous year included positive effects from milestone payments. By contrast, the upfront cash payment in the context of the global strategic alliance with GlaxoSmithKline plc (GSK) for the joint development and marketing of bintrafusp alfa will have a positive earnings effect in the high double-digit to low triple-digit euro millions in 2020. The exact amount is dependent on the cost evolution and on reaching development milestones and will be recognized in other operating income. Moreover, the forecast for Healthcare includes effects from active pipeline and portfolio management. Overall, the contribution to earnings attributable to one-time effects will be significantly below the prior-year figure. Furthermore, we expect EBITDA pre to be significantly burdened by foreign exchange effects.

Life Science

FORECAST FOR THE LIFE SCIENCE BUSINESS SECTOR

€ million	Actual results 2019	Forecast for 2020	Key assumptions
Net sales	6,864	• Strong organic growth • Slightly negative foreign exchange effect	• Process Solutions remains the main driver of growth, followed by Applied Solutions • Positive effect from Covid-19 in Process Solutions apparent; this will compensate for slightly negative effects in the other business units • Adverse foreign exchange impact due to exchange rate developments in multiple growth markets
EBITDA pre	2,129	• Strong organic earnings growth • Moderately negative foreign exchange effect	• Organic earnings growth owing to the expected sales growth • Negative foreign exchange effect owing to exchange rate developments in multiple growth markets
Business free cash flow	1,375	Increase in the low percentage teens range	• Rise in EBITDA pre • Improved management of working capital • Offset by higher capital spending on strategic projects

NET SALES

For our Life Science business sector, we continue to assume strong organic growth of net sales in 2020 compared with the previous year. The Process Solutions business unit will again remain the strongest driver of organic growth in 2020, followed by Applied Solutions. In Process Solutions we expect additional positive effects from the Covid-19 pandemic, which can at least compensate for the slightly negative impacts on the other business units. As previously stated, we do not expect that the acquisitions of FloDesign Sonics Inc. and BSSN Software GmbH will have a material portfolio effect. We expect slightly negative foreign exchange effects as a result of devaluating currencies in various growth markets.

EBITDA PRE

For EBITDA pre of the Life Science business sector, we confirm our forecast of strong organic growth in fiscal 2020. The persistently dynamic demand trend is the driver of organic earnings growth. Within the Life Science business sector, in fiscal 2020 we expect moderately adverse foreign exchange effects stemming from the development of various emerging market currencies.

Performance Materials

FORECAST FOR THE PERFORMANCE MATERIALS BUSINESS SECTOR

€ million	Actual results 2019	Forecast for 2020	Key assumptions
Net sales	2,574	• Moderate to strong organic decline • Portfolio effect in the mid-thirties percentage range • Neutral to slightly positive foreign exchange effect	• Continued strong growth momentum in Semiconductor Solutions • Continued price decline in Liquid Crystals • Significant decrease in Surface Solutions • Overall significant negative effects apparent from the Covid-19 pandemic • Portfolio effect due to Versum Materials in the mid-thirties percentage range, no material portfolio effect from Intermolecular • Slightly positive foreign exchange effect due to the trend of exchange rates in several Asian growth markets
EBITDA pre	803	• Organic decline in the low teens percentage range • Portfolio effect in the mid-thirties percentage range • Slightly positive foreign exchange effect	• Strong growth in Semiconductor Solutions cannot offset price decline in Liquid Crystals or the significantly adverse impact of the Covid-19 pandemic despite strict cost discipline • Versum Materials earnings contribution in the mid-thirties percentage range to affect margin positively • Planned realization of synergies of at least € 25 million from the integration of Versum Materials • Slightly positive foreign exchange effect due to the trend of exchange rates in individual Asian growth markets
Business free cash flow	641	Increase with growth rates in the low twenties range	Rise in EBITDA pre including the contribution from Versum Materials, softened by higher capital spending

NET SALES

For our Performance Materials business sector we forecast a moderate to strong organic decline in net sales in 2020. For our Semiconductor Materials business, we continue to expect strong growth dynamics this year as stated in our previous forecast. By contrast, in addition to the continued price erosion owing to price pressure common in the industry, our Liquid Crystals business is suffering from the adverse effects in connection with the economic slowdown in the context of the Covid-19 pandemic. This slowdown in the dynamics of the global economy will also lead to significantly deteriorating business prospects for our Surface Solutions business in 2020. Thanks to Versum Materials, we expect a portfolio effect in the mid-thirties percentage range in first three quarters of 2020. Moreover, the acquisition of Intermolecular closed on September 20, 2019. We do not consider the resulting portfolio effect to be material.

Due to the development of the euro against the U.S. dollar as well as the development of several currencies of Asian growth markets, we expect a neutral to slightly positive foreign exchange effect for 2020.

EBITDA PRE

For our Performance Materials business sector, in comparison with the previous year we expect the economic slowdown within the scope of the Covid-19 pandemic to have a significantly adverse impact on EBITDA pre. The strong growth of our Semiconductor Materials business will not be able to compensate for this. As a result of additional high cost discipline, in comparison with the outlook published in the first quarter, we now assume that the percentage year-on-year decline in organic EBITDA pre will only be in the low teens range. We estimate that the portfolio effect of Versum Materials will be in the mid-thirties percentage range, which will have a slightly positive effect on the margin of the business. We confirm the planned realization of synergies of at least € 25 million, which are included in this forecast.

Owing to the foreign exchange development of the euro-U.S. dollar and several Asian currencies, we assume a slightly positive foreign exchange effect.

Corporate and Other

Overall, in contrast to our estimation in the first quarter, we forecast a slight decline in corporate costs in 2020 in comparison with the previous year. The forecast figures will be adversely affected by currency hedging.

MERCK GROUP

Forecast for FY 2020

€ million	Net sales	EBITDA pre	Business free cash flow
Merck Group	**~16,900 to 17,700** • Slight to moderate organic growth • Portfolio effect in the mid single-digit percentage range • Exchange rate effect –2% to +0%	**~4,450 to 4,850** • Slight to moderate organic growth • Positive portfolio effect in the mid single-digit percentage range • Negative foreign exchange effect of –4% to –2%	**~2,750 to 3,200** Stable to strong increase
Healthcare	• Slight organic growth • Adverse portfolio effect in the mid double-digit million range • Slight to moderately adverse foreign exchange effect	• Organic stable • Significantly negative foreign exchange effect	Stable to slight decline
Life Science	• Strong organic growth • Slightly negative foreign exchange effect	• Strong organic earnings growth • Moderately negative foreign exchange effect	Increase in the low percentage teens range
Performance Materials	• Moderate to strong organic decline • Portfolio effect in the mid-thirties percentage range • Neutral to slightly positive foreign exchange effect	• Organic decline in the low teens percentage range • Portfolio effect in the mid-thirties percentage range • Slightly positive foreign exchange effect	Increase with growth rates in the low twenties percentage range
Corporate and Other	–	• Costs slightly below the year-earlier level	–

EPS pre € 5.60 to € 6.25

Full-year FX assumption for 2020: € 1 = US$ 1.09 to US$ 1.13

Consolidated Half-Year Financial Statements as of June 30, 2020

Consolidated Half-Year Financial Statements as of June 30, 2020

Consolidated Income Statement

€ million	Q2 2020	Q2 2019	Jan.–June 2020	Jan.–June 2019
Net sales	**4,119**	**3,971**	**8,489**	**7,717**
Cost of sales	–1,610	–1,454	–3,264	–2,838
Gross profit	**2,509**	**2,517**	**5,225**	**4,879**
Marketing and selling expenses	–1,035	–1,157	–2,094	–2,248
Administration expenses	–298	–269	–587	–552
Research and development costs	–520	–553	–1,099	–1,080
Impairment losses and reversals of impairment losses on financial assets (net)	–5	2	1	–2
Other operating income	114	252	226	352
Other operating expenses	–274	–173	–465	–352
Operating result (EBIT)[1]	**491**	**618**	**1,207**	**997**
Finance income	4	37	18	53
Finance costs	–107	–98	–219	–227
Profit before income tax	**389**	**557**	**1,006**	**824**
Income tax	–100	–136	–259	–203
Profit after tax from continuing operations	**289**	**421**	**747**	**620**
Profit after tax from discontinued operation	**–**	**50**	**–**	**40**
Profit after tax	**289**	**471**	**747**	**660**
thereof: attributable to Merck KGaA shareholders (net income)	290	471	746	659
thereof: attributable to non-controlling interests	–1	–	1	1
Earnings per share (in €)				
Basic	0.67	1.08	1.72	1.52
from continuing operations	0.67	0.97	1.72	1.42
from discontinued operation	–	0.11	–	0.09
Diluted	0.67	1.08	1.72	1.52
from continuing operations	0.67	0.97	1.72	1.42
from discontinued operation	–	0.11	–	0.09

[1] Not defined by International Financial Reporting Standard (IFRSs).

Statement of Comprehensive Income

€ million	Q2 2020	Q2 2019	Jan.–June 2020	Jan.–June 2019
Profit after tax	**289**	**471**	**747**	**660**
Items of other comprehensive income that will not be reclassified to profit or loss in subsequent periods				
Net defined benefit liability				
Changes in remeasurement	–466	–278	–364	–365
Tax effect	83	40	53	60
Changes recognized in equity	–383	–238	–310	–306
Equity instruments				
Fair value adjustments	37	44	–20	26
Tax effect	–	–	–	–
Changes recognized in equity	37	44	–20	27
	–346	–194	–331	–279
Items of other comprehensive income that may be reclassified to profit or loss in subsequent periods				
Debt instruments				
Fair value adjustments	–	–	–	–
Reclassification to profit or loss	–	–	–	–
Tax effect	–	–	–	–
Changes recognized in equity	–	–	–	–
Cash flow hedge reserve				
Fair value adjustments	19	3	–29	–35
Reclassification to profit or loss	25	25	46	50
Reclassification to assets	–	–	–	–
Tax effect	–14	–8	–6	–4
Changes recognized in equity	29	21	12	11
Cost of cash flow hedge reserve				
Fair value adjustments	–3	–16	4	–14
Reclassification to profit or loss	3	4	5	4
Tax effect	1	3	–1	3
Changes recognized in equity	1	–9	8	–7
Exchange differences on translating foreign operations				
Changes taken directly to equity	–384	–218	–152	128
Reclassification to profit or loss	4	–	3	–
Changes recognized in equity	–379	–218	–149	128
	–349	–206	–130	133
Other comprehensive income	**–695**	**–400**	**–461**	**–146**
Comprehensive income	**–406**	**71**	**286**	**515**
thereof: attributable to Merck KGaA shareholders	–406	71	286	513
thereof: attributable to non-controlling interests	–	–	1	2
Comprehensive income	**–406**	**71**	**286**	**515**
thereof: from continuing operations	–406	21	286	475
thereof: from discontinued operation	–	50	–	40

Consolidated Balance Sheet[1]

€ million	June 30, 2020	Dec. 31, 2019
Non-current assets		
Goodwill	17,118	17,141
Other intangible assets	8,664	9,175
Property, plant and equipment	6,067	6,213
Other non-current financial assets	673	738
Other non-current receivables	21	22
Other non-current non-financial assets	90	97
Deferred tax assets	1,462	1,421
	34,096	**34,808**
Current assets		
Inventories	3,537	3,342
Trade and other current receivables	3,509	3,488
Contract assets	93	156
Other current financial assets	32	57
Other current non-financial assets	585	591
Income tax receivables	458	589
Cash and cash equivalents	1,512	781
	9,726	**9,003**
Total assets	**43,822**	**43,811**
Total equity		
Equity capital	565	565
Capital reserves	3,814	3,814
Retained earnings	11,753	11,507
Gains / losses recognized in equity	1,850	1,980
Equity attributable to Merck KGaA shareholders	**17,982**	**17,865**
Non-controlling interests	44	48
	18,026	**17,914**
Non-current liabilities		
Non-current provisions for employee benefits	3,525	3,194
Other non-current provisions	255	254
Non-current financial debt	10,081	8,644
Other non-current financial liabilities	54	43
Other non-current non-financial liabilities	89	93
Deferred tax liabilities	1,713	1,828
	15,716	**14,056**
Current liabilities		
Current provisions for employee benefits	80	110
Other current provisions	781	823
Current financial debt	4,009	4,550
Other current financial liabilities	409	1,127
Trade and other current payables	1,764	2,054
Refund liabilities	597	565
Income tax liabilities	1,319	1,402
Other current non-financial liabilities	1,122	1,211
	10,080	**11,842**
Total equity and liabilities	**43,822**	**43,811**

[1]Previous year's figures have been adjusted, see "Accounting and measurement principles".

Consolidated Cash Flow Statement

€ million	Q2 2020	Q2 2019	Jan.–June 2020	Jan.–June 2019
Profit after tax	**289**	**471**	**747**	**660**
Depreciation / amortization / impairment losses / reversals of impairment losses	559	453	991	927
Changes in inventories	–118	–113	–247	–259
Changes in trade accounts receivable	75	–104	–180	–119
Changes in trade accounts payable/refund liabilities	–69	159	–42	141
Changes in provisions	–54	–47	–38	54
Changes in other assets and liabilities	–166	–26	–189	–115
Neutralization of gains / losses on disposals of assets	–4	–50	–38	–49
Other non-cash income and expenses	–9	–	15	–5
Net cash flows from operating activities	**502**	**743**	**1,019**	**1,235**
thereof: from discontinued operation	–	–7	–	–12
Payments for investments in intangible assets	–48	–83	–66	–93
Payments from the disposal of intangible assets	7	–	13	17
Payments for investments in property, plant and equipment	–200	–165	–541	–374
Payments from the disposal of property, plant and equipment	6	3	10	6
Payments for investments in financial assets	–12	–127	–38	–164
Payments for acquisitions less acquired cash and cash equivalents	–6	–10	–7	–10
Payments from the disposal of other financial assets	38	3	70	10
Payments for the purchase of non-financial assets	–	–400	–	–500
Payments from other divestments	–	–92	56	–92
Net cash flows from investing activities	**–216**	**–870**	**–504**	**–1,199**
thereof: from discontinued operation	–	112	–	112
Dividend payment to Merck KGaA shareholders	–168	–162	–168	–162
Dividend payments to non-controlling interests	–	–11	–5	–11
Dividend payments to E. Merck KG	–455	–454	–512	–516
Payments from new borrowings from E. Merck KG	390	397	390	406
Repayments of financial debt to E. Merck KG	–	–	–34	–
Payments from the issuance of bonds	–	1,497	1,490	1,497
Repayments of bonds	–	–	–2,041	–
Changes in other current and non-current financial debt	–69	–23	1,120	26
Net cash flows from financing activities	**–302**	**1,244**	**239**	**1,241**
thereof: from discontinued operation	–	–	–	–
Changes in cash and cash equivalents	**–16**	**1,116**	**754**	**1,276**
Changes in cash and cash equivalents due to currency translation	–3	–6	–23	4
Cash and cash equivalents at the beginning of the reporting period	1,530	2,340	781	2,170
Changes in cash and cash equivalents due to reclassification to assets held for sale	–	–	–	–
Cash and cash equivalents as of June 30	**1,512**	**3,451**	**1,512**	**3,451**

Consolidated Statement of Changes in Net Equity

		Comprehensive income						
	Jan. 1, 2020	Profit after tax	Gains / losses recognized in equity	Dividend payments	Profit transfer to / from E. Merck KG including changes in reserves	Transactions with no change of control	Change in scope of consolida-tion / Other	**June 30, 2020**
Equity capital	**565**	**–**	**–**	**–**	**–**	**–**	**–**	**565**
General partner's equity	397	–	–	–	–	–	–	397
Subscribed capital	168	–	–	–	–	–	–	168
Capital reserves	**3,814**	**–**	**–**	**–**	**–**	**–**	**–**	**3,814**
Retained earnings	**11,507**	**746**	**–331**	**–168**	**–**	**–1**	**–**	**11,753**
Retained earnings / net retained profit	13,158	746	–	–168	–	–1	44	13,779
Remeasurement of defined benefit plans	–1,729	–	–310	–	–	–	21	–2,019
Fair value reserve for equity instruments	79	–	–20	–	–	–	–65	–7
Gains / losses recognized in equity	**1,980**	**–**	**–130**	**–**	**–**	**–**	**–**	**1,850**
Fair value reserve for debt instruments	–1	–	–	–	–	–	–	–1
Cash flow hedge reserve	–118	–	12	–	–	–	–	–107
Cost of cash flow hedge reserve	–33	–	8	–	–	–	–	–26
Currency translation difference	2,131	–	–149	–	–	–	–	1,982
Equity attributable to Merck KGaA shareholders	**17,865**	**746**	**–461**	**–168**	**–**	**–1**	**–**	**17,982**
Non-controlling interests	48	1	–	–5	–	–	–	44
Total equity	**17,914**	**747**	**–461**	**–173**	**–**	**–1**	**–**	**18,026**

		Comprehensive income						
€ million	Jan. 1, 2019	Profit after tax	Gains / losses recognized in equity	Dividend payments	Profit transfer to / from E. Merck KG including changes in reserves	Transactions with no change of control	Change in scope of consolida-tion / Other	June 30, 2019
Equity capital	**565**	**–**	**–**	**–**	**–**	**–**	**–**	**565**
General partner's equity	397	–	–	–	–	–	–	397
Subscribed capital	168	–	–	–	–	–	–	168
Capital reserves	**3,814**	**–**	**–**	**–**	**–**	**–**	**–**	**3,814**
Retained earnings	**11,192**	**659**	**–279**	**–162**	**–**	**–**	**–**	**11,410**
Retained earnings / net retained profit	12,525	659	–	–162	–	–	1	13,024
Remeasurement of defined benefit plans	–1,340	–	–306	–	–	–	–	–1,646
Fair value reserve for equity instruments	7	–	27	–	–	–	–1	32
Gains / losses recognized in equity	**1,629**	**–**	**132**	**–**	**–**	**–**	**–**	**1,761**
Fair value reserve for debt instruments	–1	–	–	–	–	–	–	–
Cash flow hedge reserve	–128	–	11	–	–	–	–	–116
Cost of cash flow hedge reserve	–33	–	–7	–	–	–	–	–40
Currency translation difference	1,790	–	127	–	–	–	–	1,918
Equity attributable to Merck KGaA shareholders	**17,200**	**659**	**–147**	**–162**	**–**	**–**	**–**	**17,550**
Non-controlling interests	33	1	1	–11	–	–	–	24
Total equity	**17,233**	**660**	**–146**	**–173**	**–**	**–**	**–**	**17,574**

Notes to the Consolidated Half-Year Financial Statements as of June 30, 2020

These consolidated half-year financial statements have been prepared with Merck KGaA, Frankfurter Strasse 250, 64293 Darmstadt, Germany, which manages the operations of the Merck Group, as parent company.

Accounting and measurement principles

The half-year financial statements of the Merck Group dated June 30, 2020 comply with IAS 34. They have been prepared in accordance with the International Financial Reporting Standards in force on the balance sheet date as issued by the International Accounting Standards Board (IFRS and IAS) and the IFRS Interpretations Committee (IFRIC and SIC) and endorsed by the European Union as well as in accordance with section 117 in conjunction with section 115 of the German Securities Trading Act (WpHG). In accordance with IAS 34, a condensed scope of reporting as compared with the consolidated financial statements as of December 31, 2019 was selected. The figures presented in this half-year financial report have been rounded, which may lead to individual values not adding up to the totals presented.

The preparation of these consolidated half-year financial statements requires that assumptions and estimates be made to a certain extent. The assumptions and estimates are based on the latest state of knowledge and the data available on the balance sheet date. A detailed presentation of the most significant management judgments and sources of estimation uncertainty can be found in the Notes to the Consolidated Financial Statements of the Merck Group for 2019. Due to the uncertain development of the global Covid-19 pandemic, the degree of uncertainty in making assumptions and exercising management judgments is higher in these consolidated half-year financial statements than usual. This applies in particular to impairment testing of assets.

The notes to the consolidated financial statements for 2019 also include a presentation of the accounting and measurement principles used. These apply accordingly to these consolidated half-year financial statements for 2020 with the exception of the changes resulting from new and binding accounting standards that took effect in fiscal 2020 as well as the following disclosure changes.

ACCOUNTING STANDARDS APPLICABLE FOR THE FIRST TIME IN FISCAL 2020

The following regulations take effect as of fiscal 2020:

- Amendment to IAS 1 “Presentation of Financial Statements”
- Amendment to IAS 8 “Accounting Policies, Changes in Accounting Estimates and Errors”
- Amendment to IAS 39 “Financial Instruments: Recognition and Measurement”
- Amendment to IFRS 3 “Business Combinations”
- Amendment to IFRS 7 “Financial Instruments: Disclosures”
- Amendment to IFRS 9 “Financial Instruments”
- Amendments to References to the Conceptual Framework in IFRS Standards

These rules had no material effects on the half-year consolidated financial statements.

CHANGE IN BALANCE SHEET DISCLOSURE OF PROVISIONS FOR EMPLOYEE BENEFITS

To increase the comparability and the further harmonization with the requirements of the IFRS taxonomy, with effect from January 1, 2020 Merck adapted the disclosure of provisions and liabilities for employee benefits.

Provisions for employee benefits of € 237 million previously included in other non-current provisions were reclassified to provisions for pensions and other post-employment benefits and this item was renamed “non-current provisions for employee benefits”.

Current liabilities were expanded to include “Current provisions for employee benefits.” In connection with this reclassification, other current provisions correspondingly decreased by € 110 million as of January 1, 2020.

Scope of consolidation

As of June 30, 2020, 332 (December 31, 2019: 337) companies were fully consolidated. No companies were consolidated using the equity method as of the balance sheet date. Since the beginning of 2020, four companies were deconsolidated due to their divestments to third parties. In addition, one company was merged.

Significant events during the reporting period

IMPACT OF THE COVID-19 PANDEMIC ON THE FINANCIAL STATEMENTS

Merck is continuously reviewing the impacts of the Covid-19 pandemic on the company and the resulting effects on the financial statements of the Group. To date, the Fertility and Neurology franchises of the Healthcare business sector as well as Surface Solutions and Display Materials within the Performance Materials business sector were the units affected most adversely by the Covid-19 pandemic. Apart from sales declines, further impacts in the reporting period resulted mainly from higher logistic expenses and impairment losses on inventories. Further information can be found under "Course of business and economic position". More information on the expected impact of the Covid-19 pandemic on fiscal 2020 can be found under "Report on Expected Developments".

Impairment testing of non-financial assets
During the reporting period an analysis was performed to determine the extent to which indicators of potential impairments on non-financial assets existed owing to the subsequent effects of the Covid-19 pandemic. This analysis was mainly founded on the following bases:

- Updated medium-term planning approved by the Executive Board
- Industry studies, analyst forecasts as well as evaluations of trading multiples of peer group companies for each business sector
- The average market capitalization of Merck in comparison with Group equity on the balance sheet
- Development of the order backlog.

As a result, individual impairment indicators within the meaning of IAS 36 were deemed as fulfilled within the Performance Materials business sector (primarily relating to the Display Materials and Surface Solutions businesses) and Healthcare (primarily relating to the Fertility and Neurology franchises). This estimate is based in particular on the lowering of internal short- and medium-term earnings and cash flow planning as well as published analyst forecasts. Consequently, first an impairment test of non-financial assets at the level of the respective asset or the level of the respective cash-generating unit was conducted.

In the reporting period, this resulted in impairment losses on intangible assets in the Performance Materials business sector amounting to € 96 million. € 69 million of this was attributable to technology-related intangible assets, which were largely acquired as part of the acquisition of AZ Electronics Materials. The recoverable amounts of intangible assets were determined as value in use or as fair value less costs of disposal using the Multi-period Excess Earning Method (MEEM) at level 3 of the IFRS 13 measurement hierarchy and using discount factors after tax in a range between 5.8% in 6.8%. Further impairment losses on property, plant and equipment in the amount of € 12 million were recognized within the Performance Materials business sector.

Impairment testing of goodwill
Moreover, an impairment test of the goodwill allocated to the cash-generating units Performance Materials and Healthcare was performed. Despite the reduced medium-term planning vis-à-vis the year-ago period, impairments were not identified in either of the two cash-generating units.

Significant measurement assumptions
For both value in use and fair value less costs of disposal, the discounted cash flow method (Level 3 in the fair value hierarchy of IFRS 13) was used to determine the recoverable amount. The cash flows taken into consideration were based on the most recent medium-term planning approved by the Executive Board. The planning is based on two scenarios that were condensed into a probability-weighted expected value. The baseline ("V") scenario assumes that global economic growth will recover at a comparable pace after a sharp slump in 2020 and that growth rates will then return to those seen before the outbreak of the pandemic. In this scenario, during the detailed planning period and for the cash-generating unit Performance Materials, the expected average growth of net sales was a mid single-digit percentage rate (cash-generating unit Healthcare: low single-digit percentage rate, excluding new products from the development pipeline and other expansion investments). For the cash-generating unit Performance Materials, the expected average growth of EBITDA pre was a mid single-digit percentage rate (cash-generating unit Healthcare: low single-digit percentage rate, excluding new products from the development pipeline and other expansion investments).

In contrast, the negative scenario considered with a probability of occurrence of less than 20% (extended "U" scenario) assumes a slower recovery from the effects of the Covid-19 pandemic and a sustained reduction in average global GDP growth over the entire detailed planning period. Compared with the baseline scenario, the assumptions for the cash-generating unit Performance Materials were lower annual net sales in a range between 6–7% (cash-generating unit Healthcare: 1–7%) and lower annual EBITDA pre in a range between 10–13% (cash-generating unit Healthcare: 1–10%). The following table summarizes further significant measurement assumptions of the impairment tests:

			Discount rate			
	Long-term growth rate		Weighted costs of capital after tax		Weighted costs of capital before tax	
in %	**2020**	2019	**2020**	2019	**2020**	2019
Performance Materials[1]	1.0%	1.0%	5.8%	6.3%	7.2%	8.0%
Healthcare	0.0%	0.0%	5.6%	5.8%	7.5%	7.8%

[1] In 2019 including Versum Materials Inc. based on the preliminary purchase price allocation.

The stated discount rate before tax was iteratively calculated based on the discount rate after tax.

Sensitivity analysis

Within the cash-generating unit Performance Materials, the difference between the recoverable amount and the carrying amount (headroom) amounted to more than 25% of the recoverable amount (2019: more than 15%). Within the cash-generating unit Healthcare, as in 2019 the headroom amounted to significantly more than 50% of the recoverable amount.

An increase in the probability of occurrence of the aforementioned negative scenario to 100% would not have led to impairment losses for either the cash-generating unit Performance Materials or the cash-generating unit Healthcare. The following table presents the extent to which further significant measurement assumptions would have to change before a goodwill impairment in the cash-generating unit Performance Materials business or the cash-generating unit Healthcare would be recognized.

	Performance Materials		Healthcare	
in % / in percentage points	**2020**	2019	**2020**	2019
Reduction in net payment streams (in %)	> 10%	> 10%	> 10%	> 10%
Reduction in the long-term growth rate (in percentage points)	> 2	> 2	> 2	> 2
Increase in the discount rate after tax (in percentage points)	> 1.5	> 1.5	> 2	> 2

Impairments of financial assets

Owing to the Covid-19 pandemic, individual contractually agreed payment terms were extended with some customers.

Furthermore, the expected default rates to be applied for trade accounts receivable in the simplified impairment model were adjusted by adapting the minimum default probabilities per age group derived from market data in line with the development of the prices of credit default swap spreads. This led to an increase in impairments on trade accounts receivable in a low single-digit million euro amount.

LITIGATION DEVELOPMENTS

Patent law dispute within the Performance Materials business sector

PS-VA liquid crystals mixtures: In the Performance Materials business sector, Merck is involved in a legal dispute with JNC Corporation, Japan, (JNC). JNC claims that by manufacturing and marketing certain liquid crystal mixtures, Merck infringes on JNC patents.

JNC is asserting its claims in court in two jurisdictions. Merck maintains that the patent infringement assertion by JNC is invalid in three jurisdictions owing to relevant prior art and has filed the corresponding nullity actions. As of the end of the second quarter of 2020, the nullity actions were concluded in two jurisdictions with legally binding effect in favor of Merck. A patent infringement action was only conducted in two jurisdictions and was concluded in 2019. In the third jurisdiction, a patent infringement and a nullity action as well as a correction trial are still pending. In view of these developments, the provision was reduced as of June 30, 2020 and amounts to a double-digit million euro sum. Cash outflow within the next 12 months is considered possible at present.

EU Commission antitrust proceedings

Antitrust review proceedings for the acquisition of Sigma-Aldrich Corporation, United States, (Sigma-Aldrich): On July 6, 2017, Merck received notice from the European Commission (EU Commission) in connection with the antitrust review proceedings for the acquisition of Sigma-Aldrich, in which the EU Commission informed Merck of its preliminary conclusion that Merck and Sigma-Aldrich allegedly transmitted incorrect and / or misleading information within the scope of the acquisition of Sigma-Aldrich. The EU Commission received registration of the merger on April 21, 2015, and granted clearance on June 15, 2015, subject to the condition that Merck and Sigma-Aldrich divest parts of the European solvents and inorganic chemicals businesses of Sigma-Aldrich in order to resolve antitrust concerns. According to the preliminary viewpoint of the EU Commission communicated in the letter dated July 6, 2017, Merck and Sigma-Aldrich withheld in this connection important information about an innovation project allegedly relevant for certain laboratory chemicals of significance to the analysis by the EU Commission. According to the EU Commission, the innovation project should have been included in the remedies package. This resulted in an EU Commission administrative procedure. On July 1, 2020, the EU Commission informed Merck that the allegations made against Merck will be dropped. The accusations made against Sigma-Aldrich remain the object of the ongoing proceedings. This could lead to a fine being imposed, against which legal recourse could be taken. The existing provision amounting to a mid double-digit euro sum was reduced to a low double-digit million euro sum in the reporting period. A potential cash outflow is considered possible for 2020.

AGREEMENT TO DIVEST THE ALLERGOPHARMA ALLERGY BUSINESS

On February 19, 2020, Merck signed an agreement to divest its Allergopharma allergy business to Dermapharm Holding SE. Following regulatory approval and the satisfaction of other customary closing conditions, the transaction closed on March 31, 2020. Only the transfer of the minor business in China is expected for the second half of 2020.

Allergopharma is a leader in allergen-specific immunotherapy of type 1 allergies. Allergopharma products are currently available in 18 markets worldwide. The transaction encompasses the Allergopharma business in Europe and Asia, with the broad portfolio of therapeutic and diagnostic products as well as the production site in Reinbek near Hamburg (Germany). An existing adrenaline autoinjector development project for the treatment of anaphylactic reactions is not part of the transaction and will remain with Merck. As of June 30, 2020, after the deduction of cash and cash equivalents Merck received € 56 million, which was disclosed in the reporting period under cash flows from investing activities in the cash flow statement. Because the purchase price adjustments have not been completed, it has not yet been possible to determine the final purchase price.

In the opinion of the Executive Board, the preconditions for classification as a discontinued operation pursuant to IFRS 5 were only met once the agreement to divest the Allergopharma business had been signed.

ACQUISITION OF VERSUM MATERIALS, INC., USA, IN 2019

On October 7, 2019, Merck announced the successful closing of the acquisition of Versum Materials, Inc., USA, ("Versum"). The purchase price in accordance with IFRS 3 was around € 5.2 billion and was paid fully in cash.

Business activities of Versum

Versum is one of the world's leading suppliers of innovation-driven, high-purity process chemicals, gases and equipment for semiconductor manufacturing. The company reported annual sales of approximately € 1.2 billion in fiscal 2018, has approximately 2,300 employees, and operates 14 manufacturing and seven research and development facilities throughout Asia and North America. The legacy Versum business is being integrated into the Semiconductor Solutions business unit within the Performance Materials business sector. The merger is expected to transform Merck into a leading provider of electronic materials for the semiconductor and display industries.

Purchase price allocation

Intangible assets represented the vast majority of the fair values of the acquired net assets. Except for intangible assets, property, plant and equipment as well as tax liabilities, the purchase price allocation had been completed as of June 30, 2020.

More information on the (preliminary) fair values of the acquired net assets at the time of the acquisition can be found under "Acquisition and divestments" in the Notes to the Consolidated Financial Statements of the Annual Report for 2019.

The preliminary and still positive difference of € 3,144 million resulting from the purchase price allocation was recognized as goodwill and allocated in full to the Performance Materials business sector. It includes expected synergies resulting from the integration of Versum into the Merck Group, expected revenues from technical innovations and developments that go beyond the current product, development, and customer portfolios, and unrecognized intangible assets such as the expertise of the workforce. Goodwill is not expected to be deductible for tax purposes. The development of goodwill carried in foreign currency during the period from first-time recognition and June 30, 2020 was as follows:

€ million	Development of goodwill
Goodwill on October 7, 2019 (preliminary)	3,144
Exchange rate effects	–64
Goodwill on December 31, 2019 (preliminary)	**3,080**
Exchange rate effects	–2
Goodwill on June 30, 2020 (preliminary)	**3,078**

OTHER ACQUISITIONS MADE IN 2019

On September 20, 2019, Merck completed the acquisition of Intermolecular Inc., USA, (Intermolecular) for US$ 1.20 per share in cash (equivalent to € 56 million for 100% of the shares).

Intermolecular possesses application specific materials expertise and accelerated learning and experimentation platforms with powerful analytics infrastructure that perfectly complement the business and technology portfolio of Merck's semiconductor business unit of the Performance Materials business sector. Intermolecular reported annual sales of US$ 34 million in fiscal 2018 and has around 90 employees.

The intangible assets identified during the purchase price allocation and recognized on the date of first-time consolidation were to the largest extent attributable to technology-related intangible assets. As of June 30, 2020, the purchase price allocation had not been completed in respect of intangible assets and deferred taxes.

On June 17, 2019, Merck acquired the laboratory informatics provider BSSN Software GmbH, Darmstadt, (BSSN). BSSN develops and markets software for managing and integrating data, which unifies data from laboratory instruments and data systems and makes them available for analyzing, processing, and sharing. The business was integrated into the Life Science business sector. The purchase price amounted to € 16 million including milestone payments amounting to € 6 million for reaching technological development targets. The first milestone payment, which amounted to € 2 million, was made in June 2020.The intangible assets identified during the purchase price allocation and recognized on the date of first-time consolidation were attributable to technology-related intangible assets. The positive difference of € 11 million was recognized as goodwill.

The completion of the acquisition of FloDesign Sonics, Inc., USA was announced on October 10, 2019. The company has developed an industrial acoustic cell processing platform for the industrialization of cell and gene therapy manufacturing. It forms part of the Life Science business sector. The purchase price according to IFRS 3 amounted to € 46 million and comprise fixed compensation of € 32 million as well as contingent consideration for the achievement of technological development targets as well as sales-independent milestone payments of € 14 million. The intangible assets identified during the preliminary purchase price allocation and recognized on the date of first-time consolidation were attributable to technology-related intangible assets. As of June 30, 2020, the purchase price allocation had not been completed in respect of intangible assets and deferred taxes.

Segment Reporting

INFORMATION BY BUSINESS SECTOR

	Healthcare				Life Science			
€ million	**Q2 2020**	Q2 2019	**Jan.–June 2020**	Jan.–June 2019	**Q2 2020**	Q2 2019	**Jan.–June 2020**	Jan.–June 2019
Net sales[1]	**1,499**	**1,677**	**3,200**	**3,158**	**1,806**	**1,705**	**3,575**	**3,366**
Intersegment sales	–	–	–	–	4	5	9	10
Operating result (EBIT)[2]	**269**	**345**	**692**	**473**	**386**	**322**	**731**	**635**
Depreciation and amortization	78	177	156	351	199	197	395	390
Impairment losses	12	–	13	27	–	–	–	–
Reversals of impairment losses	–	–	–	–	–	–	–	–
EBITDA[2]	**359**	**523**	**860**	**852**	**584**	**518**	**1,126**	**1,025**
Adjustments[2]	15	5	−14	8	−15	15	−4	24
EBITDA pre (Segment result)[2]	**374**	**528**	**846**	**860**	**569**	**533**	**1,122**	**1,049**
EBITDA pre margin (in % of net sales)[2]	24.9%	31.5%	26.4%	27.2%	31.5%	31.3%	31.4%	31.2%
Assets by business sector[3]			7,260	7,560			21,543	21,600
Liabilities by business sector[3]			−2,687	−3,055			−1,418	−1,519
Investments in property, plant and equipment[3]	67	66	222	164	70	63	177	139
Investments in intangible assets[4]	7	35	15	41	14	43	22	45
Business free cash flow[2]	261	346	638	568	472	323	718	591

[1] Excluding intersegment sales.
[2] Not defined by International Financial Reporting Standards (IFRSs).
[3] Figures for the reporting period ending on June 30, 2020; previous-year figures as of December 31, 2019.
[4] As reported in the consolidated cash flow statement.

Segmentation was performed in accordance with the internal organization and reporting structure of the Merck Group valid as of 2020.

The fields of activity of the individual segments are described under “Fundamental Information about the Group” in the combined management report for 2019.

“Corporate and Other” in Segment Reporting includes income and expenses, assets and liabilities as well as cash flows that cannot be directly allocated to the reportable segments presented. This relates mainly to central Group functions. Moreover, the column served the reconciliation to the Group numbers. The expenses and income from the financial result and from income taxes as well as cash flows were also disclosed under “Corporate and Other”.

Apart from sales, the success of a segment is mainly determined by EBITDA pre (segment result) and business free cash flow. EBITDA pre and business free cash flow are performance indicators not defined by International Financial Reporting Standards. They represent important variables used to steer the Merck Group. To permit a better understanding of operational performance, EBITDA pre excludes depreciation and amortization, impairment losses and reversals of impairment losses in addition to specific adjustments presented in the following. Among other things, business free cash flow is also used for internal target agreements.

Transfer prices for intragroup sales were determined on an arm’s-length basis. The intersegment sales reported in the above table are valued at Group production cost.

Performance Materials				Corporate and Other				Group			
Q2 2020	Q2 2019	**Jan.–June 2020**	Jan.–June 2019	**Q2 2020**	Q2 2019	**Jan.–June 2020**	Jan.–June 2019	**Q2 2020**	Q2 2019	**Jan.–June 2020**	Jan.–June 2019
814	**589**	**1,714**	**1,193**	**–**	**–**	**–**	**–**	**4,119**	**3,971**	**8,489**	**7,717**
–	–	–	–	–4	–5	–9	–10	–	–	–	–
–30	**100**	**86**	**195**	**–133**	**–148**	**–301**	**–305**	**491**	**618**	**1,207**	**997**
138	62	272	124	18	20	41	37	434	455	863	902
112	–	112	–	–	–	–	–	123	–	125	27
–	–	–	–	–	–	–	–	–	–	–	–
219	**161**	**470**	**318**	**–115**	**–128**	**–261**	**–268**	**1,048**	**1,074**	**2,195**	**1,927**
19	29	54	65	8	16	24	44	27	65	60	141
238	**190**	**524**	**383**	**–107**	**–112**	**–236**	**–224**	**1,074**	**1,139**	**2,256**	**2,068**
29.3%	32.3%	30.6%	32.1%	–	–	–	–	26.1%	28.7%	26.6%	26.8%
		10,537	10,784			4,482	3,867			43,822	43,811
		–597	–716			–21,094	–20,608			–25,796	–25,897
57	28	118	41	7	8	24	29	200	165	541	374
25	2	26	3	2	3	4	3	48	83	66	93
204	153	389	326	–125	–121	–271	–239	813	701	1.474	1.246

The following table presents the reconciliation of EBITDA pre of all operating businesses to the profit before income tax of the Merck Group:

€ million	Q2 2020	Q2 2019	Jan.–June 2020	Jan.–June 2019
EBITDA pre of the operating businesses[1]	**1,181**	**1,251**	**2,492**	**2,292**
Corporate and Other	–107	–112	–236	–224
EBITDA pre of the Merck Group[1]	**1,074**	**1,139**	**2,256**	**2,068**
Depreciation / amortization / impairment losses / reversals of impairment losses	–556	–455	–988	–929
Adjustments[1]	–27	–65	–60	–141
Operating result (EBIT)[1]	**491**	**618**	**1,207**	**997**
Financial result	–102	–61	–201	–174
Profit before income tax	**389**	**557**	**1,006**	**824**

[1] Not defined by International Financial Reporting Standards (IFRSs).

Business free cash flow was determined as follows:

€ million	Q2 2020	Q2 2019	Jan.–June 2020	Jan.–June 2019
EBITDA pre[1]	**1,074**	**1,139**	**2,256**	**2,068**
Investments in property, plant and equipment, software as well as advance payments for intangible assets	–221	–193	–396	–319
Changes in inventories	–94	–96	–195	–269
Changes in trade accounts receivable as well as receivables from royalties and licenses	85	–116	–77	–175
Lease payments[2]	–31	–33	–68	–59
Elimination of changes in consolidations	–	–	–45	–
Business free cash flow[1]	**813**	**701**	**1,474**	**1,246**

[1] Not defined by International Financial Reporting Standards (IFRSs).
[2] Excluding payments for low-value leases and interest components included in lease payments.

Adjustments comprised the following:

€ million	Q2 2020	Q2 2019	Jan.–June 2020	Jan.–June 2019
Restructuring expenses	–21	–39	–37	–100
Integration expenses / IT expenses	–37	–22	–59	–35
Gains (+) / losses (–) on the divestment of businesses	–2	2	28	–
Acquisition-related adjustments	30	–	11	–
Other adjustments	4	–6	–4	–5
Adjustments before impairment losses/reversals of impairment losses[1]	**–27**	**–65**	**–60**	**–141**
Impairment losses	–112	–	–114	–
Reversals of impairment losses	–	–	–	–
Adjustments (total)[1]	**–138**	**–65**	**–174**	**–141**

[1] Not defined by International Financial Reporting Standards (IFRSs).

Lower restructuring expenses are mainly due to the decline in the costs incurred by the Performance Materials business sector in the context of the Bright Future transformation program (January-June 2020: € 2 million/January-June 2019: € 60 million). The rollout of new ERP systems (January-June 2020: € 32 million / January-June 2019: € 23 million) and the integration of Versum Materials, Inc., USA, (January-June 2020: € 18 million / January-June 2019: € 0 million) contributed significantly to the increase in integration and IT expenses to € 59 million. The gain on the divestment of the allergy business in the first quarter of 2020 (€ 36 million) has been recorded under "Gains on the divestment of businesses". The vast majority of the increase in impairment losses to € 114 million relates to intangible assets in the Performance Materials business sector.

The following tables present a more detailed breakdown of net sales from contracts with customers:

€ million	Jan.–June 2020							
Net sales by nature of the products	Healthcare		Life Science		Performance Materials		**Group**	
Goods	3,130	98%	3,167	89%	1,540	90%	7,837	92%
Equipment/hardware	2	0%	168	5%	127	7%	297	4%
Services	24	1%	236	7%	46	3%	307	4%
License income	–	0%	4	0%	1	0%	5	0%
Commission income	7	0%	–	0%	–	0%	7	0%
Income from co-commercialization agreements	35	1%	–	0%	–	0%	35	0%
Total	**3,200**	**100%**	**3,575**	**100%**	**1,714**	**100%**	**8,489**	**100%**
Net sales by region (customer location)								
Europe	1,074	33%	1,224	34%	130	7%	2,428	29%
North America	700	22%	1,293	36%	250	15%	2,243	27%
Asia-Pacific (APAC)	884	28%	893	25%	1,300	76%	3,077	36%
Latin America	321	10%	121	4%	13	1%	455	5%
Middle East and Africa (MEA)	221	7%	44	1%	21	1%	285	3%
Total	**3,200**	**100%**	**3,575**	**100%**	**1,714**	**100%**	**8,489**	**100%**

€ million	Jan.–June 2019							
Net sales by nature of the products	Healthcare		Life Science		Performance Materials		**Group**	
Goods	3,067	97%	2,928	87%	1,192	100%	7,187	93%
Equipment/hardware	4	0%	206	6%	–	0%	210	3%
Services	55	2%	227	7%	1	0%	282	4%
License income	–	0%	4	0%	–	0%	4	0%
Commission income	10	0%	1	0%	1	0%	11	0%
Income from co-commercialization agreements	22	1%	–	0%	–	0%	22	0%
Total	**3,158**	**100%**	**3,366**	**100%**	**1,193**	**100%**	**7,717**	**100%**
Net sales by region (customer location)								
Europe	1,096	35%	1,144	34%	111	9%	2,351	31%
North America	668	21%	1,194	36%	110	9%	1,972	26%
Asia-Pacific (APAC)	857	27%	846	25%	951	80%	2,654	34%
Latin America	333	11%	137	4%	16	1%	486	6%
Middle East and Africa (MEA)	204	6%	45	1%	6	1%	255	3%
Total	**3,158**	**100%**	**3,366**	**100%**	**1,193**	**100%**	**7,717**	**100%**

HEALTHCARE

€ million	**Jan.–June 2020**	**Share**	Jan.–June 2019	Share
Oncology	**518**	**16%**	**479**	**15%**
thereof: Erbitux®	419	13%	411	13%
thereof: Bavencio®	63	2%	45	1%
Neurology & Immunology	**790**	**25%**	**735**	**23%**
thereof: Rebif®	584	18%	630	20%
thereof: Mavenclad®	206	6%	105	3%
Fertility	**468**	**15%**	**601**	**19%**
thereof: Gonal-f®	279	9%	359	11%
General Medicine & Endocrinology	**1,318**	**41%**	**1,209**	**39%**
thereof: Glucophage®	460	14%	418	13%
thereof: Concor®	281	9%	241	8%
thereof: Euthyrox®	228	7%	189	6%
thereof: Saizen®	118	4%	112	4%
Other	**105**	**3%**	**134**	**4%**
Total	**3,200**	**100%**	**3,158**	**100%**

LIFE SCIENCE[1]

€ million	**Jan.–June 2020**	**Share**	Jan.–June 2019	Share
Process Solutions	1,695	48%	1,443	43%
Research Solutions	1,047	29%	1,086	32%
Applied Solutions	834	23%	837	25%
Total	**3,575**	**100%**	**3,366**	**100%**

[1] Previous year's figures have been adjusted due to an internal realignment.

PERFORMANCE MATERIALS

€ million	**Jan.–June 2020**	**Share**	Jan.–June 2019	Share
Display Solutions	567	33%	656	55%
Semiconductor Solutions	960	56%	307	26%
Surface Solutions	187	11%	230	19%
Other	0	0%	1	0%
Total	**1,714**	**100%**	**1,193**	**100%**

Earnings per share

Basic earnings per share are calculated by dividing the profit after tax attributable to the shareholders of Merck KGaA (net income) by the weighted average number of theoretical shares outstanding. The use of a theoretical number of shares takes into account the fact that the general partner's equity is not represented by shares. The subscribed capital of € 168 million was divided into 129,242,252 shares. Accordingly, the general partner's equity of € 397 million was divided into 305,535,626 theoretical shares. Overall, equity capital thus amounted to € 565 million or 434,777,878 theoretical shares outstanding. The weighted average number of shares (basic) was likewise 434,777,878 in the first half of 2020.

There were no changes to equity capital in the first half of 2020. The weighted average (basic) number of shares was 434,777,878 and thus corresponded to the number of theoretical shares outstanding. In the first half of 2020, there were no shares with a potential diluting effect; as a result, diluted earnings per share were equivalent to basic earnings per share.

Information on the measurement of fair value

The following table presents the carrying amounts and the fair values of the individual financial assets and liabilities as of June 30, 2020 for each individual financial instrument class pursuant to IFRS 9:

June 30, 2020	Carrying amount			Fair value[1]			
€ million	Short-term	Long-term	Total	Fair value determined by official prices and quoted market values (Level 1)	Fair value determined using input factors observable in the market (Level 2)	Fair value determined using input factors unobservable in the market (Level 3)	Total
Financial assets							
Subsequent measurement at amortized cost							
Cash and cash equivalents	1,512	–	1,512				
Trade and other receivables (excluding leasing receivables)	3,483	20	3,503				
Other debt instruments	1	8	8				
Subsequent measurement at fair value through other comprehensive income							
Equity instruments	–	331	331	125	–	206	331
Trade and other receivables	24	–	24	–	–	24	24
Other debt instruments	6	4	10	10	–	–	10
Subsequent measurement at fair value through profit or loss							
Contingent considerations	–	262	262	–	–	262	262
Other debt instruments	–	58	58	2	22	34	58
Derivatives without a hedging relationship	10	10	21	–	21	–	21
Derivatives with a hedging relationship	15	–	15	–	15	–	15
Leasing receivables (to be measured in accordance with IFRS 16)[2]	2	–	3				
Total	**5,053**	**694**	**5,747**	**137**	**58**	**526**	**721**
Financial liabilities							
Subsequent measurement at amortized cost							
Trade and other payables	1,764	–	1,764				
Financial debt	3,861	9,619	13,481	9,654	4,172	–	13,825
Other financial liabilities	373	38	411				
Subsequent measurement at fair value through profit or loss							
Contingent considerations	–	16	16	–	–	16	16
Derivatives without a hedging relationship	46	40	86	–	86	–	86
Derivatives with a hedging relationship	35	–	35	–	35	–	35
Refund liabilities	597	–	597				
Leasing liabilities (to be measured in accordance with IFRS 16)[2]	102	422	524				
Total	**6,778**	**10,135**	**16,912**	**9,654**	**4,293**	**16**	**13,962**

[1] The simplification option under IFRS 7.29(a) was used for disclosures of certain fair values.
[2] Measurements within the scope of IFRS 16 are exempted from the requirements of IFRS 13 (IFRS 13.6(b)).

The following table presents the carrying amounts and fair values of the individual financial assets and liabilities as of December 31, 2019 for each individual financial instrument class pursuant to IFRS 9:

December 31, 2019	Carrying amount			Fair value[1]			
€ million	Short-term	Long-term	Total	Fair value determined by official prices and quoted market values (Level 1)	Fair value determined using input factors observable in the market (Level 2)	Fair value determined using input factors unobservable in the market (Level 3)	Total
Financial assets							
Subsequent measurement at amortized cost							
Cash and cash equivalents	781	–	781				
Trade and other receivables (excluding leasing receivables)	3,458	22	3,480				
Other debt instruments	1	8	9				
Subsequent measurement at fair value through other comprehensive income							
Equity instruments	–	399	399	209	–	190	399
Trade and other receivables	24	–	24	–	–	24	24
Other debt instruments	29	9	39	39	–	–	39
Subsequent measurement at fair value through profit or loss							
Contingent considerations	–	258	258	–	–	258	258
Other debt instruments	–	50	50	2	22	26	50
Derivatives without a hedging relationship	20	14	33	–	33	–	33
Derivatives with a hedging relationship	7	–	7	–	7	–	7
Leasing receivables (to be measured in accordance with IFRS 16)[2]	5	–	5				
Total	**4,325**	**761**	**5,086**	**250**	**62**	**499**	**810**
Financial liabilities							
Subsequent measurement at amortized cost							
Trade and other payables	2,054	–	2,054				
Financial debt	4,422	8,129	12,551	10,183	2,706	–	12,889
Other financial liabilities	1,081	27	1,108				
Subsequent measurement at fair value through profit or loss							
Contingent considerations	–	16	16	–	–	16	16
Derivatives without a hedging relationship	19	56	76	–	76	–	76
Derivatives with a hedging relationship	46	–	46	–	46	–	46
Refund liabilities	565	–	565				
Leasing liabilities (to be measured in accordance with IFRS 16)[2]	109	458	567				
Total	**8,295**	**8,687**	**16,982**	**10,183**	**2,828**	**16**	**13,027**

[1] The simplification option under IFRS 7.29(a) was used for disclosures of certain fair values.

[2] Measurements within the scope of IFRS 16 are exempted from the requirements of IFRS 13 (IFRS 13.6(b)

The measurement techniques and main input factors used to determine the fair value of financial instruments are as follows:

FAIR VALUE DETERMINED BY OFFICIAL PRICES AND QUOTED MARKET VALUES (LEVEL 1)

	Financial instruments concerned	Description of the measurement technique	Main input factors used to determine fair values
Financial assets			
Subsequent measurement at fair value through other comprehensive income			
Equity instruments	Shares	Derived from active market	Quoted prices in an active market
Other debt instruments	Bonds		
	Other short-term cash investments		
Subsequent measurement at fair value through profit or loss			
Other debt instruments	Publicly traded funds	Derived from active market	Quoted prices in an active market
Financial liabilities			
Subsequent measurement at amortized cost			
Financial debt	Bonds	Derived from active market	Quoted prices in an active market

FAIR VALUE DETERMINED USING INPUT FACTORS OBSERVABLE IN THE MARKET (LEVEL 2)

	Financial instruments concerned	Description of the measurement technique	Main input factors used to determine fair values
Financial assets			
Subsequent measurement at fair value through profit or loss			
Other debt instruments	Convertible notes with conversion right to shares in companies	Nominal value considering liquidity discount	Volatilities observable on the market
Derivatives (without a hedging relationship)	Forward exchange contracts and currency options	Use of recognized actuarial methods	Spot and forward rates observable on the market as well as exchange rate volatilities
	Interest rate swaps		Interest rate curves available on the market
Derivatives (with a hedging relationship)			
	Forward exchange contracts and currency options	Use of recognized actuarial methods	Spot and forward rates observable on the market as well as exchange rate volatilities
Financial liabilities			
Subsequent measurement at fair value through profit or loss			
Derivatives (without a hedging relationship)	Forward exchange contracts and currency options	Use of recognized actuarial methods	Spot and forward rates observable on the market as well as exchange rate volatilities
	Interest rate swaps		Interest rate curves available on the market
Derivatives (with a hedging relationship)			
	Forward exchange contracts and currency options	Use of recognized actuarial methods	Spot and forward rates observable on the market as well as exchange rate volatilities
Subsequent measurement at amortized cost			
Financial debt	Liabilities to banks and other loan liabilities	Discounting of future cash flows	Interest rates observable on the market

FAIR VALUE DETERMINED USING INPUT FACTORS UNOBSERVABLE IN THE MARKET (LEVEL 3)

	Financial instruments concerned	Description of the measurement technique	Main input factors used to determine fair values
Financial assets			
Subsequent measurement at fair value through other comprehensive income			
Equity instruments	Equity investments in unlisted companies	Discounting of expected future cash flows	Expected cash flows from recent business planning, average cost of capital, expected long-term growth rate
		Derived from observable prices within the scope of equity refinancing sufficiently close to the balance sheet date, considered risk allowances	Derived from observable prices from equity refinancing transactions
		Cost-based determination	Acquisition cost
Trade and other receivables	Trade accounts receivable that are intended for sale due to a factoring agreement	Nominal value less factoring fees	Nominal value of potentially sold trade accounts receivable, average fees for sales of trade accounts receivable
Subsequent measurement at fair value through profit or loss			
Derivatives (without a hedging relationship)	Option on equity instruments in unlisted companies	Option pricing models	Sales planning, milestone payments, probabilities of regulatory and commercial events, discount rates
Contingent considerations	Contingent considerations from the sale of businesses or shares in corporations	Discounting of probability-weighted future milestone payments and license fees	Sales planning, milestone payments, probabilities of regulatory and commercial events, discount rates
Other debt instruments	Interests in unlisted funds	Consideration of the fair value of companies in which the funds are invested	Net asset values of the fund interests
	Notes with conversion right to shares in unlisted companies	Application of recognized actuarial methods including risk discounts	Interest rates observable on the market
Financial liabilities			
Subsequent measurement at fair value through profit or loss			
Contingent considerations	Contingent considerations from the purchase of businesses	Discounting of probability-weighted future milestone payments and license fees	Sales planning, milestone payments, probabilities of regulatory and commercial events, discount rates

Counterparty credit risk was taken into consideration for measurements of financial instruments at fair value. In the case of non-derivative financial instruments, such as other liabilities or interest-bearing securities, this was reflected using risk premiums on the discount rate, while discounts on market value (so-called credit valuation adjustments and debit valuation adjustments) were used for derivatives.

Equity investments in unlisted companies (Level 3)
The planning periods used to determine the fair value of equity investments in unlisted companies ranged from 0.5 to 9.5 years (December 31, 2019: 1 to 9 years). Cash flows for periods in excess of this are included in the terminal value calculation using long-term growth rates of between 1.0% and 2.0% (December 31, 2019: 1.0% and 2.0%). The applied average cost of capital (after tax) was 7.0% on June 30, 2020 (December 31, 2019 7.0%).

Determining the parameters that are to be included in discounted cash-flow-methods and deriving the fair value from observable prices within the scope of equity refinancing are both subject to discretionary decisions and estimation uncertainty.

Assets from contingent considerations (Level 3)
The fair values of assets from contingent considerations are calculated by weighting the expected future milestone payments and royalties using their probabilities of occurrence and discounting them. This assessment is subject to significant discretionary judgment. The main parameters when determining contingent considerations are

- the estimated probabilities of occurrence of the individual milestone events,
- the sales planning assumed to derive royalties and
- the discount rate used.

When determining the probabilities of occurrence of the individual milestone events in connection with the development of drug candidates, the focus is on empirically available probabilities of success of development programs in comparable phases of clinical development in the relevant therapeutic areas. To determine the sales planning, internal sales plans and sales plans of external industry services are used. The discount rates (after tax) as of June 30, 2020 were between 5.6% and 6.6% (December 31, 2019: 5.9% to 6.9%) and were calculated using the weighted average cost of capital.

The most significant contingent consideration was the future purchase price claim from the disposal of the Biosimilars business to Fresenius SE & Co. KGaA, Bad Homburg vor der Höhe, on August 31, 2017. It was calculated by an external valuation expert on initial recognition in 2017 and continued on this basis. As of June 30, 2020, the carrying amount was € 208 million (December 31, 2019: € 198 million).

If, in the context of determining the fair value of this contingent consideration at the date of transaction, the probability of approval as well as the discount factor of the three major development programs had been estimated to be lower or higher, this would have led to the following changes in the measurement and the corresponding effects on the profit before income tax:

June 30, 2020		Change in the probability of regulatory approval		
€ million		–10%	unchanged	10%
Change in the discount rate	5.1%	–23	6	35
	unchanged (5.6%)	–28	–	28
	6.1%	–33	–6	22

Dec. 31, 2019		Change in the probability of regulatory approval		
€ million		–10%	unchanged	10%
Change in the discount rate	5.4%	–28	6	40
	unchanged (5.9%)	–33	–	33
	6.4%	–37	–6	26

The changes in financial assets and liabilities allocated to Level 3 and measured at fair value for each individual category of financial instrument were as follows in the period from January 1, 2020 to June 30, 2020:

2020		Financial assets				Financial liabilities
		Subsequent measurement at fair value through profit or loss		Subsequent measurement at fair value through other comprehensive income		Subsequent measurement at fair value through profit or loss
€ million	Total	Other debt instruments	Contingent considerations	Equity instruments	Trade and other receivables	Contingent considerations
Net carrying amounts, Jan. 1, 2020	**483**	**26**	**258**	**190**	**24**	**–16**
Additions due to acquisitions / divestments / conclusion of factoring agreements	50	13	–	21	16	–
Transfers into Level 3 out of Level 1 / Level 2	–	–	–	–	–	–
Fair value changes						
Gains (+) / losses (–) recognized in profit or loss	–	–4	4		–	–
thereof: other operating result	–10	–3	–7		–	–
thereof: attributable to assets / liabilities held as of the balance sheet date	–9	–3	–7		–	–
thereof: financial result	10	–1	11		–	–
thereof: attributable to assets / liabilities held as of the balance sheet date	10	–1	11		–	–
Gains (+) / losses (–) recognized in other comprehensive income	–5			–6	–	
Currency translation difference	–	–	–	–	–	–
Disposals due to divestments / payments received / payments made	–18	–1	–	–	–17	–
Transfers out of Level 3 into Level 1 / Level 2	–	–	–	–	–	–
Other	–	–1	–	1	–	–
Net carrying amounts, June 30, 2020	**510**	**34**	**262**	**206**	**24**	**–16**

Additions during the reporting period comprised particularly acquisitions of equity investments by Merck Ventures B.V., Netherlands as well as trade accounts receivable that are designated to be sold owing to a factoring agreement. Disposals during the reporting period related particularly to advance payments received in connection with trade accounts receivable under factoring agreements. The gains and losses from Level 3 assets recognized in other comprehensive income were reported in the consolidated statement of comprehensive income under the item “Fair value adjustments”.

The changes in financial assets and liabilities for each of the individual classes of financial instruments allocated to Level 3 and measured at fair value were as follows in the period from January 1, 2019 to December 31, 2019:

2019		Financial assets					Financial liabilities
		Subsequent measurement at fair value through profit or loss			Subsequent measurement at fair value through other comprehensive income		Subsequent measurement at fair value through profit or loss
€ million	Total	Other debt instruments	Contingent considerations	Derivatives without a hedging relationship	Equity instruments	Trade and other receivables	Contingent considerations
Net carrying amounts, Jan. 1, 2019	**487**	**27**	**259**	**45**	**140**	**21**	**–5**
Additions due to acquisitions / divestments / conclusion of factoring agreements	73	9	–	–	53	26	–13
Transfers into Level 3 out of Level 1 / Level 2	–	–	–	–	–	–	–
Fair value changes							
Gains (+) / losses (–) recognized in profit or loss	–22	3	19	–45		–	1
thereof: other operating result	3	2	–1	–		–	2
thereof: attributable to assets / liabilities held as of the balance sheet date	–11	2	–15	–		–	2
thereof: financial result	–25	1	20	–45		–	–
thereof: attributable to assets / liabilities held as of the balance sheet date	20	1	20	–		–	–
Gains (+) / losses (–) recognized in other comprehensive income	98				98	–	
Currency translation difference	–	–	–	–	–	–	–
Disposals due to divestments / payments received / payments made	–50	–2	–20	–	–6	–22	1
Transfers out of Level 3 into Level 1 / Level 2	–104	–	–	–	–104	–	–
Other	–	–10	–	–	10	–	–
Net carrying amounts, Dec. 31, 2019	**483**	**26**	**258**	**–**	**190**	**24**	**–16**

Related-party disclosures

As of June 30, 2020, there were liabilities of Merck Financial Services GmbH to E. Merck KG in the amount of € 1,164.0 million. In addition, as of June 30, 2020, there were receivables of Merck & Cie, Switzerland, to E. Merck KG in the amount of € 3.9 million as well as of Merck KGaA to E. Merck Beteiligungen KG in the amount of € 25.0 million. The balances resulted mainly from the profit transfers by Merck & Cie, Switzerland, to E. Merck KG as well as the reciprocal profit transfers between Merck KGaA and E. Merck KG. They included financial liabilities of € 1,164.0 million, which were subject to standard market interest rates. Neither collateral nor guarantees existed for any of the balances either in favor or to the disadvantage of the Merck Group.

From January to June 2020, Merck KGaA performed services for E. Merck KG with a value of € 0.6 million. During the same period, E. Merck KG performed services for Merck KGaA with a value of € 0.5 million.

As of June 30, 2020, receivables and payables vis-à-vis non-consolidated subsidiaries amounted to € 4.8 million and € 8.1 million, respectively. From January to June 2020, the Merck Group generated revenue of € 0.0 million with these companies. During the same period, expenses amounting to € 0.3 million were incurred as a result of transactions with these companies.

Subsequent events

With respect to pending antitrust review proceedings for the acquisition of Sigma-Aldrich Corporation, United States, (Sigma-Aldrich), the EU Commission informed Merck on July 1, 2020 that the allegations made against Merck will be dropped. This led to a partial release of the existing provision. More information about these proceedings can be found under "EU Commission antitrust proceedings".

Subsequent to the balance sheet date, no further events of special importance occurred that could have a material impact on the net assets, financial position or results of operations.

Darmstadt, July 30, 2020

Stefan Oschmann

Kai Beckmann **Belén Garijo** **Marcus Kuhnert**

Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles for half-year financial reporting, the consolidated half-year financial statements of the Merck Group give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the interim management report of the Group includes a fair review of the development and performance of the business and the position of the Group, together with a description of the material opportunities and risks associated with the expected development of the Group for the remaining months of the financial year.

Darmstadt, July 30, 2020

Stefan Oschmann

Kai Beckmann **Belén Garijo** **Marcus Kuhnert**

Review Report

To Merck Kommanditgesellschaft auf Aktien, Darmstadt

We have reviewed the condensed half-year consolidated financial statements – comprising the Consolidated Income Statement, the Consolidated Statement of Comprehensive Income, the Consolidated Balance Sheet, the Consolidated Cash Flow Statement, the Consolidated Statement of Changes in Net Equity and Notes to the Half-Year Financial Statements – together with the interim group management report of Merck Kommanditgesellschaft auf Aktien, Darmstadt, for the period from January 1, 2020 to June 30, 2020 that are part of the half-year financial report according to § 115 WpHG ["Wertpapierhandelsgesetz": "German Securities Trading Act"]. The preparation of the condensed half-year consolidated financial statements in accordance with those IFRS applicable to interim financial reporting as adopted by the EU, and of the interim group management report in accordance with the requirements of the WpHG applicable to interim group management reports, is the responsibility of the Company's management. Our responsibility is to issue a report on the condensed half-year consolidated financial statements and on the interim group management report based on our review.

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

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

Frankfurt am Main, July 30, 2020

KPMG AG
Wirtschaftsprüfungsgesellschaft

Original German version signed by

Rackwitz	**Rienecker**
Wirtschaftsprüfer	Wirtschaftsprüferin

FINANCIAL CALENDAR
for 2020 / 2021

November
11/12/2020
Quarterly Statement Q3

May
5/12/2021
Quarterly Statement Q1

March
3/4/2021
Annual Press Conference

August
8/5/2021
Half-yearly Financial Report

April
4/23/2021
Annual General Meeting

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