Annual Report

2020

Science for a **better life**

Five-Year Summary

€ million	2016	2017	2018	2019	2020
Bayer Group financial KPIs					
Sales	34,943	35,015	36,742	43,545	**41,400**
EBITDA[1]	8,801	8,563	9,695	9,529	**(2,910)**
EBITDA before special items[1]	9,318	9,288	8,969	11,474	**11,461**
EBITDA margin before special items[1]	26.7%	26.5%	24.4%	26.3%	**27.7%**
EBIT[1]	5,738	5,903	3,454	4,162	**(16,169)**
EBIT before special items[1]	6,826	7,130	6,013	6,975	**7,095**
Income before income taxes	4,773	4,577	1,886	2,853	**(17,250)**
Net income (from continuing and discontinued operations)	4,531	7,336	1,695	4,091	**(10,495)**
Earnings per share (from continuing and discontinued operations) (€)[1]	5.44	8.29	1.80	4.17	**(10.68)**
Core earnings per share (from continuing operations) (€)[1]	6.67	6.64	5.60	6.38	**6.39**
Free cash flow	5,806	5,202	4,652	4,214	**1,343**
Net financial debt	11,778	3,595	35,679	34,068	**30,041**
Capital expenditures (newly capitalized)	2,627	2,418	2,368	2,920	**3,138**
Return on Capital Employed (ROCE) (%)	10.3	10.8	4.0	3.7	**–16,5**
Bayer AG					
Total dividend payment	2,233	2,402	2,611	2,751	**1,965**
Dividend per share (€)	2.70	2.80	2.80	2.80	**2.00**
Bayer Group nonfinancial KPIs[2]					
Number of smallholder farmers in LMICs who have received support (million)	–	–	–	42	**45**
Number of women in LMICs who have gained access to modern contraception (million)	–	–	–	38	**40**
Number of people in underserved communities whose self-care needs have been supported by Bayer interventions (million)	–	–	–	41	**43**
Scope 1 & 2 greenhouse gas emissions (million t)	–	–	–	3.76	**3.58**
Scope 3 greenhouse gas emissions from relevant categories (million t)	–	–	–	8.87	**7.88**
Off-setting of remaining Scope 1 & 2 greenhouse gas emissions (million t)	–	–	–	0.0	**0.20**
Innovation					
Research and development expenses[3]	4,405	4,504	5,105	5,301	**7,126**
Ratio of R&D expenses to sales – Crop Science (%)[4]	11.7	11.7	13.0	11.3	**10.4**
Ratio of R&D expenses to sales – Pharmaceuticals (%)[4]	16.7	16.2	15.5	15.6	**15.5**
Ratio of R&D expenses to sales – Consumer Health (%)[4]	3.9	3.9	4.1	3.9	**3.8**
Employees					
Number of employees[5] (Dec. 31)	99,592	99,820	107,894	103,824	**99,538**
Personnel expenses (including pension expenses) (€ million)	9,459	9,528	10,778	11,788	**9,769**
Safety & Environmental Protection					
Recordable Incident Rate (RIR) for Bayer employees	0.40	0.45	0.40	0.46	**0.32**
Process Safety Incident Rate (PSI-R)	–	–	–	0.10	**0.08**
Total energy consumption (terajoules)	26,243	25,832	28,903	39,212	**35,858**
Energy efficiency (kWh / €1,000)[6]	209	205	219	250	**241**
Hazardous waste generated (thousand t)	428	485	303	316	**305**
Water use (million m³)	93	98	42	59	**57**

2019 figures restated; figures for 2016 – 2018 as last reported

[1] For definitions of the indicators see A 2.3.

[2] For more information see A 1.2.1

[3] The increase in research and development expenses in 2020 was mainly due to special charges in connection with the impairment charges at Crop Science.

[4] R&D expenses before special items

[5] Employees calculated as full-time equivalents (FTEs)

[6] Quotient of total energy consumption and external sales

Fiscal 2020:

Bayer delivers robust performance despite pandemic – foundation laid for future growth

- **Group sales at €41.4 billion, impacted by negative currency effects of €1.9 billion (Fx & p adj. +0.6%)**
- **EBITDA before special items unchanged at €11.5 billion – currency effects offset by stringent cost management**
- **Crop Science and Pharmaceuticals report stable operational business, Consumer Health sees strong growth**
- **Core earnings per share at €6.39 (+0.2%)**
- **Earnings per share at –€10.68, impacted by litigation provisions and impairments**
- **Net financial debt improves to €30.0 billion**
- **Proposed dividend of €2.00 per share**
- **Portfolio and innovation capabilities strengthened**
- **Outlook for 2021: positive momentum and solid operational growth – stable earnings at constant currencies**

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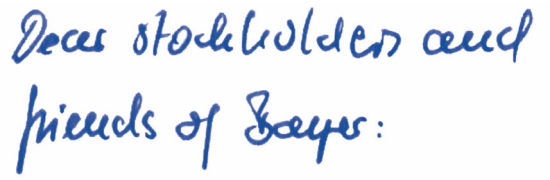
Chairman's Letter

Bayer has enormous long-term growth potential



The world in 2020 was firmly in the grip of the coronavirus pandemic, which placed great demands on everyone. Across the globe many people died from the virus infection, the economy and stock markets slumped, livelihoods were destroyed.

For Bayer, too, it was a challenging year. Yet we came through the pandemic in good shape and at the same time laid the foundation for future growth. We achieved a great deal in the face of adverse conditions, bringing new products to market for our customers, driving forward Bayer's transformation and taking our sustainability commitment to the next level. We invested substantially in innovation and future growth.

And we did this despite the upheavals we experienced in many of our markets due to COVID-19. In the pharmaceuticals business, for example, demand for certain medicines decreased because people avoided going to the doctor or treatments were postponed.

In the agriculture sector, the currently challenging market environment, combined with significant negative currency effects, resulted in lower growth expectations. This led to impairment charges of €9.1 billion in our Crop Science Division.

Bayer CEO Werner Baumann

Shouldering responsibility during the crisis

Looking back on the past year, we have much we can be proud of. We managed to keep the company running successfully despite this major crisis, and continued providing farmers, patients and consumers with urgently needed and in some cases life-saving products. At the same time we succeeded in protecting our workforce and minimizing the number of COVID-19 infections in the company.

What's more, we are deploying our knowledge and our resources to help in the fight against the virus. For example, we signed a collaboration agreement with biotech company CureVac to advance the further development, manufacture and supply of a vaccine against COVID-19. Using our global production network, we plan to manufacture 160 million vaccine doses in 2022.

This effort isn't primarily for financial considerations. Our overriding aim is to contribute to ending the pandemic. Right from the start of the pandemic, we've been helping in many ways. We donated money, medicines, protective equipment and medical appliances worth €29 million in more than 60 countries. On top of that, we've helped by providing additional testing capacities. And at Group headquarters in Leverkusen, we've made our cultural events venue available as a COVID-19 vaccination center.

I've been very impressed by the commitment our employees have shown in making all this possible. And I would like to sincerely thank them all, also on your behalf as shareholders. For me, that commitment once again underlines what a great company Bayer is.

Thanks to our employees' dedication, we achieved the operational targets for 2020 that we had adjusted due to the pandemic – proving once again how robust our businesses are. Group sales came in at €41.4 billion, level with the previous year after adjusting for currency and portfolio effects. Business development varied among the divisions, adjusted for currency effects and portfolio changes in each case: Crop Science posted a sales gain over the prior year, while Pharmaceuticals saw a decline. Consumer Health sales increased substantially, growing at the forefront of the industry in a pivotal year for everyday health.

In the end – despite significant negative currency effects, COVID-related sales losses in the pharmaceuticals business and substantial price reductions for pharmaceuticals in China – we reported EBITDA before special items of €11.5 billion, in line with the previous year. We even raised the clean EBITDA margin to 27.7%, from 26.3% in the prior year. For 2021, we are targeting sales growth of around 3% on a currency- and portfolio-adjusted basis and a currency-adjusted EBITDA margin before special items of about 27%.

On this basis we have decided to propose to the Annual Stockholders' Meeting that a dividend of €2.00 per share be paid for 2020. Thus we are upholding our dividend policy, but unlike previous years, the dividend will be at the lower end of the corridor of 30% to 40% of core earnings per share so that we will have further funds available for investing in innovation and growth.

As you know, last year was also marked by efforts to resolve the glyphosate litigation in the United States. In June 2020, we reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the claims known at that time. We continue to work on this. The total cost of the envisaged settlements of all outstanding claims is estimated at up to US$9.6 billion.

With regard to potential future Roundup™ cases, the parties have negotiated a revised settlement proposal and submitted it to the court. The parties have worked diligently to address questions previously raised by the court in July 2020 in response to the original proposal. The settlement includes a commitment that Bayer will provide up to US$2 billion for future claims and other settlement elements. Bayer remains strongly committed to a resolution that simultaneously addresses the current litigation on reasonable terms and provides a viable solution to manage and resolve future litigation.

Strengthening innovation capabilities to ensure future growth

Last year we launched a series of measures to boost our innovation capabilities in order to drive future growth. These include further operational savings. Bayer will implement the planned measures fairly and responsibly, as always.

In addition, we took decisive steps last year to position ourselves at the forefront of the latest technological developments in the life sciences. Breathtaking advances in cell biology and genome editing, along with increasingly specific application technologies, are revolutionizing the life sciences and – partly in conjunction with IT and artificial intelligence – are opening up undreamed-of possibilities in health and nutrition. We plan to be among the companies shaping this biorevolution.

Last year our Pharmaceuticals Division invested heavily in external innovation, concluding more than 25 collaboration agreements and acquisitions. We took a major step forward in particular with the acquisition of Asklepios BioPharmaceutical (AskBio). This transaction, together with the acquisition of BlueRock Therapeutics in 2019, has put us among the leading players in the promising and rapidly expanding area of cell and gene therapies.

With this platform we can work on groundbreaking innovations, including some to treat or even cure diseases caused by defective genes. There are tremendous opportunities here, with the market for cell and gene therapies set to grow to more than €25 billion by 2025 according to external estimates.

Our development portfolio for these therapies already comprises eight late-stage candidates in clinical development. They address various therapeutic areas including Pompe disease, hemophilia A and heart failure. We are also working on completely new therapeutic approaches to Parkinson's in two different clinical projects, where we hope to achieve a breakthrough in a neurodegenerative disorder that has so far proven impossible to cure. We are also treading new paths in the treatment of cancer, harnessing donor-independent cell therapies as a new approach in immuno-oncology, for example.

In our agriculture business, too, we are extremely well positioned to lead the biorevolution. With the industry's largest research and development investment, most advanced biotechnology platform, leading crop protection portfolio and leading digital platform, we are in a strong position to help shape the future of agriculture. Our research pipeline at Crop Science contains numerous new chemical and biological crop protection products, seed varieties, improved genetics and digital products.

One game-changer in our Crop Science pipeline is Vitala™, our new short-stature corn variety launched experimentally in Mexico last year. It will revolutionize the way corn is produced. The shorter stalks make the corn more resilient to extreme weather events, which are becoming more common due to climate change. This technology also presents an opportunity to use less land, nitrogen and water and an increased ability to be more precise in crop protection applications. The product has true global potential, with benefits that address the diverse needs of farmers across the globe.

We are also fueling Crop Science's research opportunities through collaborations such as Unfold, a joint venture established with Temasek. Unfold is focusing on innovating vegetable varieties specific to the needs of the vertical farming environment and aims to set new standards in quality, efficiency and sustainability.

In Consumer Health, too, we're stepping up our focus on innovation. In November, we acquired a majority stake in Care/of, a leading personalized nutrition company with outstanding digital competencies. We also forged a partnership with the U.S. biotech company Azitra, which is aimed at better understanding the skin microbiome to deliver self-care solutions that could one day help wounds heal faster, accelerate recovery from eczema, and strengthen skin as the immune system's first line of defense.

Innovation and sustainability go hand in hand

Here at Bayer, we are convinced that innovation and sustainability go hand in hand. Both are deeply rooted in our corporate culture. We've made sustainability a core component of our strategic alignment, and that means the attainment of our sustainability goals is now a factor for the variable compensation of the Board of Management and senior management. Last year, we also established a sustainability council made up of highly qualified experts to advise us on sustainability matters and monitor our progress.

We have set ourselves ambitious, measurable goals and laid out a timeline for reaching them by 2030 so that we can help to achieve the Sustainable Development Goals of the United Nations.

At the same time, we aim to become a 100% carbon-neutral company by 2030. Last year, the independent Science Based Targets initiative reviewed our climate protection goals and confirmed that Bayer is helping to limit global warming to 1.5°C and fulfill the Paris Climate Agreement.

In difficult times like these, it's more essential than ever before that society looks forward and addresses future issues. And that's what we're doing at Bayer. We're working on innovative products for agriculture that help to ensure an adequate food supply for the growing world population without placing excessive demands on the planet and its ecosystems. And we're working on innovative medicines and improvements in health care to better treat, prevent or even cure diseases in the future.

Last year made the significance of both abundantly clear. Rarely before has the importance of innovation in the areas of health care and agriculture been so evident – and with it the importance of our vision: *Health for all, hunger for none*. This vision is what motivates us. It encapsulates Bayer's enormous long-term growth potential. We are accelerating the company's transformation to realize that potential.

I would like to thank you, our shareholders, for your trust and support.
I'm glad you're traveling with us on our journey.

Sincerely,

Werner Baumann
Chairman of the Board of Management of Bayer AG

Board of Management

Werner Baumann

Chairman

Werner Baumann studied economics in Aachen and Cologne, joining Bayer AG in 1988. After holding positions of increasing responsibility in Spain and the United States, he became a member of the Board of Management of Bayer HealthCare. He was appointed to the Bayer Board of Management in 2010, first as Chief Financial Officer and then as Chief Strategy and Portfolio Officer. Baumann has been Chairman of the Bayer Board of Management since May 2016. Alongside this role, he became Bayer's Chief Sustainability Officer in January 2020.

Wolfgang Nickl

Finance

Wolfgang Nickl studied business administration in Stuttgart and Los Angeles. Following numerous roles in Europe and the United States at Western Digital Corporation, Nickl was appointed Chief Financial Officer in 2010. In 2013, he joined Netherlands-based ASML N.V. as Executive Vice President and Chief Financial Officer. Nickl has been a member of the Bayer Board of Management since April 2018.

Sarena Lin[1]

Chief Transformation and Talent Officer

Sarena Lin studied Computer Science at Harvard University and later received her MBA in Strategy and a master's degree in International Relations from Yale University. She worked at McKinsey from 1998 to 2011 and held roles such as Managing Partner in Taipei as well as Partner in New York. From 2011 to 2017, she worked at Cargill in Minneapolis, United States. She then joined Elanco, where she served as President, Elanco USA as well as Executive Vice President of Corporate Strategy and Global Marketing. She has been a member of Bayer's Board of Management since February 2021.

[1] Labor Director

Liam Condon

Crop Science

Liam Condon studied international marketing in Dublin and Berlin. He held various positions of increasing responsibility with the former Schering AG, Berlin, Germany, and with Bayer HealthCare in Europe and Asia, including as Managing Director of Bayer HealthCare China and head of Bayer HealthCare in Germany. Condon became Chief Executive Officer of Bayer CropScience in 2012. He was appointed to the Bayer Board of Management and head of the Crop Science Division in January 2016.

Stefan Oelrich

Pharmaceuticals

Stefan Oelrich joined Bayer as a commercial trainee. After qualifying as a commercial assistant, he held a number of positions of increasing responsibility in Bayer's HealthCare business. In 2011, Oelrich joined Sanofi, where he held numerous roles before being appointed Executive Vice President Diabetes & Cardiovascular in the company's Executive Committee. Oelrich has served as a member of the Bayer Board of Management and head of the Pharmaceuticals Division since November 2018.

Heiko Schipper

Consumer Health

After completing his studies in business economics in Rotterdam, Heiko Schipper acquired experience at Heineken before joining Nestlé in 1996, where he held various sales and marketing roles in Bangladesh, Indonesia and Switzerland. Schipper took on general management roles with increasing responsibility in the Philippines and Greater China. He was later appointed CEO of Nestlé Nutrition and a member of the Nestlé Group Executive Board. Schipper has been a member of the Bayer Board of Management since March 2018.

Report of the Supervisory Board

Dear Shareholders:

During 2020, the Supervisory Board monitored the conduct of the company's business by the Board of Management on a regular basis with the aid of detailed written and oral reports received from the Board of Management, and also acted in an advisory capacity. In addition, the Chairman of the Supervisory Board maintained a constant exchange of information with the Chairman and the other members of the Board of Management. This exchange of information was maintained both by Werner Wenning, who served as Chairman of the Supervisory Board until the end of the Annual Stockholders' Meeting, and by his successor. In addition, the Chairman of the Supervisory Board and the Chairman of the Audit Committee were regularly in direct contact with the heads of the Law, Patents, Insurance, Compliance and Data Privacy unit, Internal Audit and the Taxes, Treasury and Accounting unit. Furthermore, the Chairman of the Audit Committee was regularly in direct contact with the head of the Global Compliance and Data Privacy department. In this way the Supervisory Board was kept continuously informed about the company's intended business strategy, corporate planning (including financial, investment and human resources planning), earnings performance, the state of the business and the situation in the company and the Group.

Where Board of Management decisions or actions required the approval of the Supervisory Board, whether by law or under the Articles of Incorporation or the rules of procedure, the draft resolutions were inspected by the members at the meetings of the full Supervisory Board, sometimes after preparatory work by the committees, or approved on the basis of documents circulated to the members. The Supervisory Board was involved in decisions of material importance to the company. We discussed at length the business trends described in the reports from the Board of Management and the prospects for the development of the Bayer Group as a whole, the divisions and the principal affiliated companies in Germany and abroad.

Changes on the Supervisory Board

Werner Wenning stepped down as a member and Chairman of the Supervisory Board at the end of the company's Annual Stockholders' Meeting on April 28, 2020. The Supervisory Board elected Prof. Dr. Norbert Winkeljohann as its new Chairman. The Annual Stockholders' Meeting elected Horst Baier as a new stockholder representative effective as of the end of the meeting. Horst Baier brings along extensive expertise in areas including capital markets, finance and accounting and thus helps to fulfill the Supervisory Board's stated goals with regard to the competencies of its membership. Sabine Schaab, an employee representative on the Supervisory Board since October 2017, passed away on August 4, 2020. Andrea Sacher was appointed by a court to succeed her effective September 8, 2020.

An extensive onboarding program was provided for the members who joined the Supervisory Board in 2020, during which they met individually with each member of the Board of Management. They received information regarding the company's organizational structure, its strategy, the legal framework for their duties and the status of the principal litigations, along with additional information depending on their intended membership of committees.

Work of the Supervisory Board

The Supervisory Board convened 10 times in 2020. The average attendance rate at the meetings of the full Supervisory Board and its committees held in 2020 was approximately 94 percent. Frank Löllgen, an employee representative, was unable to attend half of the meetings of the Supervisory Board or of the committees on which he served due to a prolonged illness. The average attendance rate by the remaining members was approximately 97 percent. Thus each of the other members attended far more than half of the meetings of the Supervisory Board and the committees on which he or she served. A detailed overview of the attendance of the individual members of the Supervisory Board at the meetings of the full Supervisory Board and its committees is shown in the “Further Information” section of this Annual Report.

Prof. Dr. Norbert Winkeljohann,
Chairman of the Supervisory Board of Bayer AG

The members of the Board of Management generally attended the meetings of the Supervisory Board. However, the Supervisory Board also met regularly without the Board of Management or with only the Chairman of the Board of Management present.

The deliberations of the Supervisory Board primarily related to questions concerning Bayer’s strategy, portfolio and business activities. The work of the Supervisory Board focused on the following areas in particular, each of which was discussed at multiple meetings: first, the glyphosate litigations and the further material litigations relating to the contamination of water bodies by PCBs as well as to dicamba and Essure™, which were dealt with at length by the full Supervisory Board and several of its committees; second, the effects of the coronavirus pandemic on the business and on short- and mid-term planning; and third, certain corporate acquisitions and divestments. Outside of the meetings of the Supervisory Board, these issues were also the subject of extensive dialogue between the respective Chairman of the Supervisory Board and the Chairman of the Board of Management, as well as further members of the Board of Management.

At its individual meetings, the Supervisory Board focused mainly on the following topics and passed the following written resolutions:

1. At the February meeting, the Supervisory Board addressed the 2019 Annual Report and the agenda for the 2020 Annual Stockholders’ Meeting. It dealt with the topics of governance body liability and D&O insurance; the voluntary special audit of Bayer’s existing due diligence procedures for material M&A transactions, which was still ongoing at that time; inclusion and diversity at Bayer; the risk report; and the ongoing litigations. It also resolved on the compensation of the Board of Management. The Supervisory Board elected Norbert Winkeljohann to succeed Werner Wenning as its Chairman, effective as of the end of the Annual Stockholders’ Meeting. In addition, it elected Horst Baier to be Chairman of the Audit Committee in the event of his election to the Supervisory Board by the Annual Stockholders’ Meeting, also effective as of the end of the Annual Stockholders’ Meeting, and thus as successor to Norbert Winkeljohann, who had stepped down from the position on being elected Chairman of the Supervisory Board.

2. By way of a written resolution in March, the Supervisory Board gave its approval for the Annual Stockholders' Meeting to be held virtually due to the coronavirus pandemic.

3. At its meeting in April, the Supervisory Board extended the contracts of Wolfgang Nickl and Heiko Schipper as members of the Board of Management by four years each and made changes to the membership and chairmanship of the Supervisory Board's committees in view of Werner Wenning's imminent departure from the Supervisory Board and the assumption of its chairmanship by Norbert Winkeljohann. These changes included the enlargement of the Nominations Committee from two to four stockholder representatives and the election of Colleen Goggins and Dr. Simone Bagel-Trah as the additional members. The Supervisory Board deliberated the question of its members' independence and determined, supported in particular by third-party opinions, that it considers the newly elected Chairman of the Supervisory Board, Norbert Winkeljohann, to be independent, even taking into consideration his previous service with PricewaterhouseCoopers. The Supervisory Board discussed the precautions taken at Bayer in view of the coronavirus pandemic and the effects of the pandemic on business development. Moreover, it addressed the year-to-date business performance and the outcome of the completed voluntary special audit, which established the appropriateness of Bayer's existing due diligence procedures for material M&A transactions. At this meeting the Supervisory Board also discussed the ongoing litigations, especially those relating to glyphosate, and the upcoming Annual Stockholders' Meeting. Finally, in view of Werner Wenning's planned departure from the Supervisory Board after the upcoming Annual Stockholders' Meeting, the Supervisory Board expressed its appreciation for his work and his outstanding service to Bayer.

4. At an extraordinary meeting held in June, the Supervisory Board approved the outright acquisition of the company Care/of, appointed a compensation consultant to review the appropriateness of the Board of Management's compensation, and renewed its approval for the sale of Covestro shares. Finally, the Supervisory Board engaged in a detailed discussion of proposals to settle the glyphosate, dicamba and PCB litigations. Based on the presentations by the Board of Management and by in-house and third-party legal experts, the statements by the advisor retained by the Supervisory Board, John H. Beisner, an expert opinion on the admissibility of the settlements under stock corporation law and detailed discussions, the Supervisory Board approved the concluding of the proposed settlement agreements.

5. At an extraordinary meeting in July, the Supervisory Board approved the acquisition of the company KaNDy Therapeutics and once again dealt at length with the ongoing U.S. litigations and with an action for annulment of resolutions of the Annual Stockholders' Meeting.

6. By way of a written resolution issued in August, the Supervisory Board approved the concluding of a settlement agreement in the Essure™ litigation.

7. At its regular meeting in September, the Supervisory Board discussed the business performance and the expectations for the full year in light of the coronavirus pandemic and its potential effects on the company's mid-term development. At this meeting, the Supervisory Board extended the contract of Werner Baumann as a member and Chairman of the Board of Management by three years. Finally, the Supervisory Board once more conferred at length regarding the glyphosate litigations. Based again on detailed presentations, the assessments by the advisor retained by the Supervisory Board, John H. Beisner, an updated expert opinion on the admissibility of the settlement under stock corporation law and detailed discussions, the Supervisory Board approved a revised proposal to settle the glyphosate litigations.

8. At an extraordinary meeting in October, the Supervisory Board approved the acquisition of Asklepios BioPharmaceutical Inc. (AskBio) and the sale of the Elanco shares held by Bayer that formed part of the consideration for the sale of the Animal Health business.

9. At a succession of three extraordinary meetings held in the months of November and December, the Supervisory Board dealt in detail with the strategy of the Group and its Crop Science, Pharmaceuticals and Consumer Health divisions as well as with assessments and suggestions put forward by investors during roadshows and other interactions with members of the Board of Management and the Chairman of the Supervisory Board.

10. At its regular meeting in December, the Supervisory Board discussed the business performance, the status of the U.S. litigations, the operational planning for 2021, and rating and financing issues. It conferred about the results of the Corporate Governance Roadshow held by the Chairman of the Supervisory Board in November and December and the discussions that took place with investors on those occasions. The Supervisory Board also approved the issuance of bonds. It dealt with the ongoing structural program (Bayer 2022) and a newly launched program to accelerate the company's transformation. The Supervisory Board revised its rules of procedure and resolved to issue an unqualified declaration of compliance with the German Corporate Governance Code. Finally, a new member had to be elected to the Innovation Committee. Following this meeting, a training and discussion event took place on the subject of "Value Creation through Sustainability," during which the envisaged sustainability goals were also discussed.

Committees of the Supervisory Board

The Supervisory Board has a Presidial Committee, an Audit Committee, a Human Resources Committee, a Nominations Committee, an Innovation Committee and the special committee established in 2019 for dealing with the glyphosate litigations.

The current membership of the committees is shown in the "Further Information" section under "Governance Bodies."

The meetings and decisions of the committees, and especially the meetings of the Audit Committee, were prepared on the basis of reports and other information provided by the Board of Management. Reports on the committee meetings were presented at the meetings of the full Supervisory Board.

Presidial Committee: This comprises the Chairman and Vice Chairman of the Supervisory Board along with a further stockholder representative and a further employee representative. The Presidial Committee serves primarily as the mediation committee pursuant to the German Codetermination Act. It has the task of submitting proposals to the Supervisory Board on the appointment of members of the Board of Management if the necessary two-thirds majority is not achieved in the first vote at a full Supervisory Board meeting. In addition, certain decision-making powers in connection with capital measures, including the power to amend the Articles of Incorporation accordingly, have been delegated to this committee. The Supervisory Board can also delegate certain responsibilities to the Presidial Committee on a case-by-case basis. Furthermore, the Presidial Committee may undertake preparatory work for meetings of the full Supervisory Board.

No meeting of the Presidial Committee had to be convened in 2020. By way of a written vote taken in November, the Presidial Committee, based on an authorization from the Supervisory Board, approved further procedural details of the sale of Elanco shares, which had already been approved by the full Supervisory Board.

Audit Committee: The Audit Committee comprises three stockholder representatives and three employee representatives. Both the Chairman of the Audit Committee who served until the Annual Stockholders' Meeting, Norbert Winkeljohann, and his successor, Horst Baier, satisfy the statutory requirements concerning the expertise in the field of accounting or auditing that a member of the Supervisory Board and the Audit Committee is required to possess. The Audit Committee meets regularly four times a year.

Its tasks include, in particular, examining the financial reporting and monitoring the financial reporting process, the effectiveness of the internal control system, the risk management system, the internal audit system, the compliance system and the audit of the financial statements. It also addresses relevant topics in the tax, finance and treasury areas. The Audit Committee prepares the resolutions of the Supervisory Board concerning the financial statements and management report of Bayer AG, the proposal for the use of the distributable profit, the consolidated financial statements and the management report of the Bayer Group (including the CSR reporting). Further tasks include discussing the half-year financial reports and any quarterly reports or quarterly statements to be issued. The committee submits a reasoned proposal to the full Supervisory Board concerning the auditor's appointment. It prepares the agreements with the auditor (dealing in particular with the awarding of the audit contract, the determination of the main areas of focus for the audit and the audit fee agreement) and takes appropriate measures to determine and monitor the auditor's independence. The Audit Committee regularly assesses the quality of the audit and resolves on the approval of any other contracts awarded to the auditor, paying special attention to any potential implications for the auditor's independence. In addition, the Audit Committee monitors the internal process for assessing whether transactions with related parties are executed in the ordinary course of business and on market terms. It resolves on behalf of the Supervisory Board on the approval of related-party transactions pursuant to Sections 111a to 111c and Section 107 of the Stock Corporation Act where such transactions require Supervisory Board approval and the Supervisory Board has not entrusted the approval decision to any other committee.

The Chairman of the Board of Management and the Chief Financial Officer regularly attended the meetings of the Audit Committee. Representatives of the auditor were also present at all the meetings and reported in detail on the audit work and the audit reviews of the half-year report and quarterly statements.

The Audit Committee discussed developments in the area of corporate compliance and the latest reports from Internal Audit at each of its meetings, where necessary.

The individual Audit Committee meetings also focused mainly on the following topics:

1. At the February meeting, the Audit Committee discussed the financial statements of Bayer AG and the consolidated financial statements of the Bayer Group. It also carefully considered the risk report, which covers the risk early warning system, and the report on the internal control system (ICS). The Audit Committee also dealt with the yearly compliance report and the developments in compliance and legal cases. Other topics were the yearly report by Internal Audit and the establishment of a procedure for recording related-party transactions in accordance with the new legal requirements.

2. The April meeting mainly dealt with the financial statements for the first quarter and, in particular, the effects of the coronavirus pandemic on the outlook for the full year. The committee also conferred about the short- and mid-term financial planning and the main areas of focus for the audit of the financial statements.

3. The July meeting addressed the quarterly reporting and, in particular, discussed in detail the status of the various U.S. litigations along with other legal and compliance cases, including the related accounting measures. Other topics were the yearly report of the treasury function and the continued development of the framework for the internal control system.

4. At its November meeting, the Audit Committee dealt extensively with the impairment charges that had become necessary at Crop Science in the course of its deliberations on the quarterly statement. It discussed the Group structure and its effects on the distributable profit of Bayer AG, the audit planning by Internal Audit, the yearly tax report, the audit conducted pursuant to Section 32 of the German Securities Trading Act (WpHG) (EMIR), the audit budget for the auditor of the financial statements for 2021 and the framework for the auditor's non-audit services.

Human Resources Committee: On this committee, too, there is parity of representation between stockholders and employees. It consists of the Chairman of the Supervisory Board and three other Supervisory Board members. The Human Resources Committee prepares the personnel decisions of the full Supervisory Board, which resolves on appointments or dismissals of members of the Board of Management. The Human Resources Committee resolves on behalf of the Supervisory Board on the service contracts of the members of the Board of Management. However, it is the task of the full Supervisory Board to resolve on the total compensation of the individual members of the Board of Management and the respective compensation components, as well as to regularly review the compensation system on the basis of recommendations submitted by the Human Resources Committee. The Human Resources Committee also discusses the long-term succession planning for the Board of Management.

The Chairman of the Board of Management regularly attended the meetings of the Human Resources Committee where the issues discussed did not relate to him personally.

The Human Resources Committee convened on three occasions. In each case, the meetings involved deliberations and the adoption of resolutions relating to the compensation of the Board of Management and the service contracts of Board of Management members. The Human Resources Committee also addressed the extension of the contracts of Board of Management members Wolfgang Nickl and Heiko Schipper and that of the Chairman of the Board of Management, Werner Baumann, and discussed the planned enlargement of the Board of Management.

Nominations Committee: This committee carries out preparatory work when an election of stockholder representatives to the Supervisory Board is to be held. It suggests suitable candidates for the Supervisory Board to propose to the Annual Stockholders' Meeting for election. Following a change to the rules of procedure in April 2020, the committee comprises the Chairman of the Supervisory Board, the other stockholder representative on the Presidial Committee and two further stockholder representatives.

The Nominations Committee convened once in 2020 and resolved to propose Horst Baier as a stockholder representative for election by the Annual Stockholders' Meeting in the event of Werner Wenning stepping down from the Supervisory Board. The committee also discussed possible candidates for the chairmanship of the Supervisory Board following Werner Wenning's departure.

Innovation Committee: The Innovation Committee is primarily concerned with the innovation strategy and innovation management, the strategy for the protection of intellectual property, and major research and development programs at Bayer. Within its area of responsibility, the committee advises and oversees the management and prepares any Supervisory Board decisions. The Committee comprises the Chairman of the Supervisory Board and five other members of the Supervisory Board, with parity of representation between stockholders and employees. The meetings of the Innovation Committee are regularly attended by the Chairman of the Board of Management, as well as by further members of the Board of Management depending on the topics for discussion.

The Innovation Committee convened three times in 2020.

1. At its February meeting, it discussed innovations in agricultural pest and disease control in the Crop Science area, the implementation status of the R&D strategy for Pharmaceuticals, and the status of the development portfolio.

2. At a meeting in August, the committee addressed the strategy of Pharmaceuticals in the area of cell and gene therapy and that of Crop Science with regard to digital solutions.

3. At its November meeting, the Innovation Committee discussed how to bring its scientific expertise to bear in helping to form the science panel envisaged under the proposed settlement relating to the future risks from the glyphosate litigation, support the continued development of the relevant framework and assist the panel with its work.

Glyphosate Litigation Committee: The Glyphosate Litigation Committee was established as a nonstanding committee. It intensively deals with the glyphosate litigations, and oversees and advises the Board of Management on related matters. The eight-member committee comprises four stockholder representatives and four employee representatives. The independent legal advisor retained by the Supervisory Board, John H. Beisner, is also invited to the committee's meetings. Beisner's task is to independently advise the Supervisory Board on matters related to the glyphosate litigations, including the trial strategy and the ongoing mediation process. Although not involved in Bayer's legal defense for these litigations, he has comprehensive access to all relevant information and documents in his role as advisor to the Supervisory Board. The committee's work complements and further intensifies the status reports and discussions of the glyphosate litigations that regularly take place at the meetings of the full Supervisory Board.

The committee held two meetings during 2020, one in June and one in July. At each meeting, it dealt with the most recently litigated trials and the immediately pending trials in connection with these litigations, the future trial calendar, the ongoing appeal proceedings, the status of the mediation talks, and the principles and details of a potential litigation settlement.

Corporate governance

The Supervisory Board dealt with the principles of corporate governance at Bayer. In particular, at its meeting in December, it discussed the thoroughly revised German Corporate Governance Code, resolved on a revised version of the rules of procedure and issued an unqualified declaration of compliance with the German Corporate Governance Code. In addition, the Chairman of the Supervisory Board summarized at the meetings the dialogue he had with investors during a Corporate Governance Roadshow held in November and December 2020 and several individual conversations.

Financial statements and audits

The financial statements of Bayer AG were prepared according to the requirements of the German Commercial Code and Stock Corporation Act. The consolidated financial statements of the Bayer Group were prepared according to the German Commercial Code and the International Financial Reporting Standards (IFRS). The combined management report was prepared according to the German Commercial Code. The auditor, Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Munich, has audited the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report. The auditor responsible for the audit was Prof. Dr. Frank Beine. The conduct of the audit is explained in the auditor's reports. The auditor finds that Bayer has complied, as appropriate, with the German Commercial Code, the German Stock Corporation Act and/or the International Financial Reporting Standards endorsed by the European Union, and issues an unqualified opinion on the financial statements of Bayer AG, the consolidated financial statements of the

Bayer Group and the combined management report. The financial statements of Bayer AG, the consolidated financial statements of the Bayer Group, the combined management report and the audit reports were submitted to all members of the Supervisory Board. They were discussed in detail by the Audit Committee and at a meeting of the full Supervisory Board. The auditor submitted a report on both occasions and was present during the discussions.

We examined the financial statements of Bayer AG, the proposal for the use of the distributable profit, the consolidated financial statements of the Bayer Group and the combined management report. While examining the combined management report, we also examined in particular the nonfinancial statement, which is fully integrated into the management report and was also examined by the auditor. We have no objections, thus we concur with the result of the audit.

We have approved the financial statements of Bayer AG and the consolidated financial statements of the Bayer Group prepared by the Board of Management. The financial statements of Bayer AG are thus confirmed. We are in agreement with the combined management report and, in particular, with the assessment of the future development of the enterprise. We also concur with the dividend policy and the decisions concerning earnings retention by the company. We assent to the proposal for the use of the distributable profit, which provides for payment of a dividend of €2.00 per share.

The Supervisory Board would like to thank the Board of Management and all employees for their dedication and hard work in 2020.

Leverkusen, February 23, 2021

For the Supervisory Board

Prof. Dr. Norbert Winkeljohann
Chairman

Investor Information

Unsatisfactory stock performance in 2020

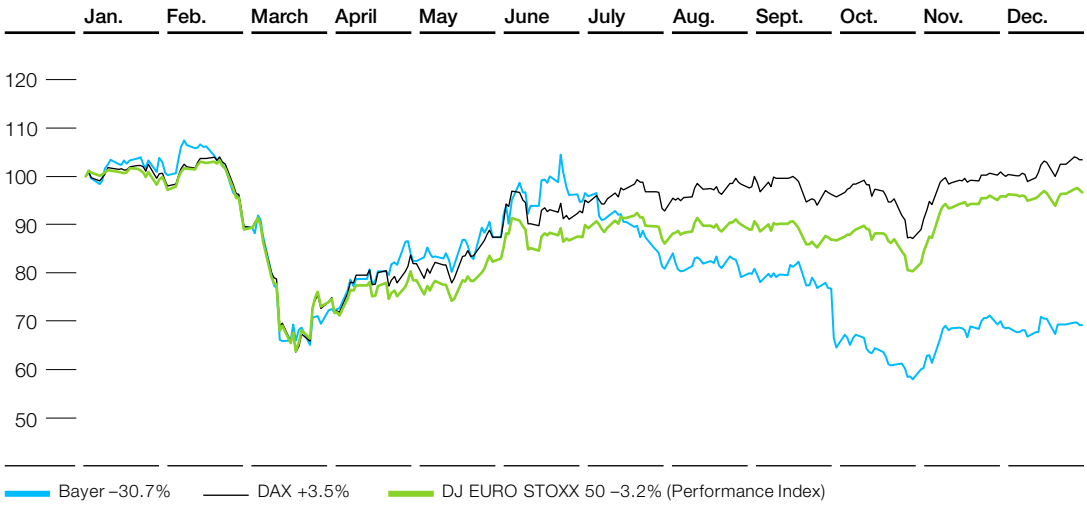
Bayer saw the value of its stock fall sharply in 2020, closing about 31% lower at year-end. At the beginning of the year, the price of Bayer shares rose from €73.52 to a high of €78.29 on February 6, shortly before the escalating COVID-19 pandemic caused a general decline on the financial markets. As a result, the price of Bayer shares declined to €47.50 at the end of March. However, Bayer stock recorded a steady recovery in the months that followed, nearly matching its opening value for the year in late June. The value of Bayer stock then declined sharply after the U.S. court overseeing the litigations, at the beginning of July, expressed doubts about the settlement proposed for glyphosate product liability lawsuits that may potentially be filed in the future. Combined with the lower growth expectations for 2021, announced on September 30, and the impairment charges at Crop Science, this placed the company's stock under increasing pressure, and Bayer shares reached their lowest value of €40.36 on October 30. The share price subsequently recovered slightly, closing at €48.16 on December 31.

Including the dividend of €2.80 per share paid at the beginning of May, Bayer stock registered a negative yield of 30.7%. This means the Bayer share was the weakest stock listed on the DAX (+3.5%) and one of the weakest on the Euro STOXX 50 Performance Index (–3.2%).

1

Performance of Bayer Stock in 2020

Indexed; 100 = Xetra closing price on December 31, 2019



2

Bayer Stock Data

		2019	2020
Earnings per share from continuing and discontinued operations	€	4.17	(10.68)
Core earnings per share from continuing operations[1]	€	6.38	6.39
Free cash flow per share	€	4.29	1.37
Equity per share	€	48.28	31.22
Dividend per share	€	2.80	2.00
Year-end price[2]	€	72.81	48.16
High for the year[2]	€	73.60	78.29
Low for the year[2]	€	52.53	40.36
Total dividend payment	€ million	2,751	1,965
Number of shares entitled to the dividend (Dec. 31)	million shares	982.42	982.42
Market capitalization (Dec. 31)	€ billion	71.5	47.3
Average daily share turnover on German stock exchanges	million shares	3.3	4.2
Price / EPS[2]		17.5	(4.5)
Price / core EPS[2]		11.4	7.5
Price / cash flow[2]		8.9	10.4
Dividend yield	%	3.8	4.2

2019 figures restated

[1] For details on the calculation of core earnings per share, see Combined Management Report, A 2.3

[2] Xetra closing prices

Bayer stock included in important indices

In addition to the DAX, Bayer stock is listed in numerous other key European indices, including the Euro STOXX 50, the FTSE Euro 100 and the S&P Europe 350. It is also included in the important sustainability indices FTSE4Good, STOXX Global ESG Impact, STOXX Europe Sustainability, DAX 50 ESG and MSCI ACWI Low Carbon Target Index.

Consistent dividend policy

We are maintaining our dividend policy, which envisages a payout ratio within the target range of 30% to 40% of core earnings per share (core EPS). However, we expect a payout ratio that tends toward the lower end of this range in the coming years. The Board of Management and the Supervisory Board are proposing the payment of a dividend of €2.00 per share for 2020 (2019: €2.80 per share), which corresponds to 31.3% of core EPS from continuing operations of €6.39 for fiscal 2020. Based on the Bayer stock price at the end of 2020, the dividend yield is 4.2%.

See A.2.3 for the definition of core earnings per share

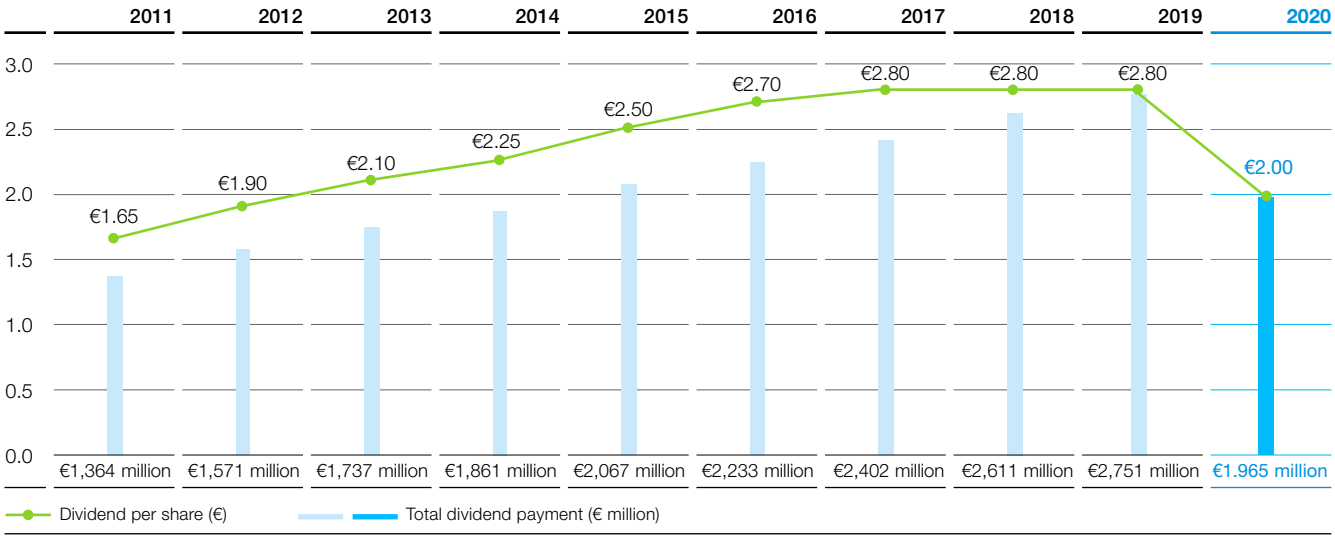
Bayer stock assessed by large number of analysts

More than 20 analysts from domestic and foreign investment banks and brokerage firms publish studies on Bayer stock on a regular basis. Of the analyst recommendations on Bayer stock published as of the end of 2020, 13 were positive, nine were neutral and one was negative. The average target price was €62.72. The highest amount was €96.00, and the lowest estimate was €47.00.[1]

[1] Source: VARA Research (Bayer does not assume any responsibility for these studies nor for any recommendations or assessments made as part of such studies)

3

Dividends Per Share and Total Dividend Payment



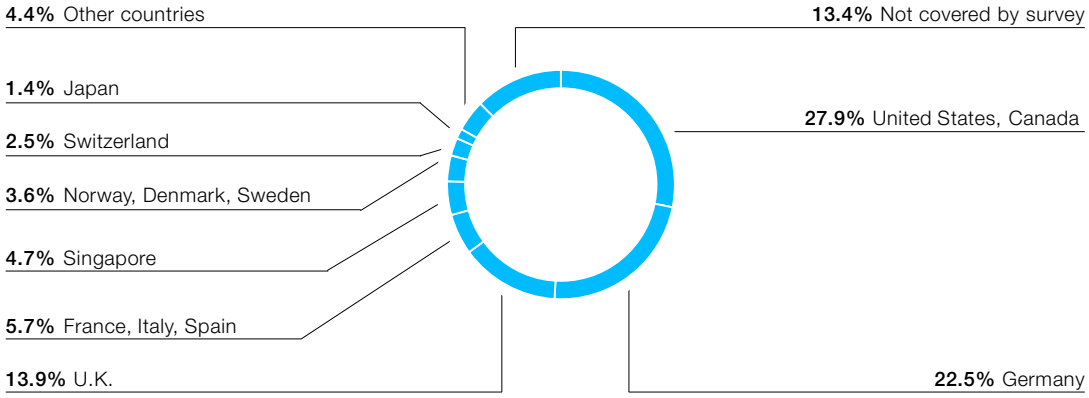
International ownership structure and sharply rising stockholder numbers

Our company's global presence is also reflected in our international ownership structure. The biggest share of our capital stock, at 27.9%, is held by investors in North America. Another significant group of investors is based in Germany, holding 22.5% of Bayer stock, while shareholders in the United Kingdom account for 13.9%. Irrespective of the geographic distribution, some 12% of our shares are held by private stockholders. Bayer employees hold about 1% of our capital stock through participation programs.

Our share register saw a strong increase of more than 100,000 new stockholders in 2020, with the year-end total coming in at approximately 550,000 shareholders. Bayer has a 100% free float as defined by Deutsche Börse, the operator of the Frankfurt Stock Exchange.

4

Shareholder Composition – Regional Allocation



Source: Cmi2i

Investor relations activities in 2020 influenced by the COVID-19 pandemic

Due to the COVID-19 pandemic, the majority of our investor relations activities in 2020 took place in virtual forma. Despite the restrictions relating to the outbreak of the pandemic, we were able to continue the intensive dialogue with stockholders, participating in a large number of conferences and roadshows as usual. The conferences and roadshows focused mostly on Europe and North America. Members of the Board of Management were frequently part of these events.

Due to the restrictions related to the COVID-19 pandemic, it was not possible to hold the Annual Stockholders' Meeting 2020 as an on-site event as usual. Instead, we successfully organized an entirely virtual Stockholders' Meeting, making Bayer the first DAX company to make use of newly introduced legislation. By holding the Annual Stockholders' Meeting as scheduled, we were able to ensure that the proposed dividend of €2.80 per share for fiscal 2019 could be paid as planned. In all, up to 5,000 participants simultaneously watched the online broadcast of the Annual Stockholders' Meeting.

Keen interest in sustainability issues

The capital market's growing interest in sustainability issues was also reflected in our discussions with investors and rating agencies in 2020. These discussions were dominated by questions related to our sustainability strategy and our focus on climate protection, the effects of our products on the environment, the tasks of the Sustainability Council, as well as nonfinancial Group targets and the role they play in management compensation.

In September, we held a webcast to outline the status of our sustainability performance and show the progress we had made since announcing our ambitious and measurable targets in 2019.

The prestigious rating organization CDP ("Carbon Disclosure Project"), whose ratings are included in the criteria for investment decisions by many investors, once again gave Bayer its highest rating "A" in 2020 – thus ranking the company as one of the world's leaders in the area of climate and water. Bayer also appeared in the "CDP Forest" ranking for the first time this year, achieving a respectable "B" status.

Bayer successfully issues €6 billion in bonds

In June, we repaid a matured €1 billion exchangeable bond.

On July 1, we then successfully placed bonds with a total volume of €6 billion. In preparation, Bayer held a virtual roadshow on the day before the issuance, with numerous institutional bond investors taking advantage of the opportunity to learn about Bayer in direct conversations with management. The bond issuance on the following day also met with substantial interest among a broad investor base and was heavily oversubscribed, enabling Bayer to set an attractive price. The strong investor demand for the new bonds underscores the capital market's confidence in Bayer's development. Further details of all outstanding bonds are given in Note [24] to the consolidated financial statements.

Gross proceeds of US$1.9 billion from sale of Elanco Animal Health Inc. shares

In November, we made another successful capital market transaction, placing 54.5 million shares of Elanco Animal Health Inc.at a price of US$30.25 per share. The shares accounted for part of the proceeds from the sale of the Animal Health business to Elanco. An additional 8.175 million Elanco shares were subsequently placed at the same conditions. Bayer generated total gross proceeds of some US$1.9 billion from these divestments; at year-end we held approximately 10.3 million shares.

About this Report

This integrated Annual Report combines our financial reporting and material sustainability information. Our aim is to elucidate the interactions between financial, ecological and societal factors and underline their influence on our company's long-term success. All information required by commercial law is combined and referenced in our nonfinancial statement. In addition to the Annual Report, we publish a separate Sustainability Report with additional detailed nonfinancial information to meet the informational needs of all stakeholders to the greatest possible extent.

Legal principles and reporting standards

The consolidated financial statements of the Bayer Group as of December 31, 2020, comply with the International Financial Reporting Standards (IFRS), as adopted by the European Union, valid at the closing date and with the provisions of the German Commercial Code in conjunction with German financial reporting standards (DRS). With due regard to these provisions, the combined management report provides an accurate overview of the financial position and results of operations of the Bayer Group. The Corporate Governance Report also conforms with the German Stock Corporation Act and the recommendations of the German Corporate Governance Code.

The nonfinancial statement (Sections 289b et seq. and 315b et seq. of the German Commercial Code) is integrated into the combined management report and covers data for the Bayer Group and Bayer AG as the parent company. As a framework for this, we apply the GRI Standards (Section 289d of the German Commercial Code). We also use, for example, the international recommendations and guidelines of the OECD and ISO 26000 as a guide for defining and selecting nonfinancial indicators and in our reporting. When selecting and measuring our key data, we take into account the recommendations of the Greenhouse Gas Protocol with respect to greenhouse gas emissions and those of the European Federation of Financial Analysts Societies, the World Business Council for Sustainable Development and the European Chemical Industry Council with respect to other nonfinancial indicators. The legality, accuracy and expediency of the nonfinancial statement have been verified by the Supervisory Board.

The Annual Report is available online as a PDF. Furthermore, contents subject to the statutory disclosure requirement are published in the Federal Gazette and appear for the first time in XHTML / iXBRL format under consideration of the specifications of the European Single Electronic Format (ESEF) Regulation.

Data collection and reporting thresholds

In accordance with IFRS 5 (Non-current Assets Held for Sale and Discontinued Operations), financial indicators are given for continuing operations unless otherwise explicitly indicated. The same logic applies principally to HR, procurement and HSE (health, safety and environment) information and our social data.

Reporting of the Group's HSE data includes all fully consolidated companies in which we hold at least a 50% interest. Data on occupational injuries is collected at all sites worldwide. Environmental indicators are measured at all environmentally relevant production, research and administration sites.

External verification

The auditing company Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Munich, Germany, has audited the consolidated financial statements of Bayer AG, Leverkusen, and the combined management report for the fiscal year from January 1, 2020, to December 31, 2020, and has issued an unqualified opinion. The audit, which is conducted to obtain reasonable assurance, also includes the disclosures pertaining to the nonfinancial statement in the management report. Exempted from this are Table A 1.2.1/2 and the indented passages pertaining to the nonfinancial Group targets in Chapter 1.2.1, which were reviewed in 2020 on a limited assurance basis. Our information on Scope 3 emissions was also subject to a limited assurance review. The declaration of compliance with the German Corporate Governance Code have not been audited by the auditor.

Additional information

As the indicators in this report are stated in accordance with commercial rounding principles, totals and percentages may not always be exact.

A Combined Management Report

of the Bayer Group and Bayer AG as of December 31, 2020

1. Fundamental Information About the Group

1.1 Corporate Profile and Structure

Our goal: Promote health and safeguard the food supply

Economic growth and sustainability go hand in hand

1.1.1 Corporate Profile

We are a life science company and a global leader in health care and nutrition. Our innovative products support efforts to overcome the major challenges presented by a growing and aging global population. We help prevent, alleviate and treat diseases. We also aim to ensure the world has a reliable supply of high-quality food, feed and plant-based raw materials. As part of this endeavor, the responsible use of natural resources is always a top priority. “Health for all, hunger for none” – putting an end to hunger and helping everyone lead a healthy life, while at the same time protecting ecosystems. That is what we aspire to achieve, guided by our purpose “Science for a better life.”

We aim to continuously enhance our company’s earning power and create value for customers, patients, shareholders, employees and society. Growth and sustainability are integral parts of our strategy, guided by our corporate values of **L**eadership, **I**ntegrity, **F**lexibility and **E**fficiency, or LIFE for short. These values shape our culture and ensure a common identity throughout the Bayer Group. Building on this, our Bayer Societal Engagement (BASE) principles provide clear direction for the way we interact with social interest groups.

1.1.2 Corporate Structure

Corporate structure as of December 31, 2020

As the parent company of the Bayer Group, Bayer AG – represented by its Board of Management – performs the principal management functions for the entire enterprise. This mainly comprises the Group’s strategic alignment, resource allocation, and the management of financial affairs and managerial staff, along with the management of the Group-wide operational business of the Crop Science, Pharmaceuticals and Consumer Health divisions. The enabling functions support the operational business.

The following structural changes occurred within our organization in 2020:

The Animal Health business unit was sold to Elanco Animal Health Incorporated, United States, in August and is no longer part of the Bayer Group. The business activities were already reported retroactively as a discontinued operation in the previous year, after we had concluded the divestment agreement in August 2019.

In 2020, we also continued to pursue the goal of creating an organization and infrastructure that provide optimum support for the business, and therefore made further adjustments to the structure of our enabling functions. For example, we merged the Internal Audit & Risk Management functions to form the enabling function Internal Audit & Risk Management. In addition, we realigned the IT department to accelerate our digital transformation, with leading IT service providers now providing a range of services and operating our global IT infrastructure. Internally, the IT function is now focusing more on innovative digital solutions along the entire value chain.

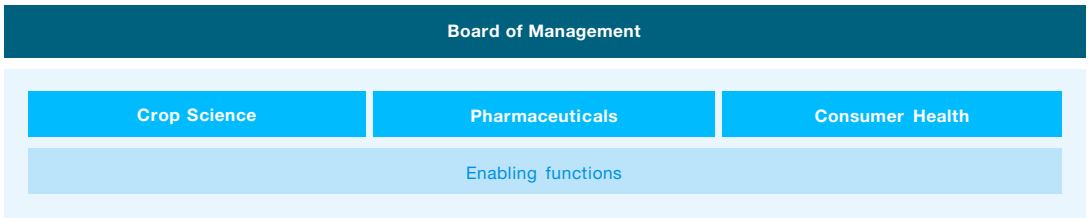
The size of the Board of Management was reduced to five members at the start of the year, after the Supervisory Board had passed a resolution to this effect in September 2019. Responsibilities were reassigned as part of the move, with the role of Labor Director, for instance, being transferred to the Chairman of the Board of Management.

In January 2021, the Supervisory Board of Bayer AG announced the appointment of Sarena Lin as a member of the Board of Management. Effective February 1, she became Chief Transformation and Talent Officer, assuming responsibility for Human Resources, Strategy and Business Consulting. Lin also began her role as Labor Director on the same date.

At the start of 2020, we simplified the value flows and aligned them with our structural changes and our steering logic, necessitating the restatement of prior-period data. The costs of the enabling functions are now mainly allocated to the income statements of the divisions directly or using a reduced number of allocation keys that are standardized across the Group. Further information on these adjustments and their impact on our key financial data is given in B Consolidated Financial Statements.

A 1.1.2/1

Bayer Group Structure in 2020



Our divisions are active in the following areas:

Crop Science is the world's leading agriculture enterprise, with businesses in crop protection, seeds and digital farming. We offer a broad portfolio of high-value seeds, improved plant traits, innovative chemical and biological crop protection products, digital solutions and extensive customer service for sustainable agriculture. We market these products primarily via wholesalers and retailers or directly to farmers. In addition, we market pest and weed control products and services to professional users outside the agriculture industry. Most of our crop protection products are manufactured at the division's own production sites. Numerous decentralized formulation and filling sites enable the company to respond quickly to the needs of local markets. The breeding, propagation, production and / or processing of seeds, including seed dressing, take place at locations close to our customers, either at our own facilities or under contract.

Pharmaceuticals concentrates on prescription products, especially for cardiology and women's health care, and on specialty therapeutics focused on the areas of oncology, hematology, ophthalmology and, in the medium term, cell and gene therapy. We have established an independent strategic unit for cell and gene therapy that reports directly to the head of Pharmaceuticals. The division also comprises the radiology business, which markets diagnostic imaging equipment together with the necessary contrast agents. Our portfolio includes a range of key products that are among the world's leading pharmaceuticals for their indications. The prescription products of our Pharmaceuticals Division are primarily distributed through wholesalers, pharmacies and hospitals.

Consumer Health is a leading supplier of nonprescription (OTC = over-the-counter) medicines, nutritional supplements, medicated skincare products and other self-care solutions in the categories of pain, cardiovascular risk prevention, dermatology, nutritional supplements, digestive health, allergy, and cough & cold. The products are generally sold by pharmacies and pharmacy chains, supermarkets, online retailers and other large and small retailers.

The **enabling functions**, such as Group Finance, Information Technology and Human Resources, serve as Group-wide competence centers and bundle business support processes and services.

More information on the divisions' products and activities is contained in the following table:

A 1.1.2/2

Products and Activities of the Divisions

Indication / Application / Business	Core activities and markets	Main products and brands[1]
Crop Science		
Herbicides	Chemical crop protection products to control weeds	Roundup™, Adengo™, Alion™, Corvus™, Atlantis™, XtendiMax™
Corn Seed & Traits	Seeds and traits for corn	Dekalb™, SmartStax™ RIB Complete, VT Double™ PRO, VT Triple™ PRO, Vitala
Soybean Seed & Traits	Seeds and traits for soybeans	Asgrow™, Intacta RR2PRO™ Roundup Ready 2 Xtend™, Roundup Ready 2 Yield™, XtendFlex™
Fungicides	Biological and chemical products to protect crop plants from fungal diseases	Fox™, Luna™, Nativo™, Serenade™, Xpro™
Insecticides	Biological and chemical products to protect crop plants from harmful insects and their larvae	BioAct™, Confidor™, Movento™, Sivanto™
Environmental Science	Products for professional pest control, vector control, forestry, golf courses and parks, railway tracks, products for consumer lawn and garden use	Ficam™, Maxforce™, Esplanade™, K-Othrine™, Fludora™ Fusion
Vegetable Seeds	Vegetable seeds	Seminis™, DeRuiter™
Digital Agriculture	Digital applications for agriculture	Climate FieldView™
Other	Seeds and traits for cotton, oilseed rape / canola, rice and wheat as well as biological and chemical seed treatment products to protect against fungal diseases and pests	Gaucho™, Bollgard™ II, Bollgard™ II XtendFlex™, Cotton, Deltapine™
Pharmaceuticals		
Cardiology	Hypertension, pulmonary hypertension, heart attack and stroke, thrombosis, coronary artery disease (CAD), peripheral artery disease (PAD), symptomatic chronic heart failure	Xarelto™, Adalat™, Aspirin™ Cardio, Adempas™, Verquvo™
Oncology	Liver cancer, renal cell carcinoma, thyroid carcinoma, prostate cancer, colorectal cancer, gastrointestinal stromal tumors (GIST), follicular lymphoma, solid tumors with NTRK gene fusions	Nexavar™, Nubeqa™, Xofigo™, Stivarga™, Aliqopa™, Vitrakvi™
Ophthalmology	Visual impairment due to age-related macular degeneration (AMD), diabetic macular edema (DME) or retinal vein occlusion (RVO)	Eylea™
Hematology	Hemophilia A	Kogenate™ / Kovaltry™ / Jivi™
Women's health	Contraception, gynecological therapy	Mirena™ product family, Yaz™ product family, Visanne™
Infectious diseases	Bacterial infections	Avalox™ / Avelox™, Cipro™, Ciprobay™
Radiology	Contrast agents; diagnostic imaging equipment for use with contrast agents	Gadovist™, Ultravist™, Medrad Spectris Solaris™, Medrad Stellant™
Neurology	Multiple sclerosis	Betaferon™ / Betaseron™
Consumer Health		
Dermatology	Wound care, skin care, skin and intimate health	Bepanthen™, Canesten™
Nutritionals	Multivitamin products, dietary supplements	One A Day™, Elevit™, Berocca™, Supradyn™, Redoxon™
Pain and Cardio	General pain relief and cardiovascular risk prevention	Aspirin™, Aleve™
Digestive Health	Digestive health complaints	Alka-Seltzer™, MiraLAX™, Rennie™, Iberogast™
Allergy, Cough & Cold	Allergies, cough and cold	Claritin™, Aspirin™, Alka-Seltzer™, Afrin™

[1] The order of the products listed is no indication of their importance.

We operate sites around the world, and some are used by multiple divisions. As of December 31, 2020, the Bayer Group comprised 385 consolidated companies in 83 countries.

A 1.1.2/3

Bayer Worldwide 2020

Europe / Middle East / Africa

Belgium
- Antwerp — CS

Germany
- Bergkamen — PH
- Berlin — PH
- Bitterfeld-Wolfen — CH
- Darmstadt — CH
- Dormagen — CS
- Frankfurt am Main — CS
- Grenzach — CH
- Hürth-Knapsack — CS
- Cologne — PH
- Leverkusen — | PH
- Monheim am Rhein — CS
- Weimar — PH
- Wuppertal — PH

Finland
- Turku — PH

France
- Gaillard — CH
- Lyon — CS
- Sophia Antipolis — CS
- Villefranche — CS

Italy
- Garbagnate — PH

Netherlands
- Bergschenhoek — CS

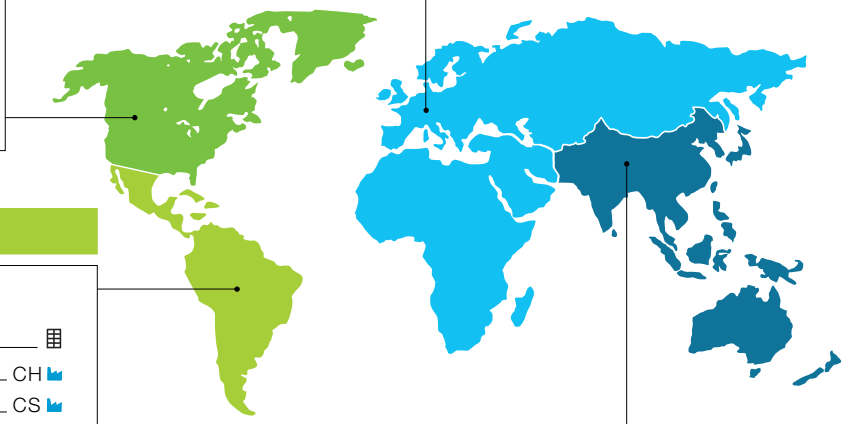
Norway
- Oslo — PH

Switzerland
- Basel — PH | CH
- Muttenz — CS

Spain
- Alcalá — CH

North America

United States
- Berkeley — PH
- Boston/Cambridge — PH
- Kansas City — CS
- Luling — CS
- Morristown — CH
- Muscatine — CS
- Myerstown — CH
- San Francisco — PH
- Saxonburg — PH
- Soda Springs — CS
- St. Louis — | CS
- Whippany — | PH | CH
- Woodland — CS



Latin America

Argentina
- Buenos Aires
- Pilar — CH
- Zárate — CS

Brazil
- Belford Roxo — CS
- Camaçari — CS
- Petrolina — CS
- São José dos Campos — CS
- São Paulo — | CS

Mexico
- Lerma — CH
- Mexico City

Asia / Pacific

China
- Beijing — | PH
- Qidong — CH

India
- Thane
- Vapi — CS

Indonesia
- Cimanggis — CH

Japan
- Koka — PH
- Osaka — PH
- Tokyo — PH

CS: Crop Science
PH: Pharmaceuticals
CH: Consumer Health
Significant research and development location
Significant production location
Significant administrative site

1.2 Strategy and Management

Long-term profitable growth in focus

Innovative solutions support "Health for all, hunger for none" vision

Ambitious sustainability targets for the entire Group

Accelerated global trends demand faster corporate transformation

COVID-19 pandemic highlights systemic importance of our business activities

1.2.1 Strategy and Targets

Group strategy

A growing and aging world population and the increasing strain on nature's ecosystems are among the major challenges facing humanity. As a global leader in health and nutrition, we are able to play a key role in devising solutions to tackle these challenges.

Guided by our purpose "Science for a better life," we deliver breakthrough innovations in health care and agriculture. We contribute to a world in which diseases are not only treated but effectively prevented or cured, in which people can take better care of their own health needs, and in which enough agriculture products are produced while respecting our planet's natural resources. That's because at Bayer, we believe that growth and sustainability should go hand in hand. In short, we are working to make our vision "Health for all, hunger for none" a reality.

Our strategy as a diversified life science company remains unchanged, especially in the current situation, with the systemic relevance and resilience of our businesses becoming particularly evident in the face of the global COVID-19 pandemic. At the same time, the pandemic has accelerated a number of trends, meaning that we need to execute our strategy and implement the transformation of our company at a faster pace.

We focus on four strategic levers to deliver attractive returns for our shareholders while also making a positive contribution to society and the environment:

// We develop **innovative products and solutions** and leverage cutting-edge research to address unmet societal challenges. As part of these endeavors, we are improving our access to innovation by collaborating with third parties. In addition, we are working on disruptive technologies, for example through our Leaps by Bayer activities, while also continuing to drive the digitalization of our entire value chain.

// We drive the **operational performance** of our business by optimizing our resource allocation. Alongside our ongoing efficiency and structural measures, we have also launched a program to accelerate our transformation.

// **Sustainability** is an integral part of our business strategy, operations and compensation system. We make a positive contribution to society and the environment. Our ambitious targets for 2030 are fully in step with the United Nations' Sustainable Development Goals and the climate targets of the Paris Agreement.

// As a **global leader** in health and nutrition, we continue to develop our business. We create value with strategy-based resource allocation focused on profitable growth. We are active in regulated and highly profitable sectors that are driven by innovation and in which we have the objective to grow ahead of the competition.

These four strategic levers underpin the strategies of our divisions.

Strategies of the divisions

Crop Science

Global agriculture and food systems are confronted with major challenges, such as climate change, water scarcity and population growth. At the same time, megatrends in e-commerce, digital ecosystems, food security and alternative energy are driving a structural transformation of agricultural markets. The sector has to meet the needs of a growing population while at the same time promoting sustainability and protecting our ecosystems.

By leveraging our R&D expertise and leading positions in seeds, traits, crop protection and digital farming, we are actively addressing the challenges our industry is facing.

Our near- to medium-term growth will primarily be driven by product innovations in crop protection, seeds and traits. To fuel long-term growth, we are also tapping into new business areas such as digital farming. Our leading position in this field allows us to tailor the solutions we offer our customers, automate processes and increase the productivity of our R&D pipeline. We are digitally connecting farms, creating an industry-wide ecosystem aimed at bringing new pools of value to our customers. In the longer term, our data-based models and digitally enabled services will supplement or in some cases replace what is currently our core business.

See also A 1.3

We see this optimized form of agriculture in the future as part of the solution to the growing loss of biodiversity and increasing climate change. At the same time, it also needs to produce enough healthy food at affordable prices.

To increase food security, we aim to empower 100 million smallholder farmers in low- and middle-income countries by improving access to agronomic knowledge, products, services and partnerships. We will do this by expanding our product and service portfolio, including with tailored digital solutions. As part of this endeavor, we are also partnering with research institutes, nongovernmental organizations, companies and social start-ups.

We also aim to reduce the environmental impact of crop protection by 30% in key cropping systems and decrease field greenhouse gas emissions by 30% in the most emitting cropping systems that we serve by 2030. In late July, we launched our Bayer Carbon Initiative which rewards farmers in Brazil and the United States for adopting climate-smart practices such as no- or low-till farming and the use of cover crops. This program is enabled by our digital platform and serves as a tangible step toward delivering on our goals.

Pharmaceuticals

Throughout the world, an aging population is leading to a growing number of chronic diseases and the increased occurrence of multiple conditions. The convergence of biology and data science will be a key element for innovation in Pharmaceuticals. Digital technologies can transform the way health care is delivered, while cell and gene therapy has the potential to cure severe diseases. Furthermore, the pandemic has accelerated the digital transformation of health care provision.

See also A 1.3

We are helping to drive medical progress through our focus on researching, developing and marketing innovative medicines. Our near- to medium-term growth is driven by key products, such as Xarelto™ and Eylea™, and will be further fueled by several promising late-stage R&D pipeline candidates, such as finerenone, and recently launched products, such as Verquvo™ and Nubeqa™. To safeguard long-term growth, we continue to invest in R&D in therapeutic areas with a substantial need for innovation. Moreover, we are expanding our efforts to access external innovation through research collaborations and in-licensing, capturing continued growth opportunities in biologics and novel technologies.

Building on the acquisition of BlueRock Therapeutics LP, United States, and strengthened internal capabilities in cell and gene therapy, we have established an independent strategic unit for cell and gene therapy. We significantly strengthened this unit with the acquisition of Asklepios BioPharmaceutical, Inc. (AskBio), United States, a biopharma company specialized in the R&D and manufacturing of gene therapies across different therapeutic areas, which adds an industry-leading, adeno-associated virus (AAV)-based gene therapy platform with demonstrated applicability and a number of preclinical and clinical-stage candidates. We aim to further accelerate the implementation of our long-term innovation strategy.

Our sustainability agenda includes improving access to medicines. We are therefore applying tiered pricing principles globally, in order to set price levels according to a country's ability to pay. Another key focus is on improving women's health and strengthening their role in society by helping to promote gender equality and women's economic participation. As part of this endeavor, we are leveraging our leading position in women's health and are aiming to provide 100 million women in low- and middle-income countries with access to modern contraception by 2030. This includes partnerships such as The Challenge Initiative through Johns Hopkins University, together with the Bill & Melinda Gates Foundation, that supports family planning in poor urban settlements. In addition, we remain committed to combating neglected tropical diseases and noncommunicable diseases (such as through the Ghana Heart Initiative).

Consumer Health

Rising health care costs, changing demographics and evolving health awareness of consumers continue to make self-care more relevant, and are expected to fuel solid long-term growth in the consumer health care market. The COVID-19 pandemic has further raised awareness about the importance of self-care and accelerated the move toward digitalization, as well as driving growth in categories like nutritional supplements.

We provide consumers with products, services and information that empower them to transform their everyday health. Our strategy focuses on our core categories, as well as the transition of prescription medicines to nonprescription status. We drive profitable growth through excellence in the development of innovative solutions and through execution excellence in marketing, sales and product supply.

See also A 1.1.2

The digital transformation and our sustainability agenda are the accelerators driving forward the implementation of our strategy at Consumer Health.

See also A 1.3

We are digitalizing all areas of our operations, including marketing, sales, supply chain and R&D to engage better with consumers, customers, and healthcare professionals while driving efficiency and flexibility. In addition, we are pursuing an agile innovation model with external partners to discover new sources of growth. By acquiring a majority stake in Care/of, a personalized nutrition company, we have gained access to a new business model that enables us to provide consumers with individual, tailored solutions.

Moreover, our sustainability ambition has two focus areas. Firstly, it focuses on expanding access to everyday health for 100 million people in underserved communities. Secondly, it focuses on investing in sustainable solutions to support a healthier planet by 2030. We have embedded the sustainability strategy into our operating model across the entire value chain.

Sustainability

As a leading company in health and nutrition, we will contribute significantly toward meeting the Sustainable Development Goals (SDGs) of the United Nations through our innovations, products and services, addressing some of the most fundamental challenges of our time.

We are making significant progress in this regard. We have started a far-reaching decarbonization program across the company, contributing in this way to meeting the target to limit global warming to 1.5°C as confirmed by the Science Based Target initiative. To reduce emissions by more than 42% by the end of 2029, we are implementing energy efficiency measures at our sites, and will purchase 100% electricity from renewable sources. We have committed to becoming climate-neutral in our own operations by 2030 by offsetting all remaining emissions through the purchase of certificates from certified climate protection projects that satisfy externally recognized quality standards. We are also cooperating with our suppliers and customers to reduce our greenhouse gas emissions along the upstream and downstream value chain by at least 12.3% by 2029. The above-described in-field decarbonization efforts of our Crop Science Division supplement these commitments and should make significant contributions in the value chains of the agricultural industry.

We will continue forging ahead with decarbonization also after 2030. As a signatory to the Business Ambition for 1.5°C, we have committed to reaching net zero emissions in our entire value chain by 2050.

Our Group-wide sustainability targets have been included in the compensation system of our Board of Management and other employees eligible to participate. From 2021 onward, quantitative sustainability targets will account for 20% of the target attainment within the long-term incentive.

Sustainable behavior is an integral part of our LIFE values and our Bayer Societal Engagement (BASE) principles. These values and principles form our code of conduct and guide our relationships with all societal stakeholders, from employees and suppliers to customers, investors and scientists.

The recently established external Sustainability Council supports us with a critical-constructive perspective on all sustainability matters. It is composed of renowned, independent experts who advise the Board of Management and provide input within our business on all matters related to sustainability. The contributions of the Sustainability Council inform our strategic planning going forward.

Targets and key performance indicators

Our strategy is aimed at achieving long-term profitable growth balanced with our responsibility for the environment and society. To advance and measure the implementation of our strategy, we have set ambitious Group targets.

A 1.2.1/1

Financial Group Targets

Target	Target attainment in 2020	Target for 2021 at Dec. 31, 2020, closing rates	Target for 2021 (currency-adjusted)
Group sales (Fx & p adj. change); Revised 2020 outlook issued in August: increase by 0 to 1% (Fx & p adj.) to €43 billion to €44 billion	€43.3 billion +0.6%	approx. €41 billion Fx & p adj.: approx. +3%	approx.€42 to €43 billion Fx & p adj.: approx +3%
EBITDA margin before special items; Revised 2020 outlook issued in August: approx. 28% (Fx adj.)	28.1%	approx. 26%	approx. 27%
Core earnings per share; Revised 2020 outlook issued in August: €6.70 to €6.90 (Fx adj.)	€6.92	€5.60 to €5.80	€6.10 to €6.30
Free cash flow Revised 2020 outlook issued in August: minus €0.5 billion to €0 billion	€1.3 billion	approx. minus €3 to minus €4 billion	approx. minus €3 to minus €4 billion

Fx & p adj. = currency- and portfolio-adjusted

See A 2.1.1 Economic Position and Target Attainment for further information on the attainment of our Group financial targets, and A 3.1.2 Corporate Outlook for our financial targets for 2021.

A 1.2.1/2

Nonfinancial Group Targets Through 2030

Target[1]	Base year 2019	2020	Target for 2030
Number of smallholder farmers in LMICs[2] who have received support	42 million	45 million	100 million
Number of women in LMICs[2] who have gained access to modern contraception	38 million	40 million	100 million
Number of people in underserved[3] communities whose self-care needs have been supported by Bayer interventions	41 million	43 million	100 million
Scope 1 & 2[4] greenhouse gas emissions	3.76 million metric tons	3.58 million metric tons	42% decrease[5,7]
Scope 3 greenhouse gas emissions from relevant[8] categories	8.87 million metric tons	7.88 million metric tons	12.3% decrease[6,7]
Off-setting of remaining Scope 1 & 2 greenhouse gas emissions in 2030	0 million metric tons	0.20 million metric tons	100%

[1] A more detailed description of the calculation methodologies is published on our website www.bayer.com/en/sustainability.
[2] Low- and middle-income countries
[3] From a financial or medical perspective
[4] Covering Scope 1 & 2 emissions (market-based) of sites that have an energy consumption in excess of 1.5 terajoules; 2019 figures restated owing to a recalculation of fleet emissions; Scope 1 & 2 emissions audited to obtain reasonable assurance
[5] Corresponding to the sustainability target of limiting global temperature rise to 1.5°C above pre-industrial level
[6] Corresponding to the sustainability target of limiting global temperature rise to below 2°C above pre-industrial level
[7] By the end of 2029
[8] In accordance with the criteria set out by the Science-Based Targets initiative, the Scope 3 categories relevant for our goal include emissions in the following categories: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) upstream transportation and distribution, and (6) business travel

In our Crop Science Division, we helped smallholder farmers to increase productivity in 2020 by supplying high-quality seeds and crop protection products, while also delivering insecticides that provide protection against malaria. Through these efforts, we have already supported 45 million smallholder farmers in the respective countries. Compared to the 2019 baseline, this represents an improvement of around three million smallholder farmers. Moving forward, we will also increasingly support smallholder farmers with the help of partnerships and digital services.

In our Pharmaceuticals Division, our local sales activities for modern contraception are primarily supplemented by global aid programs (such as the United Nations' Population Fund, UNFPA) for which we offer our products on favorable terms. The number of women supported in this way increased from 38 million in the 2019 base year to 40 million in 2020. From 2021, this figure will also take into account support provided through partnerships that we have recently entered into, such as with the Bill & Melinda Gates Institute at Johns Hopkins University as part of "The Challenge Initiative."

In our Consumer Health Division, we are making our products available to low-income consumers locally at affordable conditions (by adjusting sizes and pricing), while at the same time enhancing our product portfolio in a targeted manner. As part of this endeavor, we aim to provide products that address unmet medical need. We supplement our local business activities by collaborating with strategic partners, sharing health-related knowledge and engaging in appropriate lobbying work as we look to empower people in underserved communities to take charge of their everyday health. Through our efforts, we were already able to reach 43 million people in 2020 (41 million in 2019), with the increase in demand for our products partly attributable to the greater focus on health and prevention in connection with the COVID-19 pandemic. By launching a strategic partnership initiative in 2021, we aim to improve access to micronutrients for up to four million underserved pregnant women and their babies in over 50 countries.

As part of our climate strategy, we reduced Scope 1 and 2 greenhouse gas emissions by 0.18 million metric tons of CO_2 equivalents in 2020. In the categories that are relevant for our attainment of the Scope 3 Science Based Target, we reduced emissions by 0.99 million metric tons of CO_2 equivalents.

See A 1.7 Environmental Protection and Safety

1.2.2 Sustainability Management

Our strategic focus on sustainability represents our targeted approach toward increasing the overall societal impact of our business activities. The Chairman of the Board of Management assumes responsibility for this strategy in his role as Chief Sustainability Officer. He is supported by the Public Affairs, Science and Sustainability enabling function, which develops nonfinancial targets and key performance indicators as well as management systems and corporate policies. To enable operational implementation throughout the value chain, we have established a sustainability organization in each of our divisions and integrated sustainability aspects into the processes of our enabling functions.

See the Sustainability Report for more detailed information: www.bayer.com/sustainability-report

Our commitment to the U.N. Global Compact and the Responsible Care™ initiative of the chemical industry and our involvement in the World Business Council for Sustainable Development (WBCSD) underline our mission as a company that acts sustainably.

Materiality analysis and stakeholder dialogue

We ascertain the expectations and requirements of our various stakeholders using a materiality analysis, which surveys external stakeholders and internal managerial employees from various areas of the company throughout the world. The results of this reveal the latest developments along with sustainability-related opportunities and risks. Areas of activity with very high relevance from an internal and external perspective are accounted for in our strategic lever of sustainability and reflected in our nonfinancial Group targets. The current materiality analysis confirmed the following key areas of activity:

www.bayer.com/materiality

// Innovation
// Access to health care
// Sustainable food supply
// Product stewardship
// Climate and environmental protection
// Business ethics

As part of our stakeholder engagement process, which is underpinned by a dedicated guideline, we approach key social and political players and canvass their support from the outset in strategic decision-making processes regarding new projects such as investment projects and launches of new products.

Respect for human rights

The observance of human rights is a fundamental basis of our actions. Bayer fully respects and promotes human rights and has documented its stance in a globally binding corporate policy entitled the Bayer Human Rights Policy. Directives, processes and management and monitoring systems control the implementation of human rights standards in business operations. In 2020, we began developing a human rights strategy for the Group, which we will complete in the first half of 2021, and are also updating Bayer's Human Rights Policy as part of this process.

www.bayer.com/en/sustainability/human-rights

We began devising a specific human rights training program in 2020 to help our employees better understand our Human Rights Policy and the associated challenges. To support our updated policy, this program is scheduled for roll-out in 2021. In addition, we have offered corresponding training programs for many years to enhance employees' awareness of the importance of human rights in their day-to-day activities. In 2020, around 80% of our employees received training in aspects of our current Human Rights Policy. We also demand that our business partners, particularly our suppliers, fully observe human rights.

We are a founding member of the U.N. Global Compact and respect the Universal Declaration of Human Rights, the U.N. Guiding Principles on Business and Human Rights, and a range of globally recognized declarations applicable to multinational corporations, including the OECD Guidelines for Multinational Enterprises, the Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, and the core labor standards of the International Labour Organization (ILO).

Within the context of our risk management process, we conduct a risk analysis of the potentially adverse consequences of our operating activities for human rights. In 2020, we did not establish any adverse potential consequences to be reported in accordance with the CSR Directive Implementation Act (CSR-RUG).

See A 3.2 for further information on the risk management process

Foundation and charity activities

Bayer continues to be socially engaged worldwide in keeping with our purpose "Science for a better life." In 2020, Bayer and the Bayer Fund made financial aid of around €57 million (2019: €61 million) available worldwide for charitable projects and activities in the areas of research and education, social innovation in health and nutrition, and support for the communities near our sites. In addition, we provided our own products and material aid worth more than €100 million. The global activities of the Bayer Science & Education Foundation and the Bayer Cares Foundation are a component of our societal engagement. The U.S.-based Bayer Fund also supports a wide range of initiatives in the areas of community assistance, nutrition, education and disaster aid. Group-wide allocation and management policies form the basis for our donation activities; the Board of Management is involved in major funding decisions.

A Board of Trustees comprising members from inside and outside the company coordinates the yearly alignment of all programs. A Science Council comprising five internationally recognized scientists was newly established in 2020 to decide on the awarding of research prizes and scholarships from the foundations.

Money from the €20 million Social Innovation Ecosystem Fund of the Bayer Cares Foundation was used in 2020 to promote innovative technological and social entrepreneurial solutions in the fields of health care and agriculture. The main objective of the fund is to enable smallholder farmers in Sub-Saharan Africa to lift themselves and their families out of poverty through their own agricultural smallholdings and improved access to medical care. Five pioneering social enterprises were supported by this fund in 2020.

Since the outbreak of the COVID-19 pandemic, we have provided donations of products, equipment and money worth €29 million in over 60 countries to fight the pandemic. In Germany, for example, we have turned research laboratories at our Berlin site into test laboratories at short notice and granted leave of absence to more than 140 employees to perform the tests. In Mali,

Senegal, Uganda and Kenya, the Bayer Cares Foundation provided charitable health care organizations with immediate financial assistance to promote innovative projects to stem the pandemic. As part of our commitment we also provided our employees worldwide with protective masks for everyday use.

1.2.3 Management Systems

Planning and steering

Economic planning and steering are conducted in line with the frameworks that are set for the Group and the divisions by the Board of Management in the course of the strategic planning process and are translated into specific targets during operational planning. The planning and steering process is complemented by the continuous monitoring of business developments, with key management and performance indicators being updated regularly. It is on this basis that strategic objectives are implemented and countermeasures are initiated in the event of deviations from the budget. In addition, the Board of Management uses predominantly nonfinancial targets and performance indicators to steer the company's sustainable alignment.

The following financial indicators are employed to plan, steer and monitor the development of our business:

Operational management indicators

The main parameters in performance management at the operational level are sales, earnings and cash flow data, which also form the basis of short-term variable compensation. Growth is measured in terms of the change in sales after adjusting for currency and portfolio effects (Fx & portfolio adj.) in order to reflect the operational business development of the Group and the divisions. A key measure of profitability is the EBITDA margin before special items, which is the ratio of EBITDA before special items to sales. Another important profitability indicator for the Bayer Group is core earnings per share, which is the core net income divided by the weighted average number of shares. The free cash flow – an absolute indicator – shows the generation of freely available financial resources and also reflects the company's financial strength and earning power.

See also A 2.3

Strategic value management indicator: return on capital employed (ROCE)

Return on capital employed (ROCE) is used as a strategic metric to measure the company's operating profit after taxes in relation to the average capital employed. Comparing ROCE against the weighted average cost of capital (WACC) on an annual basis illustrates the level of value creation. In addition, it forms part of our long-term stock-based cash compensation (LTI).

See also A 2.2.3 and A 2.3

Total shareholder return

We aim to create shareholder value and thus maximize the returns we deliver for our stockholders. Total shareholder return, which is determined based on the change in the share price over the measurement period plus any dividends paid in the interim, also forms part of the LTI.

Integrated management system

We maintain a Group-wide integrated management system (IMS), which is detailed in a corporate policy. The IMS provides a framework for all management systems at Bayer, ensuring compliance with the law and with internal and external requirements while also ensuring efficient ways of working. This is achieved through internal regulations and applicable processes involving clear roles and responsibilities. It also encompasses effective risk management and as such helps to safeguard our company's license to operate.

1.3 Focus on Innovation

Final key authorization for XtendFlex™ soybeans received in the European Union; full launch in the United States and Canada in 2021 is now possible

Regulatory approval in the United States for Verquvo™ (vericiguat) to treat chronic heart failure strengthens cardiovascular portfolio

Acquisition of AskBio builds on newly established cell and gene therapy platform to transform groundbreaking technologies into treatment options for therapeutic areas with a high medical need

Access to a new business model through the acquisition of Care/of, a provider of personalized nutritional supplements

Bayer joins international AMR Action Fund to develop urgently needed novel antibiotics

Innovation is one of the Bayer Group's strategic levers. Our new solutions generate added value for our customers and society. Our activities focus on innovative products based on our research and development (R&D) competencies supplemented with process, service and business model innovations. We also focus on social innovation to improve the living conditions for people in developing countries and disadvantaged individuals in our society.

See A 1.2.2 "Foundation and charity activities" for social innovations

Our innovations help us contribute to solving global challenges in medical care and agriculture. In addition to the strong innovative capabilities of our employees throughout the company, our efforts are driven by excellence in R&D, a broad open innovation network, and the use of new, groundbreaking technologies with a particular focus on data science insights. In addition, our internal "WeSolve" online platform enables all employees to engage in innovation trends and current projects.

Partnerships are integral to our innovation strategy, ensuring access to complementary technologies and expertise. We enter into strategic alliances with various partners such as universities, governmental agencies, start-ups, suppliers and industry partners.

See the division sections of this chapter for further details on collaborations

We maintain a global network of R&D locations, which employ roughly 15,100 Bayer employees. In 2020, our research and development spend before special items amounted to €4,884 million (2019: €5,282 million).

We have worked hard on protection concepts to ensure that our research and development activities can continue largely without interruption during the COVID-19 pandemic. In addition, employees from our R&D organizations joined international research consortiums to make an active contribution to solutions aimed at controlling the COVID-19 virus.

Excellence in research and development

The activities we pursue are aligned with the innovation strategies of our divisions and are aimed at improving human and plant health and safeguarding stable harvests in agriculture. As part of these efforts, we are increasingly employing data science methods. At our subsidiary The Climate Corporation, for example, we use artificial intelligence and machine learning to help farmers achieve better yields through optimized seed selection and harvest analysis, as well as weather and pest infestation forecasts.

See the following subsections for further details

A cross-divisional R&D platform for data sciences is used to generate new solutions. This platform facilitates dialogue and enables the efficient processing of large volumes of data from R&D, for

example by networking our bioinformatics experts across divisional and site boundaries. Furthermore, the inaugural Data Science Summit was held in February as a platform for experts from inside and outside the company to share data science insights.

In 2020, the Bayer R&D Executive Committee developed the new Bayer Science Fellows Program 2.0, creating a global community of active and engaged Bayer scientists from across our divisions. The focus here is on scientific excellence, the willingness to engage in multidisciplinary cooperation and advise Bayer management in science strategy, and the transfer of expertise to colleagues. Bayer Science Fellows represent Bayer R&D in national and international scientific communities, the media and civil society, thus actively contributing to our mission “Science for a better life.”

Leaps by Bayer

Through Leaps by Bayer, we invest in disruptive innovations in the areas of health and nutrition. The research activities of Leaps by Bayer are focused on applying and further developing new technologies with the potential to solve some of humankind’s most pressing problems (the ten “leaps”) and thus make an important contribution to the Sustainable Development Goals of the United Nations. The Leaps by Bayer portfolio comprised investments in more than 35 biotech start-ups in 2020. Last year we concluded the following agreements:

www.leaps.bayer.com/approach#10leaps

In the **agriculture sector**, we partnered with the Singapore sovereign wealth fund Temasek to establish the start-up Unfold Bio Inc., California, United States, with the aim of developing innovative vegetable seed that can be efficiently and sustainably cultivated in vertical farming. Unfold is the world's first company to focus not on the technical infrastructure, but rather on the biology and genetic potential of vegetable crops.

Leaps by Bayer also invested in Apollo Agriculture Ltd., Kenya, a start-up that uses digital, chemical and financial tools to help African smallholder farmers grow crops under suboptimal climatic conditions. By investing in the U.S. start-up company Rantizo Inc., we became involved for the first time in agricultural drones that offer the potential to deploy chemical and biological crop protection agents in a targeted and thus conservative way.

Ukko Inc., a biotech company headquartered in Israel, also joined the Leaps by Bayer portfolio. Ukko has set itself the goal of eliminating food allergies by using artificial intelligence to modify proteins and in this way develop therapeutic approaches to treat gluten intolerances or peanut allergies, for example. The applications for these innovations also have relevance in the agricultural and pharmaceutical fields.

Leaps by Bayer’s activities in **health care** are diverse and include, for example, an investment in Metagenomi Technologies LLC, United States, which aims to find ways to cure genetic diseases through novel gene editing technologies. We also invested in Vesigen Therapeutics Inc., United States, with the goal of focusing modern cell and gene therapies on specific cells in the body, which is considered an especially critical supporting technology. Furthermore, we have joined a financing round for Senti Biosciences, Inc., a U.S. biotech company which is a leader in the use of synthetic biology to engineer gene circuits to improve cell and gene therapy products.

The strategic partnership into which we have entered with Recursion Pharmaceuticals, Inc., United States, comprises not only an investment via Leaps by Bayer but also close cooperation with the R&D areas of our Pharmaceuticals Division right from the early stages. The objective is to merge Recursion’s AI platform with our molecule library in order to discover new active substances and develop innovative therapies to treat fibrotic diseases of the lung, kidney, heart and other organs.

In the area of immuno-oncology, we invested in Triumvira Immunologics Inc., Texas, United States, a leading company in the field of T-cell therapy.

In microbiome research, furthermore, we invested in Azitra Inc., United States, with the aim of assembling a joint platform to develop novel antimicrobial dermatological products.

Leaps by Bayer has also invested in the foundation and incubation of early-stage biotech companies as part of the Israeli company FutuRx Ltd.

We also continued to strengthen our existing portfolio, injecting additional capital into companies including InforMed Data Systems Inc. (OneDrop), Dewpoint Therapeutics Inc., NewLeaf Symbiotics, Inc. and Immunitas Therapeutics.

We also launched the AMR Action Fund together with more than 20 leading biopharmaceutical companies. The AMR Action Fund is a groundbreaking partnership that also includes philanthropies, development banks and multilateral organizations and is focused on making two to four new antibiotics available by 2030. These treatments are urgently needed to address the rapid rise of infections that do not respond to treatment with existing antibiotics due to antimicrobial resistance (AMR).

Patents protect Bayer's intellectual property

Reliable global protection of intellectual property rights is particularly important for an innovation company like Bayer. In most cases, it would be impossible to cover the high costs incurred in the research and development of innovative products without this protection. We are therefore committed worldwide to protecting both the international patent system and our own intellectual property. Depending on the legal framework, we endeavor to obtain patent protection for our products and technologies in major markets. When we successfully market patent-protected products, we are able to reinvest the profits in sustainable research and development.

The term of a patent is normally 20 years from the date the application is filed. Since it takes an average of 11 to 13 years to develop a new medicine or crop protection active ingredient, only seven to nine years of patent protection remain following the product's approval. The same applies to the development of new transgenic traits. To nevertheless provide an adequate incentive to make the necessary major investments in research and development, the European Union member states, the United States, Japan and some other countries extend patent terms or issue supplementary protection certificates to compensate for the shortening of the effective protection period for pharmaceutical and crop protection patents, but not for transgenic traits.

Crop Science

Working with digital applications and teams of experts, we develop a broad spectrum of tailored solutions that give farmers greater choice and enable them to achieve higher productivity in a sustainable manner. Our R&D organization comprises approximately 7,100 employees (2019: 7,800)[1] operating in more than 50 countries around the world. We also enter into collaborations with a large number of external partners under our Open Innovation model to strengthen our innovation power.

Bayer worldwide:
see also A 1.1.2/3

Research and development capacities

Our R&D is focused on developing products for farmers and customers across multiple indications, through multiple technology platforms, in order to increase agricultural productivity while better protecting natural resources and at the same time making contributions to sustainability. Using a targeted approach, we focus on bringing together our expertise across the following disciplines to deliver more innovation faster:

[1] Including permanent and temporary employees

Our **breeding** innovations are aimed at improving crop yields, boosting resiliency against pests, disease and a changing climate, and raising quality. We combine genomic, phenotypic and environmental data with the use of advanced breeding methods and artificial intelligence (AI) to develop new, innovative seed products. In 2020, we opened our automated greenhouse in Marana, Arizona, United States, to serve as our new global product design center for corn. This greenhouse's operations are designed for the sustainable use of inputs and, by consolidating the end-to-end breeding process, more advanced corn products can be developed faster.

Biotechnology – using genome editing and other molecular approaches – helps us to develop solutions that strengthen plants' resistance to insect pests, disease, weeds and other environmental stresses, such as drought or high winds in a targeted manner. Biotechnology makes possible sustainable farming with reduced pesticide use and conservative tillage practices that are designed to preserve topsoil and decrease CO_2 emissions.

In **chemical crop protection**, we discover, optimize and develop innovative, safe and sustainable products with herbicidal, insecticidal and fungicidal activity. Our tailored solutions help farmers achieve better harvests by managing threats in a more targeted manner. We are constantly working on improving our current offerings and developing new molecules. Discovering new modes of action (MOAs) is one of our main priorities. In 2020, we were able to announce the discovery of a new herbicide molecule. The use of different MOAs for weed control is important for managing herbicide resistance and enabling practices like no-till farming that help to sequester greenhouse gases.

Our approach in **biologicals** encompasses a focus on microbial organisms and materials derived from them. We are realigning our activities by partnering with innovation leaders. In addition to microbes, we are also developing a broad range of biological solutions, including plant extracts. Biologicals often enable us to reduce the use of synthetic chemicals, decreasing residue levels and supporting resistance management strategies. By introducing microbials or other biological product types into programs with traditional chemistry, we are building a more holistic application system.

Digital solutions and data science, and in particular artificial intelligence, are transforming the world of agriculture. The performance of seed and crop protection products depends heavily on the environmental conditions and management practices under which they are used. With FieldView™, our industry-leading digital farming platform, we have unparalleled insight into field-specific information that enables us to use advanced modeling to make custom product recommendations tailored to each individual acre. With these insights we are able to maximize the value of our seed and chemistry portfolio for our farmer customers, as well as lead Bayer toward digitally enabled business models and new opportunities for growth.

Research and development pipeline

Our product pipeline contains numerous new small molecule products, seed varieties, digital products and biologicals that promote sustainable agriculture and help improve farmer productivity. The following table shows new products in late development phases[2], sorted according to key crops, that are planned to be launched by 2023.

[2] Products in late development phases have proven proof of concepts validated by field studies and are ready for hand-off to the regulatory team for regulatory approvals.

A 1.3/1

Product Innovation Pipeline[1]

Crop / digital application	First launch	Product group	Indication	Product / trait / number of hybrids or varieties
Corn	2022	Biotechnology trait	Pest management	SmartStax PRO / VTPro4
	2023	Biological	Crop efficiency	BioRise third-generation seed treatment
	2023	Breeding / native trait	Crop efficiency / yield	Short Stature Corn
	Annual	Breeding / native trait	Crop efficiency	> 150 new corn seed hybrids
Soybeans	2021	Biotechnology trait	Pest management	Intacta2Xtend Soybeans
	2022	Crop protection	Disease management	Fox Supra (Indiflin)[2]
	Annual	Breeding / native trait	Crop efficiency	> 150 new soybean seed varieties
Cotton	2021	Biotechnology trait	Pest management	ThryvOn Technology
	Annual	Breeding / native trait	Crop efficiency	> 10 new cotton seed varieties
Horticulture	2021	Biological	Disease management	High-concentration biological for seed and soil application (Minuet in U.S.A.)
Vegetables	Annual	Breeding / native trait	Crop efficiency, disease management	~ 130 new seed varieties launched with highlights in pepper, tomato and melon seed
All major crops	Annual	Biological / small molecule LCM	Crop efficiency, disease, pest and weed management	~ 8 new formulations of crop protection products between 2021–2023
Digital applications	2021	Digital / climate	Crop efficiency	Advanced seed prescription service for corn in Argentina, Brazil and the EU
	2022	Digital / climate	Crop efficiency	Seed Advisor tool within FieldView™ enabling seed placement and density recommendations for North American corn growers

As of December 2020

[1] Planned market launch of selected new products, subject to regulatory approval

[2] Co-development with Sumitomo

In 2020, we launched confirmatory technical proof-of-concept field studies for three new small molecule or biological active ingredients and plant traits[3]. For 2021, we aim to launch confirmatory technical proof-of-concept field studies for two to three new small molecule or biological active ingredients and plant traits.

New products and registrations in 2020

Since the beginning of 2020, our latest fungicide innovation iblon™ technology has been available to growers in New Zealand. iblon™ technology is based on the active ingredient isoflucypram, a member of a new subclass in the family of succinate dehydrogenase inhibitors, or SDHIs. It provides excellent disease control, resulting in healthy-looking crops that deliver higher yields compared to currently available market standards. Further product launches for iblon™ technology fungicides are expected in other important cereal-producing countries once regulatory approval has been completed.

In the 2020 winter canola season, we launched BUTEO™ start, an insecticidal seed treatment for canola that offers very good protection against the cabbage stem flea beetle and crucifer flea beetle, in selected Eastern European countries. From the next planting season in 2021 onward, BUTEO™ start will also be available to growers in Canada.

[3] A new plant trait is a specific characteristic that has not yet been available or offered at Bayer for the crop plant in question.

In May, our Bollgard™ 3 ThryvOn™ cotton was approved by the U.S. Environmental Protection Agency (EPA). This first-of-its-kind trait technology provides season-long protection against tarnished plant bugs and thrips species, and may help reduce the need for some insecticide applications.

In June, we obtained certification in China for the second generation of our trait-based insect protection in soy. This approval marks a key milestone to support the launch of Intacta 2 Xtend™, targeted for 2021.

In September, we announced that the European Commission had authorized XtendFlex™ soybean technology for food, feed, import, and processing in the European Union. This milestone represents the final key authorization for XtendFlex™ soybeans. With this approval in hand, a full launch in the United States and Canada in 2021 is now possible.

In September, we also began the commercial beta introduction of a new short stature corn product in Mexico called VITALA™. The VITALA™ system is based on a new hybrid variety and best practices in agronomy to help farmers grow more using fewer resources.

In October, we received a new five-year registration for our XtendiMax™ herbicide from the U.S. EPA. Based on the active ingredient dicamba, this product is an important weed-control tool for many U.S. growers. Following the recent launch announcement for XtendFlex™ soybeans, growers in the United States can now take full advantage of the benefits of the Roundup Ready™ Xtend Crop System.

Patents

We regularly apply for patent protection for our innovations in both chemical crop protection and seed / biotechnology. However, the link between patents and products is relatively complex since products often combine multiple technologies that are patented differently in different areas of the world, with patents often granted only late in the product lifecycle.

Although the patents have already expired for some of our crop protection active ingredients, such as glyphosate, trifloxystrobin, prothioconazole[4] or imidacloprid, we have a portfolio of patents on formulations, mixtures and / or manufacturing processes for these active ingredients. In addition, some of our younger active ingredients such as fluopyram and bixafen are still patent-protected in the United States, Germany, France, the United Kingdom, Brazil, Canada and other countries until at least 2023. In fact, fluopyram is patent-protected until 2024 in the United States and 2025 in Brazil.[5] While our patent coverage on the first-generation Roundup Ready™ trait for soybeans has expired, some varieties – for example in the United States – are still protected by variety patents. The patent coverage on our second-generation Roundup Ready 2 Yield™ trait for soybeans runs until at least the mid-2020s. Our Intacta RR2 PRO™ soybean also has patent coverage until at least the mid-2020s. Patents on our herbicide trait that confers dicamba tolerance run until at least the mid-2020s. In corn seed and traits, patent coverage for our first-generation YieldGard™ trait in corn has expired. However, most farmers have already upgraded to next-generation branded corn traits with patent coverage running until at least the mid-2020s.

Collaborations

We are part of a global network of partners from diverse segments of the agricultural industry and work together with numerous public-private bodies, NGOs, universities and other institutions. In 2020, we entered into many new research partnerships, including those detailed below.

[4] The last supplementary protection certificates for prothioconazole in some CIS countries expired in 2020.
[5] Patent protection does not take into account patent term extensions or supplementary protection certificates.

In February, we announced an agreement with Meiogenix, France, to accelerate the development of Meiogenix's proprietary technologies related to plant breeding and genome editing applications. These technologies are used to induce the exchange of genomic regions between chromosomes of plant cells during meiosis. Technologies based on meiotic recombination provide commercial crops with access to a broader genetic diversity, including complex traits for improved food quality, plants' resistance to diseases and pests, and higher yield potential.

Also in February, we signed a memorandum of understanding with XAG Co., Ltd., China, to formalize a strategic partnership that will develop and commercialize digital farming technologies in Southeast Asia and Pakistan (SEAP). The collaboration will enable smallholder farmers in SEAP to access digital farm management know-how and technology, and will help them overcome farming challenges such as labor shortages, water availability, product stewardship and safe use and – most importantly – allow them to grow more with less.

In July, we announced a strategic collaboration with Prospera Technologies Inc., Israel, a leading AI data analytics company specializing in machine learning, to jointly create integrated digital solutions for vegetable greenhouse growers. The all-in-one, cloud-based service will enable vegetable greenhouse growers to make more timely and insightful decisions that help optimize both the profitability and sustainability of their crops and operations. The initial roll-out and in-field exploration of the offering began in July in Mexico.

The FieldView™ platform is a central hub or "ecosystem" for agricultural innovations, collaborating with over 70 third-party partners to ensure farmers can easily access a broad and interconnected set of tools, data, and services to optimize all their decisions on the farm. Key partnerships include Sentera, FarmBox and CLAAS.

The following table provides an overview of important collaborations that are currently ongoing.

A 1.3/2

Crop Science: Important Collaborations

Partner	Collaboration objective
AbacusBio Limited	Accelerate Bayer's Global Crop Breeding program by utilizing AbacusBio's expertise in trait prioritization and valuation to advance products that anticipate grower and market needs
Arvinas Inc.	Oerth Bio (joint venture of Bayer & Arvinas, Inc.) to utilize Arvinas' targeted protein degradation technology PROTAC™ to develop innovative new agricultural products to improve crop yields
Atomwise Inc.	Partnership using artificial intelligence (AI) to discover small molecules for crop protection applications
BASF SE	Co-funded collaboration agreement to develop transgenic products with increased yield stability in corn and soybeans
Brazilian Agricultural Research Corporation – Embrapa	R&D cooperation to address specific agricultural challenges in Brazil, e.g., Asian soybean rust
2Blades Foundation	Collaboration research program to identify Asian soybean rust resistance genes in legumes and genes to control fungal diseases in corn
Citrus Research Development Foundation, Inc.	Search for solutions to citrus greening disease, which currently threatens the global citrus production and juice industry
CLAAS KGaA mbH	Enables real-time data connectivity between wireless technology in the cab and farmers' FieldView™ accounts and expands Drive compatibility across all lines of CLAAS equipment in Europe
Elemental Enzymes Ag and Turf, LLC	Use of soil microbes to improve plant health and thereby increase crop productivity
Energin. R Technologies 2009 Ltd. (NRGENE)	Collaboration to develop a sequence-based pangenome and haplotype database to facilitate molecular breeding approaches
Evogene Ltd.	Research program to identify genes for fungal disease resistance in corn
FarmBox	Leverages FieldView™ data to enable dealers to write prescriptions specific to a farmer's operation. The partnership also provides multiple solutions for retail, growers and dealers, including scouting
Forschungszentrum Jülich GmbH	Research collaboration focused on phenotyping of biologicals in plants

A 1.3/2 (continued)

Crop Science: Important Collaborations

Partner	Collaboration objective
Grains Research and Development Corporation (GRDC)	Partnership for the discovery and development of innovative weed management solutions (herbicides)
Ginkgo Bioworks Inc.	The Joyn Bio joint venture investigates technologies to enhance plant-associated microorganisms
Hitgen Ltd.	Research program based on a DNA-encoded library to discover new active substances for use in agriculture
Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology Hellas (IMBB-FORTH)	Collaboration seeking to reveal key aspects of insect gut physiology and discover novel targets for the development of insect control solutions
Innovative Vector Control Consortium (IVCC)	Joint development of new substances to combat mosquitoes transmitting diseases such as malaria and dengue fever
KWS SAAT SE	Joint collaboration and commercial agreement for herbicide-tolerant sugar beet
Meiogenix	Further development of technologies in the fields of plant breeding and genome editing
Novozymes A/S (BioAg Alliance)	Joint development of new sustainable microbial solutions for crop agriculture
Oxitec Ltd.	Development of a Friendly™ fall armyworm exploring a new approach to support integrated pest management in a sustainable way with initial focus on Brazil
Pairwise Plants	Research alliance to develop genome editing tools and products in corn, soybeans, cotton, oilseed rape / canola, and wheat
Pivot Bio Inc.	Research collaboration focused on Bradyrhizobium for improved nitrogen utilization in soybeans
Prospera Technologies Inc.	Joint development of digital solutions for vegetable greenhouse growers
Second Genome, Inc.	Alliance that leverages partner's microbiome / metagenomics platform to expand sourcing and diversity of novel proteins for the development of next-generation insect control traits
Sentera Inc.	Enables farmers to visualize and order imagery through FieldView™
Targenomix GmbH	Development and application of systems biology approaches to achieve a better understanding of metabolic processes in plants
Temasek	Unfold (joint venture between Bayer and Temasek) will focus on innovation in vegetable seed with the goal of raising vertical farming to the next level in terms of quality, efficiency and sustainability
XAG Co. Ltd.	Strategic partnership to develop and market digital agricultural technologies

Pharmaceuticals

In our Pharmaceuticals Division, we focus on indications with high medical need in the areas of cardiovascular disease, oncology, women's healthcare, hematology and ophthalmology. Our work in radiology focuses on the development of digital solutions, contrast agents and injection systems. Approximately 7,400 (2019: 7,500) employees work in our research and development (R&D) departments at a number of locations around the world, mainly in Germany, the United States, Japan, China, Finland and Norway.

Bayer worldwide:
see also A 1.1.2/3

Our R&D innovation model is centered around a deeper understanding of diseases, expanding our activities to include new modalities, groundbreaking technologies and external innovation.

We achieved further significant progress in this area in 2020, such as the establishment of a strategic organizational unit for cell and gene therapies (CGT). The CGT organization will be responsible, from research to market maturity, for developing cell and gene therapies and making them available to patients. The unit will combine external strategic collaborations, acquisitions of technologies and license activities to establish a pipeline in cell and gene therapies. The acquisition of Asklepios BioPharmaceutical, Inc. (AskBio), United States will supplement the cell therapy activities at BlueRock Therapeutics, United States, which we purchased in 2019, and thus further consolidate our leading position in gene and cell therapies. Another fundamental element of our new cell and gene therapy strategy is the partnership we have established with Atara Biotherapeutics, Inc., United States, which will strengthen our cell therapy pipeline.

We are also continuously advancing the digital transformation in R&D. In this context, we entered into various partnerships over the course of 2020, such as the alliance with the artificial intelligence specialist Exscientia Ltd, United Kingdom, in which we aim to identify and optimize novel lead structures for potential drug candidates to treat cardiovascular and oncological diseases. Other partnerships in this field were formed with the U.S.-based companies Recursion Pharmaceuticals Inc. and Schrödinger, Inc.

We are also investing in external growth to supplement our development portfolio. This includes the acquisition of British biotech company KaNDy Therapeutics Ltd., which further expands our development portfolio in women's healthcare. KaNDy Therapeutics Ltd. recently completed Phase IIb for an innovative non-hormonal oral compound, publishing positive data for the treatment of frequent symptoms of the menopause. We also purchased an exclusive license from Systems Oncology LLC, United States, for the global development and commercialization of the preclinical oral drug candidate ERSO™, thereby supplementing our development portfolio with an innovative treatment approach for women with metastatic estrogen receptor-positive breast cancer.

Promising new molecular entities from our research pipeline are transferred to preclinical development. We define a new molecular entity (NME) as a chemical or biological substance that is not yet approved for use in humans. In preclinical development, these substances are examined further in various models with respect to their suitability for clinical trials and the associated "first-in-humans" studies.

Clinical trials are an essential tool for determining the efficacy and safety of new drugs before they can be used to diagnose or treat diseases. The benefits and risks of new medicinal products must always be scientifically proven and well documented. All our clinical trials comply with strict international guidelines and quality standards, as well as the respective applicable national laws and standards.

We also publish information about clinical trials in line with the applicable national laws and according to the principles of the European (EFPIA) and U.S. (PhRMA) pharmaceutical industry associations, these principles being defined in position papers.

Information about our own clinical trials can be found in the publicly accessible register www.ClinicalTrials.gov and our own Trial Finder database. Further information on our globally uniform standards, the monitoring of studies and the role of the ethics committees can be found on our homepage.

www.pharma.bayer.com/ethics-clinical-trials

Phase II clinical projects

The following table shows our most important drug candidates currently in Phase II clinical testing projects:

A 1.3/3

Research and Development Projects (Phase II)[1]

Project	Indication
BAY 1097761 (PEG-ADM Inhale)	Acute respiratory syndrome
BAY 1747846 (High Relaxivity Contrast Agent)	Magnetic resonance imaging
BAY 2433334 (FXIa inhibitor)	Prevention of stroke in atrial fibrillation patients
BAY 2433334 (FXIa inhibitor)	Secondary prevention of stroke
BAY 2433334 (FXIa inhibitor)	Prevention of major adverse cardiac events (MACE)
BAY 2586116 (task channel blocker)	Obstructive sleep apnea
Eliapixant (BAY 1817080, P2X3 Antagonist)	Chronic cough
Eliapixant (BAY 1817080, P2X3 Antagonist)	Overactive bladder
Eliapixant (BAY 1817080, P2X3 Antagonist)	Endometriosis
Eliapixant (BAY 1817080, P2X3 Antagonist)	Neuropathic pain
Elinzanetant (Neurokinin-1,3 Rezeptor Antagonist)	Vasomotor symptoms
Fulacimstat (chymase inhibitor)	Chronic kidney disease
Osocimab (anti-FXIa antibody)	Prevention of thrombosis in end-stage renal disease (ESRD)
BAY-2976217 (FXI LICA, IONIS-FXI-L_{RX})[2]	Prevention of thrombosis in end-stage renal disease (ESRD)
Pecavaptan (dual vasopressin receptor antagonist)	Congestive heart failure
Levonorgestrel (progestin) + indomethacin (NSAID) combi IUS	Contraception
Regorafenib + nivolumab combination[3]	Metastatic colorectal cancer
Regorafenib + nivolumab combination[3]	Recurrent or metastatic solid tumors
Regorafenib + pembrolizumab combination	Second-line therapy of unresectable hepatocellular carcinoma
Rogaratinib (pan-FGFR inhibitor)	Urothelial cancer
Runcaciguat (sGC Activator)	Chronic kidney disease

[1] As of February 4, 2021
[2] Sponsored by Ionis Pharmaceuticals, Inc., United States
[3] In collaboration with Bristol-Myers Squibb Company Co., United States, and Ono Pharmaceutical Co., Ltd., Japan
The nature of drug discovery and development is such that not all compounds can be expected to meet the predefined project goals. It is possible that any or all of the projects listed above may have to be discontinued due to scientific and / or commercial reasons and will not result in commercialized products. It is also possible that the requisite U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA) or other regulatory approvals will not be granted for these compounds. Moreover, we regularly review our research and development pipeline so that we can give priority to advancing the most promising pharmaceuticals projects.

Below are the most significant changes that occurred in 2020 compared with 2019:

In January, we decided to halt the development of our alpha2c AR antagonist fadaltran as the efficacy endpoints in the Phase IIa trial were not met.

In February, we discontinued the development of BAY 1902607, one of two P2X3 antagonists. The project was terminated on the basis of the results of a Phase IIa trial that examined the efficacy and safety of BAY 1902607 in patients with refractory chronic cough. We are continuing to advance the development of our second P2X3 antagonist, BAY 1817080.

In June, we presented the results of the Phase IIb VITALITY-HFpEF study investigating our sGC stimulator vericiguat in patients with chronic heart failure and preserved ejection fraction as part of the Heart Failure Association (HFA) Discoveries program. The primary endpoint was not met.

We have switched our development focus from investigating the unconjugated FXI antisense oligonucleotide (IONIS-FXI Rx) to the more potent ligand-conjugated IONIS-FXI-L_{RX}, as this can enable lower and less frequent doses to be used in patients.

In November, we also decided to discontinue development of vilaprisan. A comprehensive assessment of the generated preclinical and clinical data is currently being conducted.

Phase III clinical projects

The following table shows our most important drug candidates currently in Phase III clinical testing projects:

A 1.3/4

Research and Development Projects (Phase III)[1]

Project	Indication
Aflibercept (VEGF inhibitor)[2]	Retinopathy of prematurity
High-dose aflibercept (VEGF inhibitor)[2]	Diabetic macular edema (DME)
High-dose aflibercept (VEGF inhibitor)[2]	Neovascular age-related macular degeneration (nAMD)
Copanlisib (PI3K inhibitor)	Various forms of non-Hodgkin lymphoma (NHL)
Regorafenib (multikinase inhibitor)	Newly diagnosed or recurrent glioblastoma
Darolutamide (ODM-201, AR antagonist)	Hormone-sensitive metastatic prostate cancer
Darolutamide (ODM-201, AR antagonist)	Adjuvant treatment for localized prostate cancer with very high risk of recurrence
Finerenone (MR antagonist)	Heart failure with mid-range or preserved ejection fraction

[1] As of February 4, 2021

[2] In collaboration with Regeneron Pharmaceuticals, Inc., United States

The nature of drug discovery and development is such that not all compounds can be expected to meet the predefined project goals. It is possible that any or all of the projects listed above may have to be discontinued due to scientific and / or commercial reasons and will not result in commercialized products. It is also possible that the requisite U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA) or other regulatory approvals will not be granted for these compounds. Moreover, we regularly review our research and development pipeline so that we can give priority to advancing the most promising pharmaceuticals projects.

Below are the most significant changes that occurred in 2020 compared with 2019:

In March, we presented data from the Phase III VICTORIA study investigating the efficacy and safety of vericiguat in patients with symptomatic chronic heart failure and reduced ejection fraction of less than 45% who have had a previous worsening heart failure event at the virtual Annual Scientific Session & Expo of the American College of Cardiology (ACC). The data confirmed that the oral, once-daily active ingredient significantly reduced the risk of the composite primary efficacy endpoint of cardiovascular death or heart failure hospitalization and was also well tolerated, while the incidence rate of adverse events was comparable to that of placebo. The data from the presentation at the event was published in The New England Journal of Medicine.

At the ACC congress, we also presented data from the Phase III VOYAGER PAD study that was published at the same time in The New England Journal of Medicine. This data demonstrated that the Factor Xa inhibitor rivaroxaban (Xarelto™) in the vascular dose plus ASA 100 mg significantly lowered the combined risk of acute limb ischemia, major amputation of vascular etiology, myocardial infarction, ischemic stroke, and cardiovascular death in patients with symptomatic peripheral artery disease following revascularization. The study for rivaroxaban also demonstrated that the incidence rate of major bleeding was not elevated according to the TIMI definition, the main criteria for safety assessment in this trial.

Also at the ACC scientific meeting, we presented results from the clinical Phase IIIb PRONOMOS trial that were concomitantly published in The New England Journal of Medicine. This trial investigated rivaroxaban in comparison to enoxaparin in adult patients during a period of immobilization after nonmajor, moderate-risk lower limb orthopedic surgery. Rivaroxaban reduced the risk of major venous thromboembolism compared to enoxaparin. Bleeding rates were low and not statistically different between the two treatment groups.

April saw the start of a Phase III trial investigating darolutamide in adjuvant prostate cancer, sponsored by the Australian and New Zealand Urogenital and Prostate Cancer Trials Group (ANZUP) and supported by Bayer. The purpose of this study is to determine the efficacy of darolutamide in combination with a luteinizing hormone-releasing hormone analogue (LHRHA) in men undergoing radiation therapy for localized prostate cancer who are at very high risk of recurrence. The study will include around 1,100 participants from Australia, New Zealand, Europe and North America.

In May, we presented the final data from the Phase III ARAMIS trial at the virtual ASCO Annual Meeting showing that darolutamide, a nonsteroidal androgen receptor antagonist, in combination with androgen deprivation therapy (ADT) significantly improves overall survival in men with nonmetastatic castration-resistant prostate cancer (nmCRPC) compared to placebo plus ADT. This data was published in September in The New England Journal of Medicine.

In June, we launched the Phase III PHOTON trial together with Regeneron Pharmaceuticals, Inc., evaluating extended treatment intervals with a new aflibercept 8 mg formulation for intravitreal injection in adults with visual impairment due to diabetic macular edema (DME). The Phase III PULSAR trial to investigate extended dosing intervals with a new 8 mg aflibercept formulation in adults with neovascular age-related macular degeneration (nAMD) began in August. Aflibercept 2 mg is already approved under the brand name Eylea™ for five indications in more than 100 countries.

In June, we initiated the FINEARTS-HF study, which is investigating the efficacy and safety of finerenone with regard to morbidity and mortality in symptomatic heart failure patients with a left ventricular ejection fraction of 40% or more. The study started in September. The primary objective of the study is to demonstrate superiority of finerenone over placebo in reducing the rate of the composite endpoint of cardiovascular death and total (first and recurrent) heart failure (HF) events (defined as hospitalizations or emergency treatment for HF).

In July, we announced that our Phase III FIDELIO-DKD study evaluating the efficacy and safety of the investigational drug finerenone versus placebo had met its primary endpoint. The results showed that finerenone delayed the progression of chronic kidney disease by significantly reducing the combined risk of time to first occurrence of kidney failure, a sustained decrease of estimated glomerular filtration rate greater than or equal to 40% from baseline over a period of at least four weeks, or renal death. Finerenone also significantly reduced the risk of the key secondary endpoint, a composite of time to first occurrence of cardiovascular death or nonfatal cardiovascular events (nonfatal myocardial infarction, nonfatal stroke, or heart failure hospitalization). The results of the FIDELIO-DKD study, which is part of the biggest Phase III clinical trial program to date for chronic kidney disease and type 2 diabetes, were presented in October at Kidney Week 2020 of the American Society of Nephrology (ASN) and published at the same time in The New England Journal of Medicine.

At the ESMO congress in September we also presented updated data on larotrectinib (Vitrakvi™) that demonstrates high efficacy and good tolerability of this precision oncology medication in adult and pediatric patients with TRK fusion cancer.

In October we announced that the Phase III CHRONOS-3 study evaluating copanlisib in combination with rituximab in patients with relapsed indolent non-Hodgkin lymphoma (iNHL) had met its primary endpoint of significantly prolonging progression-free survival (PFS). The safety and tolerability observed in the trial were generally consistent with previously published data on the individual components of the combination, and no new safety signals were identified. We intend to present the results from CHRONOS-3 at a scientific congress and discuss the data with health authorities worldwide.

Furthermore, as mentioned above, we decided in November to discontinue development of vilaprisan. A comprehensive assessment of the generated preclinical and clinical data is currently being conducted.

We further announced in February 2021 that Nubeqa™ (darolutamide) is planned to be investigated in the Phase III trial ARANOTE evaluating the efficacy and safety of darolutamide plus androgen deprivation therapy (ADT) in comparison to placebo plus ADT in men with metastatic hormone-sensitive prostate cancer. The primary endpoint of this study is radiological progression-free survival (rPFS). We anticipate that the first patients will be enrolled to the study in the first quarter of 2021.

Filings and approvals

Following the completion of the required studies with a number of these drug candidates, we submitted applications to one or more regulatory agencies for approvals or approval expansions. The most important drug candidates in the approval process are:

A 1.3/5

Main Products Submitted for Approval[1]

Project	Indication
Finerenone (MR antagonist)	EU, U.S.A., Japan, China[2]: Heart failure with mid-range or preserved ejection fraction
Larotrectinib (LOXO-101, TRK fusion inhibitor)	Japan: Solid tumors with NTRK gene fusions
Rivaroxaban (FXa inhibitor)	China: VTE treatment in children
Rivaroxaban (FXa inhibitor)	EU, U.S.A., China: Peripheral artery disease (PAD)
Vericiguat (sGC stimulator)[3]	EU, Japan, China: Chronic heart failure with reduced ejection fraction (HFrEF)

[1] As of February 3, 2021
[2] Filings in China are included in this table starting in the second quarter of 2020. The projects were already submitted in prior quarters for approval in the respective indications.
[3] Co-development with Merck & Co., Inc., United States

In January, darolutamide was approved in Japan under the brand name Nubeqa™ for the treatment of patients with nonmetastatic castration-resistant prostate cancer (nmCRPC). The approval is based on the Phase III ARAMIS trial evaluating the efficacy and safety of darolutamide plus androgen deprivation therapy (ADT) compared to placebo plus ADT. In March, we received marketing authorization in the European Union for Nubeqa™ to treat patients with nonmetastatic castration-resistant prostate cancer who are at high risk of developing metastatic disease. In February 2021, the Chinese National Medical Products Administration (NMPA) also approved Nubeqa™ for the treatment of patients with nonmetastatic castration-resistant prostate cancer who are at high risk of developing metastatic disease. Darolutamide is a nonsteroidal androgen receptor inhibitor that we developed together with Finnish pharmaceutical company Orion Corporation.

In April, the European Medicines Agency (EMA) approved Eylea™ (aflibercept) injection solution in a prefilled syringe form for all registered indications. The prefilled syringe was also launched on the Japanese market in June.

In May, we applied for registration in Japan for the precision oncology treatment larotrectinib, an oral TRK inhibitor that has been developed specifically to treat adults and children with locally advanced or metastatic solid tumors that have a rare genomic alteration called neurotrophic tyrosine receptor kinase (NTRK) gene fusion. The product is already approved under the brand name Vitrakvi™ in several countries, including the United States, Brazil, Canada and countries of the European Union.

In June, we applied for marketing authorization in the European Union and Japan for vericiguat to treat patients with chronic heart failure. In July, we announced that the United States Food and Drug Administration (FDA) had accepted the New Drug Application for priority review. In August, we submitted the regulatory application seeking the approval of vericiguat in China. In January 2021, the FDA granted regulatory approval for vericiguat for the treatment of patients with symptomatic chronic heart failure and reduced ejection fraction of less than 45% who have had a previous worsening heart failure event in combination with available heart failure therapies, under the brand name Verquvo™. Vericiguat is being developed by Bayer in collaboration with MSD (a trade name of Merck & Co., Inc., United States).

In August, the Chinese National Medical Products Administration (NMPA) approved Xofigo™ (radium-223 dichloride) for the treatment of patients with castration-resistant prostate cancer (CRPC), symptomatic bone metastases and no known visceral metastases. The drug is already approved in more than 50 countries worldwide, including the United States, the countries of the European Union and Japan. The approval of Xofigo™ in China is based on the data from the ALSYMPCA trial as well as the Phase III 15397 trial conducted in Asia.

In November, we submitted marketing authorization applications for finerenone in the United States, the European Union and Japan for patients with chronic kidney disease and type 2 diabetes. The submissions are based on the positive results of the Phase III FIDELIO-DKD trial investigating the efficacy and safety of this investigational drug. In January 2021, the U.S. Food and Drug Administration (FDA) accepted the applications and granted a priority review.

Also in November, the EMA's Committee for Medicinal Products for Human Use recommended the expanded approval of Xarelto™, on the basis of which the European Commission then granted this extension in January 2021. Rivaroxaban is now licensed for use in children aged between 0 and 17. The expansion extends to treatment of acute venous thromboembolism (VTE) and prevention of recurring VTE following initial diagnosis, including cerebral venous sinus thrombosis. It is now possible to apply for prolongation of the patent by six months to April 2024.

In January 2021, the Japanese Ministry of Health, Labour and Welfare (MHLW) granted regulatory approval for the oral Factor Xa inhibitor rivaroxaban (Xarelto™) in the treatment of venous thromboembolism (VTE) including catheter-related thrombosis and cerebral venous sinus thrombosis and for the prevention of recurrent VTE in pediatric patients. The suspension for oral administration was likewise approved. This means that rivaroxaban, which is already routinely used in adult patients with VTE, is now the first oral Factor Xa inhibitor to be licensed for the treatment and prevention of recurrent VTE in children.

Likewise in January 2021, the Japanese health authorities granted us regulatory approval for molidustat, a new therapeutic option for renal anemia. Molidustat stimulates the production of erythrocytes by mimicking the physiological reaction that occurs when the human body adapts to hypoxic conditions such as those prevailing at high altitudes. The marketing authorization application was based on data from clinical trials including the Japanese clinical Phase III MIYABI trial program in nondialysis patients with chronic kidney disease and dialysis patients.

Patents

The following table shows the expiration dates for our most significant Pharmaceuticals patents:

A 1.3/6

Pharmaceuticals Patent Expiration Dates

Products	Market										
	Germany	France	Italy	Switzer-land	Spain	U.K.	China	Japan	Brazil	Canada	U.S.A.
Adempas™											
Active ingredient	2028	2028	2028	2028	2028	2028	2023	2027-2028[d]	2028	2023	2026
Eylea™											
Active ingredient	2025	2025	2025	2025	2025	2025	2020	2021-2023[d]	2028	2020	–
Jivi™											
Active ingredient	2025[a]	2025[a]	2025[a]	2025[a]	2025[a]	2025[a]	2025	2027[e]	2030[c]	2027[e]	2025[a]
Nexavar™											
Active ingredient	2021	2021	2021	2021	2021	2021	2020	2021-2025[d]	2025	2020	2020
Nubeqa™											
Active ingredient	2030[a]	2030[a]	2035[e]	2030[a]	2030[a]	2030[a]	2030	2035[e]	2030	2032	2030[a]
Stivarga™											
Active ingredient	2028	2028	2028	2028	2028	2028	2024	2026[d]	2028	2024	2031
Verquvo™											
Active ingredient	2031[f]	2031[f]	2031[f]	2031[f]	2031[f]	2031[f]	2031	2031[f]	2031[b]	2031[f]	2031[f]
Vitrakvi™											
Active ingredient	2029[a]	2029[a]	2034	2029[a]	2034[e]	2029[a]	2029	2029	2030	2031	2029[a]
Xarelto™											
Active ingredient	2023	2023	2023	2023	2023	2023	2020	2022-2025[d]	2022	2020	2024
Xofigo™											
Use	2024	2024	2024	2024	2024	2024	–	2022[e]	–	–	2022

[a] Current expiration date; patent term extension applied for
[b] Patent application pending
[c] Patent term revised
[d] Application-specific patent term extension(s)
[e] Patent term extension granted
[f] Current expiration date; patent term extension will be applied for punctually

Collaborations

In addition to the collaborations entered into in January with Evotec SE, Germany, Exscientia Ltd., United Kingdom, and Daré Bioscience, Inc., United States, which we already reported in the 2019 Annual Report, the following collaborations were initiated in 2020:

In March, we signed a research collaboration and licensing agreement with the Indian drug discovery company Curadev Pvt. Ltd. for Curadev's Stimulator of Interferon Genes (STING) antagonist program. The collaboration aims to discover and develop new drug candidates for the treatment of lung, cardiovascular and other inflammatory diseases.

In May, we announced a collaboration with the U.S. diagnostics company ArcherDX, Inc., which will focus on the global development and commercialization of therapy-accompanying diagnostic tests – also known as companion diagnostics (CDx) – for Vitrakvi™ (larotrectinib), based on next-generation sequencing.

In August, we entered into an agreement with U.S.-based digital health company Informed Data Systems Inc. (One Drop) to jointly develop digital health products for multiple therapeutic areas. In the year before, we had invested in the company and signed a licensing agreement with them as part of our Leaps by Bayer initiative. The aim of the collaboration at present is to provide integrated services empowering patients to manage certain conditions.

In September, we formed a strategic partnership with U.S.-based biotech company Recursion Pharmaceuticals, Inc., as described above.

Also in September, we entered into an exclusive global license agreement with the U.S. company Systems Oncology, LLC, for ERSO™, an oral compound in pre-clinical development for the treatment of metastatic estrogen receptor-positive (ER+) breast cancer. Under the terms of the agreement, we will be responsible for developing and commercializing ERSO globally.

In October, our partner Foundation Medicine Inc., United States, announced that it had applied for an extension to the regulatory approval for its companion diagnostic test FoundationOne™CDx in Japan. In the same month, the U.S. Food and Drug Administration (FDA) approved FoundationOne™CDx for use as the first companion diagnostic for Vitrakvi™ in the United States.

In November, we signed a development and license agreement with Blackford Analysis Ltd., United Kingdom, to establish a digital AI platform for radiology. The platform will provide access to a curated marketplace through which radiologists and their teams can centrally manage workflows, thus supporting their diagnostic decision-making and enabling earlier interventions for patients.

We also entered into a strategic partnership with Atara Biotherapeutics, Inc., United States, in December, comprising an exclusive worldwide license agreement for mesothelin-directed CAR-T cell therapies for the treatment of solid tumors. Under the terms of the agreement, Atara will lead IND (Investigational New Drug)-enabling studies and process development for ATA3271 while Bayer will be responsible for submitting the IND and subsequent clinical development and commercialization.

In connection with our work to stem the spread of the COVID-19 pandemic, in January 2021 we announced that we had signed a collaboration and service agreement with the bio pharmaceutical company CureVac N.V., Germany, in order to work together on the COVID-19 vaccine candidate CvnCoV. CureVac is developing in clinical trials a new class of transformative medicines based on messenger ribonucleic acid (mRNA). Under the terms of the agreement, we will support the further development and supply of the vaccine candidates and provide support for local activities in selected countries. We will also deploy our manufacturing network to contribute to vaccine production.

The following table shows examples of the main R&D collaborations:

A 1.3/7

Main Collaborations

Partner	Collaboration objective
ArcherDX, Inc.	Collaboration for global development and marketing of companion diagnostics (CDx) tests for Vitrakvi™ (larotrectinib) on the basis of next-generation sequencing
Arvinas Inc.	Research collaboration in the field of life sciences using novel PROTAC™ (proteolysis-targeting chimeras) technology from Arvinas to develop new pharmaceuticals to treat cardiovascular, oncological and gynecological diseases
Atara Biotherapeutics, Inc.	Strategic partnership for next-generation, mesothelin-directed CAR-T cell therapies for the treatment of solid tumors
Blackford Analysis Ltd.	Development and licensing agreement aimed at establishing a digital AI platform for radiology
Brigham and Women's Hospital and Massachusetts Hospital	Joint laboratory for research into new drug candidates to treat chronic lung diseases
Bristol-Myers Squibb Co. and Ono Pharmaceutical Co., Ltd.	Clinical collaboration to evaluate new combination possibilities for Stivarga™ (regorafenib) with immuno-oncologics
Broad Institute	Strategic partnership to research and develop new therapeutic options in the fields of cardiovascular medicine and oncology and establishment of a joint research laboratory
Compugen Ltd.	Research and development of new immunotherapy approaches in oncology
Curadev Pvt. Ltd.	Research collaboration to identify and develop new drug candidates for the treatment of lung, cardiovascular and other inflammatory diseases, and a licensing agreement for Curadev's STING (Stimulator of Interferon Genes) antagonist program
CureVac N.V.	Collaboration and service agreement to support the further development and supply of the COVID-19 vaccine candidate CvnCoV and to provide support for local activities in selected countries
Daré Bioscience Inc.	License agreement for U.S. commercial rights to hormone-free contraceptive Ovaprene™ in the future
German Cancer Research Center (DKFZ)	Strategic partnership to research and develop new therapeutic options in oncology, especially in immunotherapy, and establishment of a joint research laboratory

A 1.3/7 (continued)

Main Collaborations

Partner	Collaboration objective
Dewpoint Therapeutics, Inc.	Option, research and license agreement for the development of new treatments for cardiovascular and gynecological diseases, with the partnership leveraging Dewpoint's proprietary platform for biomolecular condensates and Bayer's compound library
Evotec AG	Collaboration to identify development candidates for the treatment of endometriosis and kidney diseases and to develop multiple clinical candidates for the treatment of polycystic ovary syndrome (PCOS)
Exscientia Ltd.	Collaboration in early research projects to treat cardiovascular and oncological diseases
Foundation Medicine Inc.	Collaboration for the development and global commercialization of therapy-accompanying diagnostic tests, also known as companion diagnostics (CDx), based on next-generation sequencing for new cancer drugs developed by Bayer
Haplogen GmbH	Research collaboration in the field of pulmonary diseases such as chronic obstructive pulmonary disease (COPD)
Informed Data Systems Inc. (One Drop)	Collaboration for co-development of digital health care products in a variety of therapeutic areas
Ionis Pharmaceuticals, Inc.	Development of the antisense drug IONIS-FXIRx for thrombosis prevention and development of IONIS-FXI-LRx in the preclinical phase
Janssen Research & Development, LLC of Johnson & Johnson	Development and marketing of Xarelto™ (rivaroxaban) for the treatment of coagulation disorders
Kyoto University	Research alliance to identify new therapeutic approaches for pulmonary diseases
MD Anderson Cancer Center	Development collaboration in oncology
Merck & Co., Inc.	Development and marketing collaboration in the field of soluble guanylate cyclase (sGC) modulation
Orion Corporation	Development and marketing of darolutamide (previously ODM-201) for the treatment of patients with prostate cancer
Peking University	Research collaboration and establishment of a research center for joint projects
PeptiDream Inc.	Active ingredient research in various therapeutic areas and target classes with the help of PeptiDream's Peptide Discovery Platform System technology
Recursion Pharmaceuticals Inc.	Strategic partnership to conduct research into new treatments for fibrotic diseases of the lungs, kidneys, heart and other organs
Systems Oncology, LLC	Development and marketing of ERSO™ for the treatment of patients with breast cancer
Tsinghua University	Research collaboration and establishment of a research center for joint projects
Ultragenyx Pharmaceuticals Inc.	Research and development of a novel gene therapy for the treatment of hemophilia A
University of Oxford	Strategic research partnership to develop novel gynecological therapies
Vanderbilt University Medical Center	Strategic research alliance to identify and develop new potential active ingredients for the treatment of kidney diseases

Consumer Health

At Consumer Health, we concentrate on developing new nonprescription (OTC) products and solutions that improve consumer health and well-being. We maintain a global network of research and development facilities, with sites in the United States, France, Spain, Germany and China at which approximately 600 employees (2019: 600 employees) work. We are active in the areas of pain, cardiovascular risk prevention, dermatology, nutritional supplements, digestive health, allergy and cough & cold. In 2020, we established a new Consumer Health function, Regulatory, Medical, Safety & Compliance (RMSC), which is separate from Pharmaceuticals. It will further strengthen our commitment to science to address medical needs and compliance across innovations and existing portfolio of products on the market as leaders in selfcare.

Bayer worldwide;
see also A 1.1.2/3

The focus lies on product developments that are insight-driven and aligned to the unmet needs of consumers. Our innovations range from new product formulations, devices and packaging to new consumer and healthcare professional claims and communications. In addition, we developed around 53 new consumer-validated product innovations in 2020, thus exceeding our target. We are strengthening Consumer Health's innovation pipeline with more than 110 active projects that we are developing across all our categories. These include core and adjacent innovations as well as transformational innovations that could significantly advance self-care products for consumers

worldwide.[6] A further important part of our innovation strategy is transitioning current prescription medicines that are suitable for self-care to OTC status (Rx-to-OTC switches).

In the United States, China, Germany and other core markets, we continue to make progress in e-commerce by increasing sales and market share on key e-commerce platforms. In addition, we are pursuing an agile innovation model with external partners to discover new sources of growth. For example, we have strengthened our ability to provide individual tailored solutions through a new business model by acquiring a majority stake in Care/of, a personalized nutrition company.

We also introduced a number of new product line extensions for existing brands in various countries in 2020, for example:

In North America, we expanded our product portfolio with the launch of four product-line extensions for our One A Day™ vitamins in the United States. In the Allergy & Cold category, our Claritin™ antihistamine is now also available in a new presentation thanks to the introduction of Claritin™ Cool Mint Chewables.

In the Europe / Middle East / Africa region, we launched Iberogast™'s first ever line extension. Iberogast™ Advance is a new formulation of proven ingredients intended for the relief of ongoing gastrointestinal symptoms. We also extended our wound-healing and skincare range by launching Bepanthen™ Tattoo in a number of large European markets, including Italy, the United Kingdom and Spain.

In the Asia / Pacific region, we expanded our range of Elevit™ prenatal vitamins in the Nutritionals category with the launch of Elevit™ DHA and Elevit™ Probiotics supplements.

1.4 Commitment to Employees

Defining our corporate culture through values, dialogue and inclusion

Focus on supporting work-life integration for our employees during the COVID-19 pandemic

Bayer's business success is essentially built on the knowledge and commitment of our workforce. As an employer, we offer our employees attractive conditions and wide-ranging individual development opportunities. Alongside professional training, we focus on promoting a dialogue- and feedback-oriented culture based on trust, intentional inclusion, and respect for diversity and equality of opportunity, which is also summarized in our corporate policy entitled "Fairness and Respect at Work." Our employees worldwide are trained to comply with these guidelines. We measure the engagement and satisfaction of our employees by means of institutionalized feedback discussions and regular employee surveys. Responsibility for the human resources strategy of the Bayer Group lies with the Board of Management, supported by Bayer's Human Resources enabling function. The strategy is globally implemented within the scope of binding policies.

[6] Core innovation means optimizing existing products for existing customers. Adjacent innovation refers to the extension of existing brands to new market segments. Transformational innovation refers to achieving breakthroughs and creating new markets that do not yet exist.

For 10 years, Bayer's LIFE values (Leadership, Integrity, Flexibility and Efficiency) have guided us in our activities. These stand for our values and leadership principles. To align the behaviors of the LIFE values with Bayer's new vision "Health for all, hunger for none," the attributes for each value were updated in 2020. The attributes define each value's practical meaning and behaviors. In this way, we have further developed our holistic mindset framework, which serves as the sole reference for how employees work at Bayer.

The updated attributes for each value can be found at www.bayer.com/en/commitments/our-values

Employees at all Bayer sites around the world have the right to elect their own representatives. In 2020, the working conditions for around 55% (2019: 55%) of our employees worldwide were governed by collective or company agreements.

Employee data

On December 31, 2020, we employed 99,538 people (2019: 103,824) worldwide. In Germany we had 23,398 employees (2019: 24,953), representing 23.5% of the total Group workforce (2019: 24.0%).

Bayer AG key data: see also A 5.4

The absolute decline in employee numbers as a result of the restructuring and portfolio measures was reflected above all in the development in Europe / Middle East / Africa and North America.

As part of the restructuring, employees from the Information Technology enabling function transferred to external service providers. In addition, the number of employees working in research and development fell, in part due to the transfer of certain activities in pharmaceutical research to Nuvisan ICB GmbH, Germany, at the Berlin site. In relative terms, headcount declined most strongly in North America and Asia / Pacific.

In 2020, the Bayer Group hired 9,615 new employees (accounting for 9.5% of our workforce). On the reporting date, our employees had worked for the Bayer Group for an average of 11.3 years (2019: 10.2). Our workforce includes only a small number of employees on temporary contracts (3.6%).

Restructuring measures

We act with social responsibility when changes and restructuring measures are necessary. For example, we will complete the worldwide reduction of around 12,000 jobs initiated in late 2018 by the end of 2021 following local laws and regulations, meaning that there may be different solutions in different countries. In all countries, we aim to minimize the impact on employees and find mutually agreeable solutions in cases where job reductions are necessary. The General Works Agreement "Safeguarding Bayer's Future 2025" fundamentally rules out dismissals for operational reasons for the intercompany personnel network of Bayer AG in Germany until the end of 2025.

We made further progress with the planned Group-wide measures in 2020. To date, around 10,700 jobs have been reduced as part of these measures. Flexible models with attractive conditions have been offered to employees of various age groups since February 2019. More than 2,200 employees in Germany have accepted such a voluntary severance agreement since it was introduced.

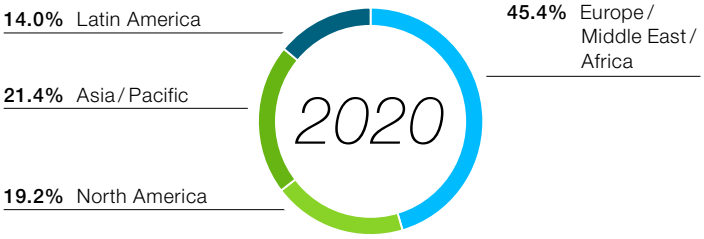
Further measures with regard to the acceleration of our transformation announced in September are currently being developed and discussed in detail.

A 1.4/1

Employee Data

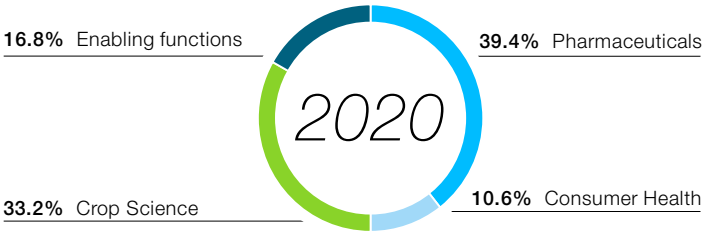
	2019	2020	Change %
Total	**103,824**	**99,538**	**–4.1%**

by Region



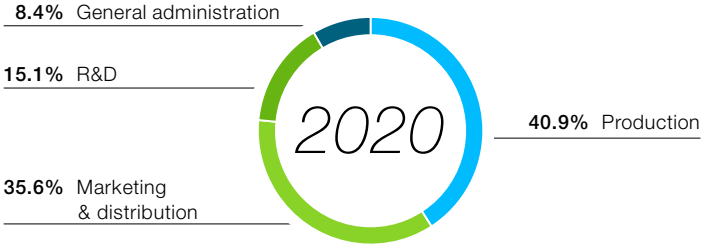
	2019	2020	Change %
Europe/Middle East/Africa	46,933	45,146	–3.8%
North America	20,735	19,111	–7.8%
Asia/Pacific	22,341	21,310	–4.6%
Latin America	13,815	13,971	+1.1%

by Division



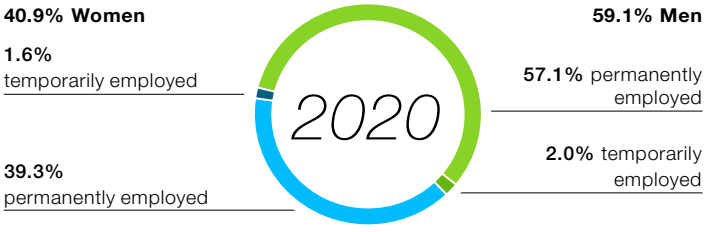
	2019	2020	Change %
Crop Science	33,866	33,064	–2.4%
Pharmaceuticals	38,553	39,206	+1.7%
Consumer Health	10,400	10,570	+1.6%
Enabling functions	21,005	16,698	–20.5%

by Function



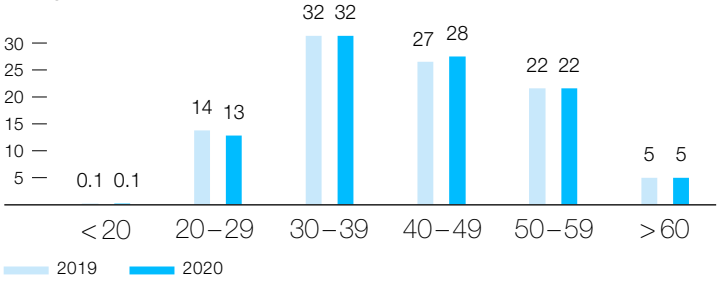
	2019	2020	Change %
Production	40,814	40,696	–0.3%
Marketing & distribution	37,665	35,424	–5.9%
R&D	16,006	15,065	–5.9%
General administration	9,339	8,353	–10.5%

by Gender



	Women		Men	
	2019	2020	2019	2020
Europe/Middle East/Africa	20,609	19,971	26,324	25,174
North America	7,799	7,232	12,936	11,879
Asia/Pacific	8,542	8,174	13,799	13,136
Latin America	5,089	5,325	8,726	8,647
Total	42,093	40,702	61,785	58,836

by Age Group in %



Fluctuation in %

	Voluntary		Total	
%	2019	2020	2019	2020
Women	7.2	5.1	15.3	12.3
Men	6.2	4.7	14.7	12.2
Total	6.6	4.9	15.0	12.3

Number of employees in full-time equivalents (FTE)

Employee compensation and variable pay

Our compensation system combines a basic salary reflecting performance and responsibility with elements based on the company's success, such as variable one-time payments, plus additional benefits that include stock participation programs. Members of upper management throughout the Bayer Group are invited to participate in Aspire, a uniform long-term compensation program based on the development of the share price. Adjustments based on continuous benchmarking make our compensation internationally competitive.

Besides providing attractive compensation for their work, Bayer contributes to the financial security of its present and former employees after their retirement. Retirement benefit plans are available to 71% (2019: 78%) of Bayer employees worldwide to complement national pension systems.

From 2021 onward, we will adjust the calculation logic of the short-term and long-term variable incentive programs for eligible employees to include the Group's sustainability, return on investment and free cashflow targets. These additional parameters will align with those that are already relevant for the compensation of the Board of Management, thereby standardizing the performance parameters for variable compensation throughout the Group.

See also A 4.4

A 1.4/2

Personnel Expenses and Pension Obligations

€ million	2019	2020
Personnel expenses	11,788	9,769
of which pension expenses	968	976
Pension obligations[1]	25,879	26,595
Pension benefits paid[2]	1,198	1,139

[1] Present value of defined benefit obligations for pensions and other post-employment benefits as of December 31
[2] Including Animal Health and Currenta (until their deconsolidation)

The decline in personnel expenses is due, among other reasons, to the reduction in headcount. In addition, lower restructuring expenses led to a decrease in expenses compared to 2019. As a result of the business performance in 2020, the additions to provisions for variable compensation were lower than in 2019. Provisions of around €500 million (2019: €890 million) were established in 2020 for variable one-time payments to employees under the Group-wide short-term incentive (STI) program and similar programs. Furthermore, a budget of approximately €72 million (2019: €70 million) was made available in 2020 for individual Top Performance Awards.

Our compensation principles comprise providing fair compensation to all and informing all of our employees transparently about the overall structure of their compensation. As standard practice, Bayer pays at least a "living wage," which is annually reviewed and defined worldwide by the nonprofit organization Business for Social Responsibility (BSR), and compensates employees on both permanent and temporary employment contracts in excess of the statutory minimum wage in many of the countries in which we operate.

Vocational and ongoing training

To meet the need for skilled employees, we hire apprentices in Germany in more than 26 different occupations. In total, we have around 1,300 apprentices. We also offer trainee programs in various areas for those embarking on a career, and internships for students around the world.

www.bayer.com/en/working-at-bayer

A wide range of ongoing training opportunities is available to our employees in the form of both e-learning and face-to-face training. Each employee engaged in an average of around 28 hours of ongoing training in 2020.

Digitalization

We have included "Go Digital" as an attribute in our updated LIFE mindset framework for the value "Flexibility" and are enabling our employees through our Create Digital Mindset and Skills program. Over 10,000 employees have already participated in this program to learn new digital

skills in areas such as artificial intelligence, data science, design thinking, agile methodology and innovation. To drive our digital transformation, 78% of our Group Executives have completed a digital training program, which was co-created with a leading digital business school.

Work-life integration

We support employees in balancing their work and private lives. We provide various programs to support employees, including flexible working arrangements (how, when and where employees work) and support for childcare and care of close relatives within the scope of local social and legal guidelines. In many countries, our commitment in this area goes beyond the statutory requirements.

www.bayer.com/career

In 2020, part-time employees accounted for around 6.1% of our workforce (of which 55.6% were women and 44.4% men), primarily in Europe.

In response to the COVID-19 pandemic, we are developing an approach for when, where and how employees will work in the next normal. More flexible ways of working is a core theme throughout this ambition, embracing empowerment at all levels of the organization to define and shape a next normal that strengthens our business, best meets the needs of our customers and employees, respects cultural differences and complies with all labor law and tax law requirements. Ensuring employee safety and driving work-life integration remain important enablers of our people.

Health promotion

Almost 97% (2019: 98%) of our employees worldwide either have statutory health insurance or can obtain health insurance through the company.

We maintain a global framework concept to promote employee health and quality of life called BeWell@Bayer. BeWell@Bayer expands the core aspect of health into a comprehensive approach, targets further health improvements in the daily work environment and is intended in particular to help employees balance their professional and private lives. Health check-ups are an integral part of our global health promotion initiatives.

Inclusion and diversity

Mutual understanding and a company culture that leverages talented employees of various backgrounds and perspectives is an important success factor for the Bayer Group. We create an inclusive workplace where all employees feel welcome and contribute at their best. We will continue to seek out and promote the best talent and drive for a workforce that both reflects the highest quality of skills and qualifications, and our strong focus on inclusion and diversity. We employ people from around 149 nations.

Our Inclusion & Diversity strategy focuses on the integrative behavior and decision-making of all employees within the Group. Each of our Business Resource Groups (BRGs) has a sponsor at Board of Management level and is intensively supported in promoting an inclusive workspace. In addition, we are integrating inclusion and diversity into core people processes such as talent attraction and talent management.

The proportion of women in the workforce remained almost constant at 40.9% (2019: 40.5%). We are specifically targeting a greater gender balance in management. Based on 40,268 employees in management, the proportion of women in 2020 was 41.0% (2019: 40.5%), and among skilled workers 40.8% (2019: 40.4%). The proportion of women in the Group Leadership Circle and Group Executive Circle, the highest management levels below the Board of Management, increased again compared to previous years. At the end of 2020, they were made up of 23.0% women (2010: 6.5%[7]) and 77.0% men (2010: 93.5%).

[7] Figure as last reported

The Group Leadership Circle currently comprises 35 nationalities (2019: 29), with around 64.8% (2019: 65.8%) of its members working in their native country. Information on diversity in our Board of Management and our Supervisory Board can be found in our Corporate Governance Report.

The average age of our employees is 42 (2019: 42). There were no significant changes to the age structure in 2020 compared to 2019.

People with disabilities are an integral part of our workforce. Based on voluntary statements by employees, we employ some 2,150 people with disabilities, 46% of whom are women and 54% men. That represents around 2.1% of our total workforce.

In 2020, we further developed a more integrated talent management approach that uses an inclusive lens in our people practices and personnel decisions with a strong focus on diversity. We aim to increase female representation to 33% across our entire top management by 2025, and to 50% across all other management levels (including upper and lower management) by the same year. We then aim to increase the share of women in top management to 50% as well by 2030. We have also defined aspirations for other diversity elements, including generation, nationality, experience, LGBTQ+, and people with disabilities for 2025 and 2030. Regionally tracked elements such as ethnic origin are integrated into targets in our country organizations.

1.5 Procurement and Supplier Management

Sustainability risk classification reviewed and expanded

First activities for reducing CO_2 emissions in the supply chain initiated

We influence society and the environment through our procurement activities and supplier relationships. Not only economic, but also ethical, social and ecological principles are therefore anchored in our updated Procurement Policy, which is binding for all employees worldwide.

As a cross-divisional enabling function, Procurement leverages synergies by bundling know-how and procurement spend. In 2020, we had a total of 97,362 (2019: 86,400) suppliers. Our procurement spend was €17.7 billion (2019: €17.6 billion).[8]

Our main direct procurement materials include active ingredients, raw materials, intermediates, finished products and seeds. Technical goods and services, marketing services and information technologies are important components of our indirect procurement portfolio.

Procurement operates according to established procurement and supplier management processes. Long-term contracts and active supplier management for strategically important goods and services are key elements here. They serve to minimize procurement-specific risks such as supply disruptions or significant price fluctuations, as well as to safeguard the company's competitiveness and ensure smooth production processes.

[8] In addition, internal services to the value of €0.3 billion were procured from the Currenta Group at the time of Currenta's deconsolidation in 2019.

During the continuing COVID-19 pandemic, our supply chain has proven to be stable and resilient due partly to our involvement in the Together for Sustainability (TfS) initiative and the Pharmaceutical Supply Chain Initiative (PSCI). We have worked together for many years with our suppliers to jointly develop sustainable solutions to avoid risks.

To meet our climate protection targets, Procurement takes measures connected with reducing the carbon footprint in our supply chain. We launched our activities in 2020 and were already able to make initial progress in preparing the future implementation of Scope 3 reductions among suppliers.

See also A 1.2.1 Strategy and Targets

Sustainability in the supply chain

Clear sustainability criteria and standards are in place for our supply chain on both a global and regional level. With the goal of improving sustainable practices in our supply chain, we operate a Group-wide four-step management process that comprises the following elements: raising awareness, supplier selection, supplier evaluation and supplier development. In 2020, together with an external services provider, we updated our sustainability risk classification according to procurement categories and countries. We select suppliers to be evaluated based on this classification and the associated supply chain risks. This allows for a more targeted analysis according to individual risk criteria (e.g., human rights violations) and enables us to increase transparency in our supply chain.

Our sustainability requirements are established in the Supplier Code of Conduct, which is based on our Bayer Human Rights Policy and the principles of the U.N. Global Compact. The code serves as the basis for selecting and evaluating our suppliers and is integrated into electronic ordering systems throughout the Bayer Group. Furthermore, our standard supply contracts (with the exception of ongoing contracts of the acquired agricultural business) contain a clause that authorizes us to verify suppliers' compliance with our sustainability requirements. In the course of the acquired agricultural business's supplier relationships, this clause will be successively integrated into all supply contracts that need to be revised from 2021 onward.

We verify suppliers' observance of the code requirements through online assessments[9] or on-site audits[10]. We evaluate our strategically important suppliers – together comprising almost 25% of our total procurement spend – and suppliers with a high sustainability risk, which factors in both country and category risks. Our assessment process also includes supplier evaluations performed within the scope of industry initiatives. In total, our service provider EcoVadis assessed 670 (2019: 650) suppliers on our behalf in 2020. In 2020, we arranged for 26 (2019: 62) of our suppliers to be audited on site by external, independent auditors. In addition, five suppliers were audited virtually due to the COVID-19 pandemic. In 2020, 83 (2019: 103) suppliers were evaluated through an HSE audit, with the focus on health, safety and environmental protection.

If critical results are recorded in the event of a serious violation or several major findings being identified in a supplier's sustainability performance, specific improvement measures are then jointly defined. In 2020, critical results were determined for 13 suppliers (2% of all assessed and audited suppliers; 2019: 2% [11 suppliers]). In these cases, we request the suppliers to remedy the identified weaknesses. We monitor the implementation of these activities by way of re-assessments or follow-up audits. We reserve the right to terminate a supplier relationship if no improvement is observed during a re-evaluation. In 2020, we did not have to end any supplier relationship due solely to sustainability performance. In 2020, 357 (2019: 332) of the 701 (2019: 712) suppliers assessed and audited improved their sustainability performance.

[9] The online assessments of suppliers that belong to a company group generally take place at parent company level.
[10] The number of evaluations for 2019 comprises suppliers of continuing and discontinued operations.

1.6 Product Stewardship

For us, product stewardship means that our products satisfy the highest quality standards and are safe for people and the environment when properly used. We respect legal requirements, and our voluntary commitment and internal standards go beyond these in various areas. We have put in place suitable directives and management systems for the implementation of regulatory and voluntary product stewardship requirements that are steered by our Corporate Health, Safety & Environment (HSE) enabling function and the quality functions of the divisions.

Assessment and testing of active ingredients and products
Along the entire value chain, our substances and finished products undergo extensive assessment and testing that we use to derive appropriate measures to mitigate health and environmental risks. Our divisions have quality management systems based on international sector-specific standards. By implementing a binding company-wide quality assurance system, we guarantee high-quality, safe and effective products and services that satisfy all internal and external requirements and meet customer expectations. In this way, we work to prevent customer complaints, product recalls and other problems. For all chemical substances, we compile safety data sheets targeting professional users. End consumer products contain appropriate information in their packaging, with one example being package inserts for pharmaceuticals. We also conduct environmental risk assessments and implement risk management measures subsequent to product registration.

At **Crop Science**, we already examine our crop protection products during the development phase in internationally standardized tests stipulated by law and regulations. These examinations cover the products' mode of action, their (eco)toxicological properties and the extent and distribution of potential residues in and on plants and in the environment. Each new crop protection active ingredient undergoes a thorough safety assessment and suitable scientific studies and testing.

Furthermore, we have made a voluntary commitment to market only those crop protection products whose active ingredients are registered in at least one OECD country or, in the case of new active ingredients, for which an OECD data package has been compiled.

Bayer aims to strengthen its customers' and stakeholders' confidence in its products through transparency, and Crop Science is the first business in its industry to make safety-relevant data on crop protection products and genetically modified crops publicly accessible. Summaries of scientific studies for 29 of our active ingredients submitted to the European Food Safety Authority (EFSA) in the context of registration procedures in the European Union are available on our website. These reports include information on toxicological and ecotoxicological studies and investigations into the degradability of crop protection products. Also available are summaries of scientific studies on 16 traits of our genetically modified crops that were evaluated by U.S. regulatory authorities. Comprehensive study reports on our registration studies for the approval of our crop protection products are available on specific request.

www.cropscience.bayer.com/transparency-crop-science

Through extensive programs, we train farmers, seed treatment professionals, dealers and other users in the safe handling and use of our products. In 2020, we managed to increase the number of our training contacts worldwide. With regard to the sale of and the application instructions for crop protection products and technologies, we observe the International Code of Conduct on Pesticide Management of the United Nations Food and Agriculture Organization (FAO). The principles of our product stewardship are established in our Product Stewardship Policy and implemented in the Product Stewardship Program.

The **Pharmaceuticals** and **Consumer Health** divisions assess the medical benefit-risk profile of their pharmaceuticals, medicinal products, dietary supplements and medicated skincare products throughout their entire product life cycle. The efficacy, safety and tolerability of pharmaceuticals are already investigated in preclinical and Phase I to III clinical development studies. These results and the benefit-risk assessment are submitted to the relevant authorities during the pharmaceutical registration process. We continue to compile safety-relevant information in a dedicated database following market launch of the product. Post-Authorization Safety Studies (PASS) are also conducted after approval. The results are entered into the PASS registry in compliance with EU pharmacovigilance legislation.

Animal welfare in active ingredient testing

Animal studies are legally required and essential from a scientific viewpoint for assessing the safety and efficacy of our products. Such studies must comply not only with legal requirements, but also with Bayer's principles on animal welfare and animal studies. The latter also apply both to the research institutes we commission and our suppliers, whose compliance with our animal welfare requirements we regularly monitor. A corporate policy outlining these principles was published in 2020. We aim to minimize the use of study animals and to employ alternative methods whenever possible.

Environmental impact

As part of our business activities, we aim to minimize the impact of our products on the environment.

Biodiversity

We endeavor to promote a responsible use of natural resources, complying with international and national legislation and respecting biodiversity. Our principles on biodiversity are set forth in both the Bayer Human Rights Policy and our own position paper on this issue, which was updated in 2020. In this, we express our commitment to the United Nations Convention on Biological Diversity and the associated Nagoya Protocol, which regulates the balanced and fair sharing of the benefits arising from the use of genetic resources. We published a supplementary corporate policy dedicated to the Nagoya Protocol in 2019 that is designed to ensure compliance with international and national legislation on access to genetic resources and a fair utilization of the resulting benefits. Through monetary and nonmonetary contributions such as donations, gifts in kind for the establishment of new collections that serve to preserve the genetic diversity of crops, participation in a variety of projects, the buildup of capacities and other global efforts, we help to facilitate the conservation and sustainable use of plant genetic resources, as well as food security and ecological sustainability. Through these activities we are reinforcing our commitment to the Sustainable Development Goals of the United Nations.

www.bayer.com/en/position-biodiversity.aspx

Agriculture in particular benefits significantly from biodiversity, but it can also contribute to its loss. We are therefore investigating and developing cultivation systems that help to achieve a better balance between productivity and the conservation of biodiversity and habitats. In cooperation projects involving our Forward Farms and nature conservation experts, we research what this balance could look like in various countries and regions. We continually deploy plant breeding innovations that help improve the genetic diversity of crops essential for a secure food supply and for the development of sustainable cultivation systems.

Operational implementation is ensured through specific measures involving our customers and distribution partners.

Bee safety of crop protection products

We are actively involved in numerous projects and research activities to protect bees and other pollinators.

To minimize risks posed to bees by our crop protection products, we perform extensive safety testing and risk assessments. We also implement product stewardship measures, including certification for seed treatment facilities, knowledge-sharing and educational training courses for growers to help them understand the benefits that pollinators can bring for crop quality and yield and the need to protect them, along with training programs for farmers who use our products. In addition, we develop bee-friendly crop protection products and application processes.

Glyphosate

Glyphosate is a nonselective herbicide used in many countries for effective, simple and cost-effective weed control. It works in plants by specifically inhibiting an enzyme that is essential to plant growth. This enzyme is not found in cells of humans or animals. Glyphosate has a proven track record of more than 40 years of safe use when used according to label directions. This is confirmed by science-based evaluations conducted by regulatory bodies and other institutions such as the European Food Safety Authority (EFSA), the U.S. Environmental Protection Agency (EPA) and the Canadian Pest Management Regulatory Agency (PMRA).

Combining glyphosate with crops that could withstand applications of this herbicide transformed agriculture. Farmers who cultivate glyphosate-tolerant crops tend to adopt conservation tillage, which brings its own benefits in terms of reduced soil erosion, improved water quality and lower carbon dioxide (CO_2) emissions. In agricultural systems where glyphosate-tolerant crops are not available, glyphosate provides benefits for farmers and the environment by simplifying weed management, reducing the need for mechanical tillage and enabling the adoption of cover crops. Outside of agriculture, glyphosate delivers benefits for noxious or invasive weed control.

Glyphosate's favorable environmental safety profile underlies its ability to be used in many diverse settings. Glyphosate degrades in the environment and does not accumulate in the food chain. It is not volatile and will bind to soil after application rather than run off into waterways. Detailed reviews by the EFSA, PMRA and other regulatory authorities have concluded that approved uses of glyphosate-based herbicides are unlikely to cause adverse effects on the environment. In the United States, EPA scientists reached the same conclusion following their primary environmental review and have initiated a final step in the reregistration process to ensure current uses account for potential effects on endangered species. This is a standard review for all pesticides in the United States and can take several years to complete. Bayer scientists are reviewing the draft report on endangered species and look forward to engaging in dialogue as part of the public comment period.

Our scientists regularly review the scientific literature relevant to glyphosate and glyphosate-based herbicides and are aware of the range of claims made in connection with these products. Regulatory agencies responsible for overseeing these products to protect human health and the environment are also aware of these studies and consider them when preparing their reviews.

With regard to risks associated with glyphosate, we refer to A 3.2 Opportunity and Risk Report.

Biotechnology

We apply biotechnological processes both in the area of seeds and in pharmaceutical product development and production (e.g., Kogenate™, Kovaltry™, Jivi™, Bollgard II™, XtendFlex™ Cotton and Intacta RR2 Pro™). Further biotechnologically manufactured active ingredients are undergoing clinical development. In plant cultivation, we use both conventional breeding methods and genetic engineering.

For us, the safety of people and the environment is always a top priority in the use of biotechnology. In addition to meeting legal and regulatory requirements, we have specified the responsible use of genetic engineering and our strict, globally applicable safety measures in handling biological substances in corresponding corporate policies.

The development and commercialization of genetically improved seeds are also subject to stringent laws and regulations. We have additionally established internal processes to ensure the responsible use of biotechnologically manufactured products throughout their life cycle. Furthermore, in 2020, Crop Science maintained its membership in the Excellence Through Stewardship (ETS) organization.

Active ingredient residues in the environment

We are actively committed to preventing emissions of product residues (e.g., active ingredients and their degradation products) into the environment or, where they are unavoidable, to minimize the risk they harbor. We focus on all stages of the product cycle from manufacturing to safe use and disposal.

At our production sites worldwide, regulatory authorities and external assessors therefore monitor compliance with wastewater thresholds. Internal experts also perform corresponding audits of the production sites at regular intervals. We take additional action in our production facilities to avoid or reduce emissions from production such as the release of active ingredients into the environment. We are also working in various research projects to develop further effective risk minimization measures.

With regard to the application of crop protection products, potential environmental impact is investigated in ecotoxicological studies prior to the official product approval process. The responsible authorities receive an extensive environmental risk assessment and can specify risk minimization measures as appropriate.

Environmental risk assessments are also conducted in Europe and the United States for the official approval of human pharmaceuticals.

1.7 Environmental Protection and Safety

We are working on ways to further reduce the environmental impact of our business activities and to develop solutions that relieve the burden on the environment. Responsibility for this lies with the Corporate Health, Safety & Environment (HSE) enabling function, which defines framework conditions in the form of corporate policies and other measures. We use HSE management systems to control operational implementation in the divisions.

Energy consumption

Compared with 2019, Bayer's total energy consumption fell to 35.9 petajoules in 2020 (2019[11]: 39.2 petajoules). This includes both primary energy consumption, which mainly relates to fossil fuels, and secondary energy consumption. This decline is primarily due to reduced production activities, including in connection with the COVID-19 pandemic. In addition, at the Rock Springs

[11] 2019 values restated

site in the United States, the reallocation of coal from use as an energy source to use in a chemical process also contributed to this reduction.

Energy efficiency reported as the ratio of energy consumed to external sales improved from 250 kWh/€ thousand in 2019 to 241 kWh/€ thousand[12] in 2020.

Greenhouse gas emissions

We consider climate protection and the related reduction of greenhouse gas emissions to be a top priority. We have therefore set ourselves ambitious targets in this area that are explained in more detail in Chapter 1.2.1 Strategy and Targets.

www.bayer.com/CDP-Climate

The following table provides an overview of the development in 2020:

A 1.7/1

Greenhouse Gas Emissions

Million metric tons of CO_2 equivalents	2019	2020
Scope 1: Direct emissions[1,2]	2.08	2.01
Scope 2: Indirect emissions[3] according to the market-based method	1.68	1.57
Total greenhouse gas emissions according to the market-based method[1]	**3.76**	**3.58**
Scope 3: Indirect emissions from our upstream and downstream value chains (by materiality)[4,5]	10.05	8.86
of which indirect emissions from our upstream value chain to attain the SBT[4,6,7]	8.87	7.88

[1] 2019 values restated owing to a recalculation of fleet emissions
[2] Direct emissions result from our own power plants, vehicles, waste incineration plants and production facilities (Scope 1). In line with the GHG Protocol, we also report the direct emissions that arise through the generation of energy for other companies and are sold as a site service. Consequently, the figures for direct emissions of the Bayer Group are higher than the actual emissions resulting from Bayer's business activities alone. In 2020, 97.7% of direct greenhouse gas emissions were carbon dioxide emissions. Other greenhouse gases such as nitrous oxide, partially fluorinated hydrocarbons and methane made a negligible contribution to direct greenhouse gas emissions.
[3] Indirect emissions result from the procurement of electricity, steam and cooling energy (Scope 2). We report these in CO_2 equivalents.
[4] Scope 3 emissions were subjected to a limited assurance check.
[5] Emissions from eight Scope 3 categories are of material importance to Bayer and together represent our total Scope 3 emissions: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) upstream transportation and distribution, (5) waste, (6) business travel, (7) employee commuting and (12) end-of-life treatment of sold products.
[6] Science Based Target
[7] For the calculation of our reduction target for Scope 3 emissions in line with SBTi, 88% of total materially important Scope 3 emissions are considered. The following Scope 3 categories are covered: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) upstream transportation and distribution and (6) business travel.

In 2020, we cut Scope 1 and 2 greenhouse gas emissions by 0.18 million metric tons of CO_2 equivalents. This represents a reduction of 4.8%. The main reason for this decline is the increased share of electricity purchased from renewable sources (Scope 2: from 1.7% in 2019 to 6.1% in 2020). In the categories relevant to our achievement of the Scope 3 Science Based Target, we cut our emissions by 0.99 million metric tons of CO_2 equivalents, corresponding to a reduction of 11.2%. The significant decline in business travel in 2020 also contributed to this. In addition, by purchasing climate protection certificates in, for example, Uruguay, Brazil and China, we financed reforestation and forest conservation projects in 2020, thereby offsetting 0.2 million metric tons of greenhouse gas emissions.

[12] 2019 values restated

Water

We use water resources as sparingly as possible and are endeavoring to further reduce emissions into water. We check whether our sites in water-scarce areas or areas identified as being threatened by water scarcity have introduced a water management system. In 2020, we achieved our goal of ensuring that 100% of these sites have a water management system.

Total water use in 2020 amounted to 57 million cubic meters (2019: 59 million cubic meters). This year-on-year decrease in use is due to the improved infrastructure at the Luling site in the United States and the impact of the COVID-19 pandemic at some sites. Around 37.8% of all water used by Bayer is cooling water that is only heated in the process and does not come into contact with products. It can be returned to the water cycle, in line with the relevant official permits.

www.bayer.com/CDP-water

At our production facilities, we endeavor to use water several times and to recycle it. The total quantity of industrial and mixed wastewater fell in 2020 to 25 million cubic meters (2019: 26 million cubic meters). This decline in wastewater volume is due to the impact of the COVID-19 pandemic and reduced water consumption at the Luling site in the United States. All wastewater is subject to thorough checks before it is discharged into the various disposal channels. In 2020, 78.8% of Bayer's industrial and mixed wastewater worldwide was purified in wastewater treatment plants (Bayer or third-party facilities). The remaining volume was categorized as environmentally safe according to official provisions and returned to the natural water cycle.

Waste and recycling

We want to minimize material consumption and disposal volumes through systematic waste management. In accordance with Bayer's corporate policies, all production sites are obliged to prevent, reduce and recycle waste and to dispose of it safely and in line with good environmental practices.

The total quantity of waste generated rose to 937,000 metric tons in 2020 (2019: 879,000 metric tons). This was mainly due to the fact that at the seed production site in Maria Eugenia Rojas in Argentina we disposed of large volumes of vegetable by-products as nonhazardous waste for agricultural use and composting.

The volume of hazardous waste fell to 305,000 metric tons (2019: 316,000 metric tons) owing to the completion of building and renovation work at the Vapi site in India. The volume of hazardous waste from production, including hazardous waste from wastewater treatment plants, remained consistent with the 2019 level, at 301,000 metric tons.

Process and plant safety

We aim to design and operate our processes and production facilities in such a way that they do not pose any inappropriate risks to employees, the environment or neighboring communities. We are working to further develop our safety culture and the expertise of employees. Principles of process and plant safety are laid out in our globally applicable corporate policy. Compliance with internal and external safety regulations is verified in internal audits.

www.bayer.com/en/safety.aspx

To prevent substance and energy releases, the causes of process safety incidents (PSIs) are analyzed and relevant findings communicated throughout the Bayer Group. A globally standardized key performance indicator (KPI) – the Process Safety Incident Rate (PSI-R) – is used at Bayer as an early indicator and is integrated into Group-wide safety reporting. The PSI-R indicates the number of PSI incidents per 200,000 hours worked. In 2020, the PSI-R was 0.08 (2019: 0.10).

The integration project that was launched in 2019 to align the process safety approaches of Bayer and the acquired agricultural business were completed in the first quarter of 2020. This showed that the approaches were similar. The results will be implemented on a step-by-step basis.

Transportation safety

Transportation and warehouse safety is part of the HSE management and is implemented by a network of supply chain experts. In addition to complying with legal regulations, we have implemented supplementary standards and requirements that are defined in corporate policies. We thereby ensure that our materials are handled and transported in accordance with their respective potential hazards and applicable regulations.

There were 13 transport incidents in 2020[13] (2019: 28), primarily involving road transport accidents.

Safe working conditions

Our fundamental conviction is that nothing is important enough to justify an accident or any risk to the safety of employees. We consider safeguarding the occupational health of our employees – and of the employees of contractors on our company premises – to be a top priority.

In 2020, occupational safety and health protection were primarily shaped by the development of the COVID-19 pandemic. With protecting the health and safety of our employees being our top priority, we implemented existing pandemic plans early on, thus minimizing risks to employees at work as far as possible. The protection concepts and measures that we implemented on a global scale took the different tasks at the individual sites into consideration.

In 2020, the Recordable Incident Rate (RIR)[14] declined from 0.46 to 0.32 cases per 200,000 hours worked, corresponding to 383 occupational injuries worldwide. The significant reduction in the RIR is due to the long-term impact of effective occupational safety measures and programs and short- and medium-term effects in connection with the COVID-19 pandemic resulting from a reduction in the radius of movement, for example between home and the workplace, and from increased individual attention being paid to health and safety issues.

Regrettably, two Bayer employees lost their lives in work-related accidents in 2020. We will not let up in our efforts to further reduce risks and risky behavior.

Our Behavioral Safety initiative promotes safety-conscious conduct through corresponding training programs to further strengthen safety initiatives that are already successful. All safety programs and initiatives take account of globally recognized safety principles that further elaborate the safety-oriented conduct of our employees. Involvement in the Behavioral Safety initiative continues to increase and is sustainably supported by the publication of a global corporate policy. Behavioral improvements were achieved in areas in which the program has already been implemented, and the Recordable Incident Rate is therefore expected to decline further across the Bayer Group in the medium term.

[13] Transport incidents comprise accidents that cause personal injury or significant damage to property, environmental impact resulting from the release of substances, or leakage of hazardous goods.

[14] The RIR covers all injuries to employees and directly supervised contractors leading to medical treatment that goes beyond simple first aid.

2. Report on Economic Position

2.1 Overview of Business Performance

2.1.1 Economic Position and Target Attainment

Our operational business was stable in 2020 – despite significant unforeseen developments. Sales were level with the previous year, edging up by 0.6% on a currency- and portfolio-adjusted basis (Fx & portfolio adj.), and were held back by negative currency effects of €1.9 billion. EBITDA before special items came in at the prior-year level (–0.1%) despite sharply negative currency effects, thanks to stringent cost management. Crop Science reported an increase in sales (Fx & portfolio adj.) but saw EBITDA before special items heavily impacted by the development of the Brazilian currency in particular. Pharmaceuticals posted a slight decrease in sales, partly due to negative factors in connection with the COVID-19 pandemic, but succeeded in raising earnings. Consumer Health increased business substantially (Fx & portfolio adj.), although EBITDA before special items fell due to currency and portfolio effects. Earnings per share (total) declined significantly, mainly due to impairment charges in the Crop Science Division and allocations to provisions for litigations. The gain from the sale of the Animal Health business unit had a positive impact. Core earnings per share came in at the prior-year level.

In the Group outlook published in February 2020 in the 2019 Annual Report, which did not yet take into account the impact of the COVID-19 pandemic, we anticipated currency-adjusted sales of around €44 billion to €45 billion, corresponding to an increase of 3% to 4% on a currency- and portfolio-adjusted basis. We expected an EBITDA margin before special items of around 28% on a currency-adjusted basis, which, based on the sales forecast, would have corresponded to EBITDA before special items of €12.3 billion to €12.6 billion on a currency-adjusted basis. We also forecast core earnings per share of between €7.00 and €7.20 on a currency-adjusted basis, and free cash flow of approximately €5 billion.

We revised our outlook in August based on the business development in the first half of the year and assumptions for the rest of the year that involved uncertainties. We reduced our sales forecast to €43 billion to €44 billion, corresponding to an increase of 0 to 1% on a currency- and portfolio-adjusted basis. Our target for the EBITDA margin before special items was left unchanged at around 28% on a currency-adjusted basis. Based on the sales target above, this would have corresponded to EBITDA before special items of around €12.1 billion on a currency-adjusted basis. In the revised outlook, we anticipated core earnings per share of between €6.70 and €6.90 on a currency-adjusted basis. We lowered our free cash flow forecast to between minus €0.5 billion and €0 billion in view of the expected payments in connection with litigations.

We met this revised full-year forecast in terms of our operational management indicators:

A 2.1.1/1

Target Attainment in 2020

	Forecast for 2020 currency-adjusted	Revised forecast for 2020[1] currency-adjusted	Target attainment in 2020 currency-adjusted	2020 results reported
Group sales	€44 - 45 billion	€43 - 44 billion	€43.3 billion	€41.4 billion
	+ 3 - 4% (Fx & p adj.)	+ 0 - 1% (Fx & p adj.)	+ 0.6% (Fx & p adj.)	– 4.9%
EBITDA before special items	€12.3 - 12.6 billion based on a margin of approx. 28%	€12.1 billion based on a margin of approx. 28%	€12.2 billion and a margin of 28.1%	€11.5 billion and a margin of 27.7%
Core earnings per share	€7.00 - 7.20	€6.70 - 6.90	€6.92	€6.39
Free cash flow	Approx. €5 billion (reported)	Minus €0.5 - 0 billion (reported)	€1.3 billion	€1.3 billion

Fx & p adj. = currency- and portfolio-adjusted
[1] Issued in August 2020

2.1.2 Key Events

Business activities impacted by COVID-19

Fiscal 2020 was greatly affected by the COVID-19 pandemic. Our top priority was – and remains – ensuring the health and safety of our employees and the supply of our products and life-saving medicines to patients, farmers and consumers.

The protective measures adopted worldwide and the uncertainty associated with the pandemic affected our business activities in a variety of ways. In our Crop Science Division, they led to weaker demand in some parts of our business. Among other factors, lower demand for biofuel in the first half of the year depressed prices for agricultural commodities, particularly in North America. This had negative repercussions for our business with corn seed and traits, for example. In addition, the uncertainties in certain regions and product areas resulted in shifts in demand between quarters. In the Pharmaceuticals Division, the worldwide protective measures and contact restrictions led to the cancellation or postponement of visits to the doctor, especially in the first half of the year, which resulted in nonurgent treatments in particular not being performed. However, the situation normalized to some extent in the third and fourth quarters. The increased focus on health and prevention had a positive impact on our Consumer Health Division, mainly through a sharp rise in demand for products in the Nutritionals category. At the same time, increased protection and hygiene measures led to a drop in sales of cough and cold products.

Further details on the effects of the pandemic on our business operations and the measures we adopted in response are provided in the respective chapters.

With regard to efforts to contain the COVID-19 pandemic, we announced in January 2021 that we had signed a collaboration and services agreement with the biopharmaceutical company CureVac N.V., Germany, to work together to enhance the availability of the COVID-19 vaccine candidate CVnCoV. CureVac is developing a new class of transformative medicines based on messenger ribonucleic acid (mRNA), which have reached clinical trials. Under the terms of the agreement, we will assist with the further development and supply of the vaccine candidate and support local activities in selected countries. In addition, we will use our production network to help

manufacture vaccines. We plan to supply 160 million doses of the vaccine in 2022. The first doses from our production could potentially be available by the end of 2021.

Accelerating the company's transformation

To counter the effects of reduced growth prospects and move the company forward in a persistently challenging market environment, we announced in September that we will accelerate our transformation. We aim to further enhance our innovation capabilities and lay the foundation for future growth, an example of which being our new strategic unit for cell and gene therapy. We are also planning to introduce additional operational savings, which could also lead to job reductions. The details are currently being worked out.

Impairment charges at Crop Science

The currently challenging market environment and extremely negative currency effects are leading to reduced growth expectations in the agricultural industry, especially in North and Latin America, with the cost of capital increasing at the same time. In this connection, we had to take noncash impairment charges of €9.1 billion on various intangible assets, including goodwill, in our agricultural business over the course of the year.

See A 2.2.1 and Note [14] in B Consolidated Financial Statements for more information

Portfolio changes

In February, we entered into an agreement with Nuvisan ICB GmbH, Germany, which acquired a large part of our Berlin-based small molecule research unit in mid-2020. The Nuvisan group is an international service provider for clinical studies, laboratory services and contract manufacturing for the pharmaceuticals industry. We will work closely with Nuvisan at the Berlin site in the future, with the move giving us greater flexibility in research and development in line with our strategy.

In early August, we completed the sale of our Animal Health business unit to Elanco Animal Health Incorporated, United States. The divestment resulted in approximately 4,400 employees transferring to Elanco. The provisional sale price amounted to US$6.8 billion, comprising a cash component and an equity component. The equity component consisted of approximately 72.9 million shares of Elanco common stock, corresponding to 15.5% of the company's outstanding shares. The provisional divestment gain amounted to about €5.2 billion.

In November we sold approximately 54.5 million of these Elanco shares for US$30.25 per share. In December we sold a further 8.175 million Elanco shares on the same terms. The gross proceeds of the two transactions totaled approximately US$1.9 billion.

In September, we completed the acquisition of British biotech company KaNDy Therapeutics Ltd. to expand our drug development pipeline in women's health care. Under the terms of the agreement, we paid an upfront consideration of US$425 million and will make potential milestone payments of up to US$450 million until launch, followed by potential additional sales milestone payments in the triple-digit millions.

In mid-November, we increased our investment in Noho Health, Inc. (Care/of), United States, giving us a majority stake. Care/of offers consumers a personalized regimen of nutritional supplements that is based on an individual health questionnaire and a special algorithm. The purchase price amounted to US$135 million. Additional success-based milestone payments totaling US$10 million have also been agreed. In addition, we secured the option to buy the remaining shares in the company.

In December, we completed the acquisition of Asklepios BioPharmaceutical, Inc. (AskBio), a U.S.-headquartered company specialized in the research, development and manufacturing of gene therapies across different therapeutic areas. Under the terms of the agreement, we paid an upfront consideration of US$2 billion and will make potential success-based milestone payments of up to US$2 billion. AskBio and BlueRock Therapeutics LP, which was acquired in 2019, are the first partners we are integrating into our newly established cell and gene therapy platform. As part of our Pharmaceuticals Division, this platform will combine multiple backbone functions, providing support across the entire value chain for the research and development of cell and gene therapies.

In December, we also announced the sale of a facility at the Wuppertal site of the Pharmaceuticals Division, originally intended for the production of biologics substances, to a German subsidiary of WuXi Biologics. The volume of the transaction under the respective agreement, which also includes a long-term sublease agreement and a transitional service contract, amounts to approximately €150 million. We expect the transaction to close in the first half of 2021.

Litigations

Further details on the litigations above and other legal risks are given in the "Legal Risks" in Note [30] to B Consolidated Financial Statements.

Glyphosate

In June, Monsanto reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the current Roundup™ litigation, involving most of the total approximately 125,000 then known filed and unfiled claims, and to put in place a mechanism to resolve potential future claims.

The total costs of the executed and additional inventory settlements for all outstanding claims are currently expected to be up to US$9.6 billion. Monsanto continues in its efforts to reach settlement in a substantial number of the outstanding claims in the coming months.

Monsanto may withdraw from the various settlement agreements if certain eligibility and participation rates are not satisfied. Plaintiffs who opt out of a settlement have the right to pursue their claims separately against the company.

As regards potential future litigation, the company intends to make an additional payment to support a separate class agreement between Monsanto and plaintiffs' counsel. In July, Judge Chhabria of the U.S. District Court for the Northern District of California issued a pre-trial order raising concerns about certain aspects of the class settlement agreement and stating that he was tentatively inclined to deny the motion. The parties subsequently withdrew their motion, worked to comprehensively address the court's questions, and on February 3, 2021, filed with the court a revised class agreement and accompanying motion for preliminary approval of that settlement.

Bayer remains strongly committed to a resolution that simultaneously addresses the current litigation on reasonable terms and provides a viable solution to manage and resolve future litigation.

The three cases that have so far gone to trial – Johnson, Hardeman and Pilliod – will continue through the appeals process and are not covered by the settlement.

For information on the current status of these cases see Note [30] to B Consolidated Financial Statements

PCBs

In the litigation concerning the effects of PCBs in bodies of water, we reached an agreement in the second quarter for a nation-wide class settlement to settle claims of approximately 2,500 municipal government entities across the United States for a total payment, including class benefits and attorney fees, of approximately US$650 million. In November 2020, the court denied, without prejudice, the motion for preliminary approval and identified certain discreet areas of concern. In December 2020, the parties filed a revised class agreement. This agreement will require court approval before it becomes effective.

At the same time, we have entered into separate agreements with the attorneys general of New Mexico, Washington and the District of Columbia to resolve similar PCB claims. For these agreements, we will make payments that together total approximately US$170 million. Individual suits by Attorneys General of the States of Ohio, Pennsylvania, New Hampshire and Oregon remain pending. Bayer will continue its vigorous defense of any case that remains pending.

Dicamba

In June, we announced the conclusion of an agreement to settle the previously disclosed product liability litigation involving alleged damage to crops from drifting of dicamba. We will pay up to a total of US$400 million to resolve the multi-district litigation pending before a federal court in Missouri and claims for the 2015–2020 crop years.

The only dicamba drift case to go to trial – Bader Farms – is not included in this resolution.

Essure

In August, we announced that we had reached a settlement agreement to resolve Essure™ claims in the United States. By February 3, 2021, we had reached agreements in principle with plaintiff law firms to resolve approximately 99% of the nearly 40,000 total filed and unfiled U.S. Essure™ claims involving women who allege device-related injuries. The company will pay approximately US$1.6 billion to resolve these claims, including an allowance for outstanding claims, and is in resolution discussions with counsel for the remaining plaintiffs. At the same time, we continue to support the safety and efficacy of the Essure™ device and are prepared to vigorously defend it in litigation where no amicable resolution can be achieved.

See Note [30] to B Consolidated Financial Statements for the current status of this case

Financing activities

In early July, we issued €6 billion in bonds to ensure the financial flexibility necessary to make payments in connection with the glyphosate litigations and address upcoming bond maturities. The issuance comprised four €1.5 billion tranches with maturities of 4 years, 6.5 years, 9.5 years and 12 years, and exclusively targeted institutional investors.

In January 2021, we issued €4 billion in bonds consisting of four tranches. The proceeds are to be used for general corporate purposes, including the refinancing of existing liabilities. The four tranches have maturities of 4 years, 8 years, 10.5 years and 15 years.

Supervisory Board and the Board of Management

In late February 2020, the Supervisory Board of Bayer AG resolved to appoint Prof. Dr. Norbert Winkeljohann as its new Chairman with effect from the end of the 2020 Annual Stockholders' Meeting. He succeeded Werner Wenning, who then stepped down from the Supervisory Board.

The shareholder representative seat on the Supervisory Board that would have become vacant was taken by Horst Baier following his election by the Annual Stockholders' Meeting in April. He also succeeded Prof. Dr. Norbert Winkeljohann as Chairman of the Audit Committee.

In September, the Supervisory Board of Bayer AG unanimously decided to extend the contract of Werner Baumann, Chairman of the Board of Management, until April 30, 2024. Before the extension, Baumann's contract would have expired at the 2021 Annual Stockholders' Meeting.

In January 2021, the Supervisory Board of Bayer AG announced the appointment of Sarena Lin to the Board of Management as Chief Transformation and Talent Officer, effective February 1, 2021.

2.1.3 Economic Environment

World economy contracts due to coronavirus pandemic

See also A 2.2.2

Global economic development in 2020 was impacted by the COVID-19 pandemic. Trade and consumption slumped, especially in the second quarter, and unemployment rose considerably. Many countries saw their economies stabilize to a certain extent as the year went on, driven in part by the massive support from monetary and fiscal policy. Overall, however, economic output declined in all regions, especially in Europe, but also in the United States and most emerging markets. China was one of the few countries to register modest growth for the year.

A 2.1.3/1

Economic Environment

	Growth[1] 2019	Growth[1] 2020
World	+2.6%	–3.9%
European Union[2]	+1.6%	–6.7%
of which Germany	+0.6%	–5.3%
United States	+2.2%	–3.6%
Emerging Markets[3]	+4.1%	–2.1%

2019 figures restated

[1] Real GDP growth, source: IHS Markit (as of January 2021)

[2] EU excluding United Kingdom, 2019 figures restated

[3] Including about 50 countries defined by IHS Markit as Emerging Markets in line with the World Bank

Currency development

In 2020, Group sales were impacted by negative currency effects of €1,941 million, while EBITDA before special items was diminished by negative currency effects of €741 million. The effects pertained to the currencies shown in the following table.

A 2.1.3/2

Currency Development Bayer Group

	Average end-of-day exchange rate against the euro for the year		€ million		
	2019	2020	Fx effect on sales	Fx effect on clean EBITDA	Of which result of Fx hedging[1]
AUD	1.61	1.65	(22)	(10)	2
BRL	4.41	5.80	(1,027)	(512)	124
CAD	1.49	1.53	(33)	4	20
CNY	7.74	7.87	(48)	(24)	11
JPY	122.01	121.71	13	40	28
MXN	21.55	24.35	(116)	(28)	19
RUB	72.44	81.86	(121)	(78)	26
TRY	6.35	7.90	(86)	(58)	0
USD	1.12	1.14	(121)	85	24
Other currency areas			(380)	(160)	21
All currencies			**(1,941)**	**(741)**	**275**

[1] Result of Fx hedging for all currencies in 2020 (€84 million) and 2019 (minus €191 million)

2.2 Earnings; Asset and Financial Position of the Bayer Group

2.2.1 Earnings Performance of the Bayer Group

Business Development of the Bayer Group

A 2.2.1/1

Key Data Bayer Group

			Change %[1]				Change %[1]	
€ million	Q4 2019	Q4 2020	Reported	Fx. & p. adj.	2019	2020	Reported	Fx. & p. adj.
Sales	**10,750**	**9,995**	**–7.0**	**+2.6**	**43,545**	**41,400**	**–4.9**	**+0.6**
Change in sales[1]								
Volume	+2.3%	+5.4%			+2.6%	+3.0%		
Price	+1.1%	–2.8%			+0.9%	–2.4%		
Currency	+1.3%	–9.4%			+1.5%	–4.4%		
Portfolio	–0.9%	–0.2%			+13.5%	–1.1%		
Sales by region								
Europe / Middle East / Africa	2,971	2,996	+0.8	+5.6	13,185	12,881	–2.3	+0.7
North America	3,392	3,027	–10.8	–3.7	15,087	14,352	–4.9	–2.0
Asia / Pacific	2,151	2,041	–5.1	–2.2	8,610	8,267	–4.0	–1.9
Latin America	2,236	1,931	–13.6	+12.7	6,663	5,900	–11.5	+9.3
EBITDA[1]	**1,994**	**2,024**	**+1.5**		**9,529**	**(2,910)**	**.**	
Special items[1]	(482)	(368)			(1,945)	(14,371)		
EBITDA before special items[1]	**2,476**	**2,392**	**–3.4**		**11,474**	**11,461**	**–0.1**	
EBITDA margin before special items[1]	23.0%	23.9%			26.3%	27.7%		
EBIT[1]	**389**	**1,515**	**.**		**4,162**	**(16,169)**	**.**	
Special items[1]	(922)	67			(2,813)	(23,264)		
EBIT before special items[1]	**1,311**	**1,448**	**+10.5**		**6,975**	**7,095**	**+1.7**	
Financial result	**(378)**	**(142)**	**–62.4**		**(1,309)**	**(1,081)**	**–17.4**	
Net income (from continuing and discontinued operations)	**1,414**	**308**	**–78.2**		**4,091**	**(10,495)**	**.**	
Earnings per share[1] from continuing and discontinued operations (€)	**1.44**	**0.32**	**–77.8**		**4.17**	**(10.68)**	**.**	
Core earnings per share[1] from continuing operations (€)	**1.29**	**1.32**	**+2.3**		**6.38**	**6.39**	**+0.2**	
Net cash provided by operating activities (from continuing and discontinued operations)	**3,246**	**751**	**–76.9**		**8,207**	**4,903**	**–40.3**	
Free cash flow (from continuing and discontinued operations)	**1,692**	**(503)**	**.**		**4,214**	**1,343**	**–68.1**	

2019 figures restated
Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Group sales level year on year after adjusting for currency and portfolio effects

Sales of the Bayer Group came in level with the previous year in 2020, at €41,400 million (Fx & portfolio adj. +0.6%; reported –4.9%). Germany accounted for €2,361 million of this figure.

Sales at Crop Science advanced by 1.3% (Fx & portfolio adj.) to €18,840 million. Our businesses in Latin America and Asia / Pacific contributed to the increase, while sales receded in North America. Sales at Pharmaceuticals declined by 1.5% (Fx & portfolio adj.) to €17,243 million. This was due to the negative impact of the COVID-19 pandemic and sales declines resulting from new tender procedures in China. Sales at Consumer Health advanced by a substantial 5.2% (Fx & portfolio adj.) to €5,054 million, mainly in light of significant growth in the Nutritionals category. In the Reconciliation, sales fell by 8.3% to €263 million.

Earnings

EBITDA before special items of the Bayer Group came in level with the prior year at €11,461 million (2019: €11,474 million; –0.1%). Negative currency effects diminished earnings by €741 million. EBITDA before special items at Crop Science moved back by 3.8% to €4,536 million (2019: €4,714 million), primarily due to very negative currency effects. At Pharmaceuticals, EBITDA before special items improved by 2.6% to €6,016 million (2019: 5,861 million), with strict cost management more than offsetting the slight decline in sales. EBITDA before special items at Consumer Health receded by 2.5% to €1,114 million (2019: €1,142 million), mainly due to the absence of earnings contributions from the divested businesses and to negative currency effects. These factors were partly offset by the positive effects of the sales development on earnings and contributions from the efficiency program initiated at the end of 2018. In the Reconciliation, EBITDA before special items fell by 15.6% to minus €205 million.

See also A 2.3

EBITDA in 2020 came in at minus €2,910 million (2019: €9,529 million). Depreciation, amortization and impairment losses – less impairment loss reversals – led to net expenses of €13,259 million (2019: €5,367 million), with intangible assets accounting for €11,570 million (2019: €2,887 million) and property, plant and equipment for €1,689 million (2019: €2,480 million). Impairment losses – less impairment loss reversals – led to net expenses of €8,976 million (2019: €928 million). These included €8,948 million (2019: €247 million) in impairments on intangible assets, of which €2,238 million related to goodwill.

See also A 2.3

The impairment losses were mainly recognized in the Crop Science Division and pertained to the Corn Seed & Traits, Soybean Seed & Traits, Herbicides and Vegetable Seeds business units as well as to the cotton seed and canola businesses (reported under “Other”). These impairments were driven by reduced growth expectations in the agricultural industry, especially in North and Latin America. Extremely negative currency effects and an increase in the weighted average cost of capital also had a negative impact. In the Consumer Health Division, we recognized impairment loss reversals for Claritin™ and Afrin™ totaling €253 million in 2020. We also recognized an impairment loss reversal on property, plant and equipment in the Pharmaceuticals Division in connection with the agreed sale of a production facility at the Wuppertal site.

Impairment losses of €8,898 million (2019: €866 million), net of impairment loss reversals, and accelerated depreciation of €1 million (2019: €2 million) were included in special items.

EBIT in 2020 fell to minus €16,169 million (2019: €4,162 million) after net special charges of €23,264 million (2019: €2,813 million). The special charges mainly comprised provisions for the agreements reached in the litigations concerning glyphosate and dicamba (both in the Crop Science Division), PCBs (in the Reconciliation) and Essure™ (in the Pharmaceuticals Division). In addition, the aforementioned impairment charges on Crop Science assets and impairment loss reversals at Consumer Health constituted special items. Additional special charges resulted from the restructuring program announced at the end of 2018. **EBIT before special items** rose by 1.7% to €7,095 million (2019: €6,975 million).

In 2020, the following special effects were taken into account in calculating EBIT and EBITDA before special items.

A 2.2.1/2

Special Items by Category[1]

€ million	EBIT Q4 2019	EBIT Q4 2020	EBIT 2019	EBIT 2020	EBITDA Q4 2019	EBITDA Q4 2020	EBITDA 2019	EBITDA 2020
Total special items	**(922)**	**67**	**(2,813)**	**(23,264)**	**(482)**	**(368)**	**(1,945)**	**(14,371)**
Crop Science	**(596)**	**54**	**(1,418)**	**(20,420)**	**(75)**	**(56)**	**(896)**	**(11,136)**
Pharmaceuticals	**(72)**	**9**	**(137)**	**(1,565)**	**41**	**(117)**	**(24)**	**(1,705)**
Consumer Health	**162**	**174**	**(16)**	**199**	**(33)**	**(25)**	**215**	**(54)**
Reconciliation	**(416)**	**(170)**	**(1,242)**	**(1,478)**	**(415)**	**(170)**	**(1,240)**	**(1,476)**
Special items by category								
Restructuring	(499)	(56)	(1,355)	(556)	(385)	(181)	(1,239)	(694)
of which in the Reconciliation	(320)	(132)	(1,090)	(573)	(319)	(131)	(1,088)	(571)
Acquisition / integration	(66)	(71)	(707)	(282)	(67)	(73)	(707)	(271)
of which in the Reconciliation	(3)	–	(19)	(2)	(3)	(1)	(19)	(2)
Divestments	39	(10)	304	(52)	39	(10)	305	(52)
of which in the Reconciliation	–	(11)	–	(45)	–	(11)	–	(45)
Litigations / legal risks	(13)	(27)	(245)	(13,163)	(13)	(27)	(245)	(13,163)
of which in the Reconciliation	(37)	(27)	(77)	(858)	(37)	(27)	(77)	(858)
Impairment losses / loss reversals[2]	(327)	284	(754)	(9,158)	–	(24)	(3)	(138)
Other	(56)	(53)	(56)	(53)	(56)	(53)	(56)	(53)
of which in the Reconciliation	(56)	–	(56)	–	(56)	–	–	–

2019 figures restated

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] Where not already included in the other special items categories

Core earnings per share

Core earnings per share were level year on year at €6.39 (2019: €6.38; +0.2%), as the positive earnings development at Pharmaceuticals was offset by lower earnings at Crop Science.

Earnings per share (total) in 2020 fell to minus €10.68 (2019: €4.17), weighed down by litigation expenses in connection with the reported settlement agreements and the aforementioned impairments in the Crop Science Division. The proceeds from the divestment of the Animal Health business unit had a positive effect.

A 2.2.1/3

Core Earnings per Share[1]

€ million	Q4 2019	Q4 2020	2019	2020
EBIT (as per income statements)	**389**	**1,515**	**4,162**	**(16,169)**
Amortization and impairment losses / loss reversals on goodwill and other intangible assets	484	254	2,887	11,570
Impairment losses / loss reversals on property, plant and equipment, and accelerated depreciation included in special items	674	(110)	682	29
Special items (other than amortization, accelerated depreciation and impairment losses / loss reversals)	482	368	1,945	14,371
Core EBIT	**2,029**	**2,027**	**9,676**	**9,801**
Financial result (as per income statements)	(378)	(142)	(1,309)	(1,081)
Special items in the financial result[2]	11	(197)	(268)	(469)
Income taxes (as per income statements)	(43)	(987)	(443)	1,689
Special items in income taxes	67	–	67	–
Tax effects related to amortization, impairment losses / loss reversals and special items	(411)	600	(1,441)	(3,640)
Income after income taxes attributable to noncontrolling interest (as per income statements)	(11)	(3)	(19)	(8)
Above-mentioned adjustments attributable to noncontrolling interest	(1)	–	(4)	(12)
Core net income from continuing operations	**1,263**	**1,298**	**6,259**	**6,280**
Shares (million)				
Weighted average number of shares[3]	982.43	982.42	981.69	982.42
€				
Core earnings per share from continuing operations	**1.29**	**1.32**	**6.38**	**6.39**

2019 figures restated

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] Primarily comprising changes in the fair value of our interests in Elanco (€392 million) and Covestro (€94 million)

[3] The weighted average number of shares (basic and diluted) was restated pursuant to IAS 33 for all periods prior to June 2018 to reflect the effect of the bonus component of the subscription rights issued as part of the June 2018 capital increase, because the subscription price of the new shares was below the market price of the existing shares.

Bayer Group – Other Earnings Parameters

A 2.2.1/4

Bayer Group Summary Income Statements

€ million	Q4 2019	Q4 2020	Change %	2019	2020	Change %
Net sales	10,750	9,995	–7.0	43,545	41,400	–4.9
Cost of goods sold	(4,920)	(3,669)	–25.4	(17,613)	(19,138)	+8.7
Selling expenses	(3,058)	(2,827)	–7.6	(12,489)	(13,053)	+4.5
Research and development expenses	(1,399)	(1,291)	–7.7	(5,301)	(7,126)	+34.4
General administration expenses	(969)	(664)	–31.5	(3,606)	(2,879)	–20.2
Other operating income / expenses	(15)	(29)	+93.3	(374)	(15,373)	.
EBIT[1]	**389**	**1,515**	**.**	**4,162**	**(16,169)**	**.**
Financial result	**(378)**	**(142)**	**–62.4**	**(1,309)**	**(1,081)**	**–17.4**
Income before income taxes	**11**	**1,373**	**.**	**2,853**	**(17,250)**	**.**
Income taxes	(43)	(987)	.	(443)	1,689	.
Income from continuing operations after taxes	(32)	386	.	2,410	(15,561)	.
Income from discontinued operations after taxes	1,457	(75)	.	1,700	5,074	+198.5
Income after income taxes (total)	**1,425**	**311**	**–78.2**	**4,110**	**(10,487)**	**.**
of which attributable to non-controlling interest	11	3	–72.7	19	8	–57.9
of which attributable to Bayer AG stockholders (net income)	**1,414**	**308**	**–78.2**	**4,091**	**(10,495)**	**.**

2019 figures restated

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Functional costs

The cost of goods sold rose by 8.7% to €19,138 million in 2020. This significant increase was attributable to special charges resulting from the impairments recognized in the Crop Science Division. The ratio of the cost of goods sold to total sales also increased significantly year on year to 46.2% (2019: 40.4%).

Selling expenses advanced by 4.5% to €13,053 million. The considerable increase at Crop Science due to special charges for the impairments was partly offset by lower selling expenses at Pharmaceuticals. In the Consumer Health Division, special gains from the impairment loss reversals for Claritin™ and Afrin™ led to lower selling expenses. Selling expenses accounted for 31.5% (2019: 28.7%) of sales.

Research and development (R&D) expenses rose by 34.4% to €7,126 million. The ratio of R&D expenses to sales was 17.2% (2019: 12.2%). The increase in this ratio was due to special charges of €2,242 million, mainly in connection with the aforementioned impairments at Crop Science.

General administration expenses fell by a substantial 20.2% to €2,879 million, mainly on account of lower one-time expenses for the ongoing restructuring program. The ratio of general administration expenses to total sales therefore decreased to 7.0% (2019: 8.3%).

The balance of other operating expenses and other operating income amounted to minus €15,373 million (2019: minus €374 million). This figure reflected in particular the allocations to provisions in connection with the glyphosate, dicamba, PCB and Essure™ litigations as well as the impairment loss on goodwill in the Crop Science Division.

The special effects accounted for in EBIT and EBITDA before special items were attributable to the functional costs as shown in the following table.

A 2.2.1/5

Special Items by Functional Cost[1]

€ million	EBIT Q4 2019	EBIT Q4 2020	EBIT 2019	EBIT 2020	EBITDA Q4 2019	EBITDA Q4 2020	EBITDA 2019	EBITDA 2020
Total special items	**(922)**	**67**	**(2,813)**	**(23,264)**	**(482)**	**(368)**	**(1,945)**	**(14,371)**
Cost of goods sold	(682)	90	(1,190)	(3,411)	(24)	(38)	(531)	(233)
Selling expenses	174	202	(153)	(1,433)	(37)	(37)	(146)	(100)
Research and development expenses	(22)	(8)	(19)	(2,242)	(22)	(76)	(19)	(110)
General administration expenses	(413)	(175)	(1,300)	(709)	(412)	(175)	(1,298)	(708)
Other operating income/expenses	21	(42)	(151)	(15,469)	13	(42)	49	(13,220)

2019 figures restated

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Financial result and income before income taxes

After a financial result of minus €1,081 million (2019: minus €1,309 million), income before income taxes was minus €17,250 million (2019: €2,853 million). The financial result comprised income from investments in affiliated companies of €406 million (2019: €190 million), net interest expense of €1,292 million (2019: €1,281 million), a net exchange loss of €216 million (2019: net exchange gain of €58 million), interest cost of €102 million (2019: €273 million) for pension and other provisions, and net other financial income of €122 million (2019: net expenses of €3 million). The financial result included net special gains of €469 million (2019: €268 million), mainly resulting from changes in the fair value of our interests in Elanco and Covestro.

Income taxes

Income of €1,689 million from income taxes was recorded in 2020 (2019: income tax expense of €443 million). This tax income largely arose from the tax-reducing effect of the expenses in connection with the settlement agreements in the United States.

Income from discontinued operations after income taxes

Income from discontinued operations after income taxes was €5,074 million (2019: €1,700 million) and included the €5,171 million proceeds from the divestment of the Animal Health business unit.

Net income

After income from income taxes, income from discontinued operations after income taxes, and income attributable to noncontrolling interest, a net loss of €10,495 million was recorded for 2020 (2019: net income of €4,091 million).

2.2.2 Business Development by Division

Crop Science

Challenging market environment

The global seed and crop protection market grew moderately in 2020 (Fx adj. +2%, 2019: 0%). The Latin America region saw an expansion of soybean and corn acreages, while the U.S. soybean market recovered from the 2019 flooding impact. Overall growth was limited by the decrease in cotton, fruit and vegetables demand caused by the COVID-19 pandemic, as well as dry weather conditions in Europe during the spring.

A 2.2.2/1

Key Data – Crop Science

			Change %[1]				Change %[1]	
€ million	Q4 2019	Q4 2020	Reported	Fx & p adj.	2019	2020	Reported	Fx & p adj.
Sales	**4,652**	**4,176**	**–10.2**	**+4.3**	**19,832**	**18,840**	**–5.0**	**+1.3**
Change in sales[1]								
Volume	–1.7%	+4.1%			–0.3%	+1.5%		
Price	+0.8%	+0.2%			+1.7%	–0.2%		
Currency	+0.7%	–14.5%			+1.3%	–6.3%		
Portfolio	0.0%	0.0%			+36.3%	0.0%		
Sales by region								
Europe / Middle East / Africa	581	545	–6.2	–0.8	4,170	4,053	–2.8	–0.1
North America	1,761	1,555	–11.7	–4.6	8,743	8,367	–4.3	–4.3
Asia / Pacific	490	499	+1.8	+6.9	1,829	1,917	+4.8	+8.9
Latin America	1,820	1,577	–13.4	+13.7	5,090	4,503	–11.5	+9.4
EBITDA[1]	**774**	**538**	**–30.5**		**3,818**	**(6,600)**	**.**	
Special items[1]	(75)	(56)			(896)	(11,136)		
EBITDA before special items[1]	**849**	**594**	**–30.0**		**4,714**	**4,536**	**–3.8**	
EBITDA margin before special items[1]	18.3%	14.2%			23.8%	24.1%		
EBIT[1]	**(472)**	**91**	**.**		**514**	**(18,629)**	**.**	
Special items[1]	(596)	54			(1,418)	(20,420)		
EBIT before special items[1]	**124**	**37**	**–70.2**		**1,932**	**1,791**	**–7.3**	
Net cash provided by (used in) operating activities	**2,651**	**(577)**	**.**		**4,150**	**99**	**–97.6**	
Cash-flow relevant capital expenditures	484	404	–16.5		1,203	1,103	–8.3	
Research and development expenses	584	403	–31.0		2,264	4,138	+82.8	

2019 figures restated
Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

Sales

Sales at Crop Science advanced by 1.3% (Fx & portfolio adj.) to €18,840 million in 2020. Our businesses in the Latin America and Asia / Pacific regions contributed to the increase, while declines occurred particularly in North America.

A 2.2.2/2

Sales by Strategic Business Entity

			Change %[1]				Change %[1]	
€ million	Q4 2019	Q4 2020	Reported	Fx & p adj.	2019	2020	Reported	Fx & p adj.
Crop Science	**4,652**	**4,176**	**–10.2**	**+4.3**	**19,832**	**18,840**	**–5.0**	**+1.3**
Corn Seed & Traits	1,100	980	–10.9	+1.2	5,164	4,970	–3.8	–0.5
Herbicides	1,203	1,074	–10.7	–0.7	5,097	4,740	–7.0	–1.0
Fungicides	788	669	–15.1	+5.0	2,718	2,639	–2.9	+8.5
Soybean Seed & Traits	587	505	–14.0	+8.4	2,119	1,956	–7.7	+2.3
Insecticides	380	312	–17.9	–1.0	1,448	1,370	–5.4	+3.9
Environmental Science	235	237	+0.9	+9.9	994	1,070	+7.6	+11.5
Vegetable Seeds	157	179	+14.0	+21.7	689	640	–7.1	–3.9
Other	202	220	+8.9	+26.1	1,603	1,455	–9.2	–5.2

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

// Sales at **Corn Seed & Traits** remained at the prior-year level. In North America, shifts in demand into 2019 and 2021 had a negative impact, while sales moved ahead in all the other regions. Our business in Latin America benefited from an expansion in volumes due to higher acreages and positive product mix effects. We also registered growth in Europe / Middle East / Africa, primarily thanks to price increases.
// The decline in sales at **Herbicides** was due in particular to a loss of registrations in Europe / Middle East / Africa and North America. Business in North America was also impacted by shifts in demand for selective herbicides into the prior year. However, we expanded our business in Asia / Pacific and Latin America.
// Sales at **Fungicides** rose year on year, with all regions registering growth. In Latin America, we recorded sales gains for Fox Xpro™, which was launched in the previous year, with an increase in volumes and prices. We also saw an increase in volumes in North America due to the normalization of weather conditions and synergy effects arising from the Bayer Plus program.
// Sales at **Soybean Seed & Traits** were up against the prior year. Greater market penetration in Latin America had a positive effect, while our business in North America saw lower selling prices and volumes, mainly due to increased competition.
// We posted an increase in sales at **Insecticides**, with all regions registering growth. Business in Latin America benefited from higher prices achieved in Brazil.
// We achieved strong growth at **Environmental Science**, with all regions showing positive development. Our consumer business posted substantial gains, particularly in North America due to favorable weather and shifts in demand as a result of advance sales.
// Sales at **Vegetable Seeds** fell year on year. Business in the North America region was particularly affected by lower demand attributable to COVID-19.
// Sales in the reporting unit **“Other”** declined overall. Sales of cotton seed in North America were especially impacted by lower acreages.

Earnings

EBITDA before special items at Crop Science declined by 3.8% in 2020 to €4,536 million (2019: €4,714 million). The EBITDA margin before special items increased by 0.3 percentage points to 24.1% (2019: 23.8%). Business was particularly impacted by negative currency effects of €537 million, while the decline in sales in North America due to shifts in demand was also a key factor. By contrast, earnings benefited from the realization of cost synergies as we progress with the integration of the acquired business and from additional effects arising from the COVID-19 pandemic, such as lower travel costs.

EBIT receded in 2020 to minus €18,629 million (2019: plus €514 million) after net special charges of €20,420 million (2019: €1,418 million) that mainly arose from the provisions established for the glyphosate and dicamba agreements. Further special charges comprised the noncash impairment charges on various assets, including goodwill, that were mostly recognized in the third quarter.

A 2.2.2/3

Special Items[1] Crop Science

€ million	EBIT Q4 2019	EBIT Q4 2020	EBIT 2019	EBIT 2020	EBITDA Q4 2019	EBITDA Q4 2020	EBITDA 2019	EBITDA 2020
Restructuring	–	–	(1)	–	–	–	(1)	–
Acquisition / integration	(63)	(36)	(688)	(245)	(64)	(37)	(688)	(234)
Divestments	37	1	(16)	(7)	37	1	(16)	(7)
Litigations / legal risks	(48)	–	(191)	(10,762)	(48)	–	(191)	(10,762)
Impairment losses / loss reversals	(522)	89	(522)	(9,406)	–	(20)	–	(133)
Total special items	**(596)**	**54**	**(1,418)**	**(20,420)**	**(75)**	**(56)**	**(896)**	**(11,136)**

2019 figures restated

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Fourth quarter of 2020

Sales

In the fourth quarter, sales were up against the prior-year period. The Latin America and Asia / Pacific regions in particular contributed to the increase. Sales at **Corn Seed & Traits** grew thanks to higher volumes and prices in Latin America. However, sales at **Herbicides** declined, with business in North America temporarily hampered by the loss of a registration and the fact that XtendiMax™ was only registered in the fourth quarter. At **Fungicides,** business was up against the prior year, primarily thanks to higher prices. We also registered an increase in sales at **Soybean Seed & Traits**, primarily due to greater market penetration and higher prices in Latin America. At **Insecticides,** shifts in demand in the Asia / Pacific region had a negative impact. Sales at **Environmental Science** rose, driven by our consumer business in North America. At **Vegetable Seeds**, we recorded encouraging growth due to shifts in demand from the third quarter. Sales also increased in the reporting unit **"Other."** Growth was driven by our cotton seed business in the Asia / Pacific and Latin America regions, in part thanks to normalized weather conditions.

Earnings

EBITDA before special items fell by 30.0% in the fourth quarter to €594 million (Q4 2019: €849 million). Earnings were heavily impacted by negative currency effects of €450 million, mainly in Brazil, and by the decline in sales in North America and Europe / Middle East / Africa.

EBIT increased to €91 million in the fourth quarter (Q4 2019: minus €472 million) after net special gains of €54 million. These positive effects were due to impairment loss reversals on various assets, while special charges arose in connection with the integration of the acquired businesses.

Pharmaceuticals

Pharmaceuticals market shows slower growth

The pharmaceuticals market grew by 3% (Fx adj.) in 2020 (2019: 6%), with the slower growth attributable to the unprecedented challenges arising from the COVID-19 pandemic. Despite the pandemic, markets in North and Latin America and some parts of Europe showed a positive development. The increasingly aging population and improved access to health care were again among the drivers, while market expansion was also supported by innovative and in many cases higher-priced medicines. Market growth was held back not only by general uncertainties over the development of the global economy but also by continuing price pressure from generics and biosimilars along with reforms in local health care systems.

A 2.2.2/4

Key Data – Pharmaceuticals

			Change %[1]				Change %[1]	
€ million	Q4 2019	Q4 2020	Reported	Fx & p adj.	2019	2020	Reported	Fx & p adj.
Sales	**4,682**	**4,476**	**–4.4**	**+0.5**	**17,962**	**17,243**	**–4.0**	**–1.5**
Change in sales[1]								
Volume	+6.3%	+7.9%			+5.7%	+4.8%		
Price	+0.9%	–7.4%			–0.1%	–6.3%		
Currency	+1.9%	–4.9%			+1.8%	–2.5%		
Portfolio	0.0%	0.0%			–0.1%	0.0%		
Sales by region								
Europe / Middle East / Africa	1,847	1,918	+3.8	+8.1	6,918	6,940	+0.3	+2.3
North America	1,071	975	–9.0	–3.3	4,040	3,855	–4.6	–2.8
Asia / Pacific	1,501	1,357	–9.6	–7.5	6,031	5,598	–7.2	–6.3
Latin America	263	226	–14.1	+8.2	973	850	–12.6	+6.6
EBITDA[1]	**1,442**	**1,422**	**–1.4**		**5,837**	**4,311**	**–26.1**	
Special items[1]	41	(117)			(24)	(1,705)		
EBITDA before special items[1]	**1,401**	**1,539**	**+9.9**		**5,861**	**6,016**	**+2.6**	
EBITDA margin before special items[1]	29.9%	34.4%			32.6%	34.9%		
EBIT[1]	**1,060**	**1,308**	**+23.4**		**4,686**	**3,467**	**–26.0**	
Special items[1]	(72)	9			(137)	(1,565)		
EBIT before special items[1]	**1,132**	**1,299**	**+14.8**		**4,823**	**5,032**	**+4.3**	
Net cash provided by operating activities	**1,010**	**1,258**	**+24.6**		**4,427**	**4,064**	**–8.2**	
Cash flow-relevant capital expenditures	385	368	–4.4		811	915	+12.8	
Research and development expenses	744	816	+9.7		2,780	2,743	–1.3	

2019 figures restated
Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

Sales

Sales at Pharmaceuticals fell by 1.5% (Fx & portfolio adj.) to €17,243 million in 2020. This development was driven by the global COVID-19 restrictions, which particularly in the first half of the year led to a reduced number of elective treatments, especially in our ophthalmology and women’s health businesses. The situation began to normalize mid-year. Sales in the radiology business were down compared with 2019, with stricter hygiene measures slowing down patient processing throughout the year.

In addition, the implementation of new tender procedures in China for our products Glucobay™ and Avelox™ weighed heavily on sales.

A 2.2.2/5

Best-Selling Pharmaceuticals Products

			Change %[1]				Change %[1]	
€ million	Q4 2019	Q4 2020	Reported	Fx & p adj.	2019	2020	Reported	Fx & p adj.
Xarelto™	1,148	1,212	+5.6	+10.9	4,126	4,515	+9.4	+12.4
Eylea™	667	669	+0.3	+3.6	2,494	2,468	–1.0	+0.2
Mirena™ / Kyleena™ / Jaydess™	302	288	–4.6	+2.6	1,223	1,081	–11.6	–8.7
Kogenate™ / Kovaltry™ / Jivi™	222	201	–9.5	–4.9	882	851	–3.5	–2.3
YAZ™ / Yasmin™ / Yasminelle™	172	168	–2.3	+6.2	681	670	–1.6	+3.2
Nexavar™	164	159	–3.0	+2.2	706	639	–9.5	–6.9
Aspirin™ Cardio	147	169	+15.0	+20.3	579	639	+10.4	+14.2
Adempas™	111	261	+135.1	+141.6	418	628	+50.2	+52.5
Adalat™	156	138	–11.5	–9.6	664	613	–7.7	–6.2
Stivarga™	106	109	+2.8	+8.8	411	475	+15.6	+18.6
Betaferon™ / Betaseron™	125	86	–31.2	–27.1	457	404	–11.6	–9.7
CT Fluid Delivery[2]	112	107	–4.5	+1.4	407	396	–2.7	–0.4
Gadovist™ product family	111	102	–8.1	–2.7	433	385	–11.1	–8.6
Ultravist™	87	80	–8.0	–1.6	340	303	–10.9	–7.1
Xofigo™	71	61	–14.1	–7.2	303	262	–13.5	–11.6
Total best-selling products	**3,701**	**3,810**	**+2.9**	**+8.1**	**14,124**	**14,329**	**+1.5**	**+4.0**
Proportion of Pharmaceuticals sales	79%	85%			79%	83%		

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.4 “Alternative Performance Measures Used by the Bayer Group.”

// We registered strong growth in sales of our oral anticoagulant **Xarelto™** that resulted from a marked increase in volumes in China as well as substantial growth in Europe. We saw a significant expansion of business in Russia in particular. Our license revenues – recognized as sales – in the United States, where Xarelto™ is marketed by a subsidiary of Johnson & Johnson, declined due to currency effects.

// Sales of our ophthalmology drug **Eylea™** were level year on year. Particularly in the first half of the year, the reduced number of treatments due to the closure of some ophthalmology clinics and practices led to a decline in sales. The extension of treatment intervals by patients due to the contact restrictions and stay-at-home measures also diminished sales, particularly in Europe. This effect was offset by the normalization of treatment over the remainder of the year and the launch of Eylea™ prefilled syringes, which particularly benefited sales in Japan and Germany.

// Business with our **Mirena™ / Kyleena™ / Jaydess™** intrauterine systems was also impeded by the effects of the pandemic. Protective measures such as the prioritization of emergency treatments or the partial closure of some doctor’s offices led to a reduced number of procedures.

// We registered significant sales gains for **Aspirin™ Cardio**, our product for secondary prevention of heart attacks. This was mainly attributable to a sharp increase in demand in China and to growth in Mexico, which was partly due to the use of this product in the treatment of COVID-19 patients.

// We posted a significant increase in sales of our pulmonary hypertension treatment **Adempas™**, particularly in the United States. As in the past, sales reflected the proportionate recognition of the upfront and milestone payments resulting from the sGC collaboration with Merck & Co., United States. Since a further milestone in this collaboration was reached in the fourth quarter of 2020, sales for the full year included the proportionate recognition of this milestone payment for the contract term to date.

// Sales of our cancer drug **Nexavar™** receded, mainly due to a decline in volumes in the United States as a result of strong competition. This effect was partly offset by strong growth in China.

// Our cancer drug **Stivarga™** continued to deliver substantial sales gains, especially in China and the United States. Among other factors, sales benefited from the product's oral administration, enabling treatment to continue outside of hospitals and doctor's offices during the ongoing pandemic.
// Sales of our cancer drug **Xofigo™** decreased markedly, especially in the United States. Business was weighed down by restrictions related to COVID-19, among other factors.

Earnings

EBITDA before special items advanced by 2.6% to €6,016 million. The EBITDA margin before special items increased by 2.3 percentage points to 34.9%. Thanks to stringent cost management, we were able to grow earnings despite recording a slight decline in sales. We particularly reduced our selling expenses, due in part to the COVID-19-related restrictions, while the cost of goods sold and research and development expenses were also lower year on year. Earnings were diminished by a negative currency effect of €132 million.

EBIT at Pharmaceuticals declined by a substantial 26.0% to €3,467 million. The significant increase in net special charges, from €137 million in 2019 to €1,565 million in 2020, had a negative impact. The special charges in 2020 primarily arose in connection with the settlement agreement reached in the Essure™ litigation in August.

A 2.2.2/6

Special Items[1] Pharmaceuticals

€ million	EBIT Q4 2019	EBIT Q4 2020	EBIT 2019	EBIT 2020	EBITDA Q4 2019	EBITDA Q4 2020	EBITDA 2019	EBITDA 2020
Restructuring	(144)	101	(157)	71	(31)	(25)	(44)	(69)
Integration costs	–	(35)	–	(35)	–	(35)	–	(35)
Litigations / legal risks	72	–	23	(1,543)	72	–	23	(1,543)
Impairment losses / loss reversals	–	(4)	(3)	(5)	–	(4)	(3)	(5)
Other	–	(53)	–	(53)	–	(53)	–	(53)
Total special items	**(72)**	**9**	**(137)**	**(1,565)**	**41**	**(117)**	**(24)**	**(1,705)**

2019 figures restated
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Fourth quarter of 2020

Sales

Sales at Pharmaceuticals rose by 0.5% (Fx & portfolio adj.) to €4,476 million in the fourth quarter. Significant sales gains for important products more than offset the negative effects arising from the introduction of the volume-based procurement policy in China.

The **Xarelto™** growth trend continued in the fourth quarter. Strong volume gains, especially in Russia and China, were partly offset by a decrease in sales in Germany and lower license revenues in the United States as a result of currency effects. Sales of **Eylea™** were up slightly year on year, with the launch of the Eylea™ prefilled syringe contributing to growth. We posted considerable growth for **Aspirin™ Cardio** due to increased demand in China and Mexico. Fourth-quarter sales of **Adempas™** included the proportionate recognition of the milestone payment under the sGC collaboration with Merck & Co., United States, for the contract term to date. Sales of our multiple sclerosis treatment **Betaferon™ / Betaseron™** continued to decline sharply, largely due to heavy competition in the United States and Germany.

Earnings

EBITDA before special items rose by 9.9% to €1,539 million in the fourth quarter. Alongside the proportionate recognition of the Adempas™ milestone payment in sales, the significant growth in earnings was mainly driven by a decrease in selling expenses that was partly attributable to the COVID-19-related restrictions. We also recorded a decline in the cost of goods sold against the prior-year period. Earnings were diminished by a negative currency effect of €85 million.

EBIT at Pharmaceuticals rose by a substantial 23.4% to €1,308 million after net special gains of €9 million (Q4 2019: net special charges of €72 million). Special items in the "Restructuring" category were positive overall, partly due to the impairment loss reversal on a production facility at our Wuppertal site, while special charges arose in connection with the termination of development for vilaprisan and the integration of AskBio.

Consumer Health

Stable market growth

Growth of the global consumer health market in 2020 was 4% on a currency-adjusted basis (2019: 4%). While overall market growth remained stable, we saw a sharp rise in products that help support people's immune systems leading to high growth in the nutritionals category. On the other hand, the social distancing and hygiene measures led to a sharp decline in the incidence of flu around the world which led to a decline in the sales of cough and cold products.

A 2.2.2/7

Key Data – Consumer Health

			Change %[1]				Change %[1]	
€ million	Q4 2019	Q4 2020	Reported	Fx & p adj.	2019	2020	Reported	Fx & p adj.
Sales	**1,337**	**1,250**	**–6.5**	**+3.1**	**5,462**	**5,054**	**–7.5**	**+5.2**
Changes in sales[1]								
Volume	+3.0%	+0.7%			+0.9%	+3.3%		
Price	+3.2%	+2.4%			+1.7%	+1.9%		
Currency	+1.4%	–8.4%			+1.2%	–4.4%		
Portfolio	–7.1%	–1.2%			–3.6%	–8.3%		
Sales by region								
Europe / Middle East / Africa	479	452	–5.6	+1.3	1,838	1,739	–5.4	+2.6
North America	547	492	–10.1	–0.1	2,280	2,026	–11.1	+4.7
Asia / Pacific	160	178	+11.3	+14.3	749	744	–0.7	+6.1
Latin America	151	128	–15.2	+8.8	595	545	–8.4	+14.1
EBITDA[1]	**266**	**233**	**–12.4**		**1,357**	**1,060**	**–21.9**	
Special items[1]	(33)	(25)			215	(54)		
EBITDA before special items[1]	**299**	**258**	**–13.7**		**1,142**	**1,114**	**–2.5**	
EBITDA margin before special items[1]	22.4%	20.6%			20.9%	22.0%		
EBIT[1]	**381**	**352**	**–7.6**		**794**	**992**	**+24.9**	
Special items[1]	162	174			(16)	199		
EBIT before special items[1]	**219**	**178**	**–18.7**		**810**	**793**	**–2.1**	
Net cash provided by operating activities	**246**	**276**	**+12.2**		**876**	**987**	**+12.7**	
Cash flow-relevant capital expenditures	59	75	+27.1		169	159	–5.9	
Research and development expenses	58	53	–8.6		218	195	–10.6	

2019 figures restated
Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Sales

Sales at Consumer Health rose by 5.2% (Fx & portfolio adj.) in 2020 to €5,054 million. The greater focus on health and prevention in connection with the COVID-19 pandemic generated substantial growth in demand in all regions, especially in the Nutritionals category. At the same time, increased protection and hygiene measures led to a decline in sales of cough and cold products.

A 2.2.2/8

Sales by Category

€ million	Q4 2019	Q4 2020	Change %[1] Reported	Change %[1] Fx & p adj.	2019	2020	Change %[1] Reported	Change %[1] Fx & p adj.
Consumer Health	**1,337**	**1,250**	**–6.5**	**+3.1**	**5,462**	**5,054**	**–7.5**	**+5.2**
Nutritionals	299	331	+10.7	+21.8	1,134	1,313	+15.8	+22.6
Allergy & Cold	298	253	–15.1	–9.0	1,155	1,080	–6.5	–4.1
Dermatology	279	259	–7.2	0.0	1,104	1,086	–1.6	+2.5
Pain & Cardio	222	207	–6.8	+4.5	818	807	–1.3	+6.1
Digestive Health	196	186	–5.1	+1.0	721	717	–0.6	+2.4
Other[2]	42	14	–66.7	–19.2	530	51	–90.4	–3.7

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] The divested prescription dermatology (outside the United States), sun care and foot care businesses are included until the dates they were transferred (July 1, 2019; August 30, 2019; and November 1, 2019, respectively).

// In **Europe / Middle East / Africa**, sales rose by 2.6% (Fx & portfolio adj.) to €1,739 million. The increase was mainly attributable to the significant growth in demand for products in the Nutritionals category. In addition, we saw encouraging sales gains in the Dermatology category, especially for Bepanthen™ in the Middle East and Germany. Business also expanded in the Pain & Cardio category. By contrast, sales of cough and cold products fell significantly due to the increased protection and hygiene measures.

// Sales in **North America** advanced by 4.7% (Fx & portfolio adj.) to €2,026 million. The Nutritionals category showed double-digit percentage growth that was driven by continued strong demand, particularly for our One A Day™ vitamins, which also benefited from product line extensions launched at the start of the year. We also registered encouraging growth in the Digestive Health and Pain & Cardio categories. Our Allergy business saw an increase in sales of Claritin™, while business with cough and cold products declined in this region, as well, due to the increased protection and hygiene measures.

// Business in **Asia / Pacific** expanded by 6.1% (Fx & portfolio adj.) to €744 million, largely as a result of high demand for products in the Nutritionals category in Southeast Asia and China. Sales also rose in the Dermatology category due to the positive performance of Canesten™. Business in the Pain & Cardio and Allergy & Cold categories declined, mainly due to constraints related to COVID-19.

// In **Latin America**, sales climbed by 14.1% (Fx & portfolio adj.) to €545 million, with significant growth particularly for Redoxon™ in the Nutritionals category and for Aspirin™ in the Pain & Cardio category. In addition, we recorded inflation-driven price increases across all categories in Argentina.

Earnings

EBITDA before special items declined by 2.5% to €1,114 million in 2020 (2019: €1,142 million). The EBITDA margin before special items improved by 1.1 percentage points to 22.0%. Earnings primarily benefited from the significant increase in sales and the contributions from the efficiency program initiated in late 2018. Currency effects of €69 million, the absence of contributions from the businesses divested in 2019, and increased costs in connection with the COVID-19 pandemic had a negative impact.

EBIT at Consumer Health came in at €992 million (2019: €794 million), after net special gains of €199 million (2019: net special charges of €16 million) that arose primarily in connection with the impairment loss reversals recorded for Claritin™ and Afrin™.

A 2.2.2/9

Special Items[1] Consumer Health

€ million	EBIT Q4 2019	EBIT Q4 2020	EBIT 2019	EBIT 2020	EBITDA Q4 2019	EBITDA Q4 2020	EBITDA 2019	EBITDA 2020
Restructuring	(35)	(25)	(107)	(54)	(35)	(25)	(106)	(54)
Divestments	2	–	320	–	2	–	321	–
Impairment losses/loss reversals	195	199	(229)	253	–	–	–	–
Total special items	**162**	**174**	**(16)**	**199**	**(33)**	**(25)**	**215**	**(54)**

2019 figures restated
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Fourth quarter of 2020

Sales

In the fourth quarter of 2020, sales at Consumer Health increased by 3.1% (Fx & portfolio adj.) to €1,250 million, continuing the previous quarter's positive business development. In the Nutritionals category in particular, we again posted significant gains across all regions. At the same time, increased protection and hygiene measures led to a decline in sales of cough and cold products.

Earnings

EBITDA before special items declined by 13.7% in the fourth quarter of 2020 to €258 million (Q4 2019: €299 million). The decline in earnings was due to negative currency effects of €28 million, portfolio effects and increased costs in connection with the COVID-19 pandemic. Positive earnings effects primarily came from the growth in sales and the contributions from the efficiency program initiated in late 2018.

EBIT at Consumer Health amounted to €352 million (Q4 2019: €381 million), after net special gains of €174 million (Q4 2019: €162 million) that arose primarily in connection with the impairment loss reversal recorded for Claritin™.

2.2.3 Value-Based Performance

A 2.2.3/1

Value-Based Performance

	Crop Science		Pharmaceuticals		Consumer Health		Group[2]	
€ million	2019	2020	2019	2020	2019	2020	2019	2020
EBIT[1]	514	(18,629)	4,686	3,467	794	992	4,162	(16,169)
Taxes[1,3]	(123)	4,471	(1,125)	(832)	(191)	(238)	(999)	3,881
NOPAT[1]	391	(14,158)	3,561	2,635	603	754	3,163	(12,288)
Average capital employed[1]	58,590	49,502	14,966	16,554	10,496	9,802	84,768	74,678
ROCE[1]	0.7%	–28.6%	23.8%	15.9%	5.7%	7.7%	3.7%	–16.5%
WACC[1]	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%

2019 figures restated to reflect the recognition of Animal Health and Currenta as discontinued operations
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."
[2] Including Reconciliation
[3] 24% on EBIT; based on historical average of tax rates
[4] At the divisional level, ROCE is compared with the WACC of the Bayer Group as we do not report WACC for the individual divisions.

Bayer's ROCE in 2020 amounted to minus 16.5% and was therefore significantly below the cost of capital (6.8%). This negative development against the prior year is mainly due to significant special charges within the Crop Science and Pharmaceuticals divisions. Both divisions saw a decline in net operating profit after tax (NOPAT), which was weighed down by high provisions for litigations. At Crop Science, there was a further negative effect from the aforementioned impairment charges. Consumer Health increased its ROCE year on year, with the division benefiting from an increase in NOPAT that was driven by impairment loss reversals and a further decline in its capital base.

The following overview shows the components of the average capital employed used in calculating ROCE.

A 2.2.3/2

Components of Capital Employed[1]

€ million	Dec. 31, 2019	Dec. 31, 2020
Goodwill	39,312	36,080
Other intangible assets	34,710	26,029
Property, plant and equipment	12,487	11,710
Other financial assets[2]	92	144
Inventories	10,650	10,961
Trade accounts receivable	11,459	9,555
Other receivables[2]	2,016	1,842
Deferred tax assets[2, 3]	7,676	2,381
Claims for income tax refunds	1,652	1,233
Assets held for sale	124	113
Gross capital employed	**120,178**	**100,048**
Other provisions[2]	(6,662)	(14,071)
Trade accounts payable	(6,321)	(5,683)
Other liabilities[2]	(2,515)	(2,957)
Refund liabilities	(4,239)	(4,463)
Contract liabilities	(4,052)	(4,312)
Financial liabilities[2]	(3)	(2)
Deferred tax liabilities[2, 3]	(9,350)	(1,263)
Income tax liabilities	(2,243)	(2,516)
Liabilities directly related to assets held for sale	(219)	–
Capital employed	**84,574**	**64,781**
Average capital employed	**84,768**	**74,678**

2019 figures restated to reflect the recognition of Animal Health and Currenta as discontinued operations

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] Selected items of the component; items that were predominantly non-interest-bearing or nonoperating in nature were eliminated from capital employed

[3] Here we have elected to present deferred tax assets and liabilities as gross amounts for 2019. In the Bayer Group Statements of Financial Position (Table B3), by contrast, they are presented in net terms.

2.2.4 Asset and Financial Position of the Bayer Group

Financial management of the Bayer Group

The financial management of the Bayer Group is conducted centrally. Capital is a global resource, generally procured centrally and distributed within the Bayer Group. The foremost objectives of our financial management are to help bring about a sustained increase in corporate value and to ensure the Group's liquidity and creditworthiness. This involves optimizing the capital structure and effectively managing risks. The management of currency, interest-rate, commodity-price and default risks helps to reduce the volatility of our earnings.

See also A 1.2.3

The contracted rating agencies assess Bayer as follows:

A 2.2.4/1

Rating

	Long-term rating	Short-term rating	Outlook
S & P Global Ratings	BBB	A2	stable
Moody's	Baa1	P2	negative
Fitch Ratings	BBB+	F2	stable

These investment grade ratings from all three agencies reflect the company's high solvency and ensure access to a broad investor base for financing purposes. Our stated aim is to regain A-category long-term ratings in the future.

As a matter of principle, we pursue a prudent debt management strategy to ensure flexibility, drawing on a balanced financing portfolio. This is fundamentally based on bonds in various currencies, syndicated credit facilities, bilateral loan agreements and a global commercial paper program.

We use financial derivatives to hedge against risks arising from business operations or financial transactions, but do not employ contracts in the absence of an underlying transaction. It is our policy to diminish default risks by selecting trading partners with a high credit standing. We closely monitor the execution of all transactions, which are conducted in accordance with Bayer Group policies.

See also A 3.2.2

Liquidity and Capital Expenditures of the Bayer Group

A 2.2.4/2

Bayer Group Summary Statements of Cash Flows

€ million	Q4 2019	Q4 2020	2019	2020
Net cash provided by (used in) operating activities from continuing operations	**3,307**	**697**	**7,983**	**4,569**
Net cash provided by (used in) operating activities from discontinued operations	(61)	54	224	334
Net cash provided by (used in) operating activities	**3,246**	**751**	**8,207**	**4,903**
Net cash provided by (used in) investing activities	**35**	**(194)**	**(671)**	**(4,073)**
Net cash provided by (used in) financing activities	**(4,471)**	**(1,354)**	**(8,389)**	**423**
Change in cash and cash equivalents due to business activities	**(1,190)**	**(797)**	**(853)**	**1,253**
Cash and cash equivalents at beginning of period	**4,410**	**5,067**	**4,052**	**3,185**
Change due to exchange rate movements and to changes in scope of consolidation	(35)	(79)	(14)	(247)
Cash and cash equivalents at end of period	**3,185**	**4,191**	**3,185**	**4,191**

2019 figures restated

Net cash provided by operating activities

The net operating cash flow from continuing operations in 2020 came to €4,569 million (2019: €7,983 million). The decline compared with the prior year was largely attributable to payments of €3.9 billion to resolve litigations. Total net operating cash flow came to €4,903 million (2019: €8,207 million).

Net cash used in investing activities

Investing activities led to a net cash outflow of €4,073 million (2019: €671 million). The cash outflows for property, plant and equipment and intangible assets included in this figure declined by 8.8% to €2,418 million (2019: €2,650 million). Divestment proceeds less transferred cash amounted to €4,172 million (2019: €2,546 million) and mainly pertained to the sale of the Animal Health business unit. Cash outflows for acquisitions less acquired cash amounted to €2,263 million (2019: €410 million). This includes the acquisitions of Asklepios BioPharmaceutical, Inc., United States, and KaNDy Therapeutics Ltd., United Kingdom. The net cash outflow for current financial assets was €4,455 million (2019: €303 million) and mainly resulted from investments in money market funds. This line item also included the €1.5 billion in cash inflows in the fourth quarter from the sale of Elanco shares.

Net cash provided by financing activities

There was a net cash inflow of €423 million for financing activities (2019: outflow of €8,389 million). This included net borrowings of €4,467 million (2019: net loan repayments of €4,296 million). The difference to the prior year partly reflects the €6 billion bond issuance in July 2020 and the repayment of bonds in 2019, particularly in the fourth quarter. Net interest payments decreased to €1,276 million (2019: €1,478 million). The Bayer Group paid a dividend of €2,768 million (2019: €2,615 million).

Free cash flow

Free cash flow (total), which is the total operating cash flow less capital expenditures plus interest and dividends received less interest paid, was €1,343 million in 2020 (2019: 4,214 million).

Capital expenditures

A 2.2.4/3

Cash Flow-Relevant Capital Expenditure for Property, Plant and Equipment and for Intangible Assets

€ million	2019	2020
Crop Science	1,203	1,103
Pharmaceuticals	811	915
Consumer Health	169	159
Reconciliation	269	209
Group[1]	**2,650**	**2,418**

[1] Group total including continuing and discontinued operations

Crop Science continuously invests in its global production network for crop protection products and seeds as well as in research, development and digital transformation. The largest capital expenditure projects in 2020 included the expansion of fungicide production in Germany (€36 million). In the United States, we invested in the sourcing of an important raw material used in the production of glyphosate (€13 million). Alongside these projects, the development of digital solutions for our customers was a key focus of our capital expenditures in 2020 and will remain so in the coming years.

At **Pharmaceuticals**, the largest expenditures for property, plant, and equipment in 2020 were for the development of a modular production center for biologicals in Berkeley, United States (€65 million); modernization programs for the production network of our product supply organization at the sites in Leverkusen, Germany; Turku, Finland; and Garbagnate, Italy (€66 million); the building of a new research facility in Wuppertal, Germany (€55 million); and the construction of a sterile filling plant in Berlin, Germany (€27 million).

At approximately €24 million, **Consumer Health's** largest investment was the GMP upgrade program across its global production sites.

A 2.2.4/4

Material Capital Expenditures for Property, Plant and Equipment

		2019	2020
Crop Science	Expansion of production capacities for fungicides in Dormagen, Germany	initiated[1]	ongoing
	Expansion of research and development facilities in Monheim, Germany	ongoing	ongoing
	Establishment of a production site for fungicides in Kansas City, Missouri, U.S.A.	completed	
	Expansion of production capacities for insecticides in Vapi, India	ongoing	ongoing
	Construction of a corn seed production site in Pochuyki, Ukraine	ongoing[2]	ongoing
	Construction of a corn breeding station in Marana, Arizona, U.S.A.	completed	
	Expansion of R&D facilities in Petrolina, Brazil	initiated	ongoing
	Expansion of R&D facilities in Chesterfield, Missouri, U.S.A.	completed	
	Construction of a cotton seed production site in Lubbock, Texas, U.S.A.	completed	
	IT solutions to support digital transformation	ongoing	ongoing
	Sourcing of a raw material used in the production of glyphosate in Soda Springs, U.S.A.	initiated	ongoing
	Implementation of sustainability measures in Soda Springs, U.S.A.	initiated	ongoing
Pharmaceuticals	Expansion of Eylea™ production capacities in Berlin, Germany, and Shiga, Japan	ongoing	completed
	Pilot facility for solids production in Leverkusen, Germany	ongoing	completed
	Modernization of production facilities at sites across the production network (Leverkusen, Germany; Garbagnate, Italy; Turku, Finland)	ongoing	ongoing
	Construction of a new research building (preclinical pharmacology) in Wuppertal (Aprath), Germany	ongoing	ongoing
	Modernization of research facilities in Berlin, Germany	ongoing	ongoing
	Expansion of active ingredient production for Xarelto™ in Bergkamen, Germany	ongoing	completed
	Construction of modular production center for biologicals in Berkeley, U.S.A.	ongoing	ongoing
	Construction of a sterile filling plant for launch products in Berlin, Germany	ongoing	ongoing
	Expansion of Xarelto™ production in Bitterfeld, Germany	ongoing	completed
	Expansion of active ingredient production for acarbose in Wuppertal, Germany	ongoing	ongoing
	Expansion of packaging capacities in Beijing, China		initiated
	Construction of a new production facility for solid launch products in Leverkusen, Germany		initiated
Consumer Health	Upgrade of global production site facilities to new GMP standards	ongoing	ongoing

[1] New capital expenditure project initiated at the same site
[2] Work continued in 2019 and 2020

Liquid assets and net financial debt

A 2.2.4/5

Net Financial Debt[1]

€ million	Dec. 31, 2019	Dec. 31, 2020	Change %
Bonds and notes	33,569	36,745	+9.5
of which hybrid bonds[2]	4,528	4,532	+0.1
Liabilities to banks[3]	4,062	3,671	–9.6
Lease liabilities	1,251	1,137	–9.1
Liabilities from derivatives[4]	123	136	+10.6
Other financial liabilities	89	77	–13.5
Receivables from derivatives[4]	(76)	(141)	+85.5
Financial debt	**39,018**	**41,625**	**+6.7**
Cash and cash equivalents	(3,185)	(4,191)	+31.6
Current financial assets[5]	(1,765)	(7,393)	.
Net financial debt	**34,068**	**30,041**	**–11.8**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."
[2] Classified as debt according to IFRS
[3] Including both financial and nonfinancial liabilities
[4] Including the market values of interest-rate and currency hedges of recorded transactions
[5] Including short-term receivables with maturities between 3 and 12 months outstanding from banks and other companies, financial investments in debt and equity instruments that were recorded as current on first-time recognition, and shares in Elanco and Covestro

In 2020, the Bayer Group's net financial debt decreased by €4.0 billion to €30.0 billion. Cash inflows from operating activities and the sale of the Animal Health business unit, along with positive currency effects, more than offset the cash outflows for dividends, the acquisition of the U.S. pharmaceutical company Asklepios BioPharmaceutical, Inc. and settlement payments for litigations in the United States.

Financial debt included four subordinated hybrid bonds with a total volume of €4.5 billion, 50% of which is treated as equity by the rating agencies. As such, the hybrid bonds have a positive impact on the Group's rating-specific debt indicators.

In July 2020, Bayer AG placed bonds with a total volume of €6.0 billion. The issuance comprised four €1.5 billion tranches with maturities of 4 years, 6.5 years, 9.5 years and 12 years. The coupons on the notes are 0.375%, 0.75%, 1.125% and 1.375%, respectively.

In addition, debt instruments (exchangeable bond) with a nominal volume of €1.0 billion were repaid in cash in June 2020.

The increase in current financial assets mainly resulted from investments in money market funds.

Asset and Capital Structure of the Bayer Group

A 2.2.4/6

Bayer Group Summary Statements of Financial Position

€ million	Dec. 31, 2019	Dec. 31, 2020	Change (%)
Noncurrent assets	**93,735**	**81,386**	**–13.2**
Assets held for sale	1,137	113	–90.1
Other current assets	31,302	35,547	+13.6
Current assets	**32,439**	**35,660**	**+9.9**
Total assets	**126,174**	**117,046**	**–7.2**
Equity	**47,433**	**30,699**	**–35.3**
Noncurrent liabilities	**55,526**	**49,619**	**–10.6**
Current liabilities	22,553	36,728	+62.9
Liabilities directly related to assets held for sale	662	–	–100.0
Total current liabilities	**23,215**	**36,728**	**+58.2**
Liabilities	**78,741**	**86,347**	**+9.7**
Total equity and liabilities	**126,174**	**117,046**	**–7.2**

2019 figures restated

Between December 31, 2019, and December 31, 2020, total assets decreased by €9.1 billion.

Noncurrent assets declined by €12.3 billion to €81.4 billion, mainly due to a €3.2 billion reduction in goodwill and a €8.7 billion decrease in other intangible assets that primarily related to the aforementioned impairment charges at Crop Science.

Total current assets increased by €3.2 billion to €35.7 billion, driven by a €5.6 billion increase in other financial assets and a €1.0 billion rise in cash and cash equivalents. The liquidity arising from the proceeds of the sale of the Animal Health business unit to Elanco and from the bond issuance was invested in money market funds. This stood against a €2.1 billion decline in trade accounts receivable due to lower sales, the improved collection of receivables and foreign currency effects as of the closing date, along with a €1.0 billion reduction in assets held for sale that primarily pertained to the aforementioned divestment to Elanco.

Equity declined by €16.7 billion compared with December 31, 2019, to €30.7 billion, mainly due to the negative earnings impact in 2020 (€10.5 billion), the dividend payment (€2.8 billion) and negative currency effects (€3.5 billion). The equity ratio declined to 26.2% as of December 31, 2020 (December 31, 2019: 37.6%).

Liabilities as of December 31, 2020, rose by €7.6 billion to €86.3 billion, largely as a result of changes in provisions for litigations. Allocations of €13.4 billion were made for this purpose in 2020, while provisions of €4.2 billion were utilized and there were positive currency effects of €1.1 billion. The resulting €8.1 billion increase comprised €7.3 billion in current provisions and €0.8 billion in noncurrent provisions. Noncurrent financial liabilities increased by €6.0 billion due to the issuance of new bonds. The reclassification of bonds and liabilities to banks to current financial liabilities (€7.6 billion) along with positive currency effects (€2.1 billion) resulted in a €3.7 billion net decline in noncurrent financial liabilities. The €2.4 billion decline in deferred tax liabilities to €1.3 billion was primarily attributable to the aforementioned impairment charges at Crop Science. In connection with the acquisitions of Noho Health, Inc., United States, and Asklepios BioPharmaceutical, Inc., United States, liabilities were recognized for potential milestone payments in the future and for commitments to purchase additional shares. The liabilities directly related to assets held for sale and discontinued operations recognized in the prior year (€0.7 billion) were derecognized following the divestment to Elanco.

2.3 Alternative Performance Measures Used by the Bayer Group

See also “About this Report” and Note [2] to B Consolidated Financial Statements

The Combined Management Report and the Consolidated Financial Statements of the Bayer Group are prepared according to the applicable financial reporting standards. In addition to the disclosures and metrics these require, Bayer publishes alternative performance measures (APMs) that are not defined or specified in these standards and for which there are no generally accepted reporting formats. Bayer calculates APMs to enable a comparison of performance indicators over time and against those of other companies in its industry sectors. These APMs are calculated by making certain adjustments to items in the statement of financial position or the income statement prepared according to the applicable financial reporting standards. Such adjustments may result from differences in calculation or measurement methods, nonuniform business activities or special factors affecting the information value of these items. The APMs determined in this way apply to all periods and are used both internally for business management purposes and externally by analysts, investors and rating agencies to assess the company’s performance. Bayer determines the following APMs:

// Change in sales (reported, currency-adjusted, currency- and portfolio-adjusted)
// EBITDA
// EBITDA before special items
// EBITDA margin before special items
// EBIT
// EBIT before special items
// Core earnings per share
// Net financial debt
// Return on capital employed (ROCE)
// Net operating profit after tax (NOPAT)
// Capital employed
// Weighted average cost of capital (WACC)
// Free cash flow
// Forecast key financial data

The **(reported) change in sales** is a relative indicator. It shows the percentage by which sales varied from the previous year.

The **currency-adjusted or currency- and portfolio-adjusted change in sales** shows the percentage change in sales excluding the impact of exchange rate effects and, in the latter case, disregarding material acquisitions and divestments as well. Exchange rate effects are generally calculated on the basis of the functional currency valid in the respective country. An exception existed in Argentina, primarily in our crop protection business, where the currency effect was calculated on the basis of the U.S. dollar instead of the functional currency.

EBITDA stands for earnings before interest, taxes, depreciation and impairment losses / loss reversals on property, plant and equipment, impairment losses on goodwill, and amortization and impairment losses / loss reversals on other intangible assets. This performance indicator neutralizes the effects of the financial result along with distortions of operational performance that result from divergent depreciation and amortization methods and the exercise of measurement discretion. EBITDA is EBIT plus the amortization of intangible assets and the depreciation of property, plant and equipment, plus impairment losses and minus impairment loss reversals, recognized in profit or loss during the reporting period.

EBIT (earnings before interest and taxes) serves to present a company's performance while eliminating the effects of differences among local taxation systems and different financing activities.

See B 1 of the Notes to the Consolidated Financial Statements for the reconciliation to EBIT

EBITDA before special items and **EBIT before special items** show the development of the operational business irrespective of the effects of special items, i.e. special effects for the Bayer Group with regard to their nature and magnitude. These may include acquisition costs, divestments, litigations, restructuring, integration costs, impairment losses and impairment loss reversals. In the calculation of EBIT before special items and EBITDA before special items, special charges are added and special gains subtracted.

The **EBITDA margin before special items** is a relative indicator used by Bayer for internal and external comparisons of operational earnings performance. It is the ratio of EBITDA before special items to net sales.

The APM **core earnings per share (core EPS)** from continuing operations is based on the concept of earnings per share (EPS) as defined in IAS 33. Core EPS forms the basis of the Bayer Group's dividend policy.

See A 2.2.1/3 for the calculation of core EPS, and A 2.2.1 for further details

Core EPS is calculated using the following method: Based on EBIT (as per the income statements), the special items, impairment losses on goodwill, amortization / impairment losses / loss reversals on other intangible assets, impairment losses / loss reversals on property, plant and equipment and the accelerated depreciation included in special items are neutralized to determine **core EBIT**. This enables a comparison of performance over time. Core EBIT is reconciled to **core net income from continuing operations**. This is calculated by adding the core financial result to core EBIT. Special items in the financial result include nonrecurring financial expenses or income that are not part of our normal financing activities. These primarily pertain to changes in the fair value of equity instruments that are not held for medium- or long-term strategic purposes, as well as to nonrecurring financial expenses or income arising from acquisitions, divestments and litigations. Income taxes – net of special items – are then deducted from this figure to give core net income. Special items relating to income taxes include material effects from tax reforms, among other things.

Core EPS is then calculated by dividing core net income by the weighted average number of shares.

As core EPS is calculated for each interim reporting period, core EPS for the fiscal year or for each interim reporting period up to the respective closing date may deviate from the cumulated core EPS for the individual interim reporting periods.

Net financial debt is an important financial management indicator for the Bayer Group and is used both internally and externally in assessing its liquidity, capital structure and financial flexibility.

See A 2.2.4/5 for the calculation of net financial debt

The **return on capital employed (ROCE)** measures the capital return over a specified period and is employed as a strategic indicator to evaluate value creation. It is the ratio of **net operating profit after taxes (NOPAT)** to the average **capital employed** in a fiscal year. NOPAT is calculated by subtracting income taxes from EBIT. Income taxes are calculated by multiplying EBIT by a uniform tax rate that is based on a historical average of tax rates.

See A 2.2.3 for the calculation of ROCE

The **capital employed** by Bayer is the total carrying amount of operational noncurrent and current assets, minus liabilities that are largely non-interest-bearing in character and/or would distort the capital base. An average value, calculated from the values at the end of the prior year and of the reporting year, is used to depict the change in capital employed during the reporting year.

See A 2.2.3 for the calculation of capital employed

The ROCE is compared to the **weighted average cost of capital (WACC),** which is the return expected by the providers of equity and debt. If the ROCE exceeds the WACC, return expectations have been exceeded, indicating that value has been created.

The WACC is based on an after-tax approach and calculated at the start of the year as the weighted average of the equity and debt cost factors. The cost of equity is determined using the capital asset pricing model (CAPM), while the debt-capital cost factor is calculated based on the average returns of ten-year Eurobonds issued by industrial companies. Further information on the segment-specific capital cost factors used in impairment testing is provided in Note [4] to B Consolidated Financial Statements.

Free cash flow (FCF) is an alternative performance measure that is based on the cash flow from operating activities under IAS 7. FCF illustrates the cash flows available for paying dividends and reducing debt as well as for investing in innovation and acquisitions. It is calculated by subtracting cash outflows for additions to property, plant and equipment and intangible assets from the cash flow from operating activities from continuing and discontinued operations, adding interest and dividends received along with interest received from interest-rate swaps, and deducting interest paid including interest-rate swaps.

The forward-looking key performance indicators published in the **forecast for key financial data** are based on data that is determined in the course of our planning process. The key financial data in the forecast is determined in accordance with the applied accounting policies and with the calculation models for alternative performance measures described in this chapter.

3. Report on Future Perspectives and on Opportunities and Risks

3.1 Future Perspectives

3.1.1 Economic Outlook

A 3.1.1/1

Economic Outlook

	Growth[1] 2020	Growth forecast[1] 2021
World	–3.9%	+4.4%
European Union[2]	–6.7%	+3.3%
of which Germany	–5.3%	+2.8%
United States	–3.6%	+4.0%
Emerging Markets[3]	–2.1%	+5.8%

[1] Real GDP growth: Source: IHS Markit
[2] EU excluding United Kingdom
[3] Including about 50 countries defined by IHS Markit as emerging markets in line with the World Bank
As of January 2021

Global economy expected to recover in 2021

In 2021, we expect the world economy to slowly recover from the deep recession seen in 2020. Global economic output is projected to increase substantially. The COVID-19 pandemic will likely continue to weigh on growth, with protective measures and contact restrictions remaining necessary in many countries and government assistance programs potentially being scaled back. However, vaccines are expected to be widely available throughout the world over the course of the year, helping to gradually contain the pandemic. This will likely trigger an increase in private consumption in the second half of the year and a further normalization of the economy. The recovery is expected to be particularly strong in the United States and the Emerging Markets, especially China and India. By contrast, the recovery in the European Union is likely to be somewhat slower, mainly due to a potential further increase in unemployment.

The economic forecasts – including those for our divisions – continue to involve considerable uncertainties with regard to the further development of the pandemic.

A 3.1.1/2

Economic Outlook for the Divisions

	Growth 2020	Growth forecast 2021
Seeds and crop protection market[1]	+2%	+2%
Pharmaceuticals market[2]	+3%	+5%
Consumer health market[3]	+4%	+2%

2020 data provisional
[1] Bayer's estimate (as of January 2021), plus various local sources; currency-adjusted
[2] Source: IQVIA Market Prognosis (as of September 2020); all rights reserved; currency-adjusted
[3] Bayer's estimate (as of November 2020), taking into account external sources; currency-adjusted

We foresee moderate growth for the global **seed and crop protection market** (+2%). This will primarily be driven by strong global demand for corn and soybean, leading to increased acreages in the North America and Latin America regions and improving farm incomes. However, growth

will be held back by continuing pressure from the COVID-19 pandemic and regulatory and competitive factors.

We expect the **pharmaceuticals market** to expand by 5% in 2021 (2020: 3%). Growth momentum is expected to be fueled by price and volume increases along with product innovation, especially in connection with the advancing digital transformation of health care. We anticipate rising growth rates in all regions compared with 2020, with very positive market development expected in Asia in particular.

At around 2%, we anticipate that growth of the **consumer health** market in 2021 will be significantly below the 2020 level (about 4%), as we cycle over exceptionally high growth seen during the early phase of the pandemic in 2020. We also expect that social distancing and economic conditions will continue to put pressure on market growth.

3.1.2 Corporate Outlook

The following forecast is based on the current business development and our internal planning. It was prepared using the exchange rates as of December 31, 2020. A 1% appreciation (depreciation) of the euro against all other currencies would decrease (increase) sales by some €350 million and EBITDA before special items by about €100 million on an annual basis.

In fiscal 2021, we expect to generate sales of approximately €41 billion, which corresponds to an increase of approximately 3% on a currency- and portfolio-adjusted basis. We are targeting an EBITDA margin before special items of approximately 26%. Based on the aforementioned sales figure, this would correspond to EBITDA before special items of between €10.5 billion and €10.8 billion. We expect core earnings per share to come in at approximately €5.60 to €5.80.

To enhance the comparability of operating performance, we are presenting our forecast on a currency-adjusted basis as well[15].

We expect to post currency-adjusted sales of approximately €42 billion to €43 billion, which corresponds to an increase of about 3% on a currency- and portfolio-adjusted basis. We expect to generate an EBITDA margin before special items of around 27% on a currency-adjusted basis. Based on the currency-adjusted sales forecast, this would correspond to EBITDA before special items of €11.2 billion to €11.5 billion and core earnings per share of approximately €6.10 to €6.30 on a currency-adjusted basis.

[15] Using the average monthly exchange rates from 2020 (see B 3/1)

A 3.1.2/1

Forecast for 2021

	2020 figures		2021 forecast at closing rates on Dec. 31, 2020		2021 forecast (Fx adj.)	
	€ billion	Fx & p adj. change (%)	€ billion	Fx & p adj. change (%)	€ billion	Fx & p adj. change (%)
Sales	**41.4**	**+0.6**	**~41**	**~+3**	**~42 to 43**	**~+3**
Crop Science	18.8	+1.3		~+2		~+2
Pharmaceuticals	17.2	–1.5		~+4		~+4
Consumer Health	5.1	+5.2		~+2 to 3		~+2 to 3
		Margin (%)		**Margin (%)**		**Margin (%)**
EBITDA before special items[1]	**11.5**	**27.7**		**~26**		**~27**
Crop Science	4.5	24.1		~23		~24
Pharmaceuticals	6.0	34.9		~32		~32
Consumer Health	1.1	22.0		~22 to 23		~23
Financial result (core)[2]	**–1.6**		**–1.5**		**–1.6**	
Tax rate (core)[3]	**23.7%**		**23%**		**23%**	
Free cash flow[1]	**1.3**		**~–3.0 to –4.0**		**~–3.0 to –4.0**	
Net financial debt[1]	**30.0**		**~35 to 36**		**~36 to 37**	
Special items in EBIT	–23.3		–1.5		–1.5	
	€		€		€	
Core earnings per share[1]	**6.39**		**5.60 to 5.80**		**6.10 to 6.30**	

Fx & p adj. = currency- and portfolio-adjusted

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

[2] Financial result before special items

[3] (Income taxes + special items in income taxes + tax effects on adjustments) / (core EBIT + financial result + special items in financial result)

We plan to take total special charges of about €1.5 billion (currency-adjusted) in 2021 in connection with restructuring and integration measures.

Potential estimation risks regarding special charges in connection with litigations are referenced in A 3.2 Opportunity and Risk Report.

3.2 Opportunity and Risk Report

3.2.1 Group-wide Opportunity and Risk Management System

As a global life science enterprise, we are exposed to a wide range of internal and external developments and events that could significantly impact the achievement of our financial and nonfinancial objectives. Opportunity and risk management is therefore an integral part of corporate management at Bayer.

Opportunity management system

We identify opportunities as part of the annual strategic planning cycle, during which we analyze internal and external factors that may affect our business. These may be factors of a social, economic or environmental nature. The core phase of our strategic planning process takes place in the first half of the year and starts with a comprehensive analysis of the markets. We build on this by analyzing the respective market environments to identify opportunities. These analyses are based on different time periods since trends or developments may impact our business over the short, medium or long term. In addition, opportunities are identified by the management and employees through daily observation of internal processes and markets. Depending on developments, factors affecting our business, such as market risks, may result in either risks or opportunities.

Risk management system

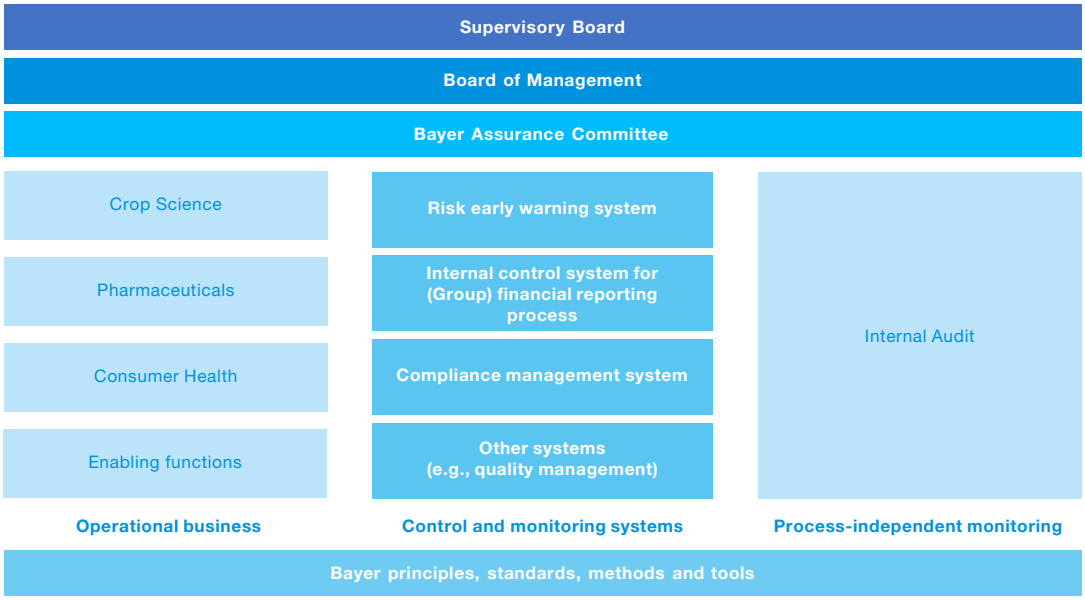
We have implemented a holistic and integrated risk management system designed to ensure the continued existence and future target attainment of the Group through the early identification, assessment and treatment of risks.

Our risk management system is aligned to internationally recognized standards and principles such as the ISO 31000 risk management standard of the International Organization for Standardization.

Structure of Bayer's risk management system

A 3.2.1/1

Structure of the Risk Management System



The **Board of Management** of Bayer AG holds overall responsibility for an effective risk management system. The Audit Committee of the Supervisory Board examines the appropriateness and effectiveness of the risk management system at least once a year and reports to the full Supervisory Board.

The **Bayer Assurance Committee**, which is chaired by the Chief Financial Officer, is a committee of the Board of Management. Besides ensuring that appropriate action is taken to control any substantial risks, the Bayer Assurance Committee regularly discusses and reviews the risk portfolio and the status of the risk control measures.

Responsibility for the identification, assessment, treatment and reporting of risks lies with the **operational business units** in the divisions and enabling functions.

Control and monitoring systems

To enable the Board of Management and the Supervisory Board to monitor material business risks as required by law, we have implemented a risk early warning system pursuant to Section 91, Paragraph 2 of the German Stock Corporation Act (AktG), an internal control system for (Group) accounting and financial reporting processes, and a compliance management system. Responsibility for these systems lies with different enabling functions. The Internal Audit & Risk Management enabling function, including in particular this function's Enterprise Risk Management unit, steers and coordinates the risk management system. It provides overarching standards, methods and tools, is responsible for the risk early warning system, steers the annual Enterprise Risk Management (ERM) process, and ensures reporting to the Bayer Assurance Committee, the Board of Management and the Supervisory Board.

Risk early warning system

Our ERM system meets the requirement set out in Section 91, Paragraph 2 of the German Stock Corporation Act that a risk early warning system be implemented and used to identify, at an early stage, developments that are material and / or could endanger the company's continued existence. It establishes a consistent framework and uniform standards for the risk early warning system throughout the Bayer Group.

Internal control system for (Group) accounting and financial reporting

(Report pursuant to Section 289, Paragraph 4 and Section 315, Paragraph 4 of the German Commercial Code)

As part of the comprehensive risk management system, Bayer has an internal control system (ICS) in place for the (Group) accounting and financial reporting process. This system comprises suitable structures and workflows that are defined and implemented throughout the organization. The purpose of our ICS is to ensure proper and effective accounting and financial reporting in accordance with Section 289, Paragraph 4 and Section 315, Paragraph 4 of the German Commercial Code. The ICS is designed to guarantee timely, uniform and accurate accounting for all business transactions based on applicable statutory regulations, accounting and financial reporting standards and the internal Group policies that are binding on all consolidated companies. Risks are identified and assessed, and appropriate countermeasures are taken to mitigate them. Mandatory, Group-wide standards such as system-based and manual reconciliation processes and functional separation have been derived from these frameworks and promulgated throughout the Bayer Group by the Group Finance enabling function on behalf of the Chief Financial Officer of Bayer AG. These standards are implemented by the Bayer Group companies. Compliance with these standards is the responsibility of the respective management teams. The Board of Management of Bayer AG has confirmed the effective functioning of the ICS and the relevant criteria for the 2020 fiscal year. However, it should be noted that an internal control system, irrespective of its design, cannot provide absolute assurance that material misstatements in the financial reporting will be avoided or identified.

Compliance management system

Our compliance management system is aimed at ensuring lawful and responsible conduct by our employees. It is designed to identify potential violations in advance and systematically prevent their occurrence. The compliance management system thus contributes significantly to the integration of compliance into our operating units and their processes. Detailed information on compliance management can be found in Chapter A 4.2 "Compliance," which describes in particular the process of identifying risks and taking measures to mitigate them.

See also A 4.2

Process-independent monitoring

The Internal Audit & Risk Management enabling function conducts independent, risk-based and objective audit activities, employing a targeted and systematic approach in order to assess and help improve the effectiveness of corporate governance, risk management and monitoring processes. In addition, the external auditor, as an independent external body, assesses the fundamental suitability of the early warning system as part of its audit of the annual financial statements.

Basic elements of the Bayer risk management system

Risk culture and objectives of the risk management system

All levels of the company are included in risk management in order to heighten the awareness and understanding of risks. This lays the foundation for a risk culture with independent, proactive and systematic risk management involving clearly defined roles and responsibilities, principles, standards, methods, tools and training measures. The aims of the risk management system are to achieve risk transparency, which also encompasses the early detection of risks, to support risk-based (treatment) decisions and to ensure compliance with legal requirements. This establishes a basis for the proper and responsible management of risks.

Risk management process

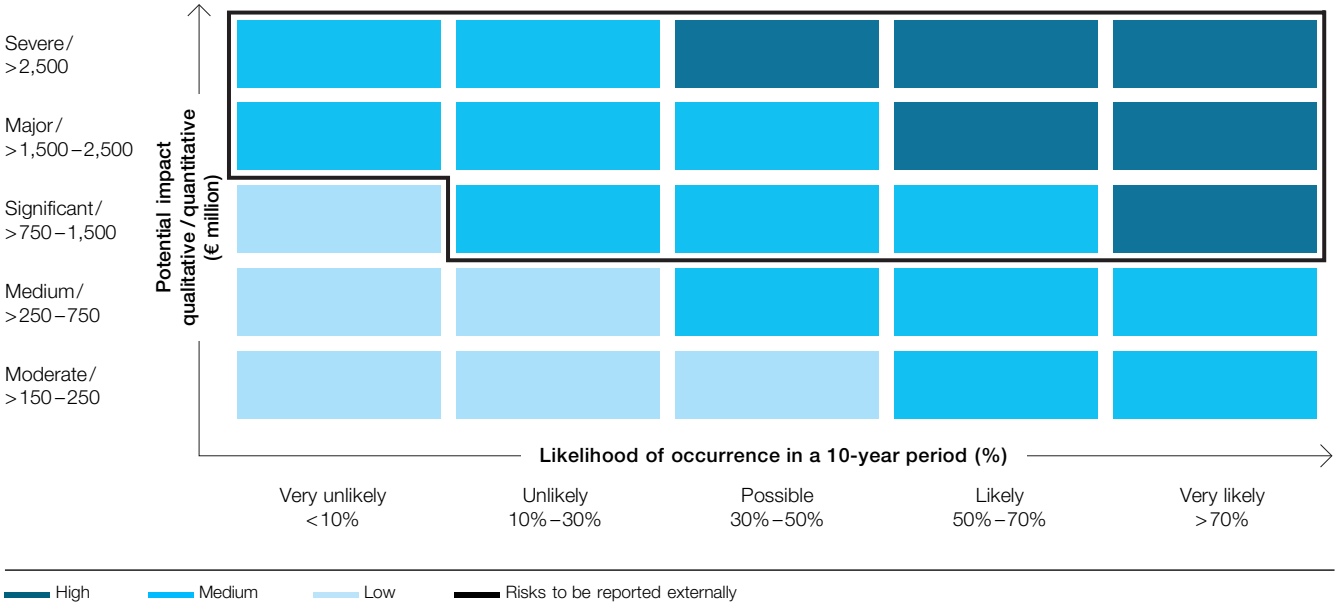
Identification: Risks are identified by risk owners in the divisions and enabling functions. To support the fullest possible identification of risks, we maintain a risk universe that reflects the company's potential risk categories. The Bayer Risk Universe, which is regularly updated, expressly accounts for risks of a nonfinancial nature that are linked to our business activity or to our business relationships, products and services. Risks pursuant to the CSR Directive Implementation Act that relate to environmental, employee and social issues, human rights, corruption and bribery (compliance) are included as well.

See "About this Report" for more information on the nonfinancial statement pursuant to the CSR Directive Implementation Act

Assessment: Where possible, the identified risks are evaluated with regard to their potential impact and likelihood of occurrence using the following matrix and taking into account established risk control measures.

A 3.2.1/2

Risk Assessment Matrix



Risks are classified as high, medium or low when assessing their materiality within the overall risk portfolio. The extent of the impact is rated in quantitative and / or qualitative terms. The quantitative assessment reflects a potentially negative effect on cash flows. A qualitative assessment of the impact is based on criteria such as the effect on our strategy or reputation, the potential loss of stakeholder confidence, and potential incomplete compliance with sustainability principles (e.g., in the area of safety, environmental protection or human rights). The higher rating – qualitatively or quantitatively – determines the overall assessment. The likelihood of occurrence is calculated based on a maximum period of 10 years. A further aspect we consider is the speed at which the impact will occur if a risk materializes. Risk categories may potentially influence the materialization of risks in other categories, a factor that we take into account when assessing the likelihood of occurrence. For example, developments in the "Social and macroeconomic trends" risk category may have an influence on the "Regulatory changes," "Legal / compliance" and "Product safety and stewardship" categories.

Risks with a potential impact of over €5,000 million are examined separately by the Bayer Assurance Committee to determine whether they could endanger the company's continued existence.

Treatment: The risk owners decide on a targeted risk level based on a cost-benefit analysis and define a risk management strategy as well as risk management measures. These include risk avoidance, risk reduction, risk transfer and risk acceptance.

Reporting: The results are reported to the Bayer Assurance Committee by the Enterprise Risk Management unit within the Internal Audit & Risk Management enabling function. In addition, new risks above a defined threshold are reported to Enterprise Risk Management on an ad-hoc basis and, if relevant, to the Bayer Assurance Committee and the Chief Financial Officer. A report on the risk portfolio is submitted to the Board of Management and the Audit Committee of the Supervisory Board at least once a year.

Monitoring and improvement

The Enterprise Risk Management unit within the Internal Audit & Risk Management enabling function continuously evaluates whether the principles, standards, methods and tools are appropriate and up to date.

3.2.2 Opportunity and Risk Status

In this section, we report on material, reportable risks pursuant to German Accounting Standard No. 20. These include all financial and nonfinancial risks that have been classified as high or medium and are at least significant in terms of potential impact after taking into account the risk control measures in place (net risk). They encompass risks falling within the black outline in the assessment matrix in A 3.2.1/2. In addition, we report relevant risks that from a financial point of view may not be sufficiently or meaningfully quantifiable, if at all. We also report on the principal opportunities identified in the course of our opportunity management. Furthermore, we assess the probability that the effects of individual risks could change significantly during the forecast period. Our most recent evaluation did not find this to be the case, with the following exception: Legal proceedings generally involve estimation risks, which may be substantial in some cases. Against the background of the proceedings in the glyphosate matter, in particular, outcomes of the mediation process and / or the ongoing litigations may lead to adjustments of the provisions established in connection with this series of litigations. Such adjustments may materially impact the forecast issued with respect to the financial position and cash flows.

Comparable risks existing in different divisions of the company are grouped together where applicable.

According to our understanding, risks relating to the aspects outlined in the CSR Directive Implementation Act that would have to be reported separately would have to have at least a “severe” potential impact under the qualitative criterion “potential incomplete compliance with sustainability principles,” and additionally their likelihood of occurrence would have to be classified as “very likely.” We did not identify any such risks in 2020.

See also A 3.2.1 and “About this Report”

The section below details the individual risk categories, how they have been classified and the divisions concerned. The order in which the risks are listed does not imply any order of importance. We also describe opportunities and risks of a division-specific nature where relevant. The divisions mentioned are those that have identified material risks. Other divisions may also be affected to a lesser extent. Material risks reported by enabling functions are categorized under “Group,” although they may also affect the divisions.

In addition, the year 2020 was marked by the COVID-19 pandemic, the impact of which gives rise to risks such as a prolonged, significant decline in global demand as well as unfavorable geopolitical and macroeconomic effects. Such developments could have consequences for our company such as a decline in sales, disruptions to our supply chain including the inability to procure certain materials, an increase in input prices or longer development times. Our earnings, working capital, cash flow and ability to achieve strategic objectives might continue to be negatively impacted.

Social and macroeconomic trends (High: Group; Medium: Crop Science)[16]

The growing world population coupled with rising food demand gives rise to opportunities for our Crop Science Division. In addition, changing consumption patterns and increasing public awareness of the importance of healthy eating and sustainability, paired with new digital technologies, are giving rise to new pools of value in the agriculture market. Therefore, while high-quality seeds and crop protection will remain at our core, we will see opportunities arise to capture additional value with new customers, new selling approaches and digital capabilities. Furthermore, the increase in quality of life and life expectancy is leading to a heightened focus on the medical care needs of elderly patients. To take advantage of the opportunities arising from the growing demand for innovative health care products to treat age-related diseases, our Pharmaceuticals Division is concentrating its research and development activities on relevant therapeutic areas, among other measures.

Moreover, a negative public perception of Bayer represents a risk. For example, modern agricultural methods, such as the application of certain classes of crop protection products and the use of genetic engineering, are often the subject of intense public debate and can adversely affect our reputation. The risk of an increasingly negative public debate that is not primarily based on science may, for example, lead to legislative and regulatory decisions that are unfavorable to our company, significantly limiting the use of our products or even resulting in voluntary or mandated product withdrawals. We are engaged in constant dialogue with interest groups and regulators to promote scientifically founded, rational and responsible discussions and decision-making processes.

Furthermore, negative developments of a macroeconomic nature, such as crises in important sales markets for our company, could weigh on our business and reduce our earnings. Our seed and crop protection business in particular is cyclical and is shaped by economic developments and factors including fluctuating weather conditions and pest pressure that may adversely impact our Crop Science business. We address these influences through our globally diversified business, flexible supply chain, comprehensive monitoring and assessment of market developments, and our ability to adjust production volumes to the level of demand forecast in sales and distribution planning on the basis of an optimized supply chain strategy.

See also A 1.2 Strategy

Market developments (Medium: Crop Science)

In the Crop Science Division, we could face increased competition in the seed and crop protection industry. New competitors entering the market and aggressive marketing and pricing strategies – not only for generic products – could negatively impact our profitability. Lower-than-anticipated demand could have a negative effect on our corn seed business, for example. In addition, increasing digitalization in the agriculture sector could lead to the rise of new players and alter the market. Greater precision in the application of products could lead to a decline in the quantities used, which in turn could potentially impact value creation within our crop protection business. To take account of these developments, we are realigning our business models, engaging in scientific and commercial partnerships and utilizing our own R&D capabilities. The unexpected development of resistances, which could impact market growth or the profitability of our products, represents a further risk. By regularly monitoring such developments, we are able to initiate industry-wide measures to halt the spread of resistance if necessary. In addition, we actively update our product portfolio based on anti-resistance strategies.

See also A 1.2.2 Sustainability Management

However, the development of resistance to crop protection products and special traits also represents an opportunity as a continuous natural driver of innovation. This applies not only to our core business with crop protection products and high-quality seeds, but also to our tailored solutions.

[16] The classification pertains to the risks.

New developments such as cell and gene therapies and digitalization are enabling patient needs to be addressed in a more targeted and sustainable way. This provides an opportunity for our Pharmaceuticals Division. Cell and gene therapies can be used to treat or potentially even completely cure numerous as yet untreatable diseases. At the same time, digitalization is leading to improved diagnostic methods, enabling diseases to be diagnosed and treated in a more targeted way.

Regulatory changes (High: Pharmaceuticals; Medium: Crop Science, Group)
Our business activity is subject to extensive and changing regulations in which we see increased risks. For example, further restrictions could be imposed on the sale and use of various crop protection products, or approvals that have already been granted could be challenged. In addition, the pricing of pharmaceutical products could become more strictly regulated – not only for products already exposed to generic competition, but also for innovative, patent-protected products. Residues of agrochemical products, pharmaceutical compounds or microplastics in the environment could also become subject to more stringent regulation. In addition, regulatory changes could affect agricultural imports from other parts of the world and therefore our business in those regions. Regulatory changes could also cause uncertainty over our products' patent protection, potentially resulting in financial losses that may even include the repayment of license fees. Regulatory changes may also lead to higher product development costs and longer development times or even necessitate adjustments to our product portfolio, which in turn may negatively impact our reputation.

We counter such risks by monitoring changes in regulatory requirements in order to adequately address them within the company. To adapt to these factors, we deploy in-house research and development capacities, make acquisitions and enter into collaborations, while aligning our product portfolio to reflect anticipated changes. We also address these risks by engaging in dialogue with the authorities with the goal of promoting science-based decision-making.

See also A 1.6

Business strategy (Medium: Crop Science, Pharmaceuticals, Group)
Our business strategy is geared toward innovation, which is inherently associated with risks. In our Pharmaceuticals Division, we see challenges in setting up new therapy platforms, such as for cell and gene therapy, and in further developing established therapeutic areas through innovative solutions. In our Crop Science Division, the challenges we face include developing new business models, such as tailored solutions based on digital applications, and successfully establishing them on the market. In addition, we might encounter challenges in our endeavors to implement our voluntary sustainability commitments in a timely manner, which may also be due to external factors.

We counter these risks by aligning our organization and our processes to existing challenges. In the Crop Science Division, for example, our digital farming activities are supplemented by strategic partnerships with leading IT companies where necessary. In the Pharmaceuticals Division, meanwhile, we are establishing a cell and gene therapy unit.

Research and development (High: Pharmaceuticals)
Across our businesses, we see opportunities both in the continued development of our brands and in the expansion of our research pipeline as a result of our innovation strength. In the Pharmaceuticals Division, opportunities arise from digitalization and associated new research and development methods that save time and increase development effectiveness. We also rely on networking, both within the company and with external partners, to boost our innovation strength. This stimulates the development of new products.

See also A 1.2

Technological advances in pharmaceutical product development may at the same time also represent a risk for our company should we not be in a position to play a role in shaping such advances. Identifying a sufficient number of research candidates and ensuring their appropriate development represents a challenge. Targeting inlicensing and acquisitions as additional ways to strengthen our company involves the risk that we may be unable to identify suitable candidates on financially acceptable terms. Furthermore, we cannot ensure that all of the products we are currently developing or will develop in the future will obtain their planned approval / registration or achieve commercial success. These goals may not be reached if, for example, we are unable to satisfy technical or capacity requirements or meet time constraints in product development, fail to achieve study objectives or do not allocate financial resources optimally. Delays or cost overruns may occur during product registration or launch. We counter this risk through holistic portfolio management, by estimating the probability of success and prioritizing development projects.

Thanks to our innovation capacities and budgets within the Crop Science Division, we anticipate that we will be able to effectively tackle the challenges faced in developing and introducing product solutions in agriculture, including longer and more costly development cycles or stricter regulatory requirements. We plan to further leverage the strengths of the combined R&D platform to deliver pioneering technologies faster. In addition, we will leverage our existing expertise and strategically invest in new capabilities to unlock and capture new market segments.

Supply of products (procurement, production, logistics) (Medium: Crop Science, Pharmaceuticals)

Despite all precautions, operations at our sites may be disrupted by fires, power outages, process changeovers – including those due to restrictions on the use of certain chemical substances – or plant breakdowns, for example. In addition, some of our production facilities are located in areas that may be affected by natural disasters such as flooding or earthquakes. These risks can lead to production disruptions or stoppages, personal injury, damage to our reputation, and declines in sales and / or margins, and may also necessitate the reconstruction of damaged infrastructure. If we are unable to meet product demand, sales may undergo a structural decline because patients then receive alternative treatments and may not switch back to our products. We address this risk for certain products by building up safety stocks and by spreading production across multiple sites, for example. Furthermore, an emergency response system based on a corresponding corporate policy has been implemented at all our production sites.

Disruptions in our upstream supply chain may also negatively impact our own supply capability. Certain materials, particularly in our Pharmaceuticals Division, are offered by only a small number of suppliers. We counter these risks by establishing relationships with alternative suppliers, concluding long-term agreements, expanding inventories or producing raw materials ourselves. Supplier risks are regularly reviewed and evaluated.

Marketing, sales and distribution (Medium: Pharmaceuticals)

New product launches present particular challenges for our marketing and distribution organization since assumptions about aspects such as the market and market circumstances may not materialize as anticipated. As a result, product launch concepts – including those related to clinical trials – and the planning or implementation of the distribution strategy could turn out to be inefficient or inadequate in terms of scheduling. In addition, if competitors' marketing activities or advertised product characteristics surpass our own efforts in this regard, this may represent a risk for sales of our products. We address these risks by conducting a forward-looking analysis of possible scenarios and devising suitable strategies for projects such as planned product launches.

Human resources (Medium: Group)

See also A 1.4

Skilled and dedicated employees are essential for our company's success. Difficulties in recruiting, hiring and retaining urgently needed specialized employees (on a regional level) – also in view of competition between employers – and in employee development could have significant adverse consequences for our company's future development. It is also possible that organizational changes that are not implemented appropriately or transparently may reduce employee motivation or increase staff turnover. Based on our analysis of future requirements, we counter these risks by designing appropriate employee recruitment and development measures. In addition, the alignment of our corporate culture toward diversity and employee needs enables us to tap the full potential of the employment market. Furthermore, deliberate and transparent change management forms an integral part of our human resources management and supports our efforts to constantly motivate our employees.

Information technology (High: Group)

Our business and production processes and our internal and external communications are dependent on global IT systems. Ensuring the optimal alignment of our IT architecture, which also encompasses the use of cloud-based services and management of any service providers commissioned, therefore represents a challenge. As such, system reliability and the confidentiality of internal and external data are of fundamental importance to us. If the risk of a breach of data confidentiality, integrity or authenticity, for example due to (cyber) attacks, were to materialize, it could lead to the manipulation and / or uncontrolled outflow of data and knowledge, and to reputational damage. Such attacks may also be carried out by in-house personnel. Our business and / or production processes could also be temporarily disrupted by (cyber) attacks. To counter these risks, we evaluate and utilize new technologies. Projects and measures have also been implemented to keep technical security precautions up to date and proactively identify and examine new threats. In addition, security measures implemented by the Corporate Cyber Defense Center protect our IT infrastructure against unauthorized access.

Finance and tax (Medium: Group)

Liquidity risk

Liquidity risks are defined as the possible inability of the Bayer Group to meet current or future payment obligations. They are determined and managed by the Group Finance enabling function as part of our same-day and medium-term liquidity planning. We hold sufficient liquidity to ensure the fulfillment of all planned payment obligations throughout the Bayer Group at maturity. Furthermore, a reserve is maintained for unbudgeted shortfalls in cash receipts or unexpected disbursements and its balance is regularly reviewed and adjusted. Credit facilities also exist with banks, including, in particular, an undrawn €4.5 billion syndicated revolving credit facility with a current maturity of 2025.

Credit risks

Credit risks arise from the possibility that the value of receivables or other financial assets of the Bayer Group may be impaired because counterparties cannot meet their payment or other performance obligations. The maximum default risk is reduced by existing collateral, especially our global credit insurance programs. To manage credit risks from trade receivables, the invoicing companies appoint credit managers who regularly analyze customers' creditworthiness. We generally agree reservation of title with our customers. Credit limits are set for all customers. In addition, all credit limits for debtors where total exposure is €10 million or more are evaluated both locally and centrally. Credit risks from financial transactions are managed centrally in the Group Finance enabling function. To minimize risks, financial transactions are only conducted within predefined exposure limits and with banks and other partners that preferably have investment-grade ratings.

Opportunities and risks resulting from market price changes

See also A 3.2.1/2
Risk Assessment Matrix

Opportunities and risks resulting from fluctuations in currency exchange rates, interest rates and commodity prices are managed by the Group Finance enabling function. Risks are avoided or mitigated through the use of derivative financial instruments. The type and level of currency, interest-rate and commodity price risks are determined using sensitivity analyses as per IFRS 7 that are based on hypothetical changes in risk variables (such as interest curves) to gauge the potential effects of market price fluctuations on equity and earnings. Although they fall below the external reporting threshold under our ERM system, we report on interest-rate and commodity price risks in this section due to the provisions of IFRS 7.

Foreign currency opportunities and risks for our company arise from changes in exchange rates and the related changes in the value of financial instruments (including receivables and payables) and of anticipated payment receipts and disbursements not in the functional currency. Increased volatilities within the year 2020, especially in emerging market currencies (BRL, RUB and TRY), have temporarily increased our anticipated foreign exchange risk. Receivables and payables in liquid currencies from operating activities and financial items are generally fully exchange-hedged through cross-currency interest-rate swaps and forward exchange contracts. Anticipated exposure from planned payment receipts and disbursements in the future is hedged through forward exchange contracts and currency options according to management guidelines. Sensitivities were determined on the basis of a hypothetical scenario in which the euro appreciates or depreciates by 10% against all other currencies compared with the year-end exchange rates. In this scenario, the estimated hypothetical increase or decrease in cash flows from derivative and nonderivative financial instruments would have improved or diminished earnings as of December 31, 2020, by €16 million (December 31, 2019: €29 million). Derivatives used to hedge anticipated currency exposure that are designated for hedge accounting would have improved or diminished equity (other comprehensive income) by €319 million (December 31, 2019: €408 million). Currency effects on anticipated exposure are not taken into account. Of the amount impacting equity, €82 million is related to the Chinese renminbi (CNY), €61 million to the Brazilian real (BRL), €47 million to the Japanese yen (JPY) and €33 million to the Canadian dollar (CAD).

Interest-rate opportunities and risks for our company arise from changes in capital market interest rates, which in turn could lead to changes in the fair value of fixed-rate financial instruments and changes in interest payments in the case of floating-rate instruments. Interest-rate swaps are concluded to achieve the target structure for Bayer Group debt. A sensitivity analysis conducted on the basis of our net floating-rate receivables and payables position at the end of 2020 gave the following result: A hypothetical increase of one percentage point in these interest rates (assuming constant currency exchange rates) as of January 1, 2020, would have raised our interest expense for the year ended December 31, 2020, by €58 million (December 31, 2019: €62 million).

Commodity price opportunities and risks arise from the volatility of raw material prices, which can lead to an increase in the prices we pay for seeds and energy. We reduce commodity price risks by using commodity price derivatives such as futures, which are mainly designated as hedge accounting. A sensitivity analysis with a 10% change in commodity prices indicated an effect of €27 million on equity (December 31, 2019: €40 million).

Financial risks associated with pension obligations

The Bayer Group has obligations to current and former employees related to pensions and other post-employment benefits. Changes in relevant measurement parameters such as interest rates, mortality and salary increase rates may raise the present value of our pension obligations. This may lead to increased costs for pension plans or diminish equity due to actuarial losses being recognized in other comprehensive income in the statement of comprehensive income. A large proportion of our pension and other post-employment benefit obligations is covered by plan assets including fixed-income securities, shares, real estate and other investments. Declining or even negative returns on these investments may adversely affect the future fair value of plan assets. Both of these effects may negatively impact the development of equity and/or earnings and/or may necessitate additional payments by our company. We address the risk of market-

related fluctuations in the fair value of our plan assets through balanced strategic investment, and we constantly monitor investment risks in regard to our global pension obligations.

Tax risks

Bayer AG and its subsidiaries operate worldwide and are thus subject to many different national tax laws and regulations. The companies are regularly audited by the tax authorities in various countries. Amendments to tax laws and regulations, legal judgments and their interpretation by the tax authorities, and the findings of tax audits in these countries may result in higher tax expense and payments, thus also influencing the level of tax receivables, tax liabilities and deferred tax assets and liabilities. Significant acquisitions, divestments, restructuring programs and other reorganizational measures that we undertake could also have an impact. We counter the resulting risks by continuously identifying and evaluating the tax framework. We establish provisions for taxes, based on estimates, for liabilities to the tax authorities of the respective countries that are uncertain as to their amount and the probability of their occurrence. It cannot be ruled out that these provisions are insufficient to cover all risks.

External partner compliance (Medium: Group)

From the perspective of the Bayer Group as a whole, there is a risk that our partners, such as suppliers, do not pay due attention to our corporate values and ethical, compliance and sustainability requirements. Clear sustainability criteria and standards are in place for our supply chain on both a global and regional level. With the goal of improving sustainable practices in our supply chain, we operate a Group-wide four-stage management process that comprises the following elements: raising awareness, supplier selection, supplier evaluation and supplier development. Seed producers are subject to a separate human rights evaluation process, for which a new approach is being devised as we refine our human rights strategy.

See also A 1.5 Procurement

Health, safety and environment (Medium: Group)

We attach great importance not only to product safety but also to protecting our employees and the environment. Misconduct or noncompliance with legal requirements or Bayer Group standards, including those safeguarding the rights to genetic resources, may result in personal injury, damage to property, reputation or the environment, loss of production, business interruptions and / or liability for compensation payments. This includes the risk of hazardous substances being released due to an incident in production. Our principles, standards and measures ensure that our requirements are adequately communicated and optimally implemented.

Intellectual property (Medium: Crop Science, Pharmaceuticals)

Our portfolio largely consists of patent-protected products. Generic manufacturers, in particular, attempt to contest patents prior to their expiration. We are currently involved in legal proceedings to enforce patent protection for our products. On the other hand, legal action by third parties for alleged infringement of patents or other property rights by Bayer may impede or even halt the development or manufacturing of certain products. We may also be required to pay monetary damages or royalties to third parties. Our patents department regularly reviews the patent situation in collaboration with the respective operating units and monitors for potential patent infringements so that legal action can be taken if necessary.

See also Note [30] to B Consolidated Financial Statements

Legal / compliance (Group[17])

See also A 1.6, A 4.2 and Note [30] to B Consolidated Financial Statements

We are exposed to risks from legal disputes or proceedings to which we are currently a party or which could arise in the future. The general risks to which we are potentially exposed include those in the areas of product liability, competition and antitrust law, anti-corruption law, patent law, tax law, data privacy and environmental protection. Investigations of possible legal or regulatory violations may result in the imposition of civil or criminal penalties – including substantial monetary fines – and / or other adverse financial consequences. Payments may also need to be made under out-of-court settlements. These risks may harm our reputation and hamper our commercial success. We have established a global compliance management system to ensure the observance of laws and regulations.

Glyphosate matter

As of February 3, 2021, lawsuits from approximately 61,800 plaintiffs claiming to have been exposed to glyphosate-based products manufactured by Bayer's subsidiary Monsanto had been served upon Monsanto in the United States. Glyphosate is the active ingredient contained in a number of Monsanto's herbicides, including Roundup™-branded products. Plaintiffs allege personal injuries resulting from exposure to those products, including non-Hodgkin lymphoma (NHL) and multiple myeloma, and seek compensatory and punitive damages. Plaintiffs claim, inter alia, that the glyphosate-based herbicide products are defective and that Monsanto knew, or should have known, of the risks allegedly associated with such products and failed to adequately warn its users. Additional lawsuits are anticipated. The majority of plaintiffs have brought actions in state courts in Missouri and California. Cases pending in U.S. federal courts have been consolidated in an MDL in the Northern District of California for common pre-trial management.

In June 2020, Monsanto reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the current Roundup™ litigation, involving most of the total approximately 125,000 then known filed and unfiled claims, and to put in place a mechanism to resolve potential future claims. The total costs of the executed and additional inventory settlements for all outstanding claims are currently expected to be up to US$9.6 billion. Monsanto continues in its efforts to reach settlement in a substantial number of the outstanding claims in the coming months. Monsanto may withdraw from the various settlement agreements if certain eligibility and participation rates are not satisfied. Plaintiffs who opt out of a settlement have the right to pursue their claims separately against the company.

As regards potential future litigation, the company intends to make an additional payment to support a separate class agreement between Monsanto and plaintiffs' counsel. In July 2020, Judge Chhabria of the U.S. District Court for the Northern District of California issued a pre-trial order raising concerns about certain aspects of the class settlement agreement and stating that he was tentatively inclined to deny the motion. The parties subsequently withdrew their motion, worked to comprehensively address the court's questions, and on February 3, 2021 filed with the court a revised class agreement and accompanying motion for preliminary approval of that settlement. Bayer remains strongly committed to a resolution that simultaneously addresses the current litigation on reasonable terms and provides a viable solution to manage and resolve future litigation.

[17] See also Note [29] to B Consolidated Financial Statements ("Legal Risks"). The legal proceedings outlined there are those currently considered to involve material risks and do not represent an exhaustive list.

The three cases that have so far gone to trial – Johnson, Hardeman and Pilliod – are continuing through the appeals process and are not covered by the settlement. In July 2020, the Court of Appeal of the State of California (First Appellate District) affirmed the judgment in favor of Johnson but reduced the total judgment from US$78.5 million to approximately US$20.5 million. The court reduced the total compensatory damages award from US$39.3 million to approximately US$10.25 million and the punitive damages award to the same amount. The parties have separately petitioned for appeal to the Supreme Court of California. In October 2020, the court denied the request to review the appeal. Both parties have the option to petition for appeal to the U.S. Supreme Court. Oral argument before the Ninth Circuit Court of Appeal in the first federal case to go to trial (Hardeman) took place in October 2020. A decision by the court is expected for mid-2021. Briefing is complete in the Pilliod case appeal, and no date for oral argument has yet been scheduled. Bayer is convinced that the verdicts are not supported by the evidence at trial and the law and therefore intends to pursue the appeals vigorously.

As of February 3, 2021, a total of 22 Canadian lawsuits relating to Roundup™ and 14 seeking class action certification had been served upon Bayer.

Bayer believes it has meritorious defenses and intends to defend the safety of glyphosate and our glyphosate-based formulations vigorously.

We may incur considerable financial disadvantages from the pending lawsuits and / or potential future cases if, for example, we are ordered to pay compensatory and possibly punitive damages or if we assume payment obligations under out-of-court settlements. We could be compelled to cover any such increased financial requirements by issuing additional external debt, increasing our equity capital or divesting assets – possibly on unfavorable terms – or through combinations of these measures. The terms on which we obtain external financing could become less favorable as a result of any increased financial requirements. These risks may also adversely affect our reputation.

Product safety and stewardship (Medium: Crop Science, Pharmaceuticals)

Despite extensive studies prior to approval or registration, products may be partially or completely withdrawn from the market due, for example, to the occurrence of unexpected side-effects or negative effects of our products. Such a withdrawal may be voluntary or result from legal or regulatory measures. In the agriculture business in particular, there is an additional risk that our customers could use our products incorrectly. Furthermore, the presence of traces of unwanted genetically modified organisms in agricultural products and / or foodstuffs may have wide-ranging negative repercussions.

See also A 1.6 Product Stewardship

While these risks have diminished compared with the prior year, they could still give rise to liability claims and also harm our reputation. We counter these risks through comprehensive measures in the areas of pharmaceutical and crop protection product safety and testing, including, in particular, a comprehensive stewardship program for genetic product integrity and quality with regard to seeds. These measures are based on globally defined principles and include analysis and monitoring measures, an alert system and training programs.

Quality and regulatory requirements (Medium: Crop Science, Pharmaceuticals, Group)

In almost every country we operate, our business activity is subject to extensive regulations, standards, requirements and inspections that also apply to our local contract manufacturers. In the area of health, this pertains to clinical studies and production processes, for example. Acquisitions may at times also be subject to requirements, compliance with which must be ensured both during and after the integration process. Potential infringements of regulatory requirements may result in the imposition of civil or criminal penalties, including substantial monetary fines, restrictions on our freedom to operate, and / or other adverse financial consequences. They could also harm our reputation and lead to declining sales and / or margins. We counter these risks through binding principles, standards and the control mechanisms in place. Quality requirements are defined and implemented in global quality management systems.

See also A 1.6

Security (Medium: Group)

Potential criminal activities targeting our employees, property or business activities represent a risk for our company. These include intellectual property theft, vandalism and sabotage. In addition, counterfeit or adulterated versions of our products could be put into circulation. There is also the risk of crises such as a pandemic or a prolonged power outage that could lead to a breakdown of our information technology infrastructure and our production. We counter these risks – which in addition to financial effects could negatively affect our reputation in some cases – through our local crisis organizations, which produce response plans and take further measures. We have implemented early warning systems, ensure continuous reporting and carry out regular crisis simulation exercises. In addition, we have established a global safety community. The Business Continuity Management unit within the Internal Audit & Risk Management enabling function assesses business continuity risks and defines appropriate measures together with the responsible specialist units.

See also A 1.7 Environmental Protection and Safety

3.2.3 Overall Assessment of Opportunities and Risks by the Board of Management

In the opinion of the Board of Management, based on the current evaluations, none of the risks described above endanger the company's continued existence. Nor could we identify any risk interdependencies that could combine to endanger the company's continued existence. Compared with the previous year, we see a slight intensification of our risk status. We remain convinced that we can take advantage of the opportunities resulting from our entrepreneurial activity and successfully master the challenges resulting from the risks stated above.

No risks that could endanger the company's existence

4. Corporate Governance Report

Bayer conforms with all recommendations of the German Corporate Governance Code

Revised compensation system for the Board of Management approved by Annual Stockholders' Meeting

The Corporate Governance Report of the Bayer Group conforms with the recommendations of the German Corporate Governance Code and includes a Declaration by Corporate Management pursuant to Sections 289f and 315d of the German Commercial Code as well as all the information and explanations required by Section 289a through e and Section 315a through d of the German Commercial Code. The contents of the Corporate Governance Report are also included in the management report. In accordance with Section 317, Paragraph 2, Sentence 6 of the German Commercial Code, the information contained in the Declaration by Corporate Management is not taken into account in the audit of the financial statements.

4.1 Declaration by Corporate Management Pursuant to Sections 289f and 315d of the German Commercial Code

See also C Governance Bodies

See A 4.4 for information on the compensation of the Board of Management

With the Declaration by Corporate Management pursuant to Sections 289f and 315d of the German Commercial Code for Bayer AG and the Bayer Group, the company provides information on the main elements of the Bayer Group's corporate governance structures, relevant corporate governance practices, the composition and procedures of the Board of Management, the Supervisory Board and their committees, and the objectives and concepts that must be established when composing the Board of Management and the Supervisory Board.

Declaration concerning the German Corporate Governance Code pursuant to Section 161 of the German Stock Corporation Act

In December 2020, the Board of Management and Supervisory Board of Bayer AG issued the annual declaration concerning the German Corporate Governance Code. As stated in this declaration, Bayer AG has fully complied with the recommendations of the German Corporate Governance Code since its previous declaration and intends to fully comply with them in the future as well.

The declaration issued in December 2020 concerning the German Corporate Governance Code is published on the Bayer website along with previous declarations: www.bayer.com/en/corporate-governance.aspx

Information on corporate governance practices

Bayer AG is subject to German stock corporation law and therefore has a dual governance system consisting of the Board of Management and the Supervisory Board, which manage the company based on a transparent strategy that is geared toward its long-term success and complies with applicable law and ethical standards.

See also A 1.1

Corporate governance practices that go beyond the legal requirements are derived from our vision and our common values, which form the basis of the respectful working relationship between our employees and with our external partners. Compliance with responsible practices at every stage of the value chain is crucial in corporate governance. The main guidelines are summarized primarily in our corporate policies on compliance, human rights, and fairness and respect at work, as well as in our Supplier Code of Conduct and the Bayer Societal Engagement (BASE) principles. The organization and oversight obligations of the Board of Management and the Supervisory Board are mainly ensured by compliance management and risk management systems.

www.bayer.com/en/corporate-compliance-policy.aspx

www.bayer.com/en/supplier-code-of-conduct.aspx

Board of Management

Composition, objectives (diversity concept) and succession planning

The Board of Management of Bayer AG comprised five members in 2020. The Board of Management runs the company on its own responsibility with the goal of achieving defined corporate objectives and sustainably increasing the company's enterprise value.

Members of the Board of Management and offices they hold: see C Governance Bodies

With regard to the composition of the Board of Management, the Supervisory Board takes into account specialist expertise and personal aptitude, as well as aspects such as age, gender, education and professional background. With regard to the proportion of women on the company's Board of Management, the Supervisory Board aims to ensure that there is at least one woman serving on the Board of Management.

An additional aspect relating to the composition of the Board of Management that the Supervisory Board has resolved to pursue is diversity. Without basing selection decisions on this aspect in individual cases, the Supervisory Board aims to ensure that different age groups are adequately represented on the Board of Management, while also taking into account the experience required for a position on the Board of Management. Irrespective of this, members of the Board of Management should generally step down from that office when they turn 62. The composition of the Board of Management should adequately reflect the company's international operations. The Supervisory Board therefore endeavors to include on the Board of Management several members of different nationalities or with an international background (e.g., several years of career experience outside Germany or the oversight of foreign business activities). The Supervisory Board also strives to ensure diversity with regard to the educational and professional backgrounds of the members of the Board of Management. In addition to the specific professional expertise, management and leadership experience required for the given task, members of the Board of Management should cover the broadest possible spectrum of knowledge, experience, and educational and professional backgrounds.

These objectives are taken into account in the selection of candidates to fill open positions on the Board of Management. With this concept for the composition of the Board of Management, the Supervisory Board pursues the goal of ensuring not just the greatest possible individual suitability of its various members, but also that as many different perspectives as possible are represented in the leadership of the company through a balanced and diverse Board of Management structure, and that the candidate selection pool is as large as possible.

In accordance with the statutory requirements, there are also targets pertaining to the proportion of women at the first and second management levels below the Board of Management. The Board of Management has set objectives of 20% women on the first management level of Bayer AG and 25% women on the second management level. These objectives are to be attained by June 30, 2022.

As part of the succession planning process, the Board of Management informs the Supervisory Board about candidates who have been identified as having the potential to become a member of the Board of Management. Among other things, the Supervisory Board places emphasis on intensive human resources development at the management level below the Board of Management while taking into account the diversity criteria outlined above. The Supervisory Board endeavors to ensure that the candidates in question are introduced to the Supervisory Board. For each member of the Board of Management, at least one candidate has been identified as a replacement who could assume the role at short notice if required. Whenever it becomes clear that there will be an empty seat on the Board of Management, efforts are undertaken to identify external candidates and evaluate internal candidates, usually with the aid of a HR consulting firm.

The size of the Board of Management of Bayer AG increased from five to six members effective February 1, 2021, following the appointment of Sarena Lin, meaning that the Board of Management once again has a female member.

As of February 1, 2021, the Board of Management returned to having at least one female member

Implementation status of the objectives

In line with the objectives, different age groups are represented on the Board of Management while also taking into account the experience required for Board of Management positions. The ages of the members of the Board of Management ranged from 51 to 58 years as of

December 31, 2020. Two of the five members of the Board of Management serving as of December 31, 2020, are citizens of a country other than Germany. All members of the Board of Management have amassed many years of career experience outside Germany. The members of the Board of Management also have diverse professional backgrounds.

Procedure and committees

The Board of Management performs its tasks according to the law, the Articles of Incorporation and the Board of Management's rules of procedure, and works with the company's other governance bodies in a spirit of trust.

For more information on the procedure and committees of the Board of Management, and the Articles of Incorporation of Bayer AG, see www.bayer.com/en/corporate-governance.aspx

Supervisory Board

Composition and objectives (diversity concept and expertise profile)

Under the German Codetermination Act, half of the Supervisory Board's 20 members are elected by the stockholders and the other half by the company's employees.

Members of the Supervisory Board and offices they hold: see C Further Information / Governance Bodies

The Supervisory Board endeavors to ensure that its members collectively possess the necessary expertise, skills and professional experience to properly perform their duties. This includes the following areas: management and leadership of international companies, a business understanding with regard to the company's main areas of activity, research and development, finance, controlling / risk management, human resources and governance / compliance.

The Supervisory Board has also resolved to pursue diversity in its composition, for instance with regard to age, gender, education and professional background. With respect to the international business alignment of Bayer AG, the Supervisory Board strives to ensure at all times that several of its members have international business experience or an international background in other respects. Further objectives concerning the composition of the Supervisory Board are that different age groups be suitably represented on the Supervisory Board and that, absent special circumstances, a member should not hold office beyond the end of the next Annual Stockholders' Meeting following their 72nd birthday. With a view to avoiding potential conflicts of interest and taking into account the ownership structure of the company and the number of independent Supervisory Board members, the Supervisory Board has set itself the goal that more than half of the stockholder representatives be independent. The Supervisory Board assesses the independence of its members according to the recommendation contained in Section C.7 of the German Corporate Governance Code.

Compensation of the members of the Supervisory Board: see A 4.4

The Nominations Committee and the full Supervisory Board take these objectives into consideration when nominating candidates to fill open positions on the Supervisory Board. The stated objectives refer to the Supervisory Board as a whole, unless otherwise determined. However, since the Supervisory Board can only nominate candidates for election as stockholder representatives, it can only take the objectives into account in these nominations. One objective for Supervisory Board elections is that neither women nor men account for less than 30% of the membership.

The Supervisory Board aims to achieve a balanced and diverse composition, to the extent that it can influence this. The aim is to ensure that oversight of the company's management is based on as many different perspectives as possible and that the candidate selection pool is as large as possible.

Implementation status of the objectives

The Supervisory Board has several members with international business experience or an international background. The ages of the members of the Supervisory Board were relatively evenly spread across a range of 39 to 69 years as of December 31, 2020. One member of the Supervisory Board, Dr. Paul Achleitner, has been a member of the Supervisory Board for more than 12 years. As such, the Supervisory Board does not consider him to be independent as defined in Section C.7 of the German Corporate Governance Code. However, the Supervisory Board does not harbor any concerns about Dr. Achleitner's impartiality or any potential conflicts of interest.

The Supervisory Board considers the shareholder representatives Dr. Simone Bagel-Trah, Horst Baier, Dr. Norbert Bischofberger, Ertharin Cousin, Johanna W. Faber, Colleen A. Goggins, Prof. Dr. Wolfgang Plischke, Prof. Dr. Otmar Wiestler and Prof. Dr. Norbert Winkeljohann to be independent. The proportion of women on the Supervisory Board is currently 35% for the full Supervisory Board, 30% for the employee representatives and 40% for the stockholder representatives. Five of the 20 members of the Supervisory Board are citizens of a country other than Germany. Numerous other members have many years of international business experience. The members of the Supervisory Board have also completed a whole range of vocational training and study courses.

In the opinion of the Supervisory Board, the stockholder representatives have the following special expertise and experience that should be represented to satisfy the objectives of the Supervisory Board:

A 4.1/1

Expertise and Experience of Shareholder Representatives on the Supervisory Board

	International business experience	R&D	Agri-culture / food	Health-care	Finance	Controlling / risk manage-ment	HR	Governance / compliance	Digital	Sustain-ability
Dr. Paul Achleitner	X				X	X	X	X		
Dr. Simone Bagel-Trah	X					X	X	X		X
Horst Baier	X				X	X	X	X		
Dr. Norbert W. Bischofberger	X	X		X						
Ertharin Cousin	X		X				X	X		X
Johanna W. (Hanneke) Faber	X		X		X	X			X	X
Colleen A. Goggins	X			X			X			
Prof. Dr. Wolfgang Plischke	X	X	X	X						X
Prof. Dr. Otmar D. Wiestler	X	X		X						
Prof. Dr. Norbert Winkeljohann (Chairman)	X				X	X	X	X	X	

Procedure and committees

The role of the Supervisory Board is to oversee and advise the Board of Management. The Supervisory Board is directly involved in decisions on matters of fundamental importance to the company, regularly conferring with the Board of Management on the company's strategic alignment and the implementation status of the business strategy. The Report of the Supervisory Board in this Annual Report provides details about the work of the Supervisory Board and its committees. In 2020, the Supervisory Board had in place a special committee to address the glyphosate litigations.

See the Report of the Supervisory Board for information on the committees' responsibilities

The Supervisory Board has set itself rules of procedure that are published online.

The Supervisory Board arranges regular self-assessments as defined in Section D.13 of the German Corporate Governance Code. In view of the changes at the helm of the Supervisory Board and in its composition in 2020, the next self-assessment is scheduled to be held in the first half of 2021.

When new members join the Supervisory Board, a series of introductory meetings are arranged with the members of the Board of Management and with representatives from internal functions to introduce them to their work on the Supervisory Board, while informational material is also provided in written form.

Further information

Securities transactions by members of governance bodies

Members of the Board of Management or Supervisory Board and persons with whom they have close relationships are legally obligated to report own-account transactions in shares or debt securities of Bayer AG, associated derivatives or other associated financial instruments to Bayer AG and the German Federal Financial Supervisory Authority (BaFin) as soon as the total volume of transactions made by a member of the Board of Management or Supervisory Board,

www.bayer.com/en/corporate-governance/disclosure-of-securities-transactions

or a person with whom they have a close relationship, has reached the €20,000 threshold within a calendar year. The transactions reported to Bayer AG in 2020 were duly published and can be viewed on the company's website.

4.2 Compliance

We define compliance as legally and ethically impeccable conduct by all employees in their daily work, because the way they carry out their duties affects our company's reputation. We do not tolerate any violation of laws, codes of conduct or internal regulations. Compliance is essential for our long-term economic success.

www.bayer.com/compliance

The following compliance principles apply throughout the Bayer Group:

// We compete fairly in every market.
// We act with integrity in all our business dealings.
// We balance economic growth with ecological and social responsibility.
// We observe trade controls that regulate our global business.
// We safeguard equal opportunity in securities trading.
// We keep accurate books and records.
// We treat each other with fairness and respect.
// We protect and respect intellectual property rights.
// We act in Bayer's best interest.
// We protect and secure personal data.

All employees are required to observe the compliance principles and to immediately report any violation of the Corporate Compliance Policy. Infringements are sanctioned. This applies in particular to managerial employees, who, for example, may lose their entitlement to variable compensation components and be subject to further disciplinary measures if violations have occurred in their sphere of responsibility. Compliant and lawful conduct is also factored into the performance evaluations of all managerial employees.

The global compliance management system is steered by a central compliance organization within the Bayer Group that reports to the Chief Financial Officer (CFO) and to the Audit Committee of the Supervisory Board. The CFO is responsible for the compliance organization, while the Audit Committee of the Supervisory Board oversees the effectiveness and further development of compliance within the Group.

Potential compliance risks (such as corruption) are identified together with the operational units to ensure the systematic and preventive detection and assessment of risks. Potential risks are then entered into global databases that we use to develop suitable measures for specific processes, business activities or countries, for example. In addition, we assess our business partners according to risk criteria as we look to identify potential compliance risks. Adherence to the corporate compliance principles is among the subjects covered in audits conducted by Bayer's Internal Audit and in the analyses and investigations by the legal and compliance organization. The heads of these organizations provide regular reports on the findings of the audits and analyses to the Audit Committee of the Supervisory Board, while summary reports are presented at least once a year.

Handling of suspected and actual compliance violations

Suspected compliance violations can be reported – anonymously if desired and if permitted by respective national law – to a central, worldwide compliance hotline that is also accessible to the general public. In 2020, the compliance organization received a total of 345 reports in this way. Alternatively, suspected violations may be reported to the respective compliance functions or to Internal Audit.

Compliance violations include all possible types of infringements of internal and external requirements and are systematically sanctioned. The action taken depends on factors including the gravity of the compliance violation and applicable law.

Compliance training and communications activities

We support all employees in acting with integrity and proactively avoiding potential violations by implementing Bayer-wide training measures and communication campaigns that are tailored to target groups and based on identified needs. Employees can consult their supervisors and / or compliance managers if they have any questions about lawful and ethical behavior.

In 2020, 94% of Bayer's managerial employees worldwide completed at least one compliance training program. Overall, 65% of employees took part in the global web-based training program on anti-corruption that was launched in October.

Training measures on anti-corruption, the importance of openly expressing concerns ("speak up"), antitrust law, conflicts of interest, fairness and respect at the workplace, foreign trade law compliance, product-related communication and data protection are fundamental elements of our compliance management system.

Marketing compliance and applicability of accepted standards

We are committed to ethical marketing practices. Our efforts in this regard are guided by our Corporate Compliance Policy, Anti-Corruption Policy and rules of conduct for responsible marketing, for example.

Bayer has also put in place directives and corporate policies that are designed to prevent price fixing and ensure data protection. Various industry codes such as those of the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) and the European Federation of Pharmaceutical Industries and Associations (EFPIA) also apply in marketing and distribution.

www.bayer.com/en/sustainability/responsible-marketing-sales-regulation

Crop Science's Product Stewardship Commitment applies to all products, services and technologies and is in alignment with the International Code of Conduct on Pesticide Management issued by the Food and Agriculture Organization (FAO) of the United Nations and the Code of Conduct on Plant Biotechnology issued by CropLife International, for example.

As regards the advertising of human pharmaceutical products, Bayer complies with the IFPMA Code of Practice as the minimum global standard, along with the regulations set out in regional and national codes. Pharmaceuticals observes the applicable transparency rules (e.g., the Physician Payments Sunshine Act in the United States) and participates in voluntary programs such as the EFPIA Disclosure Code.

Lobbying

Forming part of our commitment to ensuring transparent lobbying, our corporate policy entitled "Code of Conduct for Responsible Lobbying" sets out binding rules for our involvement in political matters and creates transparency in our interactions with the representatives of political institutions.

www.bayer.com/en/sustainability/code-of-conduct-for-responsible-lobbying

As set out in this code of conduct, our company did not make any donations to political parties, politicians or candidates for political office in 2020. This does not include political donations in the United States, where employees can make private donations in support of political nominees at federal level through so-called "political action committees." These voluntary donations are made only by employees, not the company. Decisions on how these contributions are allocated are made by an independent committee comprised of employees. In 2020, new allocation criteria were introduced for the BayPac – the name of the corresponding committee at Bayer – to reflect societal challenges, among other factors. These donations are subject to stringent conditions and mandatory transparency measures that include a publicly accessible list documenting donations made at state level. At state level, Bayer has decided to make political donations as a company due to its increased footprint in the United States.

In addition, we launched the Bayer Societal Engagement (BASE) principles in 2019. Afforded the status of a corporate policy, these principles serve to codify Bayer's standards and values to an even greater degree.

4.3 Disclosures Pursuant to Sections 289b Through e and 315b and c of the German Commercial Code

The Bayer Group meets the requirements for the nonfinancial statement pursuant to Sections 289b through e and 315b and c of the German Commercial Code (HGB). The relevant disclosures pertaining to the nonfinancial statement in accordance with the Corporate Social Responsibility Directive Implementation Act (CSR-RUG) are integrated into the management report, with the GRI standards (Section 289d HGB) serving as a framework.

The Supervisory Board fulfilled its auditing duty for the nonfinancial statement pursuant to Section 170, Paragraph 1 and Section 171, Paragraph 1 of the German Stock Corporation Act (AktG).

A 4.3/1

Index to Nonfinancial Statement

Topics	Chapter	
Business model	A 1.1	Corporate Profile and Structure
Aspects		
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	A 1.5	Procurement and Supplier Management
	A 1.6	Product Stewardship
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Employee-related aspects	A 1.2.2	Sustainability Management
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	A 1.6	Product Stewardship
	A 1.7	Environmental Protection and Safety
Tools to combat bribery and corruption	A 1.2.2	Sustainability Management
	A 1.5	Procurement and Supplier Management
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Respect for human rights	A 1.2.2	Sustainability Management
	A 1.4	Commitment to Employees
	A 1.5	Procurement and Supplier Management
Material risks	A 3.2	Opportunity and Risk Report
Diversity concept	A 1.4	Commitment to Employees
	A 4.1	Declaration by Corporate Management

4.4 Compensation Report

The Compensation Report describes the essential features of the compensation packages for the members of the Board of Management and the Supervisory Board of Bayer Aktiengesellschaft (Bayer AG) and explains the compensation that the individual members were granted or received for the 2020 fiscal year. The report complies with the requirements of the applicable financial reporting standards for publicly traded companies (German Commercial Code [HGB], German Accounting Standards [DRS] and the International Financial Reporting Standards [IFRS]) as well as with the recommendations contained in the current versions of the German Corporate Governance Code and the Guidelines for Sustainable Management Board Remuneration Systems. In terms of content, the Compensation Report also largely meets the requirements resulting from the law transposing the European Shareholder Rights Directive II (SRD II) into German law (ARUG II).

The Guidelines for Sustainable Management Board Remuneration Systems were developed by supervisory board chairpersons, investor representatives, scientists and corporate governance experts.

4.4.1 Compensation of the Board of Management

Objective

The compensation system for the Board of Management of Bayer AG applies in the version approved by a large majority (94.02%) at the Annual Stockholders' Meeting on April 28, 2020. The compensation system incentivizes the successful implementation of the corporate strategy and the sustainable development of the company, and is strongly aligned toward long-term value creation for our stockholders. At the same time, it satisfies the requirements of the German Stock Corporation Act in all respects and also complies, for example, with the recommendations of the 2020 version of the German Corporate Governance Code and the Guidelines for Sustainable Management Board Remuneration Systems issued in July 2018.

The objectives of Bayer AG are to achieve sustainable business success and profitable growth. Profitability, liquidity and return on investment are the relevant financial performance indicators that serve as significant incentivization factors in our compensation system for the Board of Management. The attainment of ambitious sustainability targets also forms part of the compensation system. The aim here is to continuously increase value for stockholders and other stakeholders and ensure the continuity of our company for the long term.

In designing the compensation system for the Board of Management, the Supervisory Board endeavors to align it as closely as possible with the compensation system for senior managers below Board of Management level and to set the same targets in terms of financial performance indicators. This is the only way to ensure that all decision-makers pursue the same goals for the company's successful development.

The Supervisory Board has designed the compensation system based on the following guidelines and principles:

// Support for implementation of **long-term strategy** including sustainability goals
// Strong **pay-for-performance** focus and long-term orientation
// Explicit focus on **shareholder interests** and consideration of stakeholder objectives
// **Intuitive**, readily understandable compensation system and **transparent disclosure**
// Compliance with **regulatory requirements** in Germany
// High level of **consistency** with compensation system for our senior managers
// Comparison with **compensation packages of competitors**
// Setting of **appropriate**, market-based **compensation levels**

Procedure for setting, implementing and reviewing Board of Management compensation

The Supervisory Board sets the Board of Management's compensation pursuant to Section 87, Paragraph 1 of the German Stock Corporation Act (AktG). In doing so, the Supervisory Board is supported by its Human Resources Committee, which develops recommendations for the Board of Management compensation system that are discussed and resolved upon by the full Supervisory Board. The Supervisory Board may seek advice from external consultants, with care being taken to ensure their independence.

To avoid potential conflicts of interest, the members of the Supervisory Board and of all committees are obligated to declare any conflict of interest to the Supervisory Board. In the event of a conflict of interest, the member concerned does not participate in the resolutions on the relevant agenda items at the meetings of the Supervisory Board or the respective committees. Where a conflict of interest is substantial and not only temporary, it results in the termination of the member's service on the Supervisory Board.

Review of the compensation system

The Human Resources Committee prepares the Supervisory Board's regular review of the compensation system for the members of the Board of Management. Where necessary, it recommends to the Supervisory Board that changes be made. The compensation system is submitted to the Annual Stockholders' Meeting for approval whenever significant changes are made or at least every four years. Should the Annual Stockholders' Meeting not approve the system submitted to it for approval, a revised compensation system is presented for a decision at the next Annual Stockholders' Meeting at the latest.

Setting compensation levels

The Supervisory Board reviews Board of Management compensation at the beginning of the year and adjusts the target compensation for the individual members, taking into account maximum total compensation. The Supervisory Board places importance on appropriately remunerating the Board of Management as a whole. Appropriateness in this context implies taking into account the levels of management board compensation at comparable companies in Germany. Compensation levels differ among the members of the Board of Management and reflect the evaluation of their areas of responsibility, the necessary ranges of experience and market conditions. In setting the targets for the variable compensation components, the Supervisory Board also ensures that the compensation is aligned toward sustainable corporate development and that the proportion of long-term variable components exceeds that of short-term variable components.

The appropriateness of the compensation levels is reviewed annually by the Supervisory Board. As part of this process, the Human Resources Committee takes into consideration a horizontal and a vertical comparison and, if adjustments are needed, drafts a resolution to be voted on by the full Supervisory Board. Adjustments are generally limited to the development of the consumer price index for Germany.

Horizontal comparison

The DAX 30 companies – excluding financial service providers – are taken as a guide when setting compensation levels. Based on the size of the Bayer Group and taking sales, employee numbers and market capitalization into account, the aim is to position Bayer among the top third of DAX 30 companies with respect to total compensation. Reviewing compensation levels annually and taking into account size criteria over time ensures that the compensation the members of the Board of Management of Bayer AG receive appropriately reflects the company's positioning. It is the goal of the Supervisory Board – within the regulatory framework – to offer them a compensation package that is in line with the market and at the same time competitive.

Vertical comparison

In setting Board of Management compensation, the Supervisory Board also undertakes a vertical comparison against the company's internal compensation structure and looks at the relation between Board of Management compensation and that of senior managers and other employees in Germany over time.

Components of the compensation package for the Board of Management

The total compensation of the members of the Board of Management of Bayer AG comprises fixed and variable components. The fixed, non-performance-related base compensation accounts for 29% of total target compensation. Fixed compensation also includes fringe benefits along with pension entitlements or the pension installment, which can vary from one Board member to another over time.

The variable, performance-related cash compensation components are the short-term incentive (STI) and the long-term incentive (LTI). For members of the Board of Management who receive a pension installment, these variable components account for about 65% of the total target compensation. Before the start of each fiscal year, the Supervisory Board sets appropriate, ambitious targets for the variable compensation components that ensure the long-term implementation of the corporate strategy. The extent to which these targets are attained determines the level of the payouts.

Total compensation is capped for each member of the Board of Management (maximum total compensation).

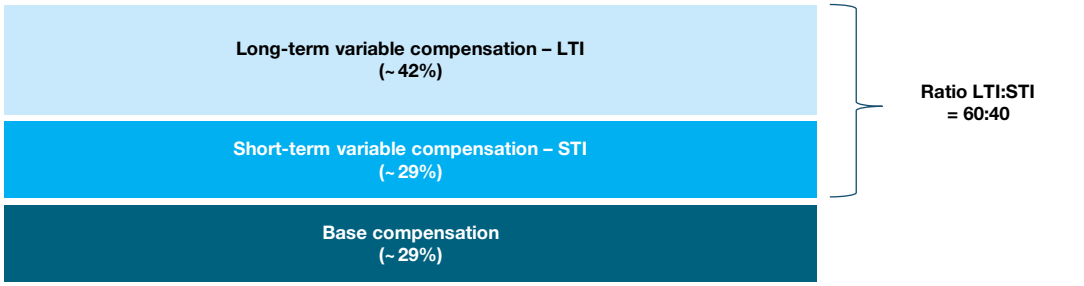
In addition to the compensation components mentioned, malus and clawback provisions and share ownership guidelines are also integrated into the compensation system. The compensation system also specifies whether payments are made in the event of early termination of service on the Board of Management and the level of any such payments.

Compensation structure

In accordance with the requirements of the German Stock Corporation Act, the recommendations of the German Corporate Governance Code and the Guidelines for Sustainable Management Board Remuneration Systems, the variable portion of compensation at Bayer has a predominantly long-term character. The LTI thus exceeds the STI. This places the focus on sustainable corporate development without losing sight of operational targets. The compensation structure excluding fringe benefits and pension entitlement / installment is illustrated in A 4.4.1/1.

A 4.4.1/1

Compensation Structure Excluding Fringe Benefits and Pension Entitlement/Installment



Total compensation also includes fringe benefits, which are granted in a ratio of about 5% to the respective base compensation (not including any indemnity payments to new members of the Board of Management for variable compensation forfeited on termination of previous employment), as well as the pension installment, which amounts to 40% of the respective base compensation.

An overview of the compensation system for the Board of Management is given below:

A 4.4.1/2

Board of Management Compensation Policy 2020

Compensation component	Design	Objective and strategic relevance
Base compensation	// Fixed, contractually agreed compensation // Generally paid out in 12 equal installments each year	// Reflects the role on the Board of Management, experience, area of responsibility and market conditions // Guarantees an appropriate income while avoiding undue risks to the company

Fringe benefits	// Regular health screening
	// Insurance policies
	// Company car with driver
	// Security installations at private residence
	// Reimbursement of work-related moving expenses
	// Indemnity payments to new members of the Board of Management for variable compensation forfeited on termination of previous employment
		// Reimbursement of costs and offsetting of financial disadvantages that arise from, or facilitate, service on the Board of Management

Pension entitlement / installment	// Members of the Board of Management newly appointed after January 1, 2020, receive an earmarked pension installment calculated as a percentage of their base compensation and paid out directly in a lump sum // According to the explanatory memorandum to the act transposing the second EU Shareholder Rights Directive into German law (ARUG II) and in compliance with the 2020 version of the German Corporate Governance Code, system changes do not have to be applied to the existing service contracts of the Board of Management members. In keeping with this proposition, members of the Board of Management who were appointed prior to January 1, 2020, are to retain their contribution-based pension entitlements	// Contributions provided to ensure an adequate private retirement income

Short-term variable cash compensation (STI)	Annual bonus based on a target amount, with payout after one year computed as follows:
	// 1/3 weighting: Core EPS at Group level
	// 1/3 weighting: Free cash flow at Group level
	// 1/3 weighting: Matrix for clean EBITDA margin vs. sales growth (Fx & p adj.) at divisional level
	// Individual performance factor (0.8 – 1.2) as a multiplier
	// Payout capped at 200% of individual target amount
		// Attainment of corporate targets for the respective year
		// Incentivizes profitable growth and stable cash flow based on Bayer performance indicators
		// Continuous, sustainable development of the operational business
		// Takes operational success into account at Group and divisional level
		// Enables performance differentiation among Board of Management members and encourages personal contribution

Long-term variable cash compensation (LTI)	Virtual stock program based on a target amount, with payout after four years computed as follows:
	// Absolute performance of Bayer stock
	// 50% weighting: performance relative to EURO STOXX 50 Total Return
	// 50% weighting: ROCE at Group level
	// Dividends paid by Bayer Aktiengesellschaft over the four-year period for each virtual share conditionally allocated at the beginning of the tranche
	// Payout capped at 250% of individual target amount
		// Provides incentive for a long-term, sustainable increase in enterprise value
		// Focus on capital market performance (also against competitors) and profitability of the Bayer Group
		// Takes our stakeholders' interests into account

Maximum total compensation	// The maximum total annual compensation paid out in a fiscal year is €12 million for the Chairman of the Board of Management and €7.5 million for the other Board of Management members	// Avoids inappropriately high payouts
Malus and clawback	// In the event of gross misconduct or misrepresentation in financial reporting, the Supervisory Board can withhold all or part of the STI and LTI (malus) or require their repayment to the company (clawback)	// Ensures appropriateness of variable compensation // Promotes adherence to important operating principles of the Bayer Group
Share ownership guidelines	// Pledge to build a certain position size in Bayer stock by the end of a four-year period // Obligation to retain the shares throughout the period of service on the Board of Management and for two years thereafter	// Aligns interests of the Board of Management with those of stockholders and fosters the members' identification with the company // Investment of own capital in the company to promote sustainable corporate development
Contract termination	// If the service contract is terminated early – other than for cause – at the company's instigation, a severance payment of up to twice the annual compensation may be made, but this is limited to the compensation for the remaining term of the respective contract // Two-year post-contractual noncompete agreement; indemnity payment in the amount of base compensation	// Cap on benefits paid on early termination of Board of Management service as per German Corporate Governance Code // Avoidance of inappropriately high payments
Change of control	// In the event of a change of control, members of the Board of Management are entitled to a severance payment of 250% of annual base compensation, or 200% of annual cash compensation in legacy cases, provided that certain narrow conditions are met. The payment is limited in either case to the compensation for the remaining term of the respective contract	// Promotes the independence of Board of Management members in takeover situations

[1] Fx & p adj. = adjusted for currency and portfolio effects

Caps on variable compensation components and total compensation

Performance evaluation for both of the variable compensation components is fundamentally oriented toward profitability and sustainability. The Supervisory Board sets ambitious targets for the variable compensation while at the same time ensuring a balanced opportunity-and-risk profile. The short-term variable compensation can fall to as low as zero if targets are not attained. If targets are clearly exceeded, the payout is limited to 200% (STI) or 250% (LTI) of the individual target amount.

The Supervisory Board has set an absolute amount in euros for the maximum total compensation in a fiscal year pursuant to Section 87a, Paragraph 1, Sentence 2, No.1 of the German Stock Corporation Act. The maximum total annual compensation is €12 million for the Chairman of the Board of Management and €7.5 million for the other members of the Board of Management.

The maximum total compensation for a fiscal year includes all fixed and variable compensation components:

// Base compensation
// Fringe benefits
// Service cost according to IFRS for pension entitlement / installment
// Short-term variable cash compensation (STI) (capped at 200%)
// Long-term variable cash compensation (LTI) (capped at 250%)

Compensation components in detail

Fixed compensation

The fixed compensation guarantees the members of the Board of Management an appropriate income while also aiming to avoid undue risks for the company.

Base compensation

The base compensation is fixed, contractually agreed annual compensation generally paid out in cash in 12 equal installments within a calendar year. The level of fixed compensation reflects the role on the Board of Management, experience, area of responsibility and market conditions.

Fringe benefits

Fringe benefits include costs assumed by the company for health screening and various insurance policies. A budget is also available to each member of the Board of Management for a company car, including driver, for business and a reasonable amount of private use. In addition, the company pays the cost of security installations at each member's private residence. Work-related moving expenses are either individually reimbursed or compensated in the form of a flat-rate allowance. Any indemnity payments to new members of the Board of Management for variable compensation forfeited on termination of previous employment also constitute fringe benefits.

Pension entitlement / installment

Members of the Board of Management appointed after January 1, 2020, are not granted benefits under the company pension plan but instead receive an earmarked amount known as a pension installment, which is paid out directly in a lump sum. The pension installment equals 40% of the respective base compensation. For the company, this avoids all the interest-rate and biometric risks involved in financing a pension entitlement. It also eliminates the complex actuarial calculations and administrative procedures involved. The members of the Board of Management are responsible for making their own pension arrangements. The pension installment is not included in the basis for calculating the variable compensation components.

According to the explanatory memorandum to the act transposing the second EU Shareholder Rights Directive into German law (ARUG II) and in compliance with the 2020 version of the German Corporate Governance Code, system changes do not have to be applied to the existing service contracts of the Board of Management members. In keeping with this proposition, members of the Board of Management who were appointed prior to January 1, 2020, are to retain their contribution-based pension entitlements.

Bayer makes company contributions to complement the personal contributions of 2% up to the ceiling for statutory pension contributions in Germany. The company contributions are currently set at 8% to Bayer-Pensionskasse or 2% to Rheinische Pensionskasse – calculated on base compensation – up to the ceiling for statutory pension contributions in Germany. In addition, Bayer provides a hypothetical annual contribution equal to 42% of the amount by which the respective base compensation exceeds that ceiling. This percentage comprises a basic contribution of 6% and a matching contribution of 36%, which is four times the member's personal contribution of 9%. The total annual contribution is converted into a pension entitlement according to the annuity table for the applicable tariff of the Rheinische Pensionskasse VVaG pension fund. The annual pension entitlement upon retirement is the total amount of the accumulated pension entitlements including any investment bonus, the amount of which is determined annually based on the net return on the assets of the Rheinische Pensionskasse VVaG minus the minimum return on the contributions that is guaranteed under the tariff and approved by the German Financial Supervisory Authority (BaFin). Future pension payments are reviewed annually and adjusted in line with the respective entitlements.

If the contract of a member of the Board of Management is terminated due to permanent incapacity to work before he or she reaches the age of 60, an invalidity pension is granted.

In addition, the following arrangements are in place for members of the Board of Management appointed prior to January 1, 2020:

// Werner Baumann acquired rights to a fixed annual pension of €443,940 starting on his 60th birthday prior to his appointment to the Board of Management. As of May 1, 2016, the day he was appointed Chairman of the Board of Management, his pension was switched over to a contribution-based entitlement. In connection with this, he received an additional, vested entitlement to an annual pension of €200 thousand starting on his 60th birthday. This is subject to a prorated reduction in the event that his term of office ends prior to his 60th birthday under certain conditions.
// In view of his split contract, Heiko Schipper participates in pension plans in Germany (30%) – for his service on the Board of Management of Bayer AG – and in Switzerland (70%) – under his contract as head of Consumer Health at BCC AG in Basel – on a prorated basis. Schipper's pension entitlement in Switzerland arises from a defined benefit plan in which contributions accumulate in an account and are then disbursed as a retirement annuity.

Certain assets are administered by Bayer Pension Trust e.V. under a contractual trust arrangement (CTA) to cover pension entitlements resulting from direct commitments in Germany. This provides substantial additional security – beyond the benefits from the Pension Insurance Association – for the respective pension entitlements of the members of the Board of Management in Germany.

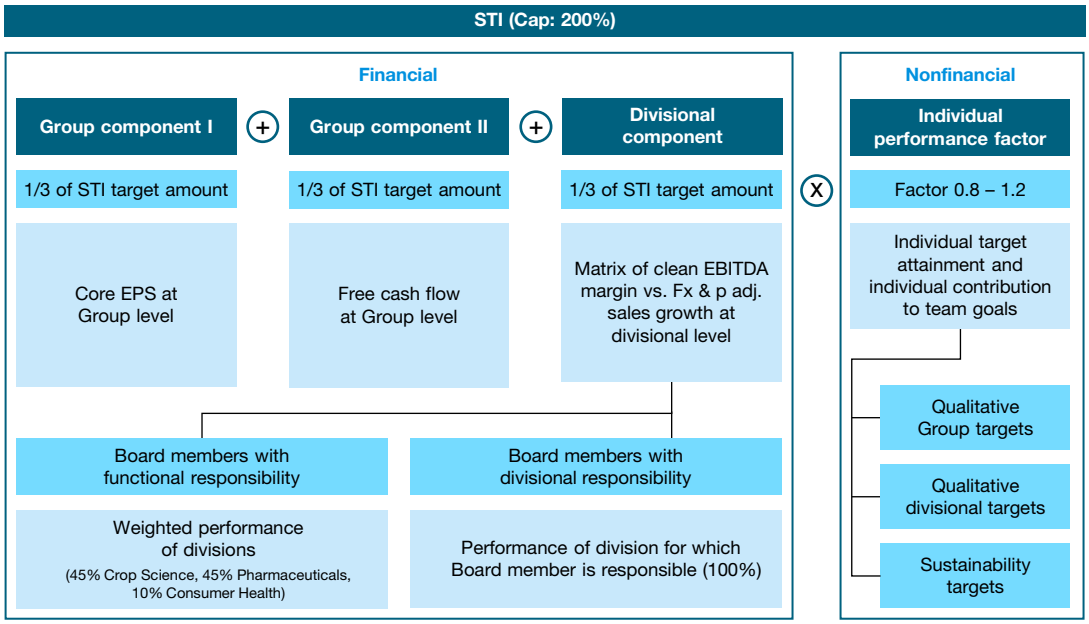
Variable cash compensation

Short-term variable cash compensation (STI)

The short-term variable cash compensation depends on the success of the business in the respective year. It incentivizes operational success accompanied by profitable growth within the established strategic framework. It also focuses on sustainable cash flow (free cash flow) development. In addition, the individual performance of the members of the Board of Management is evaluated using a performance factor that permits the establishment of further targets, particularly nonfinancial ones. The level of the STI payout is largely governed by each member's individual target amount, the target attainments for the three financial components and on the individual performance factor. Depending on the company's success, the target attainments for the three equally weighted financial components may vary between 0% and 200%. The components of the short-term variable cash compensation are shown in the graphic below.

A 4.4.1/3

Components of Short-Term Variable Cash Compensation (STI)



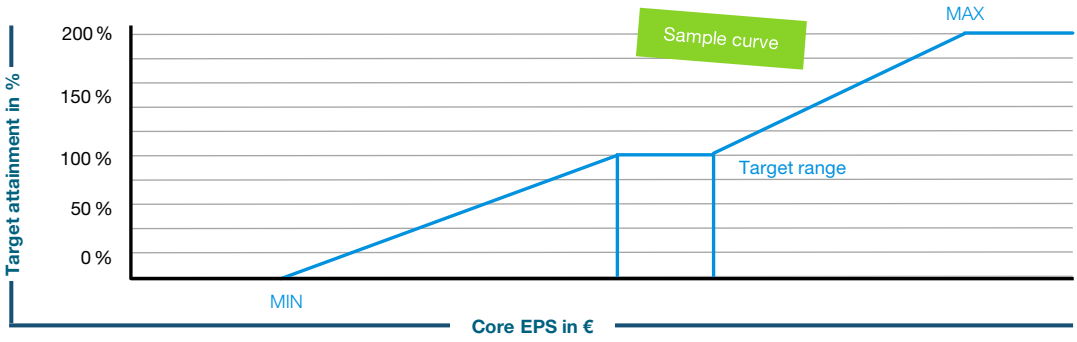
Group component I

Group component I is derived from core earnings per share (core EPS) at Group level, which forms the basis of our dividend policy. Thus core EPS provides specific incentives to raise profitability in the Bayer Group and at the same time encourages value creation for our stockholders. At the start of each fiscal year, the Supervisory Board sets a minimum value, a target corridor and a maximum value for core EPS (referred to as “benchmarks”). The target function is based on Bayer’s operational planning for the respective fiscal year. However, the Supervisory Board determines whether it is sufficiently ambitious and adjusts it if necessary. At the end of each year, the core EPS achieved is compared against the target corridor previously set for that year. If the target corridor has been achieved, target attainment is 100%. If the target attainment is above or below the target corridor, the target attainment corresponds to the target function within an interval of 0% to 200%. A sample payout curve for the core EPS target is given in the graphic below.

For definition of core EPS see A 2.3

A 4.4.1/4

Payout Curve for Core EPS



If there is a change in the number of shares on which core EPS is based due to a capital increase or decrease, the Supervisory Board assesses the impact this would have on the STI payout and resolves separately on any necessary adjustments. It is intended that any share buybacks, in particular, shall not affect the core EPS component of target attainment. Also in the event of significant changes in the business not foreseen in the operational planning, such as acquisitions or divestments of companies, the Supervisory Board assesses the impact on the STI payout and resolves separately on any necessary adjustments.

For fiscal 2020, the core EPS target corridor for the Group component I was set at €7.00 to €7.20 at the start of the year. Core EPS amounted to €6.39, corresponding to a target attainment level of 38.8%. The target attainment interval set for 2020 was between €6.00 (payout from this component = 0) and €7.50 (200% payout = cap).

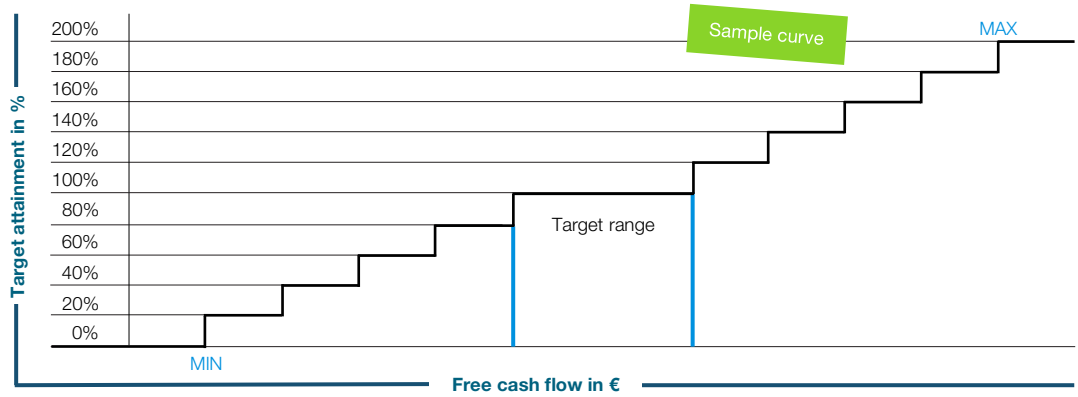
Group component II

The Group component II is determined by the free cash flow at Group level. Using the free cash flow to calculate this component incentivizes an increase in the cash flow available for paying dividends, reducing debt and making acquisitions, and ensures the Bayer Group's liquidity. At the start of each fiscal year, the Supervisory Board sets a minimum value, a target corridor, a maximum value and additional benchmarks for the free cash flow. The target corridor is based on Bayer's operational planning for the respective fiscal year. However, the Supervisory Board determines whether it is sufficiently ambitious and adjusts it if necessary. At the end of each year, the free cash flow achieved is compared against the target corridor previously set for that year. If the target attainment is above or below the target corridor, the target attainment corresponds to the target function within an interval of 0% to 200%. A sample payout curve for the free cash flow target is given in the graphic below.

For definition of free cash flow see A 2.3

A 4.4.1/5

Payout Curve for Free Cash Flow



In determining target attainment, the Supervisory Board has the discretion to adjust the free cash flow for significant unplanned and nonrecurring extraordinary effects for which no allowance could be made, or that could be allowed for only differently, when the target was set and that are considered irrelevant to performance with respect to the STI. A complete list of predefined criteria is drawn up for this purpose.

For fiscal 2020, the target corridor set for the Group component II at the start of the year was €4.75 billion to €5.25 billion based on continuing operations. The target attainment interval set for 2020 was between €3.75 billion (payout from this component = 0) and €6.25 billion (200% payout = cap). The free cash flow from continuing operations amounted to €4.8 billion after adjusting for significant unplanned and nonrecurring effects, with the payments in connection with settlement agreements reached in 2020 in the glyphosate, dicamba, PCB and Essure™ litigations classified as unplanned and nonrecurring. This corresponded to a target attainment level of 100%.

Divisional component

This component is calculated for each division by setting the EBITDA margin before special items against currency- and portfolio-adjusted sales growth in a matrix. Members of the Board of Management with divisional responsibility are assessed solely based on the respective division's performance, while those with functional responsibility are assessed based on the weighted average performance of all divisions. This average performance is determined using the following weightings: 45% Crop Science, 45% Pharmaceuticals and 10% Consumer Health. Profitable growth is among the Bayer Group's main priorities, and this matrix serves to specifically incentivize profitable growth in each division. Growth should only be generated while maintaining profitability, and raising profitability in the short term should not be incentivized at the expense of growth. At the start of each fiscal year, the Supervisory Board sets an interval – defined by a minimum value, a target corridor and a maximum value – and additional benchmarks for each

For definition of EBITDA margin before special items see A 2.3

division's EBITDA margin before special items and currency- and portfolio-adjusted sales growth. The target matrix is based on the operational planning of the divisions for the respective fiscal year. However, the Supervisory Board determines whether it is sufficiently ambitious and adjusts it if necessary. At the end of each year, the EBITDA margin before special items and the currency- and portfolio-adjusted sales growth achieved are compared to the target matrix previously set for that year.

Awards above 100% of the target corridor can occur, for example, if one performance target is met and the other is exceeded, or if both performance target corridors are exceeded.

A 4.4.1/6

STI Payout Matrix for the 2020 Financial Targets of the Divisions

					EBITDA margin before special items				
					Minimum value		Target corridor		Maximum value
				CS	25.2%	…	26.2–26.4%	…	27.4%
				PH	33.0%	…	34.0–34.2%	…	35.2%
				CH	21.5%	…	22.5–23.1%	…	24.1%
		CS	PH	CH					
Sales growth (Fx & p. adj.)	Minimum value	1.1%	0.7%	0.0%	0%	…	50%	…	100%
	…	…	…	…	…	…	…	…	…
	Target corridor	3.6–4.6%	3.2–4.2%	2.5%	50%	…	100%	…	150%
	…	…	…	…	…	…	…	…	…
	Maximum value	7.1%	6.7%	5.0%	100%	…	150%	…	200%

Fx & p. adj. = currency- and portfolio-adjusted

For fiscal 2020, the currency- and portfolio-adjusted sales growth and EBITDA margin before special items achieved by the divisions were as follows.

Crop Science

// Sales growth vs. 2019 (Fx & portfolio adj.): Actual figure 1.3%
// EBITDA margin before special items: Actual figure 24.1%
// Overall target attainment therefore amounted to 0%.

Pharmaceuticals

// Sales growth vs. 2019 (Fx & portfolio adj.): Actual figure –1.5%
// EBITDA margin before special items: Actual figure 34.9%
Overall target attainment therefore amounted to 0%.

Consumer Health

// Sales growth vs. 2019 (Fx & portfolio adj.): Actual figure 4.7%[18]
// EBITDA margin before special items Actual figure 22.0%
// Overall target attainment therefore amounted to 120.7%.

Attainment levels for the Group and divisional components of the STI

Group components I and II along with the divisional component resulted in the following overall target attainment levels for 2020:

// Crop Science: 46.3%
// Pharmaceuticals: 46.3%
// Consumer Health: 86.5%

This led to a 50.3% target attainment for Board of Management members with functional responsibility.

[18] Sales growth (Fx & portfolio adj.) was adjusted downward by 0.5 percentage points because growth in Argentina was distored by hyperinflation.

Individual performance factor

The individual performance of each member of the Board of Management is evaluated by assessing the extent to which the individual performance targets agreed with him or her at the start of the year have been attained while taking into account the member's personal contributions to the achievement of the Board of Management's team goals. The attainment of the nonfinancial targets, such as innovation progress or safety and compliance, along with sustainability goals, is also taken into account. The attainment of the financial targets is multiplied by a factor of between 0.8 and 1.2.

In accordance with a resolution of the Human Resources Committee and the Supervisory Board, all members of the Board of Management are set individual targets tailored to their respective areas of responsibility. Target attainment is individually evaluated following the end of the fiscal year. The following table provides an overview of the subject areas taken into account for the individual performance targets agreed upon for 2020.

A 4.4.1/7

Individual Targets Agreed for 2020

Board of Management member	Topic areas for individual targets

Werner Baumann	// Operationalize the Bayer 2022 project
	// Defend the glyphosate litigations
	// Assume new, additional role as Labor Director
	// Implement sustainability strategy

Liam Condon	// Promote innovation and digitalization
	// Advance the product pipeline
	// Develop digital business models
	// Launch the sustainability strategy

Wolfgang Nickl	// Steer operations to attain financial KPIs
	// Drive forward the Bayer 2022 project to achieve savings
	// Drive forward digitalization
	// Outsource IT activities

Stefan Oelrich	// Advance product developments
	// Commercialize new products
	// Strengthen the Pharmaceuticals pipeline through in-licensing
	// Drive forward sustainability activities

Heiko Schipper	// Accelerate sales growth and profitability
	// Strengthen the portfolio through acquisitions and in-licensing
	// Implement the digital strategy
	// Integrate the sustainability strategy

In addition, team targets are agreed to reflect the collective responsibility of the members of the Board of Management as a governance body. The team targets are based on the Group targets set by the Board of Management for 2020 and approved by the Supervisory Board. The following table provides an overview of the subject areas.

A 4.4.1/8

Team Targets for 2020

Subject area	
Alignment against growth markets	// Further progress the integration within Crop Science and strengthen our leadership position in agriculture
	// Drive organic growth by implementing strategic focus areas anchored in the divisional strategies
	// Intensify sourcing of value-creating external growth opportunities to ensure a robust foundation for future growth
Innovation powered by science	// Accelerate pipeline innovations
	// Drive breakthrough innovation by leveraging new sciences and technologies with Leaps
	// Build portfolio of disruptive digital business models
Excellence in execution	// Complete announced portfolio measures and execute Bayer 2022 program including efficiency programs in divisions and enabling functions
	// Advance litigation process and earn back trust of shareholders
	// Execute defined digital transformation roadmaps for divisions and enabling functions
Commitment to people and sustainability	// Integrate sustainability into divisional strategic plans and elevate sustainability objectives
	// Drive sustainability communication and improve reputation
	// Attract, engage, develop and retain talents with a strong commitment to LIFE and our inclusion & diversity strategy
	// Deliver leading-edge capabilities to Bayer through workforce upskilling and by developing our digital culture

The attainment of the individual targets and the team targets is assessed by the Human Resources Committee and the Supervisory Board following the end of the fiscal year. The performance factor amounted to between 1.03 and 1.09 for the individual members of the Board of Management.

Payment of the short-term variable compensation (STI)
The STI is paid out in the following year on the earliest possible date and is capped at 200% of the individual target amount.

Change in the way short-term variable compensation is calculated compared with 2019
Significant changes in the way short-term variable compensation is calculated compared with the 2019 methodology pertained to two aspects in particular:

// Free cash flow performance at Group level is now additionally taken into account
// The transition from an additive to a multiplier principle for the performance of the members of the Board of Management with respect to the individual and team targets

Long-term stock-based cash compensation (LTI)

Members of the Board of Management are eligible to participate in the annual tranches of the long-term stock-based compensation program Aspire on the condition that they purchase a certain number of Bayer shares – determined for each individual according to specific rules – as a personal investment and hold them until two years after their term of service ends.

Aspire 2.0 tranches issued each year until 2019

The LTI target values for the Aspire 2.0 tranches issued each year until 2019 are generally based on a contractually agreed target rate of 150% of base compensation. The starting value is also multiplied by the individual STI payout factor for the Board of Management member concerned for the year prior to the issuance of the respective tranche.

*LTI target value = 150% * base compensation * STI payout factor prior to issuance of the tranche*

The LTI payout after four years corresponds to the LTI target value, adjusted to reflect the development of Bayer's share price and its performance relative to the EURO STOXX 50 along with the dividends paid in the meantime based on the virtually acquired number of shares (total stockholder return approach):

$$\text{LTI payout} = \text{LTI target value} * \frac{\text{average share price on the last 30 trading days prior to expiration of the tranche}}{\text{average share price on the last 30 trading days prior to issuance of the tranche}} * \text{performance relative to EURO STOXX 50} + \text{total dividend equivalents}$$

For the Board of Management, an additional performance measure is included in the form of the comparison with the EURO STOXX 50. This increases or decreases the payout by the percentage of overperformance or underperformance, respectively, but by no more than 50% either way.

Target attainment for Aspire tranches issued in 2016 and 2017
The following table provides an overview of the 2016 and 2017 Aspire tranches (payouts in January 2020 and January 2021, respectively), including the starting and final prices / values for Bayer stock and the EURO STOXX 50 – which are the average prices / values on the 30 trading days preceding the respective reference date – and the percentage payouts.

A 4.4.1/9

Aspire Target Attainment

	2016 tranche	2017 tranche
Bayer stock starting price[1]	€117.27	€91.92
Bayer stock final price	€69.95	€47.99
EURO STOXX 50 starting value	3,346.5	3,156.0
EURO STOXX 50 final value	3,709.8	3,520.5
Percentage payout	38.93%	38.09%

[1] Price adjusted due to rights issue on June 6, 2018

If a member of the Board of Management enters retirement during the year or steps down from the Board of Management during the year due to the nonextension of his or her service contract by mutual agreement or on the company's request, the Aspire tranche granted for that year is reduced on a prorated basis according to the duration of the member's active service on the Board of Management during this first year of the tranche. In this case, tranches granted for previous years continue unchanged.

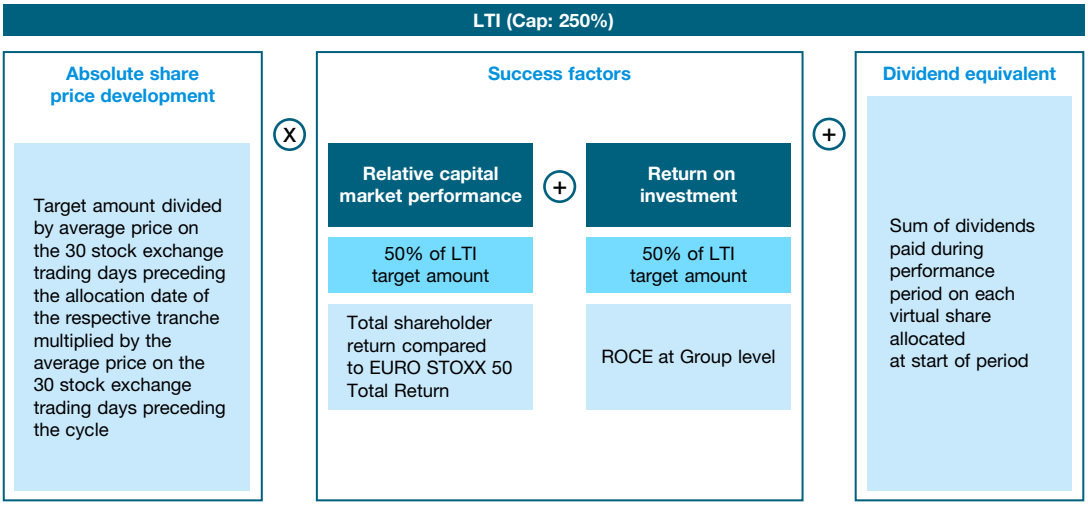
Aspire 3.0 tranches issued each year from 2020

The annual tranches are allocated in the form of virtual shares with a performance period of four years for each tranche. The number of virtual shares conditionally allocated is calculated by multiplying base compensation by the contractually agreed target rate of 150% to determine the LTI target amount, which is then divided by the arithmetic mean of the XETRA closing prices for Bayer stock on the 30 stock exchange trading days immediately preceding the start of the respective performance period.

The payout at the end of the performance period depends on the target attainment for the performance criteria of relative capital market performance and return on investment, each with a weighting of 50%. Depending on the company's success, the target attainments for the performance criteria may vary between 0% and 200%. The payout is calculated by multiplying the conditionally allocated number of virtual shares by the arithmetic mean of the XETRA closing prices for Bayer stock on the 30 stock exchange trading days immediately preceding the end of the performance period and by the performance target attainment. In addition, the participants receive a dividend equivalent based on the sum of the dividends paid on each conditionally allocated virtual share during the performance period. The LTI payout is capped at 250% of the individual target amount. The components of the long-term variable cash compensation (LTI) are shown in the graphic below.

A 4.4.1/10

Components of Long-Term Variable Cash Compensation (LTI)



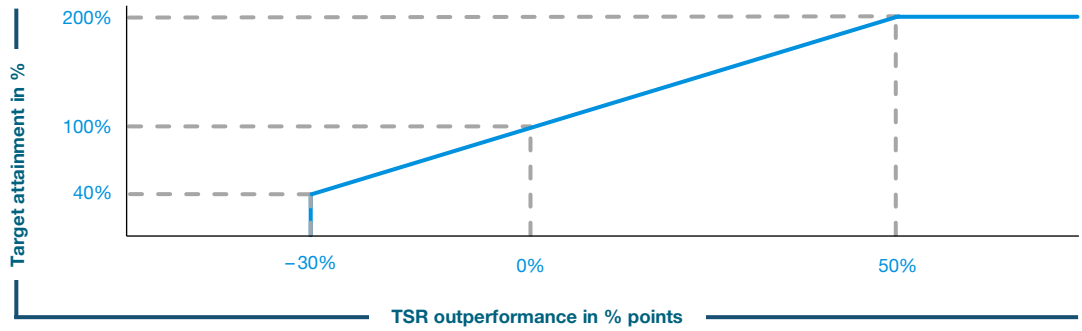
Relative capital market performance

The relative capital market performance is determined by the difference between the development of Bayer's total shareholder return (TSR) and that of a benchmark index, the EURO STOXX 50 Total Return. The TSR shows how Bayer shares performed over the four-year performance period, including share price development and hypothetically reinvested gross dividends. This takes account of the capital market performance of Bayer in relation to the EURO STOXX 50 Total Return. Bayer aims to be an attractive investment target and therefore incentivizes above-average capital market performance. The initial and final values for calculating the TSR are based on the arithmetic mean of the XETRA closing prices for Bayer stock on the 30 stock exchange trading days immediately preceding the start and the end, respectively, of the four-year performance period. The final value also includes the hypothetically reinvested gross dividends during that time.

This reduces the effect of incidental share price movements that are not sustained. Target attainment is determined from the difference between Bayer's TSR over the period and that of the EURO STOXX 50 Total Return. If the difference is zero – i.e., performance is on a par with that of the index – target attainment is 100%. If the difference is more than –30% points, target attainment is 0%. If the difference equals –30% points, target attainment is 40%. If the difference is +50% points or more, target attainment is 200%. The payout curve for the relative TSR target is given in the graphic below.

A 4.4.1/11

Payout Curve for Relative TSR



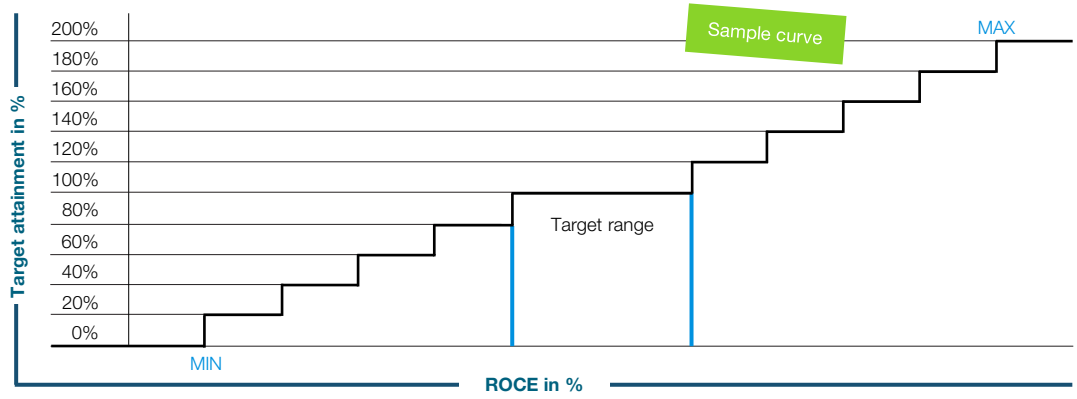
Return on investment

The return on investment is based on the return on capital employed (ROCE) at Group level. The ROCE is used as a strategic indicator. The annual comparison of the ROCE to the weighted average cost of capital indicates the value generated by the company. The ROCE is an important part of Bayer's corporate steering system. At the start of each tranche, the Supervisory Board sets a minimum value, a target corridor, a maximum value and additional benchmarks for the step function. The minimum value is based on the weighted average cost of capital (WACC) on the date of issue of the respective tranche. The target corridor for 100% target attainment is based on the WACC and an ambitious premium. At the end of the four-year performance period, the ROCE achieved in the final year of the performance period is compared to the target corridor set for that tranche of the LTI. If the target corridor has been achieved, target attainment is 100%. If the target attainment is above or below the target corridor, the target attainment corresponds to the target function within an interval of 0% to 200%. A sample payout curve for the ROCE target is given in the graphic below.

For definition of ROCE see A 2.3

A 4.4.1/12

Payout Curve for ROCE



In determining target attainment, the Supervisory Board has the discretion to adjust the ROCE for significant extraordinary effects for which no allowance could be made, or that could be allowed for only differently, when the target was set and that are considered irrelevant to performance with respect to the LTI. A complete list of predefined criteria was drawn up in advance for this purpose.

The actual payout curve, the target attainment and an explanation and rationale for any adjustments the Supervisory Board makes to the ROCE target are disclosed in the subsequent Compensation Report.

Compensation in 2021: Sustainability

In 2021, we will introduce sustainability as an additional criterion with a weighting of 20%. The other two performance criteria – relative capital market performance and return on investment – will then each have a weighting of 40%.

For more information on our sustainability targets see A 1.2.1.

Starting with the 2021 fiscal year, the Supervisory Board determines which sustainability goals are relevant for the four-year performance period upon the issuance of each LTI tranche. Sustainability goals at both divisional and Group level may be taken into account. In setting the sustainability goals, the Supervisory Board takes care to ensure that these are measurable and transparent and in doing so is guided by the goals contained in the Bayer sustainability strategy. At the start of each four-year tranche, the Supervisory Board sets a minimum value, a target corridor and a maximum value for the individual sustainability goals. If the target attainment is above or below the target corridor, the target attainment corresponds to the target function within an interval of 0% to 200%.

The specific sustainability goals are disclosed in the Compensation Report. An explanation of how the target attainment for the individual sustainability goals was determined is published in a subsequent Compensation Report.

Payment of the long-term variable compensation (LTI)

Payment is made on the earliest possible date after the end of the four-year performance period and is capped at 250% of the individual target amount.

Malus and clawback provisions for variable compensation

In the event of gross misconduct or misrepresentation in financial reporting, the Supervisory Board has the discretion to withhold the STI and LTI for fiscal years from 2020 onward (malus) or – if these have already been paid out – to require that they be repaid to the company (clawback). In the event a member of the Board of Management violates a substantial duty of care, significant obligations under his or her service contract or other important operating principles such as those prescribed by the Code of Conduct for Members of the Board of Management or the Corporate Compliance Policy, the Supervisory Board in the proper exercise of its discretion may reduce or cancel the portion of the variable compensation that has not yet been paid out (malus). The Supervisory Board in the proper exercise of its discretion may also require that all or part of any gross amount that has already been paid out be repaid to the company (clawback).

Moreover, the members of the Board of Management are obligated to repay any variable compensation already paid out if it is subsequently established that the audited and approved consolidated financial statements on which the calculation of the payout for fiscal years from 2020 onward was based were defective. This applies even if the defectiveness of the consolidated financial statements is not attributable to any fault on the part of the members of the Board of Management.

Irrespective of the above, a legal basis also exists for payment reductions or regress in the event of a damaging breach of duty by members of the Board of Management.

Share Ownership Guidelines

The Bayer Share Ownership Guidelines are also an integral factor in the compensation system. They serve to further align the interests of the Board of Management with those of our stockholders and to strengthen sustainable development. Under the Bayer Share Ownership Guidelines, members of the Board of Management are required to build substantial positions in Bayer shares within four years of joining the Board. They must purchase shares to the value of 200% of base compensation in the case of the Chairman and 100% in the case of the other members of the Board of Management and retain them for the remainder of their service on the Board of Management and for two years thereafter. If they cannot provide evidence of this share

ownership, they have no claim to payment of the LTI. The virtual shares allocated as part of the LTI program do not count toward the number of Bayer shares to be purchased under the Share Ownership Guidelines.

Contract durations and entitlements upon termination of service on the Board of Management

In appointing members of the Board of Management and determining the durations of their service contracts, the Supervisory Board observes the requirements of Section 84 of the German Stock Corporation Act and the recommendations of the German Corporate Governance Code. Members of the Board of Management are generally appointed for an initial term of office of three years under a three-year service contract. Subsequent reappointments / contract extensions are for maximum further terms of five years each, although Bayer generally only extends contracts by a maximum of four years at a time.

If the service contract of a member of the Board of Management is terminated before the end of the term of office – other than for cause – at the company's instigation, his or her entitlements under the service contract are fulfilled until the termination date. Payments of variable compensation are made on the originally agreed dates and conditions and are not brought forward. In line with the recommendations of the German Corporate Governance Code, the service contracts of the members of the Board of Management contain the provision that payments upon termination of service shall not exceed twice the annual compensation or the compensation amount for the remaining term of the contract if this is lower.

Change of control

To ensure their independence, members of the Board of Management are also entitled to a severance payment in the event of a change of control as defined in the German Securities Acquisition and Takeover Act, provided certain narrow conditions are met. The claim to a severance payment only arises if the service contract is terminated by mutual agreement at the company's instigation or if the position of the Board of Management member is significantly affected by the change of control and he or she gives notice of termination within 12 months of the date of the change of control. The position of the Board of Management member is significantly affected if, in particular, one of the following conditions is fulfilled:

// Significant changes in the company's strategy,
// Significant changes in his or her own area of activity or
// Significant changes in the company's legal form.

In these cases, members of the Board of Management are entitled to a severance payment of 250% of annual base compensation, though this must not exceed the compensation for the remaining term of the respective contract. Members of the Board of Management who were appointed in or prior to 2010 are entitled, in the cases described above, to a severance payment of 200% of annual cash compensation (base compensation, target STI and target LTI), though this must not exceed the compensation for the remaining term of the respective contract. This entitlement does not exist if termination takes place for cause as defined in Section 626 of the German Civil Code.

Post-contractual noncompete agreements

Post-contractual noncompete agreements exist with the members of the Board of Management, providing for indemnity payments to be made by the company for the two-year duration of these agreements. The indemnity payment for each of the two years amounts to 100% of a member's average base compensation for the 12 months preceding his or her departure. In the event a service contract is terminated early, any severance payment for the remaining part of the original term of the contract is deducted from the indemnity payment. Upon contract termination, the company may waive the post-contractual noncompete agreement, in which case no indemnity is paid.

Unfitness for work

In the event of temporary unfitness for work, members of the Board of Management continue to receive the contractually agreed compensation. The Supervisory Board may early terminate the service contract of a Board of Management member who has been continuously unfit for work for

at least 18 months and is likely to be permanently incapable of fully performing his or her duties (permanent incapacity to work).

Payment for service on governance bodies

Any compensation a member of the Board of Management receives for service on the supervisory board of a Bayer Group company is deducted from his or her base compensation. Any membership in a supervisory board of a company outside the Bayer Group must be approved in advance by the Supervisory Board. Where a member of the Board of Management serves on the supervisory board of a company outside the Bayer Group, the Supervisory Board of Bayer Aktiengesellschaft decides whether and to what extent a deduction is to be made.

Temporary deviations from the compensation system

Individual elements of the compensation system described may deviate temporarily in exceptional cases if this is necessary for the long-term good of our company. Any such deviations require a resolution of the Supervisory Board. The elements of the compensation system that may deviate in exceptional cases are the performance criteria for the STI and LTI. Moreover, the position-building phase under the Share Ownership Guidelines may be temporarily suspended if there is a potential risk of insider trading.

Compensation of the Board of Management in 2020

The aggregate compensation (HGB) for the members of the Board of Management in 2020 totaled €17,289 thousand (2019: €26,075 thousand), comprising €6,721 thousand (2019: €8,227 thousand) in non-performance-related components and €10,568 thousand (2019: €17,848 thousand) in performance-related components. The pension service cost amounted to €2,285 thousand (2019: €2,753 thousand).

As of December 31, 2020, the Board of Management of Bayer AG consisted of five members. The service of Dr. Hartmut Klusik and Kemal Malik on the Board of Management ended on December 31, 2019. There were no changes in the membership of the Board of Management during 2020.

The following table shows the aggregate compensation, according to the German Commercial Code, of the individual members of the Board of Management who served in 2019 and/or 2020:

A.4.4.1/13

Relative Board of Management Compensation (German Commercial Code)

	Base compensation		Fringe benefits		Short-term variable cash compensation		Long-term stock-based cash compensation (Aspire)[1]		Aggregate compensation		Pension service cost[2]	
€ thousand	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Serving members of the Board of Management as of December 31, 2020												
Werner Baumann (Chairman)	1,650	1,668	47	59	1,717	906	2,804	2,502	6,218	5,135	1,014	1,317
Liam Condon	950	961	44	47	896	458	1,841	1,441	3,731	2,907	457	437
Wolfgang Nickl	787	796	68	91	859	428	1,319	1,194	3,033	2,509	188	147
Stefan Oelrich[3]	840	849	854	860	983	420	1,226	1,274	3,903	3,403	202	157
Heiko Schipper[4]	787	796	523	594	918	751	1,181	1,194	3,409	3,335	314	227
Former members												
Dr. Hartmut Klusik	787	–	39	–	819	–	1,240	–	2,885	–	223	–
Kemal Malik[5]	814	–	37	–	792	–	1,253	–	2,896	–	355	–
Total[6]	**6,615**	**5,070**	**1,612**	**1,651**	**6,984**	**2,963**	**10,864**	**7,605**	**26,075**	**17,289**	**2,753**	**2,285**

[1] Fair value at the grant date

[2] Including company contributions to Bayer-Pensionskasse VVaG, Rheinische Pensionskasse VVaG and to a pension fund outside Germany

[3] The fringe benefits for Stefan Oelrich contain an indemnity payment of €808 thousand (2019: €808 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer. This indemnity amounts to €2,424 thousand in total and is being paid over a period of three years on a pro rata temporis basis.

[4] The fringe benefits for Heiko Schipper contain an indemnity payment of €530 thousand (2019: €495 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer. This indemnity amounts to a maximum of €1,950 thousand. A quarter of this amount was paid at the date he joined the Board of Management. The remaining three-quarters is being paid over a period of three years on a pro rata temporis basis.

[5] A severance payment of €6,831 thousand (HGB valuation) was agreed with Kemal Malik in view of his leaving the company on December 31, 2019. This puts him in the same position as if he had held office until December 31, 2021, and had then retired.

[6] The total compensation of the Board of Management includes base compensation of €557 thousand (2019: €551 thousand), fringe benefits of €435 thousand (2019: €374 thousand), short-term variable cash compensation of €525 thousand (2019: €643 thousand) and long-term stock-based cash compensation of €836 thousand (2019: €827 thousand) that Heiko Schipper received in 2019 and 2020 from our subsidiary Bayer Consumer Care AG, Switzerland, in his capacity as head of the Consumer Health Division.

A.4.4.1/14

Board of Management Compensation (German Commercial Code)

	Base compensation		Fringe benefits		Short-term variable cash compensation		Long-term stock-based cash compensation (Aspire)		Aggregate compensation	
€ thousand	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Serving members of the Board of Management as of December 31, 2020										
Werner Baumann (Chairman)	26.5%	32.5%	0.8%	1.1%	27.6%	17.6%	45.1%	48.7%	100.0%	100.0%
Liam Condon	25.5%	33.1%	1.2%	1.6%	24.0%	15.8%	49.3%	49.6%	100.0%	100.0%
Wolfgang Nickl	25.9%	31.7%	2.2%	3.6%	28.3%	17.1%	43.5%	47.6%	100.0%	100.0%
Stefan Oelrich	21.5%	24.9%	21.9%	25.3%	25.2%	12.3%	31.4%	37.4%	100.0%	100.0%
Heiko Schipper	23.1%	23.9%	15.3%	17.8%	26.9%	22.5%	34.6%	35.8%	100.0%	100.0%
Former members										
Dr. Hartmut Klusik	27.3%	–	1.4%	–	28.4%	–	43.0%	–	100.0%	–
Kemal Malik	28.1%	–	1.3%	–	27.3%	–	43.3%	–	100.0%	–
Total	25.4%	29.3%	6.2%	9.5%	26.8%	17.1%	41.7%	44.0%	100.0%	100.0%

Annual base compensation

The base compensation of the members of the Board of Management was adjusted in 2020. The total base compensation of all the members was €5,070 thousand (2019: €6,615 thousand). The base compensation of all the members of the Board of Management was adjusted in line with the development of the consumer price index.

Short-term variable cash compensation

The total short-term variable cash compensation for all the members of the Board of Management in 2020 amounted to €2,963 thousand (2019: €6,984 thousand), for which corresponding provisions were established. In 2019, a solidarity contribution of 0.14% was deducted from the STI awards of employees in the corresponding German companies in accordance with the agreements concluded with employee representatives to help safeguard jobs.

Long-term variable cash compensation based on virtual Bayer shares

This is no longer a component of long-term compensation following the adjustment of the compensation system for the Board of Management effective January 1, 2016.

The final payment was made in January 2019.

Long-term stock-based cash compensation (Aspire)

The long-term stock-based cash compensation under the Aspire 3.0 program is included in the aggregate compensation according to the German Commercial Code at its fair value of €7,605 thousand (2019 Aspire 2.0: €10,864 thousand) at the respective grant date.

The aggregate compensation according to IFRS includes the fair value of the partial entitlement earned in the respective year under Aspire 2.0 and Aspire 3.0. Grants of stock-based compensation with a four-year performance period are therefore expensed at their respective fair values over four years starting with the grant year. The stock-based compensation according to IFRS also includes the change in the value of existing entitlements under ongoing Aspire tranches granted in prior years.

A.4.4.1/15

Board of Management Compensation – Aspire Program (IFRS)

		Serving members of the Board of Management as of December 31, 2020					Former members		
€ thousand		Werner Baumann (Chairman)	Liam Condon	Wolfgang Nickl	Stefan Oelrich	Heiko Schipper	Dr. Hartmut Klusik	Kemal Malik	Total
Stock-based compensation entitlements earned in the respective year[1]	**2020**	**2,070**	**1,163**	**836**	**861**	**812**	**–**	**–**	**5,742**
	2019	1,849	1,071	553	536	512	2,471	897	7,889
Change in the value of existing entitlements[2]	**2020**	**(1,161)**	**(597)**	**(273)**	**(234)**	**(265)**	**–**	**–**	**(2,530)**
	2019	(48)	(40)	3	1	3	(37)	(38)	(156)
Total[3]	**2020**	**909**	**566**	**563**	**627**	**547**	**–**	**–**	**3,212**
	2019	1,801	1,031	556	537	515	2,434	859	7,733

[1] The newly earned entitlements are derived from the 2017 – 2020 (2019: 2016 – 2019) tranches of the Aspire program because this compensation was or is being earned over a four-year period. They are stated at their prorated fair values in 2019 and 2020, respectively. Dr. Hartmut Klusik and Kemal Malik earned their entitlements at an accelerated rate until they left the company on December 31, 2019, which is why the entitlements they earned in 2019 are higher than those of the other members of the Board of Management serving as of December 31, 2019.

[2] This line shows the change in the value of the entitlements already earned in 2017, 2018 and 2019 (2019: 2016, 2017 and 2018).

[3] €569 thousand of the entitlements earned in 2020 (2019: €359 thousand) and minus €186 thousand of the change in the value of existing entitlements (2019: €2 thousand) pertain to entitlements against our subsidiary Bayer Consumer Care AG, Switzerland.

Provisions of €9,637 thousand (2019: €13,323 thousand) were established for the Aspire entitlements of the members of the Board of Management serving as of December 31, 2020. Of this amount, €6,367 thousand relates to the tranches issued up to 2019 and €3,270 thousand to the 2020 tranche.

Pension entitlements

The pension service cost recognized for the members of the Board of Management in 2020 according to the German Commercial Code was €2,285 thousand (2019: €2,753 thousand), while the current service cost for pension entitlements recognized according to IFRS was €3,375 thousand (2019: €3,439 thousand). The following table shows the service cost and the settlement or present value of the pension obligations attributable to the individual members of the Board of Management.

A.4.4.1/16

Pension Entitlements (German Commercial Code and IFRS)

	German Commercial Code				IFRS			
	Pension service cost[1]		Settlement value of pension obligation as of December 31[2]		Current service cost for pension entitlements		Present value of defined benefit pension obligation as of December 31	
€ thousand	2019	2020	2019	2020	2019	2020	2019	2020
Serving members of the Board of Management as of December 31, 2020								
Werner Baumann (Chairman)	1,014	1,317	13,953	18,619	1,310	1,895	20,325	25,019
Liam Condon	457	437	4,289	5,371	627	702	6,220	7,188
Wolfgang Nickl	188	147	367	610	257	257	573	877
Stefan Oelrich	202	157	236	531	274	271	362	753
Heiko Schipper	314	227	5,075	5,999	248	250	5,141	6,086
Former members								
Dr. Hartmut Klusik	223	–	6,820	–	267	–	9,234	–
Kemal Malik	355	–	4,247	–	456	–	5,494	–
Total	**2,753**	**2,285**	**34,987**	**31,130**	**3,439**	**3,375**	**47,349**	**39,923**

[1] Including company contribution to Bayer-Pensionskasse VVaG, Rheinische Pensionskasse VVaG and a pension fund outside Germany

[2] The pension obligations of foreign subsidiaries and Bayer pension funds are included at present value according to IFRS.

The difference between the pension service cost according to the German Commercial Code and the service cost for pension entitlements according to IFRS arises from the difference in the valuation principles used in calculating the settlement value according to the German Commercial Code and the present value of the defined benefit pension obligation according to IFRS.

Benefits upon termination of service on the Board of Management

The following table shows the present values of the contractually agreed indemnity payments for members of the Board of Management resulting from noncompete agreements as of December 31, 2020. For currently serving members of the Board of Management, it is assumed that these payments will commence when their current contracts expire. Expected inflation-based adjustments to base compensation are taken into account in the calculation.

A.4.4.1/17

Indemnity Payments in Event of Contract Termination

€ thousand	Base compensation in 2020	End of current contract	Present value of potential indemnity payments as of Dec. 31, 2020
Serving members of the Board of Management			
Werner Baumann	1,668	April 30, 2024	3,370
Liam Condon	961	Dec. 31, 2023	1,950
Wolfgang Nickl	796	April 25, 2025	1,632
Stefan Oelrich	849	Oct. 31, 2021	1,706
Heiko Schipper	796	Feb. 28, 2025	1,632

Aggregate Board of Management compensation (IFRS)

The aggregate Board of Management compensation according to IFRS is shown in the following table.

A.4.4.1/18

Board of Management Compensation according to IFRS

€ thousand	2019	2020
Base compensation	6,615	5,070
Fringe benefits	1,612	1,651
Total short-term non-performance-related compensation	**8,227**	**6,721**
Short-term performance-related cash compensation	6,984	2,963
Total short-term compensation	**15,211**	**9,684**
Stock-based compensation (Aspire) earned in the respective year	7,889	5,742
Change in value of existing entitlements to stock-based compensation (Aspire)	(156)	(2,530)
Total stock-based compensation (long-term incentive)	**7,733**	**3,212**
Service cost for pension entitlements earned in the respective year	3,439	3,375
Total long-term compensation	**11,172**	**6,587**
Severance indemnity in connection with the termination of a service contract	8,714	–
Aggregate compensation (IFRS)	**35,097**	**16,271**

4.4.2 Compensation and Benefits Granted and Their Allocation to Members of the Board of Management

The following tables show the compensation – including fringe benefits – granted for 2020, indicating the target values and the maximum and minimum achievable values for the variable compensation components, along with the allocation of compensation.

A.4.4.2/1

Compensation and Benefits Granted (Part I)

	Serving members of the Board of Management as of December 31, 2020											
	Werner Baumann (Chairman)				Liam Condon (Crop Science)				Wolfgang Nickl (Finance)			
	Joined Jan. 1, 2010				Joined Jan. 1, 2016				Joined April 26, 2018			
€ thousand	Target value 2019	Target value 2020	Min. 2020	Max.[1] 2020	Target value 2019	Target value 2020	Min. 2020	Max.[1] 2020	Target value 2019	Target value 2020	Min. 2020	Max.[1] 2020
Base compensation	1,650	1,668	1,668	1,668	950	961	961	961	787	796	796	796
Fringe benefits	47	59	59	59	44	47	47	47	68	91	91	91
Total fixed annual compensation	**1,697**	**1,727**	**1,727**	**1,727**	**994**	**1,008**	**1,008**	**1,008**	**855**	**887**	**887**	**887**
Short-term variable cash compensation	1,650	1,668	0	3,336	950	961	0	1,921	787	796	0	1,592
Long-term stock-based compensation (Aspire)												
Aspire 2.0 2019 (Jan. 1, 2019–Dec. 31, 2022)	2,804				1,841				1,319			
Aspire 3.0 2020 (Jan. 1, 2020–Dec. 31, 2023)		2,502	0	6,256		1,441	0	3,602		1,194	0	2,985
Total	**6,151**	**5,897**	**1,727**	**11,319**	**3,785**	**3,410**	**1,008**	**6,531**	**2,961**	**2,877**	**887**	**5,464**
Service cost / benefit expense (IFRS)	1,310	1,895	1,895	1,895	627	702	702	702	257	257	257	257
Total compensation	**7,461**	**7,792**	**3,622**	**13,214**	**4,412**	**4,112**	**1,710**	**7,233**	**3,218**	**3,134**	**1,144**	**5,721**

A.4.4.2/1 (continued)

Compensation and Benefits Granted (Part II)

	Serving members of the Board of Management as of December 31, 2020							
	Stefan Oelrich[3] (Pharmaceuticals)				Heiko Schipper[4] (Consumer Health)			
	Joined Nov. 1, 2018				Joined Mar. 1, 2018			
€ thousand	Target value 2019	Target value 2020	Min. 2020	Max.[1] 2020	Target value 2019	Target value 2020	Min. 2020	Max.[1] 2020
Base compensation	840	849	849	849	787	796	796	796
Fringe benefits	854	860	860	860	523	594	594	594
Total fixed annual compensation	**1,694**	**1,709**	**1,709**	**1,709**	**1,310**	**1,390**	**1,390**	**1,390**
Short-term variable cash compensation	840	849	0	1,698	787	796	0	1,592
Long-term stock-based compensation (Aspire)								
Aspire 2.0 2019 (Jan. 1, 2019–Dec. 31, 2022)	1,226				1,181			
Aspire 3.0 2020 (Jan. 1, 2020–Dec. 31, 2023)		1,274	0	3,184		1,194	0	2,985
Total	**3,760**	**3,832**	**1,709**	**6,591**	**3,278**	**3,380**	**1,390**	**5,967**
Service cost / benefit expense (IFRS)	274	271	271	271	248	250	250	250
Total compensation	**4,034**	**4,103**	**1,980**	**6,862**	**3,526**	**3,630**	**1,640**	**6,217**

A.4.4.2/1 (continued)

Compensation and Benefits Granted (Part III)

	Former members							
	Dr. Hartmut Klusik (Human Resources, Technology & Sustainability)				Kemal Malik[2] (Innovation)			
	Stepped down: Dec. 31, 2019				Stepped down: Dec. 31, 2019			
€ thousand	Target value 2019	Target value 2020	Min. 2020	Max.[1] 2020	Target value 2019	Target value 2020	Min. 2020	Max.[1] 2020
Base compensation	787				814			
Fringe benefits	39				37			
Total fixed annual compensation	**826**	**–**	**–**	**–**	**851**	**–**	**–**	**–**
Short-term variable cash compensation	787				814			
Long-term stock-based compensation (Aspire)								
Aspire 2.0 2019 (Jan. 1, 2019–Dec. 31, 2022)	1,240				1,253			
Aspire 3.0 2020 (Jan. 1, 2020–Dec. 31, 2023)		–	–	–		–	–	–
Total	**2,853**	**–**	**–**	**–**	**2,918**	**–**	**–**	**–**
Service cost / benefit expense (IFRS)	267				456			
Total compensation	**3,120**	**–**	**–**	**–**	**3,374**	**–**	**–**	**–**

[1] The maximum achievable variable compensation shown here does not yet take into account the total caps applicable (see A 4.4.1/2).

[2] In 2019, Kemal Malik received a severance payment of €6,831 thousand (HGB valuation) in addition.

[3] The fringe benefits for Stefan Oelrich contain an indemnity payment of €808 thousand (2019: €808 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer. This indemnity amounts to €2,424 thousand in total and is being paid over a period of three years on a pro rata temporis basis.

[4] The fringe benefits for Heiko Schipper contain an indemnity payment of €530 thousand (2019: €495 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer. This indemnity amounts to a maximum of €1,950 thousand. A quarter of this amount was paid at the date he joined the Board of Management. The remaining three-quarters is being paid over a period of three years on a pro rata temporis basis.

A.4.4.2/2

Allocation of Compensation (Part I)

	Serving members of the Board of Management as of December 31, 2020									
	Werner Baumann (Chairman)		Liam Condon (Crop Science)		Wolfgang Nickl (Finance)		Stefan Oelrich[1] (Pharmaceuticals)		Heiko Schipper[2] (Consumer Health)	
	Joined Jan. 1, 2010		Joined Jan. 1, 2016		Joined April 26, 2018		Joined Nov. 1, 2018		Joined Mar. 1, 2018	
€ thousand	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Base compensation	1,650	1,668	950	961	787	796	840	849	787	796
Fringe benefits	47	59	44	47	68	91	854	860	523	594
Total	**1,697**	**1,727**	**994**	**1,008**	**855**	**887**	**1,694**	**1,709**	**1,310**	**1,390**
Short-term variable cash compensation	1,717	906	896	458	859	428	983	420	918	751
Long-term cash compensation (virtual Bayer shares)										
2015 (Jan. 1, 2016–Dec. 31, 2018)	738	–	539	–	–	–	–	–	–	–
Long-term stock-based cash compensation (Aspire)										
2015 (Jan. 1, 2015–Dec. 31, 2018)	–		–		–		–		–	
2016 (Jan. 1, 2016–Dec. 31, 2019)		772		632		–		–		–
Total	**4,152**	**3,405**	**2,429**	**2,098**	**1,714**	**1,315**	**2,677**	**2,129**	**2,228**	**2,141**
Service cost / benefit expense	1,310	1,895	627	702	257	257	274	271	248	250
Total compensation	**5,462**	**5,300**	**3,056**	**2,800**	**1,971**	**1,572**	**2,951**	**2,400**	**2,476**	**2,391**

A.4.4.2/2 (continued)

Allocation of Compensation (Part II)

	Former members of the Board of Management			
	Dr. Hartmut Klusik (Human Resources, Technology & Sustainability)		Kemal Malik (Innovation)	
	Stepped down: Dec. 31, 2019		Stepped down: Dec. 31, 2019	
€ thousand	2019	2020	2019	2020
Base compensation	787	–	814	–
Fringe benefits	39	–	37	–
Total	**826**	**–**	**851**	**–**
Short-term variable cash compensation	819	–	792	–
Long-term cash compensation (virtual Bayer shares)				
2015 (Jan. 1, 2016–Dec. 31, 2018)	–		547	
Long-term stock-based cash compensation (Aspire)				
2015 (Jan. 1, 2015–Dec. 31, 2018)	–		–	
2016 (Jan. 1, 2016–Dec. 31, 2019)		–		–
Total	**1,645**	**–**	**2,190**	**–**
Service cost/benefit expense	267	–	456	–
Total compensation	**1,912**	**–**	**2,646**	**–**

[1] The fringe benefits for Stefan Oelrich contain an indemnity payment of €808 thousand (2019: €808 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.

[2] The fringe benefits for Heiko Schipper contain an indemnity payment of €530 thousand (2019: €495 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.

4.4.3 Development of Board of Management Compensation Relative to Employee Compensation and the Financial Performance of the Company

The following overview shows the development of the compensation earned by the individual members of the Board of Management in the respective fiscal year according to IFRS in relation to selected financial performance indicators used by the Bayer Group. The total earned compensation may be impacted, for example, by changes in the number of Board of Management members or overlaps between joining and departing Board members, as well as one-time effects of fringe benefits. The performance indicators are affected by the acquisition of Monsanto (2018) and by the divestments of Covestro (2017), various Crop Science businesses to BASF (2018), the prescription dermatology business of Consumer Health (2018 and 2019), the Dr. Scholl's™ and Coppertone™ brands (2019), our stake in Currenta (2019), and Animal Health (2020). They are also particularly affected by the recognition of Covestro (2017), Currenta (2019) and Animal Health (2019) as discontinued operations. In addition, core earnings per share are impacted by the increase in the number of shares in 2018.

A.4.4.3/1

Compensation Earned by Board of Management in Relation to Company's Financial Performance

€ thousand	2016	Change %	2017	Change %	2018	Change %	2019	Change %	2020
Compensation earned (€ thousand)									
Serving members of the Board of Management as of December 31, 2020									
Werner Baumann	4,818	+19.1	5,740	–27.2	4,180	+56.1	6,525	–16.7	5,437
Liam Condon	2,475	+16.5	2,883	–27.1	2,103	+68.7	3,548	–22.9	2,734
Wolfgang Nickl	–	–	–	–	1,446	+74.8	2,527	–15.5	2,135
Stefan Oelrich	–	–	–	–	467	+646.9	3,488	–13.2	3,027
Heiko Schipper	–	–	–	–	2,983	+0.3	2,991	–1.8	2,938

A.4.4.3/1 (continued)

Compensation Earned by Board of Management in Relation to Company's Financial Performance

€ thousand	2016	Change %	2017	Change %	2018	Change %	2019	Change %	2020
Compensation earned (€ thousand)									
Former members of the Board of Management									
Marijn Dekkers[1]	7,311	–	–	–	–	–	–	–	–
Johannes Dietsch	2,429	+65.9	4,030	–51.8	1,941	–	–	–	–
Erica Mann[1]	2,701	+93.3	5,220	–91.5	446	–	–	–	–
Dieter Weinand	2,730	+6.6	2,910	+10.9	3,228	–	–	–	–
Dr. Hartmut Klusik[2]	2,709	–5.0	2,573	–22.1	2,004	+116.9	4,346	–	–
Kemal Malik[1]	2,402	+17.1	2,812	–37.6	1,754	+565.5	11,672	–	–
Total	**27,575**	**–5.1**	**26,168**	**–21.5**	**20,552**	**+70.8**	**35,097**	–53.6	16,271
Financial KPIs[3]									
EBITDA before special items (€ million)	11,302	–17.8	9,288	+2.8	9,547	+20.5	11,503	–0.4	11,461
Core EPS (€)[4]	7.32	–7.9	6.74	–11.9	5.94	+14.0	6,77	–5.6	6,39
Sales[3] (€ million)[5]	46,769	+1.5	35,015	+4.5	39,586	+3.5	43,545	+0.6	41,400

[1] These amounts contain severance payments for Marijn Dekkers in 2016, Erica Mann in 2017 and Kemal Malik in 2019.
[2] Dr. Hartmut Klusik earned his Aspire entitlements in 2019 at an accelerated rate until he left the company on December 31, 2019.
[3] Reporting is based on the financial performance indicators initially published for the respective year and their development without regard to any subsequent restatements thereof.
[4] The 2019 figure includes continuing and discontinued operations.
[5] The change figures for sales are currency- and portfolio-adjusted in line with the key indicator used for corporate management purposes.

The following overview shows the development of the target cash compensation of the Board of Management in relation to the compensation of all employees in Germany and that of nonmanagerial employees under collective bargaining agreements in Germany. This is calculated based on contractually agreed target entitlements – in accordance with the German Corporate Governance Code – with regard to base compensation, the annual bonus and the four-year stock-based compensation (where the respective employee groups are eligible to participate). For nonmanagerial employees in Germany, the 13th monthly salary and the contractually agreed vacation bonus were taken into account. Variable compensation components for both the Board of Management and the other employee groups were based on the assumption of 100% target attainment. Expenditures for fringe benefits (such as home security equipment, indemnity payments for lapsed variable compensation components granted by former employers) were not taken into account due to their irregular nature. Expenditures for pensions were also disregarded in view of the interest sensitivity of the expenses. The aim of this approach is to enhance comparability in the development of compensation.

A.4.4.3/2

Development of Average Target Cash Compensation[1] of the Board of Management and Employees

€ thousand	2016	Change %	2017	Change %	2018	Change %	2019	Change %	2020
Board of Management	3,050,000	0.8	3,074,400	1.6	3,123,600	5.9	3,307,600	2.2	3,381,630
All employees[2] in Germany[3]	98,004	3.7	101,662	2.6	104,336	8.9	113,636	2.7	116,753
Nonmanagerial employees in Germany[3]	63,749	2.8	65,512	3.2	67,628	0.2	67,791	0.2	67,896

[1] Base compensation, STI and LTI (not taking into account individual STI payout factor), excluding pensions and fringe benefits; calculated on the basis of full-time equivalents (FTEs)
[2] Excluding the Board of Management
[3] Including the employees of the companies Bayer AG, Leverkusen, Bayer Intellectual Property GmbH, Monheim am Rhein, Bayer Business Services GmbH, Leverkusen, and Pallas Versicherung Aktiengesellschaft, Leverkusen (all Germany). From 2018, the figures do not include Animal Health employees.
The relative changes in average target cash compensation can be influenced by a range of factors and can vary both over time and across the Board of Management, the overall workforce and nonmanagerial employees. These factors include changes in the composition of the workforce, various salary adjustments within and outside of collective bargaining agreements, the integration and carving out of business entities, or measures relating to HR policy.

The difference between the percentage increases in average target cash compensation for nonmanagerial employees and that for all employees in Germany in 2020 compared with 2019 is again primarily due to changes in the structure of the workforce as a result of the restructuring measures. In addition, the compensation of nonmanagerial employees in Germany was adjusted effective July 1, 2020, as agreed in the 2019 collective bargaining agreement.

In 2020, the ratio between the average compensation of a Board of Management member and that of all employees in Germany stood at 29:1 (2019: 29:1), while the ratio between the average compensation of a Board of Management member and that of nonmanagerial employees in Germany was 50:1 (2019: 49:1). For the Chairman of the Board of Management, the ratios were 50:1 (2019: 51:1) in relation to all employees in Germany and 86:1 (2019: 85:1) in relation to nonmanagerial employees in Germany.

4.4.4 Compensation of the Supervisory Board

The Supervisory Board is compensated based on the relevant provisions of the Articles of Incorporation as last amended at the Annual Stockholders' Meeting on April 28, 2017.

The members of the Supervisory Board receive fixed annual compensation of €132 thousand (2019: €132 thousand) plus reimbursement of their expenses.

In accordance with the recommendations of the German Corporate Governance Code, additional compensation is paid to the Chairman and Vice Chairman of the Supervisory Board and for chairing and membership of committees. The Chairman of the Supervisory Board receives fixed annual compensation of €396 thousand (2019: €396 thousand), the Vice Chairman €264 thousand (2019: €264 thousand). These amounts also cover membership and chairmanship of committees. The other members receive additional compensation for committee membership. The chairman of the Audit Committee receives an additional €132 thousand (2019: €132 thousand) and the other members of the Audit Committee €66 thousand (2019: €66 thousand) each. The chairmen of the remaining committees receive €66 thousand (2019: €66 thousand) each and the other members of those committees €33 thousand (2019: €33 thousand) each. As before, no additional compensation is paid for membership of the Nominations Committee. A Supervisory Board member who is a member of more than two committees receives compensation only for the two committees with the highest compensation. If changes are made to the Supervisory Board and / or its committees during the year, members receive compensation on a prorated basis. As in the past, the members of the Supervisory Board also receive an attendance fee of €1 thousand each time they personally attend a meeting of the Supervisory Board or a committee. The attendance fee is limited to €1 thousand per day.

The members of the Supervisory Board have given a voluntary pledge that they will each purchase Bayer shares for 25% of their pretax fixed compensation, including any additional compensation for committee membership, and hold these shares for as long as they remain members of the Supervisory Board. This does not apply to members who under a service or employment contract are prevented from purchasing shares or who transfer at least 85% of their fixed annual compensation and additional compensation to the Hans Böckler Foundation in accordance with the rules of the German Trade Union Confederation or whose service or employment contract requires them to transfer such compensation to their employer. If less than 85% of the fixed compensation is transferred, the voluntary pledge applies to the portion not transferred. The obligation to purchase Bayer shares was adjusted in 2017 and now only applies for the first five years of membership of the Supervisory Board; these shares must then be held until membership of the Supervisory Board ceases. Bayer shares acquired prior to 2017 in connection with the voluntary pledge are taken into account for this purpose. By voluntarily pledging to invest in and hold Bayer shares, the Supervisory Board members reinforce their interest in the long-term, sustainable success of the company.

Compensation of the Supervisory Board in 2020

The following table shows the components of each Supervisory Board member's compensation for 2020.

A.4.4.4/1

Compensation of the Members of the Supervisory Board of Bayer AG in 2020

	Fixed compensation		Attendance fees[1]		Total	
€ thousand	2019	2020	2019	2020	2019	2020
Members of the Supervisory Board serving as of December 31, 2020						
Dr. Paul Achleitner	198	198	6	1	204	199
Dr. Simone Bagel-Trah	132	132	5	1	137	133
Horst Baier[2]	–	201	–	–	–	201
Dr. Norbert W. Bischofberger	165	165	6	1	171	166
André van Broich	198	198	7	2	205	200
Ertharin Cousin[3]	33	132	1	1	34	133
Dr. Thomas Elsner	215	231	10	2	225	233
Johanna W. (Hanneke) Faber	132	132	3	1	135	133
Colleen A. Goggins	149	165	5	–	154	165
Robert Gundlach[4]	5	134	–	1	5	135
Heike Hausfeld	165	165	7	2	172	167
Reiner Hoffmann	132	132	3	1	135	133
Frank Löllgen	198	198	10	2	208	200
Prof. Dr. Wolfgang Plischke	264	264	11	2	275	266
Petra Reinbold-Knape	198	198	7	1	205	199
Andrea Sacher[5]	–	41	–	–	–	41
Michael Schmidt-Kießling	132	132	5	1	137	133
Prof. Dr. Otmar D. Wiestler	165	165	6	1	171	166
Prof. Dr. Norbert Winkeljohann (Chairman)[6]	281	365	9	2	290	367
Oliver Zühlke (Vice Chairman)	264	264	6	2	270	266
Individuals who ceased to be members of the Supervisory Board in 2019 and 2020						
Thomas Ebeling[7]	99	–	4	–	103	–
Detlef Rennings[8]	120	–	3	–	123	–
Sabine Schaab[9]	165	98	7	1	172	99
Werner Wenning[10]	396	129	11	2	407	131
Total	**3,806**	**3,839**	**132**	**27**	**3,938**	**3,866**

[1] Under the applicable provisions of the Articles of Incorporation, Supervisory Board members only receive an attendance fee when they attend a meeting in person. Due to the pandemic, most of the meetings held in 2020 took the form of video conference calls for which attendance fees were not payable.
[2] Member of the Supervisory Board since April 28, 2020
[3] Member of the Supervisory Board since October 1, 2019
[4] Member of the Supervisory Board since December 18, 2019
[5] Member of the Supervisory Board since September 8, 2020
[6] Chairman of the Supervisory Board since April 28, 2020
[7] Member of the Supervisory Board until September 30, 2019
[8] Member of the Supervisory Board until November 29, 2019
[9] Member of the Supervisory Board until August 4, 2020
[10] Chairman of the Supervisory Board until April 28, 2020

In addition to their compensation as members of the Supervisory Board, those employee representatives who are employees of Bayer Group companies receive compensation unrelated to their service on the Supervisory Board. The total amount of such compensation in 2020 was €851 thousand (2019: €813 thousand), including fixed and variable compensation components. Pension obligations to all employee representatives on the Supervisory Board amounted to €5,973 thousand (2019: €5,700 thousand).

No compensation was paid or benefits granted to members of the Supervisory Board for personally performed services such as consultancy or agency services. The company has purchased insurance for the members of the Supervisory Board to cover their personal liability arising from their service on the Supervisory Board.

4.4.5 Further Information

Advances or loans to members of the Board of Management or Supervisory Board

There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2020, or at any time during 2020 or 2019.

Pension payments to former members of the Board of Management or their surviving dependents

We currently pay retired members of the Board of Management a monthly pension equal to a maximum of 80% of the fixed compensation received immediately prior to retirement. The pensions paid to former members of the Board of Management or their surviving dependents are reassessed annually and adjusted, taking into account the development of consumer prices. The pensions paid to former members of the Board of Management or their surviving dependents in 2020 totaled €12,315 thousand (2019: €12,078 thousand). The present value of the defined benefit pension obligation for former members of the Board of Management and their surviving dependents according to IFRS amounted to €208,524 thousand (2019: €199,454 thousand), while the settlement value of the pension obligation according to the German Commercial Code amounted to €175,474 thousand (2019: €162,948 thousand).

4.5 Takeover-Relevant Information

Explanatory report pursuant to Section 289a, Paragraph 1 and Section 315a, Paragraph 1 of the German Commercial Code (HGB)

The capital stock of Bayer AG amounted to €2,515,005,649.92 as of December 31, 2020, divided into 982,424,082 no-par registered shares. The capital stock and the number of shares were thus unchanged from the end of the previous year. Each share confers one voting right. A small number of shares may be subject to temporary trading restrictions, such as retention periods, in connection with employee stock participation programs. We received no notifications in 2020 of direct or indirect holdings of shares in Bayer AG that exceed 10% of the capital stock. The company thus is not in possession of any notifications of holdings that exceed 10% of the capital stock.

See also
www.bayer.com/en/investors/shareholder-information

The appointment and dismissal of members of the Board of Management are subject to the provisions of Sections 84 and 85 of the German Stock Corporation Act, Section 31 of the German Codetermination Act and Section 6 of the company's Articles of Incorporation. Pursuant to Section 84, Paragraph 1 of the German Stock Corporation Act, the members of the Board of Management are appointed and dismissed by the Supervisory Board. Since Bayer AG falls within the scope of the German Codetermination Act, the appointment or dismissal of members of the Board of Management requires a majority of two-thirds of the votes of the members of the Supervisory Board on the first ballot pursuant to Section 31, Paragraph 2 of that act. If no such majority is achieved, the appointment is resolved pursuant to Section 31, Paragraph 3 of the Codetermination Act on a second ballot by a simple majority of the votes of the members of the Supervisory Board. If the required majority is still not achieved, a third ballot is held. Here again, a simple majority of the votes suffices, but in this ballot the Chairman of the Supervisory Board has two votes pursuant to Section 31, Paragraph 4 of the Codetermination Act. Under Section 6, Paragraph 1 of the Articles of Incorporation of Bayer AG, the number of members of the Board of Management is determined by the Supervisory Board but must be at least two. The Supervisory Board may appoint one member of the Board of Management to be the Chairman of the Board of Management pursuant to Section 84, Paragraph 2 of the German Stock Corporation Act and Section 6, Paragraph 1 of the Articles of Incorporation.

Any amendments to the Articles of Incorporation are made pursuant to Section 179 of the German Stock Corporation Act and Sections 10 and 17 of the Articles of Incorporation. Under Section 179, Paragraph 1 of the German Stock Corporation Act, amendments to the Articles of Incorporation require a resolution of the Stockholders' Meeting. Pursuant to Section 179, Paragraph 2 of the German Stock Corporation Act, this resolution must be passed by a majority of three-quarters of the voting capital represented at the meeting, unless the Articles of Incorporation provide for a different majority. However, where an amendment relates to a change

in the object of the company, the Articles of Incorporation may only specify a larger majority. Section 17, Paragraph 2 of the Articles of Incorporation of Bayer AG utilizes the scope for deviation pursuant to Section 179, Paragraph 2 of the German Stock Corporation Act and provides that resolutions may be passed by a simple majority of the votes cast or, where a capital majority is required, by a simple majority of the capital represented. Pursuant to Section 10, Paragraph 9 of the Articles of Incorporation, the Supervisory Board may resolve on amendments to the Articles of Incorporation that relate solely to their wording.

The Annual Stockholders' Meeting held on April 26, 2019, resolved that the Board of Management be authorized to purchase and dispose of own shares representing up to 10% of the capital stock existing at the time the resolution was adopted. This authorization expires on April 25, 2024. The authorization to purchase own shares also includes the purchase of own shares using put or call options (derivatives) up to a volume of 5% of the capital stock existing at the time the resolution was adopted or at the time the authorization is exercised. Stockholders' subscription rights may be excluded, depending on the purpose for which the purchased own shares are to be used.

A material agreement that is subject to the condition precedent of a change of control pertains to the undrawn €4.5 billion syndicated credit facility arranged by Bayer AG and its U.S. subsidiary Bayer Corporation. This facility is available until December 2025. The participating banks are entitled to terminate the credit facility in the event of a change of control at Bayer and demand repayment of any loans that may have been granted under this facility up to that time.

A similar clause is also contained in the agreement on a syndicated credit facility in the original amount of US$56.9 billion granted to Bayer US Finance II LLC and Bayer AG in September 2016 to finance the acquisition of Monsanto (the "Monsanto credit facility"). Pursuant to the agreement, the Monsanto credit facility was reduced in 2016 by the US$4.2 billion net proceeds from the issuance of mandatory convertible notes, to US$52.7 billion, and in 2017 by the US$1.2 billion net proceeds from the issuance of an exchangeable bond, to US$51.5 billion. The mandatory convertible notes were issued by Bayer Capital Corporation B.V. and guaranteed by Bayer AG. They matured in November 2019. The exchangeable bond was issued by Bayer AG and was settled in cash in June 2020. Holders of these bonds had the right to demand the redemption of unexchanged bonds by Bayer AG in the event of a change of control if Bayer AG's credit rating were to be downgraded within 120 days after such change of control became effective.

The Monsanto credit facility was drawn in 2018 to finance the acquisition of Monsanto. The resulting loan had a value of US$3.8 billion as of December 31, 2020. The reduction of the Monsanto credit facility and of the loan in 2018 and 2019 was achieved partly through proceeds from Bayer AG capital increases, a further reduction of Bayer's interest in Covestro AG, a series of divestments to fulfill antitrust requirements, a bond with a nominal volume of €5 billion issued by Bayer Capital Corporation B.V. and guaranteed by Bayer AG, and a US$15 billion bond in 144A/ RegS format issued by Bayer US Finance II LLC and guaranteed by Bayer AG. Both of these bonds have largely the same terms in the event of a change of control as the other bonds mentioned above, although the period for a potential deterioration of Bayer AG's credit rating is only 60 days in the case of the US$15 billion bond.

The terms of the nominal €1.4 billion (as of December 31, 2020) in notes issued by Bayer in the years 2013 to 2017 under its Debt Issuance Programme also contain a corresponding change-of-control clause associated with a deterioration of the credit rating within 120 days. Clauses to this effect were also included in the terms of the US$7 billion bond in 144A/Reg S format issued in 2014, which had an outstanding amount of US$3.3 billion as of December 31, 2020, and of the nominal €6 billion in bonds issued in July 2020, the full amount of which was outstanding as of December 31, 2020.

In the event of a change of control, members of the Board of Management are – if certain narrow conditions are met – entitled to a severance payment of 250% of annual base compensation (fixed compensation), or 200% of annual cash compensation in legacy cases, limited in either case to the compensation for the remaining term of the respective contract.

5. Information on Bayer AG

Business lease agreements exist between Bayer AG on the one hand, and Bayer Pharma AG and Bayer CropScience AG – the former parent companies of the respective divisions – on the other. Bayer AG as lessee manages these two companies' operational businesses on the basis of these agreements. In addition to its holding company function, Bayer AG thus also performs the parent company functions with respect to the two divisions.

Bayer AG has both holding and parent company functions in the Bayer Group.

Bayer AG is a generator and supplier of utilities at multiple locations and thus an energy utility as defined in Section 3, No. 18 of the German Energy Industry Act (EnWG). Since utility supply networks are operated by a subsidiary, Bayer AG also constitutes a vertically integrated energy utility under Section 3, No. 38 of the EnWG. However, regarding its own activities, it is only subject to the separate accounting obligation and not the obligation to prepare activity reports.

The financial statements of Bayer AG are prepared in accordance with the German Commercial Code (HGB) and the German Stock Corporation Act (AktG). Because the company is an integrated energy utility, the provisions of Section 6b of the EnWG are also observed.

Bayer Business Services GmbH (BBS) transferred its assets in their entirety, together with all rights and obligations, to Bayer AG pursuant to Section 2, No. 1 of the German Transformation Act (UmwG) (merger by way of absorption), whereby the former was dissolved without being wound up. The merger took effect on January 1, 2020. Comparability between the 2020 and 2019 figures is therefore very limited. The effects of the BBS merger into the enabling functions are explained below. The object of BBS's business activities was the provision of various administrative services to companies of the Bayer Group and third-party companies in Germany and other countries; it also provided services in the areas of law, patents and licensing to Bayer Group companies. The BBS merger led to a change in the treatment of costs, which accordingly impacted the allocation of functional costs.

5.1 Earnings Performance of Bayer AG

A 5.1/1

Bayer AG Summary Income Statements According to the German Commercial Code

€ million	2019	2020
Net sales	14,833	13,985
Cost of goods sold	(7,882)	(6,761)
Gross profit	**6,951**	**7,224**
Selling expenses	(4,524)	(5,381)
Research and development expenses	(2,131)	(2,401)
General administration expenses	(1,409)	(1,714)
Other operating income	481	334
Other operating expenses	(123)	(252)
Operating income	**(755)**	**(2,190)**
Income from investments in affiliated companies – net	5,605	(206)
Interest income / expense – net	85	43
Other financial income / expense – net	(66)	383
Non-operating income	**5,624**	**220**
Income taxes	(312)	(577)
Income after taxes / net income	**4,557**	**(2,547)**
Profit carried forward	–	–
Allocation from (to) other retained earnings	(1,806)	4,512
Distributable profit	**2,751**	**1,965**

Decline in earnings mainly due to weak financial result

Sales in 2020 came in roughly €1 billion short of the €15 billion forecast. This was mainly because the pharmaceuticals business was substantially weaker than planned. The decline was driven partly by the effects of the COVID-19 pandemic on sales development in the contraception and radiology portfolio, and partly by the significant drop in internal sales in China, one of the principal markets. In addition, the performance of the best-selling product, Xarelto™, was below expectations. Allocations to provisions for restructuring also weighed on operating income, which came in at minus €2.2 billion.

Sales of Bayer AG receded by 5.7% to €13,985 million (2019: €14,833 million). Developments varied among the divisions and enabling functions.

The Crop Science Division reported a 17.6% drop in sales to €4,291 million (2019: €5,206 million). Intra-Group sales declined to €4,117 million (2019: €5,073 million), while external sales rose to €174 million (2019: €133 million). The main reason for this development was the switch of the Europe / Middle East / Africa business to a licensing model with Bayer CropScience Schweiz AG, which began in July 2019. The decrease related mainly to the Fungicides (€1,701 million; 2019: €2,208 million), Insecticides (€880 million; 2019: €1,139 million) and Herbicides (€1,180 million; 2019: €1,427 million) business units. Further factors behind the decline in sales were negative effects from the devaluation of the Brazilian currency, adjustments to transfer prices and the adverse repercussions of the COVID-19 pandemic.

Sales of the Pharmaceuticals Division receded to €9,101 million (2019: €9,510 million). The decreases in sales of Yaz™ / Yasmin™ / Yasminelle™ to €457 million (2019: €474 million) and of Mirena™ to €383 million (2019: €495 million) were largely attributable to the effects of the COVID-19 pandemic and mainly resulted from protective measures such as the prioritization of emergency treatments and the partial closure of some doctors' offices, which in turn led to a reduced number of interventions. Xarelto™ posted a slight improvement over the previous year to €3,643 million (2019: €3,531 million). Intra-Group sales declined to €8,184 million (2019: €8,631 million), while external sales rose to €917 million (2019: €879 million).

In the enabling functions, revenues from the provision of services increased to €593 million (2019: €117 million), of which €514 million was attributable to the merged BBS business.

With regard to the regions, sales of Bayer AG in Latin America fell to €1,492 million (2019: €1,813 million). This decline was primarily the result of negative currency effects in Brazil, which amounted to about €200 million and mainly impacted the Crop Science Division.

Sales in North America advanced to €3,389 million (2019: €2,967 million). In the Crop Science Division, internal product sales in North America showed an increase of €347 million, of which changes in transfer prices (including currency effects) accounted for €215 million, changes in volumes for €70 million and portfolio changes for €62 million.

The remaining regions – Europe / Middle East / Africa and Asia / Pacific – posted sales declines totaling €949 million, to €9,104 million. These were mainly due to the switch of the Europe / Middle East / Africa business of Crop Science to a licensing model with Bayer CropScience Schweiz AG, which began in July 2019.

The cost of goods sold in 2020 amounted to €6,761 million (2019: €7,882 million), comprising €3,430 million (2019: €4,101 million) at Crop Science, €2,835 million (2019: €3,413 million) at Pharmaceuticals and €496 million (2019: €368 million) in the enabling functions. After deducting the cost of goods sold from sales, gross profit amounted to €7,224 million (2019: €6,951 million). The gross profit margin increased to 51.7% (2019: 46.9%). The gross margin of the Crop Science Division declined slightly to 20.1% (2019: 21.2%), while that of Pharmaceuticals increased to 68.8% (2019: 64.1%). The gross margin in the enabling functions following the merger with BBS amounted to 16.4%.

Selling expenses rose to €5,381 million (2019: €4,524 million), with €1,181 million (2019: €1,143 million) attributable to Crop Science and €4,201 million (2019: €3,146 million) to Pharmaceuticals. In the Crop Science Division, lease expenses receded to €177 million (2019: €332 million) and license fees to €637 million (2019: €663 million). The increase in selling expenses in the Pharmaceuticals Division was partly due to higher business lease fees of €608 million (2019: €443 million). At Crop Science, license fees were paid chiefly to Bayer CropScience AG (€609 million), while in the Pharmaceuticals Division they were paid primarily to Bayer Intellectual Property GmbH (€1,980 million) and Bayer Pharma AG (€579 million). In addition, the aforementioned change in the treatment of functional costs due to the BBS merger led to an increase in selling expenses in the Crop Science and Pharmaceuticals divisions.

Research and development expenses rose to €2,401 million (2019: €2,131 million), comprising €621 million (2019: €434 million) at Crop Science and €1,780 million (2019: €1,499 million) at Pharmaceuticals. Both divisions intensified their R&D activities. In the Crop Science Division, restructuring measures led to a €140 million allocation to provisions, and therefore contributed to the increase in research and development expenses. In the Pharmaceuticals Division, the establishment of €43 million in provisions in connection with the termination of development projects, combined with the above mentioned change in the treatment of functional costs, resulted in an increase in research and development expenses.

General administration expenses rose to €1,714 million (2019: €1,409 million). General administration expenses were diminished by the change in the treatment of functional costs, but this effect was more than offset by a €340 million allocation to provisions through profit or loss that was due to restructuring measures.

The balance of other operating income and expenses was positive at €82 million (2019: €358 million). The decline from the previous year was due to the one-time effect of the charging-on of €276 million in ancillary acquisition costs for the acquired agricultural business within the Group. Other components were the gain from the BBS merger (€28 million), the reversal of unutilized provisions (€124 million; mainly provisions for restructuring), expenses for compensation payments in connection with the business lease model (€17 million), write-downs of receivables (€23 million) and miscellaneous personnel expenses from transfers to third parties (€33 million).

The company recorded an operating loss of €2,190 million for 2020 (2019: €755 million).

The balance of income and expenses from investments in affiliated companies was minus €206 million (2019: €5,605 million). Dividends and similar income from subsidiaries receded markedly to €500 million (2019: €1,817 million). The decline in the balance of income and expenses from profit and loss transfer agreements with subsidiaries to minus €5,141 million (2019: €2,698 million) mainly arose due to the €731 million loss transfer from Bayer Pharma AG (2019: €2,863 million income transfer) and to the expenses of €4,501 million (2019: €0 million) resulting from a loss pooling obligation toward Bayer CropScience AG under an existing control agreement. The losses incurred by both companies were attributable to a revaluation of the Bayer Group's North America business, which led to write-downs of their investments in affiliates and the absence of dividends and similar income. The principal components of the €500 million in dividends and similar income from subsidiaries were €265 million in dividends from Animal Health and €194 million from Bayer (China) Ltd., China. Gains from the sale of investments in affiliated companies amounted to €4,447 million. They resulted primarily from the sale of the Animal Health business unit to Elanco (€4,132 million) and the merger of Bayer Beteiligungsverwaltung Goslar GmbH into Neunte Bayer VV GmbH (€275 million).

Net interest income fell to €43 million (2019: €85 million). The main components of the net interest position were €606 million in income from loans to Group companies, €189 million in interest expense to subsidiaries, €175 million in bond interest and €508 million in interest expense from effects of the unwinding of discount and from remeasurements in connection with the discounting of provisions to present value. This expense was offset against income of €320 million from investments of plan assets.

The balance of other financial expenses and other financial income was positive at €383 million and thus well in excess of the prior-year figure of minus €66 million. It mainly comprised exchange gains and losses. The net exchange gain of €131 million in 2020 compared to a net exchange loss of €206 million in the prior year. A further factor in the improvement in the balance of other financial income and expenses was the €49 million in write-backs on the shares of Covestro AG under securities recognized in noncurrent assets. These securities had been written down by €20 million in the prior year due to a decline in value that had been expected to be permanent. Miscellaneous financial income included €45 million (2019: €19 million) from the sale of Covestro shares and €14 million (2019: €30 million) in dividends of Covestro AG.

In 2020, the company recorded a €1,970 million loss before income taxes (2019: €4,869 million income before income taxes). After deduction of €577 million (2019: €312 million) in taxes, there was a net loss for the year of €2,547 million (2019: net income of €4,557 million). After the allocation of €4,512 million from other retained earnings, the distributable profit amounted to €1,965 million. The Board of Management and Supervisory Board will propose to the Annual Stockholders' Meeting on April 27, 2021, that the distributable profit be used to pay a dividend of €2.00 per share on the capital stock entitled to the dividend.

5.2 Asset and Financial Position of Bayer AG

A 5.2/1

Bayer AG Summary Statements of Financial Position According to the German Commercial Code

€ million	Dec. 31, 2019	Dec. 31, 2020
ASSETS		
Noncurrent assets		
Intangible assets, property, plant and equipment	165	413
Financial assets	70,388	66,370
	70,553	66,783
Current assets and miscellaneous assets		
Inventories	2,209	2,396
Trade accounts receivable	1,631	1,855
Receivables from subsidiaries	6,421	4,633
Other assets and deferred charges	989	2,061
Cash and cash equivalents, marketable securities	2,783	5,561
	14,033	16,506
Total assets	**84,586**	**83,289**
EQUITY AND LIABILITIES		
Equity	**33,603**	**28,305**
Provisions	**3,244**	**4,790**
Other liabilities and deferrals and accruals		
Bonds and notes, liabilities to banks	9,550	14,548
Trade accounts payable	1,724	2,022
Payables to subsidiaries	35,954	33,098
Remaining liabilities and deferred income	511	526
	47,739	50,194
Total equity and liabilities	**84,586**	**83,289**

Stable financial structure, increase in bonds and other liabilities

As in previous years, Bayer AG's financial position reflected the management function it performs for the Group, particularly with respect to the company's shareholdings and Group financing. The statement of financial position is characterized by these shareholdings and the receivables and payables vis-à-vis Group companies. Total assets decreased by €1,297 million in 2020 to €83,289 million (2019: €84,586 million).

Intangible assets of approximately €121 million and property, plant and equipment of €37 million were transferred to Bayer AG upon the merger with BBS. Whereas noncurrent assets of Bayer AG declined by €3,770 million to €66,783 million (2019: 70,553 million), mainly due to the repayment of intra-Group loans, current and miscellaneous assets increased by €2,473 million to €16,506 million (2019: €14,033 million). Among the current assets, inventories rose by €187 million to €2,396 million. Receivables from subsidiaries fell considerably by €1,788 million to €4,633 million (2019: €6,421 million). The growth of €7,338 million in loan receivables was more than offset, mainly by the substantial €7,237 million decrease in receivables from Group call deposits and the €2,692 million decline in receivables from subsidiaries with profit and loss transfer agreements. The €930 million increase in other assets to €1,645 million (2019: €715 million) was largely attributable to new short-term deposits of €1,200 million. The €2,801 million increase in securities held (2019: €0 million) arose from the purchase of short-term euro investments with indefinite maturities.

Total provisions rose by €1,546 million to €4,790 million (2019: €3,244 million). The provisions recognized for the excess of pension liabilities over plan assets rose by €678 million to €1,696 million (2019: €1,018 million). Of this amount, €306 million pertained to effects from the BBS merger. Provisions for taxes advanced by €371 million to €732 million (2019: €361 million), mainly due to the allocation to provisions for income taxes not yet finally assessed. Miscellaneous provisions rose by €497 million to €2,362 million (2019: €1,865 million). The increase was largely due to allocations of €556 million to provisions for personnel adjustment programs commenced in 2020.

Liabilities (including deferred income) – net of deductible receivables – rose by €2,455 million to €50,194 million (2019: €47,739 million). Bond debt advanced by €5,000 million to €11,300 million (2019: €6,300 million). Liabilities to banks and other financial third parties remained at the prior-year level. Payables to subsidiaries were reduced by €2,856 million to €33,098 million (2019: €35,954 million).

Financial obligations declined by €3,680 million to €47,457 million (2019: €51,137 million). Intra-Group financial obligations receded by €8,660 million to €32,866 million (2019: €41,526 million). The decrease was driven by lower liabilities to subsidiaries from call deposits compared with the prior year, which declined from €12,392 million to €5,152 million. Liabilities to third parties rose by €4,980 million to €14,591 million (2019: €9,611 million). This increase was mainly due to the higher volume of bonds, which rose from €6,300 million to €11,300 million in 2020. After deduction of €5,561 million (2019: €2,783 million) in cash and cash equivalents and marketable securities, net debt was below the previous year at €41,896 million (2019: €48,354 million). The drop in net debt was largely due to the sale of the Animal Health business unit to Elanco.

All of the own shares acquired in 2020 were subsequently resold, so the transactions were not reflected in equity at the closing date. Details are provided in Note 11 to the Financial Statements of Bayer AG (Stock-based compensation).

5.3 Forecast, Opportunities and Risks for Bayer AG

Bayer AG is largely exposed to the same opportunities and risks as the Bayer Group, including the effects of the COVID-19 pandemic. Details are provided in the respective chapter of this Annual Report.

For Bayer AG, we expect sales of approximately €15 billion and an operating loss in the region of €2 billion in 2021. These figures include Bayer AG's own operational business and the businesses leased from Bayer Pharma AG and Bayer CropScience AG. In addition to the global economy slowly recovering from the deep recession experienced in 2020, sales are expected to increase partly due to effects from the BBS merger and the ensuing change in the intra-Group charging-on of services. In addition, the earnings of most German subsidiaries are transferred directly to Bayer AG under profit and loss transfer agreements. Also, specific intra-Group dividend measures ensure the availability of sufficient distributable income. On account of the interdependencies between Bayer AG and its subsidiaries, the outlook for the Bayer Group thus largely also reflects the expectations for Bayer AG. In the coming year we again expect Bayer AG to report a distributable profit that will enable our stockholders to adequately participate in the Bayer Group's earnings.

As already stated in this report, we announced in September 2020 that we are planning additional operational savings for the Group as of 2024 in order to continue moving the company forward in the current market environment and set the course for the future. We are taking this action in addition to the efficiency program announced in November 2018. The relevant new measures were further developed during the fourth quarter and were presented to the employee representatives in January 2021 for the first time. Provisions for restructuring were adjusted accordingly, and further allocations to provisions are anticipated in 2021 as the activities are developed in greater detail. The nature and scope of the measures will reflect the savings communicated at the Group level.

5.4 Nonfinancial and Other Disclosures by Bayer AG

Due to the importance of Bayer AG within the Bayer Group, further disclosures are required. This pertains especially to the reporting of significant nonfinancial information, which also became mandatory for the parent company Bayer AG as a result of the CSR Directive Implementation Act, which came into effect in 2017.

The integrated presentation was selected in the management report for the nonfinancial statement to be issued in 2020 pursuant to Section 289b through e of the German Commercial Code (HGB). All disclosures, provisions, described processes and key data contained in the preceding statements in the management report apply to the Bayer Group including Bayer AG. No additional aspects were identified pursuant to the CSR Directive Implementation Act that apply exclusively to Bayer AG.

The following table contains significant nonfinancial and other key data of Bayer AG.

A 5.4/1

Significant Nonfinancial and Other Key Data of Bayer AG

	2019	2020
R&D expenses (€ million)	2,131	2,401
Employees[1]	17,614	18,795
Employees by function[1]		
Production	9,417	11,357
Marketing and distribution	976	971
R&D	5,211	4,828
Administration	2,010	1,639
Employees by gender[1]		
Women	6,439	6,655
Men	11,175	12,140
Personnel expenses (€ million)	2,512	2,970
Pension obligations (€ million)	4,900	6,134
Short-term incentive program (€ million)	238	143
Procurement spend (€ million)	3.6	4.4
Safety		
Recordable Incident Rate (RIR)	0.52	0.49
Lost Time Recordable Incident Rate (LTRIR)	0.38	0.39
Loss of Primary Containment Incident Rate (LoPC-IR)	0.25	0.18
Environmental protection		
Total energy consumption (terajoules)	6,565	6,267
Total greenhouse gas emissions (million metric tons of CO_2 equivalents)	0.46	0.42
Water use (million cubic meters)	5.46	5.48
Total waste generated (thousand metric tons)	270	216

[1] Full-time equivalents as of December 31, 2020

B Consolidated Financial Statements

Bayer Group Consolidated Income Statements

B 1

€ million	Note	2019	2020
Net sales	**[6]**	**43,545**	**41,400**
Cost of goods sold		(17,613)	(19,138)
Gross profit		**25,932**	**22,262**
Selling expenses		(12,489)	(13,053)
Research and development expenses		(5,301)	(7,126)
General administration expenses		(3,606)	(2,879)
Other operating income	[7]	1,636	1,540
Other operating expenses	[8]	(2,010)	(16,913)
EBIT[1]		**4,162**	**(16,169)**
Equity-method income (loss)	[10.1]	160	(96)
Financial income		475	885
Financial expenses		(1,944)	(1,870)
Financial result	**[10]**	**(1,309)**	**(1,081)**
Income before income taxes		**2,853**	**(17,250)**
Income taxes	[11]	(443)	1,689
Income from continuing operations after income taxes		**2,410**	**(15,561)**
of which attributable to noncontrolling interest		19	8
of which attributable to Bayer AG stockholders		2,391	(15,569)
Income from discontinued operations after income taxes	**[5.3]**	**1,700**	**5,074**
of which attributable to noncontrolling interest		–	–
of which attributable to Bayer AG stockholders		1,700	5,074
Income after income taxes		**4,110**	**(10,487)**
of which attributable to noncontrolling interest	[12]	19	8
of which attributable to Bayer AG stockholders (net income)		**4,091**	**(10,495)**
€			
Earnings per share	**[13]**		
From continuing operations	**[13]**		
Basic		2.44	(15.85)
Diluted		2.44	(15.85)
From discontinued operations	**[13]**		
Basic		1.73	5.17
Diluted		1.73	5.17
From continuing and discontinued operations	**[13]**		
Basic		4.17	(10.68)
Diluted		4.17	(10.68)

2019 figures restated

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

Bayer Group Consolidated Statements of Comprehensive Income

B 2

€ million	Note	2019	2020
Income after income taxes		**4,110**	**(10,487)**
of which attributable to noncontrolling interest	[12]	19	8
of which attributable to Bayer AG stockholders		4,091	(10,495)
Remeasurements of the net defined benefit liability for post-employment benefit plans	[22]	(1,347)	(125)
Income taxes	[11]	381	50
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans		**(966)**	**(75)**
Change in the fair value of own credit risk component of financial liabilities measured at fair value		(3)	–
Income taxes	[11]	1	–
Other comprehensive income relating to own credit risk component of financial liabilities measured at fair value		**(2)**	**–**
Changes in fair values of equity instruments measured at fair value		201	44
Income taxes	[11]	(6)	(1)
Other comprehensive income from equity instruments measured at fair value		**195**	**43**
Other comprehensive income relating to investments accounted for using the equity method		**21**	**(7)**
Other comprehensive income that will not be reclassified subsequently to profit or loss		**(752)**	**(39)**
Changes in fair values of derivatives designated as cash flow hedges	[27.3]	(115)	87
Reclassified to profit or loss		107	(6)
Income taxes	[11]	6	(32)
Other comprehensive income from cash flow hedges		**(2)**	**49**
Changes in time value of options used as hedging instruments	[17]	–	(1)
Other comprehensive income from time value of options		**–**	**(1)**
Changes in exchange differences recognized on translation of operations outside the eurozone	[21]	790	(3,439)
Reclassified to profit or loss	[21]	(130)	(95)
Other comprehensive income from exchange differences	**[21]**	**660**	**(3,534)**
Other comprehensive income relating to investments accounted for using the equity method		**1**	**2**
Other comprehensive income that may be reclassified subsequently to profit or loss		**659**	**(3,484)**
Total other comprehensive income[1]		**(93)**	**(3,523)**
of which attributable to noncontrolling interest		(1)	(27)
of which attributable to Bayer AG stockholders		(92)	(3,496)
Total comprehensive income		**4,017**	**(14,010)**
of which attributable to noncontrolling interest		18	(19)
of which attributable to Bayer AG stockholders		3,999	(13,991)

[1] Other comprehensive income is recognized outside profit or loss in equity.

Bayer Group Consolidated Statements of Financial Position

B 3

€ million	Note	Jan. 1, 2019	Dec. 31, 2019	Dec. 31, 2020
Noncurrent assets				
Goodwill	[14]	38,628	39,312	36,080
Other intangible assets	[14]	36,696	34,709	26,029
Property, plant and equipment	[15]	12,943	12,479	11,710
Investments accounted for using the equity method	[16]	515	522	491
Other financial assets	[17]	2,212	1,536	1,555
Other receivables	[20]	526	751	835
Deferred taxes	[11]	4,183	4,426	4,686
		95,703	**93,735**	**81,386**
Current assets				
Inventories	[18]	11,012	10,650	10,961
Trade accounts receivable	[19]	11,714	11,678	9,555
Other financial assets	[17]	1,166	2,326	7,940
Other receivables	[20]	1,958	1,811	1,667
Claims for income tax refunds		809	1,652	1,233
Cash and cash equivalents		4,052	3,185	4,191
Assets held for sale	[5.3]	234	1,137	113
		30,945	**32,439**	**35,660**
Total assets		**126,648**	**126,174**	**117,046**
Equity	**[21]**			
Capital stock		2,387	2,515	2,515
Capital reserves		18,388	18,261	18,261
Other reserves		25,118	26,477	9,748
Equity attributable to Bayer AG stockholders		**45,893**	**47,253**	**30,524**
Equity attributable to noncontrolling interest		171	180	175
		46,064	**47,433**	**30,699**
Noncurrent liabilities				
Provisions for pensions and other post-employment benefits	[22]	8,717	8,213	8,454
Other provisions	[23]	3,418	3,766	4,322
Refund liabilities	[6]	160	105	8
Contract liabilities	[6]	986	733	720
Financial liabilities	[24]	37,712	36,912	33,196
Income tax liabilities		1,433	1,603	247
Other liabilities	[26]	366	439	1,341
Deferred taxes	[11]	4,667	3,755	1,331
		57,459	**55,526**	**49,619**
Current liabilities				
Other provisions	[23]	3,365	3,251	10,127
Refund liabilities	[6]	3,622	4,134	4,455
Contract liabilities	[6]	3,235	3,319	3,592
Financial liabilities	[24]	3,682	2,182	8,570
Trade accounts payable	[25]	6,038	6,426	5,683
Income tax liabilities		1,050	758	2,269
Other liabilities	[26]	2,121	2,483	2,032
Liabilities directly related to assets held for sale	[5.3]	12	662	–
		23,125	**23,215**	**36,728**
Total equity and liabilities		**126,648**	**126,174**	**117,046**

2019 figures restated

Bayer Group Consolidated Statements of Changes in Equity

B 4

€ million	Capital stock	Capital reserves	Retained earnings incl. net income	Exchange differences	Fair-value measurement of equity instruments
Adjustment of value flow concept			(84)		
Jan. 1, 2019	**2,387**	**18,388**	**25,650**	**(736)**	**122**
Equity transactions with owners					
Capital increase	128	(128)			
Dividend payments			(2,611)		
Other changes		1	(19)		
Other comprehensive income			(965)	661	216
Miscellaneous other changes			5		(28)
Income after income taxes			4,091		
Dec. 31, 2019	**2,515**	**18,261**	**26,151**	**(75)**	**310**
Equity transactions with owners					
Capital increase					
Dividend payments			(2,751)		
Other changes			13		
Other comprehensive income			(77)	(3,506)	36
Miscellaneous other changes			216	1	(229)
Income after income taxes			(10,495)		
Dec. 31, 2020	**2,515**	**18,261**	**13,057**	**(3,580)**	**117**

B4 (continued)

€ million	Cash flow hedges	Other reserves[1]	Equity attributable to Bayer AG stockholders	Equity attributable to non-controlling interest	Equity
Adjustment of value flow concept			(84)		(84)
Jan. 1, 2019	**77**	**5**	**45,893**	**171**	**46,064**
Equity transactions with owners					
Capital increase					
Dividend payments			(2,611)	(4)	(2,615)
Other changes			(18)	(4)	(22)
Other comprehensive income	(2)	(2)	(92)	(1)	(93)
Miscellaneous other changes	16	(3)	(10)	(1)	(11)
Income after income taxes			4,091	19	4,110
Dec. 31, 2019	**91**	**–**	**47,253**	**180**	**47,433**
Equity transactions with owners					
Capital increase					
Dividend payments			(2,751)	(17)	(2,768)
Other changes			13	31	44
Other comprehensive income	49	2	(3,496)	(27)	(3,523)
Miscellaneous other changes	12				
Income after income taxes			(10,495)	8	(10,487)
Dec. 31, 2020	**152**	**2**	**30,524**	**175**	**30,699**

[1] Other reserves include the reserve for changes in own credit risk amounting to €0 million (2019: minus €6 million) and the revaluation reserve of €2 million (2019: €6 million)

Bayer Group Consolidated Statements of Cash Flows

B 5

€ million	Note	2019	2020
Income from continuing operations after income taxes		2,410	(15,561)
Income taxes		443	(1,689)
Financial result		1,309	1,081
Income taxes paid		(2,554)	(1,063)
Depreciation, amortization and impairments		5,367	13,259
Change in pension provisions		(168)	(91)
(Gains) losses on retirements of noncurrent assets		(448)	(126)
Decrease (increase) in inventories		(103)	(900)
Decrease (increase) in trade accounts receivable		14	695
(Decrease) increase in trade accounts payable		759	(347)
Changes in other working capital, other noncash items		954	9,311
Net cash provided by (used in) operating activities from continuing operations		**7,983**	**4,569**
Net cash provided by (used in) operating activities from discontinued operations	[5.3]	224	334
Net cash provided by (used in) operating activities		**8,207**	**4,903**
Cash outflows for additions to property, plant, equipment and intangible assets		(2,650)	(2,418)
Cash inflows from sales of property, plant, equipment and other assets		283	329
Cash inflows from (outflows for) divestments less divested cash		2,546	4,172
Cash inflows from noncurrent financial assets		149	673
Cash outflows for noncurrent financial assets		(421)	(245)
Cash outflows for acquisitions less acquired cash		(410)	(2,263)
Interest and dividends received		135	134
Cash inflows from (outflows for) current financial assets		(303)	(4,455)
Net cash provided by (used in) investing activities		**(671)**	**(4,073)**
Dividend payments		(2,615)	(2,768)
Issuances of debt		7,464	10,891
Retirements of debt		(11,760)	(6,424)
Interest paid including interest-rate swaps		(1,517)	(1,301)
Interest received from interest-rate swaps		39	25
Net cash provided by (used in) financing activities		**(8,389)**	**423**
Change in cash and cash equivalents due to business activities	**[31]**	**(853)**	**1,253**
Cash and cash equivalents at beginning of year		**4,052**	**3,185**
Change in cash and cash equivalents due to changes in scope of consolidation		(20)	(7)
Change in cash and cash equivalents due to exchange rate movements		6	(240)
Cash and cash equivalents at end of year		**3,185**	**4,191**

2019 figures restated

Notes to the Consolidated Financial Statements of the Bayer Group

1. General information

Bayer Aktiengesellschaft (Bayer AG), which is entered in the commercial register of the Local Court of Cologne, Germany, HRB 48248, is a global enterprise based in Germany. Its registered office is at Kaiser-Wilhelm-Allee 1, 51368 Leverkusen. The material business activities of the Bayer Group in the fields of agriculture and health care took place in the reporting period in the Crop Science, Pharmaceuticals and Consumer Health segments. The activities of each segment are outlined in Note [4].

The declarations required under Section 161 of the German Stock Corporation Act concerning the German Corporate Governance Code have been issued and made available to stockholders.

The Board of Management of Bayer AG prepared the consolidated financial statements of the Bayer Group as of December 31, 2020, at its meeting on February 16, 2021, submitted the prepared statements to the Audit Committee and the Supervisory Board for examination and approval, and released them for publication. The consolidated financial statements were discussed by the Audit Committee of the Supervisory Board of Bayer AG at its meeting on February 22, 2021, and approved by the Supervisory Board at its plenary meeting on February 23, 2021.

2. Effects of new financial reporting standards

Financial reporting standards applied for the first time in 2020

The following amendments to financial reporting standards were applied for the first time as of January 1, 2020, or June 1, 2020. The amendments had no material impact on the Group's financial position or results of operations.

B 2/1

Financial Reporting Standards Amendments With No Material Impact

Amendments to standards		Mandatory application
Conceptual Framework	Amendments to References to the Conceptual Framework in IFRS Standards	Jan. 1, 2020
IFRS 3	Amendments to IFRS 3: Business Combinations: Definition of a Business	Jan. 1, 2020
IFRS 9, IAS 39, IFRS 7	Amendments to IFRS 9, IAS 39 and IFRS 7: Interest Rate Benchmark Reform (Phase 1)	Jan. 1, 2020
IFRS 16	Amendments to IFRS 16: COVID-19-Related Rent Concessions	June 1, 2020
IAS 1, IAS 8	Amendments to IAS 1 and IAS 8: Definition of Material	Jan. 1, 2020

Published financial reporting standards that have not yet been applied

The IASB has issued the following amendments to standards and a new standard. Their application was not yet mandatory for the 2020 fiscal year. In some cases the European Union had not yet completed the endorsement process. Therefore the following standards have not yet been applied by Bayer:

B 2/2

Published Financial Reporting Standards That Have Not Yet Been Applied

Amendments to standards / new standards		Mandatory application	Anticipated effects
IFRS 3	Amendments to IFRS 3: Business Combinations: Reference to the Conceptual Framework	Jan. 1, 2022	No material effects expected
IFRS 4	Amendments to IFRS 4: Insurance Contracts: Extension of the Temporary Exemption from Applying IFRS 9	Jan. 1, 2021	No material effects expected
IFRS 9, IAS 39, IFRS 7, IFRS 4, IFRS 16	Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16: Interest Rate Benchmark Reform (Phase 2)	Jan. 1, 2021	No material effects expected
IFRS 17	Insurance Contracts, including amendments to IFRS 17	Jan. 1, 2023	Effects currently being evaluated
IAS 1	Amendments to IAS 1: Classification of Liabilities as Current or Non-current, including Deferral of Effective Date	Jan. 1, 2023	Effects currently being evaluated
IAS 16	Amendments to IAS 16: Property, Plant and Equipment: Proceeds before Intended Use	Jan. 1, 2022	No material effects expected
IAS 37	Amendments to IAS 37: Provisions, Contingent Liabilities and Contingent Assets: Onerous Contracts — Cost of Fulfilling a Contract	Jan. 1, 2022	Effects currently being evaluated
	Annual Improvements to IFRS Standards 2018–2020 Cycle	Jan. 1, 2022	No material effects expected

Change in accounting methods and restatement of prior-year data

A modified value flow concept was introduced throughout the Bayer Group on January 1, 2020, necessitating the restatement of prior-period data.

The reason for the new value flow concept being applied throughout the Bayer Group is the Bayer 2022 efficiency program. As part of this program, steering and controlling principles and responsibilities have been revised and simplified. For example, the enabling functions now have global responsibility for their primary costs. As such, the services provided by the enabling functions are now planned and coordinated at the divisional rather than the country level.

To facilitate this steering, the primary costs of the enabling functions are now being passed through to the income statements of the divisions or segments using a standardized, centrally implemented allocation logic in place of multiple local allocation keys.

This gives rise to shifts in the cost allocations to the divisions or to “Other Segments / Consolidation” and between the functional cost items. This does not affect Group earnings as a whole – with the exception of a very small proportion related to the change in the amount of capitalized inventories.

The effects on the functional costs and their allocation to the divisions are shown in the following tables:

B 2/3

Effects of the Modified Value Flow Concept

	Crop Science		Pharmaceuticals		Consumer Health	
	As reported	Restated	As reported	Restated	As reported	Restated
€ million	**2019**	**2019**	**2019**	**2019**	**2019**	**2019**
Cost of goods sold	(11,568)	(11,717)	(3,699)	(3,707)	(1,936)	(1,947)
Gross profit	8,264	8,115	14,263	14,255	3,526	3,515
Selling expenses	(3,702)	(3,922)	(6,072)	(6,076)	(2,499)	(2,442)
Research and development expenses	(2,344)	(2,264)	(2,752)	(2,780)	(230)	(218)
General administration expenses	(1,277)	(1,061)	(558)	(597)	(204)	(183)
Other operating income	729	729	318	321	419	419
Other operating expenses	(1,088)	(1,083)	(437)	(437)	(299)	(297)
EBIT[1]	582	514	4,762	4,686	713	794
EBIT before special items[1]	2,005	1,932	4,899	4,823	731	810
EBITDA[1]	3,895	3,818	5,951	5,837	1,303	1,357
EBITDA before special items[1]	4,796	4,714	5,975	5,861	1,090	1,142
Income after income taxes						
Net cash provided by (used in) operating activities	4,209	4,150	4,523	4,427	841	876

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group"

B 2/3 (continued)

			Reconciliation							
	All Other Segments		Enabling Functions and Consolidation		Group			Discontinued operations		
	As reported	Restated	As reported	Restated	As reported	Change	Restated	As reported	Change	Restated
€ million	**2019**	**2019**	**2019**	**2019**	**2019**	**2019**	**2019**	**2019**	**2019**	**2019**
Cost of goods sold	(172)	(172)	(92)	(70)	(17,467)	146	(17,613)	(1,455)	(3)	(1,452)
Gross profit	72	72	(47)	(25)	26,078	(146)	25,932	1,287	3	1,290
Selling expenses	(10)	(6)	9	(43)	(12,274)	215	(12,489)	(544)	(21)	(523)
Research and development expenses	–	(1)	(16)	(38)	(5,342)	(41)	(5,301)	(142)	–	(142)
General administration expenses	(188)	(49)	(1,663)	(1,716)	(3,890)	(284)	(3,606)	(186)	(3)	(183)
Other operating income	132	67	35	100	1,633	3	1,636	1,655	–	1,655
Other operating expenses	147	(12)	(339)	(181)	(2,016)	(6)	(2,010)	(35)	–	(35)
EBIT[1]	(108)	73	(1,760)	(1,905)	4,189	(27)	4,162	2,035	27	2,062
EBIT before special items[1]	39	72	(667)	(662)	7,007	(32)	6,975	529	27	556
EBITDA[1]	148	143	(1,743)	(1,626)	9,554	(25)	9,529	2,109	25	2,134
EBITDA before special items[1]	293	143	(651)	(386)	11,503	(29)	11,474	604	25	629
Income after income taxes	–	–	–	–	2,411	(20)	2,391	1,680	20	1,700
Net cash provided by (used in) operating activities	522	245	(2,094)	(1,715)	8,001	(18)	7,983	206	18	224

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group"

The above value flow changes also led to a change in the allocation of overheads to inventories. All other things being equal, this resulted in a €120 million reduction in the amount of capitalized overheads and a €36 million increase in deferred tax assets. These figures were restated accordingly as of January 1, 2019, along with equity. They had no material impact on subsequent quarters.

In addition, a retrospective restatement of the purchase price allocation for the 2018 acquisition of the Monsanto Group resulted in an accounting exchange on the assets side pursuant to IAS 8.42, with a €186 million reduction in deferred tax assets in the opening statement of financial position and a simultaneous increase in goodwill by the same amount. The figures in the statements of financial position for the prior-year periods have been restated accordingly.

3. Reporting policies, methods and critical accounting estimates

The consolidated financial statements as of December 31, 2020, of Bayer AG and its subsidiaries (Bayer Group) were prepared according to the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), London, United Kingdom, and the interpretations of the IFRS Interpretations Committee (IFRS IC) as endorsed by the European Union. The applicable further requirements of Section 315e of the German Commercial Code were also taken into account.

The consolidated financial statements were drawn up in euros. Except where otherwise indicated, amounts are stated in millions of euros (€ million) and rounded to the nearest million. Adding the individual figures may therefore not always result in the exact total given.

In the income statement and statement of comprehensive income, statement of financial position, statement of cash flows and statement of changes in equity, certain items are combined for the sake of clarity. These are explained in the Notes. The income statement was prepared using the cost-of-sales method. Assets and liabilities are classified by maturity. They are regarded as current if they mature within one year or within the normal business cycle of the company or the Group, or are held for sale. The normal business cycle is defined for this purpose as beginning with the procurement of the resources necessary for the production process and ending with the receipt of cash or cash equivalents as consideration for the sale of the goods or services produced in that process. Inventories and trade accounts receivable and payable are always presented as current items. Deferred tax assets and liabilities, and pension provisions are always presented as noncurrent items.

The financial statements of the individual companies consolidated are prepared according to uniform recognition and measurement methods. The consolidated financial statements are based on the principle of the historical cost of acquisition, construction or production, with the exception of the items reflected at fair value, such as equity instruments held, debt instruments held that do not solely comprise principal and interest payments, and derivatives and liabilities designated at fair value through profit or loss.

In preparing the consolidated financial statements, management has to make certain assumptions and estimates that may substantially impact the presentation of the Group's financial position and/or results of operations. Such estimates, assumptions or the exercise of discretion mainly relate to the useful life of noncurrent assets, the discounted cash flows used for impairment testing and purchase price allocations, and the recognition of provisions, including those for litigation-related expenses, pensions and other benefits, taxes, environmental compliance and remediation costs, product liability and guarantees, as well as the recognition of refund liabilities. Essential estimates and assumptions that may affect reporting in the various item categories of the financial statements are described in the following sections of this Note. Estimates are based on historical experience and other assumptions that are considered reasonable under given circumstances. They are continually reviewed but may vary from the actual values.

New or revised financial reporting standards often contain options regarding the first-time application of new recognition and measurement methods. The income statement for the previous year and the opening statement of financial position for that year may be adjusted depending on the option Bayer exercises. For further information on the standards applied for the first time as of January 1, 2020, see Note [2].

Consolidation

The consolidated financial statements include subsidiaries, joint operations, joint ventures and associates. The financial statements of the individual companies consolidated are prepared as of the closing date of the Group financial statements.

Subsidiaries are companies over which Bayer AG is currently able to exercise power by virtue of existing rights. Power means the ability to direct the relevant activities that significantly affect a company's profitability. Control is therefore only deemed to exist if Bayer AG is exposed, or has rights, to variable returns from its involvement with a company and has the ability to use its power over that company to affect the amount of that company's returns. The ability to control another company generally derives from Bayer AG's direct or indirect ownership of a majority of the voting rights. In the case of structured entities, however, control is based on contractual agreements. Inclusion of an entity's accounts in the consolidated financial statements begins when the Bayer Group is able to exercise control over the entity and ceases when it is no longer able to do so.

A joint operation or a joint venture exists where the Bayer Group controls an entity's activities jointly with a third party on the basis of a contractual agreement and decisions about the relevant activities require the unanimous consent of the parties sharing control. The parties to a joint operation have rights to the assets, and obligations for the liabilities, relating to the arrangement. The Bayer Group recognizes its share of the assets, liabilities, revenues and expenses in the consolidated financial statements in accordance with its rights and obligations. The parties jointly controlling a joint venture have rights to the net assets of the arrangement. Joint ventures are accounted for using the equity method.

Associates are companies over which Bayer AG exerts significant influence, generally through an ownership interest between 20% and 50%. They also are accounted for using the equity method. The carrying amount of a company accounted for using the equity method is adjusted annually by the change in its equity corresponding to Bayer's percentage interest in the company. Differences arising upon first-time inclusion using the equity method are accounted for according to full-consolidation principles. Bayer's share of changes – recognized in profit or loss – in these companies' equity and impairment losses recognized on goodwill are reflected in equity-method income/loss. Gains and losses from the sale of investments accounted for using the equity method are recognized in financial income or expenses, respectively, within income from investments in affiliated companies.

Interests in subsidiaries, joint ventures and associates that do not have a material impact on the Group's financial position or results of operations, either individually or in aggregate, are not consolidated but recognized as financial investments in equity instruments.

Foreign currency translation

The assets and liabilities of the subsidiaries that do not use the euro as their functional currency are translated into euros at closing rates. All changes occurring during the year and all income and expense items and cash flows are translated into euros at average monthly rates except in hyperinflationary economies, where they are translated at the respective closing rates. Equity components are translated at the historical exchange rates prevailing at the respective dates of their first-time recognition in Group equity. The exchange differences arising between the resulting amounts and those obtained by translating at closing rates are recognized outside profit or loss as "Exchange differences on translation of operations outside the eurozone" (in other comprehensive income) or presented as "Exchange differences" in the tables in the Notes. When a company is deconsolidated or the net investment in a foreign operation is reduced, such exchange differences are reclassified from equity to profit or loss and recognized in the financial result.

The exchange rates for major currencies against the euro varied as follows:

B 3/1

Exchange Rates for Major Currencies

		BRL	CAD	CNY	GBP	JPY	RUB	USD
		Brazil	**Canada**	**China**	**U.K.**	**Japan**	**Russia**	**U.S.A.**
Closing rate	2019	4.52	1.46	7.82	0.85	121.87	69.94	1.12
	2020	6.37	1.56	7.98	0.90	126.46	91.46	1.23
Average rate	2019	4.41	1.49	7.74	0.88	122.01	72.44	1.12
	2020	5.80	1.53	7.87	0.89	121.71	81.86	1.14

Since July 1, 2018, IAS 29 (Financial Reporting in Hyperinflationary Economies) has been applied for Bayer S.A., Argentina. On the date of first-time application, the adjustment of the carrying amounts of nonmonetary assets and liabilities was recognized in equity based on the general price index. Gains and losses incurred from the current hyperinflation of nonmonetary assets and liabilities and of equity are recognized in the income statement as other operating income and expenses.

Foreign currency measurement

Monetary items, such as receivables and liabilities, that are denominated in currencies other than a Group company's functional currency are measured at closing rates. Related exchange differences are recognized as exchange gains or losses under other financial income or expenses.

Sales, refund liabilities, right-of-return assets and contract liabilities

All revenues derived from the selling of products, rendering of services or from licensing agreements are recognized as sales. This is done on the basis of customer contracts and the performance obligations contained therein, which are individually identified and may be presented separately for the purpose of revenue recognition. Revenues are recognized in profit or loss when or as soon as the entity transfers control of goods or services to a customer either over time or at a point in time. Control lies with the customer if the customer can independently determine the use of and consume the benefit derived from a product or service. Revenues from product deliveries are recognized at a point in time based on an overall assessment of the existence of a right to payment, the allocation of ownership rights, the transfer of physical possession, the transfer of risks and rewards, and acceptance by the customer. In the case of product deliveries undertaken by the Bayer Group, the transfer of risks and rewards and the right to determine the product shipment destination are particularly important. Revenues from services, on the other hand, are recognized over the period of time when services are rendered and in accordance with a reasonable measure of progress.

Net sales are limited to the amount the Bayer Group expects to receive for the fulfillment of performance obligations. Payment components to be withheld for third parties are deducted. Sales are therefore reduced by sales taxes and by actual and expected sales deductions resulting from rebates, discounts and bonuses. Sales deductions are estimated primarily on the basis of historical experience, specific contractual terms and thus future expectations of sales development. Revenues from contracts involving noncash consideration, such as exchange transactions, are measured at the fair value of the assets received or the right to receive them. Furthermore, sales are reduced at the date of revenue recognition by the amount of the refund liability for expected returns of defective goods or of saleable products that may be returned under contractual arrangements. Refund liabilities are recognized for expected sales deductions and product returns.

Assets from expected product returns are recognized in inventories as right-of-return assets at the previous carrying amounts less any recovery and processing costs and potential impairments. For unilaterally fulfilled customer contracts where more than one year passes between performance and payment, significant financing components are accounted for separately based on their present values and the subsequent unwinding of the discount. The underlying discount rate takes into account the individual credit risk of the contracting party that receives the financing.

Some of the Bayer Group's revenues are generated on the basis of licensing agreements under which third parties have been granted the right to use or access products and technologies. A right-to-use license is characterized by the underlying technology remaining essentially unchanged over the period for which the rights are granted. With a right-to-access license, by contrast, the customer's interest is directed toward the consistent further development of that intellectual property (IP). Revenues from right-to-use licenses are recognized at a specific point in time, while those from right-to-access licenses are recognized over time according to the underlying measure of progress. Milestone payments related to right-to-access licenses are allocated to satisfied and unsatisfied portions of the underlying performance obligation, as applicable. Consideration relating to already satisfied obligations is recognized as catch-up adjustments to revenue. Payment elements still to be earned are deferred as contract liabilities. Sales- or usage-based royalties agreed in connection with outlicensing arrangements are only recognized if the sale or the usage is sufficiently verified and the underlying performance obligation has been fulfilled.

In the Crop Science segment, Bayer conducts barter transactions in certain geographies to grant its customers longer payment terms while at the same time reducing the credit risk. For example, payment may be made in the form of a subsequent delivery of soybeans or corn, or crops may be pledged as collateral. To the extent Bayer is thereby exposed to a commodity price risk, this is hedged using derivatives that are measured at fair value through profit or loss within other financial income and expenses. If Bayer assumes control of goods (such as soybeans) instead of receiving a cash payment, their resale is accounted for in other operating income, and their derecognition in other operating expenses, since transactions of this nature do not form part of normal business operations.

Research and development expenses

Research expenses are recognized through profit or loss. Development expenses are only capitalized as internally generated intangible assets if the recognition criteria of IAS 38 (Intangible Assets) are met. These include sufficient certainty that the development activity will give rise to future financial cash flows that also cover the respective development expenses. Since our own development projects are often subject to regulatory approval procedures and other uncertainties, the conditions for the capitalization of costs incurred before receipt of approvals generally are not satisfied. Capitalized development expenses are recognized at the cost of generation and amortized over their expected useful lives. Impairment testing is also performed on an annual or event-driven basis.

Income taxes

Income taxes comprise the taxes levied on taxable income in the individual countries along with changes in deferred tax assets and liabilities that are recognized in profit or loss. The income taxes recognized are reflected at the amounts likely to be payable under the statutory regulations in force, or already enacted in relation to future periods, at the end of the reporting period. Complex tax regulations may give rise to uncertainties with respect to their interpretation and the amounts and timing of future taxable income. Given the wide range of international business relationships and the long-term nature and complexity of existing contractual agreements, differences arising between the actual results and the assumptions made, or future changes to such assumptions, could necessitate adjustments to tax income and expense in future periods. Liabilities to tax authorities that are uncertain as to their amount and the probability of their occurrence are recognized as tax liabilities based on reasonable estimates. The amounts recognized are based on various factors, such as experience with previous tax audits and differing legal interpretations by the taxable entity and the responsible tax authority.

In compliance with IAS 12 (Income Taxes), deferred taxes are recognized for temporary differences between the carrying amounts of assets and liabilities in the statement of financial position prepared according to IFRS and their tax bases. Deferred taxes are also recognized for consolidation measures and for loss carryforwards, interest carryforwards and tax credits that are likely to be usable. Deferred tax assets relating to deductible temporary differences, tax credits, loss carryforwards and interest carryforwards are recognized where it is probable that taxable income or sufficiently taxable temporary differences will be available in the future to enable them to be used. Deferred tax liabilities are recognized on temporary differences taxable in the future. Deferred taxes are calculated at the rates which – on the basis of the statutory regulations in force, or already enacted in relation to future periods, as of the closing date – are expected to apply in the individual countries at the time of realization. Deferred tax assets and deferred tax liabilities are offset if they relate to income taxes levied by the same taxation authority and Bayer has a legal right to settle on a net basis. Material effects of changes in tax rates or tax law on deferred tax assets and liabilities are generally accounted for in the period in which the changes are enacted. Such effects are recognized in profit or loss except where they relate to deferred taxes that were recognized outside profit or loss, in which case they are recognized in other comprehensive income or directly in equity.

Deferred and current taxes are recognized in profit or loss unless they relate to items recognized outside profit or loss in other comprehensive income, in which case they, too, are recognized in other comprehensive income or directly in equity. The probability that deferred tax assets resulting from temporary differences, loss carryforwards or interest carryforwards can be used in the future is the subject of forecasts by the individual consolidated companies regarding their future earnings situation and other parameters. Deferred tax liabilities are recognized on planned dividend payments by subsidiaries. Where no dividend payment is planned for the foreseeable future, no deferred tax liability is recognized on the difference between the proportionate net assets according to IFRS and the tax base of the investment in the subsidiary.

Goodwill

In a business combination, goodwill is capitalized at the acquisition date (see “Acquisition accounting”). Goodwill is not amortized but is tested for impairment at least annually or when there is an indication of possible impairment.

Other intangible assets

Other intangible assets are capitalized at the acquisition date at their cost of acquisition or generation. Those with a definite useful life are amortized on a straight-line basis over the following periods, except where their actual depletion demands a different amortization pattern.

B 3/2

Useful Lives of Other Intangible Assets	
Patents and technologies	8 to 30 years
Trademarks	10 to 35 years
Marketing and distribution rights	5 to 30 years
Production rights	14 to 19 years
Other rights	2 to 12 years

The expected useful lives of such assets and the amortization patterns are determined based on estimates of the period for which they will generate cash flows. In addition, impairment testing is performed.

Property, plant and equipment

Property, plant and equipment is initially recognized at the cost of acquisition or construction plus the estimated amounts of any redevelopment or decommissioning costs. Thereafter it is depreciated by the straight-line method over its expected useful life, except where use-related depreciation is more appropriate.

B 3/3

Useful Lives of Property, Plant and Equipment	
Buildings	5 to 50 years
Plant installations and machinery	4 to 40 years
Furniture, fixtures and other equipment	2 to 15 years

In addition, impairment testing is performed. When assets are sold, closed down or scrapped, the difference between the net proceeds and the net carrying amount of the assets is recognized as a gain or loss in other operating income or expenses, respectively.

Grants and subsidies from third parties that serve to promote investment are reflected in the statement of financial position under other liabilities and amortized to income over the useful lives of the respective investments or in line with the terms of the grant or subsidy.

Investment property comprises land and buildings not being used for operational or administrative purposes. It is measured using the cost model. The fair value of this property reported in the Notes is primarily determined on the basis of internal valuations using the income approach, while that of undeveloped sites is mainly calculated using the market comparison approach.

Impairment testing

An impairment test is performed if there is an indication of possible impairment for an intangible asset, an item of property, plant and equipment, or a cash-generating unit or unit group to which goodwill has been allocated. Other intangible assets with an indefinite useful life (such as the Bayer Cross trademark), intangible assets that are not yet available for use (such as R&D projects) and cash-generating units or unit groups to which goodwill has been allocated are tested annually for impairment.

A cash-generating unit is the smallest identifiable group of assets generating cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Bayer Group primarily regards product families as well as seeds and the corresponding traits as cash-generating units and subjects them to global impairment testing. Goodwill is tested for impairment at the reporting segment level.

Impairment testing involves comparing the carrying amount of each cash-generating unit or unit group, intangible asset or item of property, plant and equipment to the recoverable amount, which is the higher of its fair value less costs of disposal or value in use. If the carrying amount exceeds the recoverable amount, an impairment loss must be recognized for the difference. In this case an impairment loss is first recognized on any goodwill allocated to the cash-generating unit or unit group. Any remaining impairment loss is allocated among the other noncurrent nonfinancial assets in proportion to their carrying amounts, unless this is prohibited under any other rule. The resulting expense is reflected in the operating expense item in which the depreciation or amortization of the respective asset is recognized. The same applies to income from impairment loss reversals. Impairment losses recognized on goodwill are included in other operating expenses.

The recoverable amount is generally determined on the basis of the fair value less costs of disposal, taking into account the present value of the future net cash flows as market prices for the individual units are not normally available. These are forecasted on the basis of the Bayer Group's current planning, the planning horizon being up to four years. Forecasting involves making assumptions, especially regarding future selling prices, sales volumes, costs, market growth rates, economic cycles and exchange rates. These assumptions are based on internal estimates along with external market studies. Where the recoverable amount is the fair value less costs of disposal, measurement is undertaken from the viewpoint of an independent market participant. Where the recoverable amount is the value in use, the object of valuation is measured as currently used. In either case, net cash flows beyond the planning period are determined on the basis of long-term business expectations using individually calculated growth rates. The fair value less costs of disposal is determined on the basis of unobservable inputs (Level 3).

The net cash inflows are discounted at a rate equivalent to the weighted average cost of equity and debt capital. To allow for the different risk and return profiles of the Bayer Group's principal businesses, the after-tax cost of capital is calculated separately for each reporting segment and certain cash-generating units and unit groups while taking into account regional focus areas, and a segment-specific capital structure is defined by benchmarking against comparable companies in the same industry sector. The cost of equity corresponds to the return expected by stockholders, while the cost of debt is based on the conditions on which comparable companies can obtain long-term financing. Both components are derived from capital market information.

Although the estimates of the useful lives of certain assets, assumptions concerning the macroeconomic environment and industry developments, and estimates of the discounted future cash flows are believed to be appropriate, changes in assumptions or circumstances could require changes in the carrying amounts. This could lead to the recognition of additional impairment losses in the future or – except in the case of goodwill – to reversals of previously recognized impairment losses if developments are contrary to expectations.

Leases

A lease is established by a contract that conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

As lessee, Bayer generally recognizes the present value of the future lease payments as a financial liability. The lease payments are split into principal and interest portions according to the effective-interest method. In line with this and taking into account any further cost components, the right-of-use asset (the asset that reflects the right to use the underlying asset) is capitalized under property, plant and equipment at the inception of the lease. The right-of-use asset is recognized at amortized cost and depreciated by the straight-line method.

Use is made of the recognition exemptions for certain leases in which the underlying assets are of low value and also for short-term leases. The lease payments under these contracts are recognized as other operating expenses on a straight-line basis over the lease term.

Bayer exercises the accounting policy option under IFRS 16 (Leases) available for lessees not to apply this standard to leases of intangible assets.

For certain contracts with both lease and non-lease components, Bayer as lessee applies the practical expedient not to separate these components but to recognize them collectively as a single lease component.

Payments under intra-Group leases are generally presented as expenses or income in segment reporting in line with the internal reporting system.

Lease contracts in which Bayer acts as the lessor and substantially all the risks and rewards of utilizing the underlying asset are transferred to the lessee are classified as finance leases. The net investment in the lease is recognized as a receivable. In the case of operating leases where Bayer is the lessor, the leased assets continue to be capitalized, and the lease payments are recognized in income on a straight-line basis over the lease term.

Financial assets

Financial assets comprise receivables, acquired equity and debt instruments, cash and cash equivalents, and derivatives with positive fair values. A financial asset (other than a derivative) is initially recognized at fair value, plus transaction costs in most cases, on the settlement date.

The classification and measurement of financial assets is based in each case on the business model and the characteristics of the cash flows. Trade accounts receivable are measured at amortized cost or at fair value through profit or loss. Other debt instruments are measured at amortized cost or at fair value through profit or loss. Equity instruments are generally held for medium- to long-term strategic purposes and are therefore measured at fair value through other comprehensive income. Otherwise they are measured at fair value through profit or loss, like for example the shares in Elanco Animal Health Inc., Greenfield, Indiana, United States.

Loss allowances for expected credit losses are recognized for financial assets measured at amortized cost. Under the simplified impairment model, a default on receivables expected over the respective term (stage 2 of the impairment model) is determined for trade accounts receivable based on portfolio-specific default rates. These expected default rates are mainly based on the average defaults on receivables in recent years. These default rates are adjusted during the year for the respective customer portfolio if a significant change in the default rate is expected in the future. In determining the expected default rates, we take into account the business model, the respective customer and the economic environment of the geographic region. This is achieved by applying specific default rates for the individual Group companies and, in the case of smaller companies, making a standard calculation for countries with a comparable credit risk. Further differentiation is achieved by taking into account the segments' various customer groups. Throughout the Bayer Group, customers are also assigned to risk classes with different expected default rates depending on their individual credit risk assessments.

Where action such as insolvency or comparable proceedings has been initiated against a defaulter or other objective indications exist that receivables are impaired (such as a considerable worsening of creditworthiness or a financial restructuring), the receivables are individually tested for impairment (stage 3 of the impairment model). In addition, all receivables more than 90 days past due are individually tested for impairment during the year.

For other financial assets, the expected credit loss for the next 12 months is determined on first-time recognition and on subsequent measurement using the Monte Carlo simulation method (stage 1 of the impairment model). In the event of a significant increase in the default risk, which is defined as a more than 0.25% increase in the probability of default, assets are reclassified to stage 2 of the impairment model, taking into account the expected credit losses over the respective asset maturities. An impairment loss is recognized if there are objective indications of an impairment.

Financial assets are derecognized when contractual rights to receive cash flows from the financial assets expire or the financial assets were transferred together with all material risks and benefits. Receivables are also derecognized if they have been finally assessed as irrecoverable and we have ceased efforts to collect them following the completion of insolvency proceedings, for example. Receivables are not derecognized while they remain subject to enforcement.

Inventories

Inventories are recognized at their cost of acquisition or production (production-related full costs) – calculated by the weighted-average method – or at their net realizable value, whichever is lower.

Cash and cash equivalents

Cash includes cash in hand, checks received and balances with banks and companies. Cash equivalents are financial investments with maximum maturities of three months from the acquisition date that are subject to no more than insignificant fluctuations in value and will give rise to predefined cash inflows. Cash and cash equivalents are measured at amortized cost.

Provisions for pensions and other post-employment benefits

Within the Bayer Group, post-employment benefits are provided under defined contribution and/or defined benefit plans. In the case of defined contribution plans, the company pays contributions to publicly or privately administered pension plans on a mandatory, contractual or voluntary basis. Once the contributions have been paid, the company has no further payment obligations. The regular contributions constitute operating expenses and as such are included in the respective income statement items.

All remaining commitments under pension and other post-employment benefit plans are measured in terms of the defined benefit obligation (DBO) using the projected unit credit method, with entitlements already earned being measured at the present value of the DBO. This is based on factors such as expected future salary and pension increases, changes in health care costs, mortality rates and beneficiary structure. The uniform discount rates are based on the yields of high-quality bond portfolios (AA-rated corporate bonds) in specific currencies, extrapolated where necessary to cover the future period for which sufficiently accurate bond yields are not available. The bond portfolios consist of bonds with weighted residual maturities approximately equal to the duration of the expected disbursements from the pension plans. The pension service cost and the net interest on the net liability are determined on the basis of the assumptions as of the previous closing date.

For funded obligations, the net liability is determined by deducting the fair value of plan assets. The obligations and plan assets are measured at regular intervals. Where no quoted prices for plan assets exist in active markets, their fair values are determined by applying the usual measurement methods and on the basis of freely accessible data such as interest rate curves and credit spreads. The net defined benefit asset is recognized in other receivables.

Current and past service cost and effects of plan settlements are recognized in operating income. The net interest on the net liability is reflected in the financial result under other financial income and expenses. The effects of remeasurements of the net defined benefit liability are reflected in the statement of comprehensive income as other comprehensive income. They consist of actuarial gains and losses, the return on plan assets and changes in the effects of the asset ceiling, less the amounts included in net interest and related deferred taxes.

Other provisions

Other provisions are recognized for present legal and constructive obligations arising from past events that will probably give rise to a future outflow of resources, provided that a reliable estimate can be made of the amount of the obligations. They are established at the present value of the expected future cash outflows and recognized in the respective operating expense items. The interest cost is reflected in the financial result under other financial income and expenses. If the projected obligation declines as a result of a change in the estimate, the provision is reversed by the corresponding amount and the resulting income recognized in the operating expense item(s) in which the original charge was recognized.

Costs arising from obligations to decommission or dismantle property, plant and equipment are included as a component of the acquisition or construction costs if they can be reliably estimated. If changes in the estimates require the provisions to be adjusted, the carrying amounts of the respective assets are reduced or increased accordingly.

Estimating the future costs for environmental protection and similar measures involves, in particular, uncertainties with regard to the applicable laws and regulations and the actual local conditions. Significant factors in estimating the costs include previous experiences in similar cases, expert opinions, current costs and new developments affecting costs, management's interpretation of current environmental regulations, the financial position of third parties that may become obligated to participate in any remediation costs on the basis of joint liability, and the remediation methods likely to be deployed. Changes in these assumptions could impact future reported results of the Group. Taking into consideration the experience gained to date and the knowledge and circumstances as of the closing date, provisions are believed to be adequate. However, material additional costs could be incurred beyond the amounts accrued that result in additional expenses in subsequent periods.

Provisions for employee termination benefits are established where the amounts of severance payments, additional pension plan modules to be granted or other benefits can be reliably estimated. However, material additional costs could be incurred beyond the amounts accrued that result in additional expenses in subsequent periods.

Provisions for stock-based compensation are established for the programs offered collectively to different groups of employees. As required by IFRS 2 (Share-based Payment) for compensation systems involving cash settlement, the obligations arising from the stock-based programs are covered by provisions in the amount of the fair value of the obligations existing as of the date of the financial statements vis-à-vis the respective employee group. All resulting valuation adjustments are recognized in profit or loss.

Provisions for litigations are established under certain conditions in the case of legal risks. Litigations and other judicial proceedings often raise complex issues and are subject to many uncertainties and complexities including, but not limited to, the facts and circumstances of each particular case, the jurisdiction in which each suit is brought and differences in applicable law. The outcome of any current or future proceedings cannot normally be predicted. It is particularly difficult to assess the likely outcomes of class actions for damages or mass compensation claims in the United States, which may give rise to significant financial risks for the Bayer Group. As a result of a final judgment in court proceedings, regulatory decisions or the conclusion of a settlement, the Bayer Group may incur charges for which no accounting measures have yet been taken for lack of reasonable estimability or which exceed presently established provisions and the insurance coverage.

The Bayer Group considers the need for accounting measures in respect of pending or future litigations, and the extent of any such measures, on the basis of the information available to its legal department and in close consultation with legal counsel acting for the Bayer Group. Where it is more likely than not that such a litigation will result in an outflow of resources that is already reasonably estimable, a provision for litigation is recorded in the amount of the present value of the expected cash outflows. Such provisions cover the estimated payments to the plaintiffs, court and procedural costs, attorney costs and the cost of potential settlements.

It is sometimes impossible to reliably determine the existence of a present obligation or reasonably estimate the probability that a potential outflow of resources will result from a pending or future litigation. The status of the material “legal risks” is described in Note [30]. Due to the special nature of these litigations, provisions generally are not established until initial settlements allow an estimate of potential amounts or judgments have been issued. Provisions for legal defense costs are established if it is probable that material costs will have to be incurred for external legal counsel to defend the company’s legal position.

Internal and external legal counsel evaluate the current status of the Bayer Group's material legal risks at the end of each reporting period. The need to establish or adjust a provision and the amount of the provision or adjustment are determined on this basis. Adjusting events are reflected up to the date of preparation of the consolidated financial statements. The measurement of provisions in the case of class actions or mass compensation claims is mainly based on any settlements reached during the past year and on pending or anticipated future claims.

Under IAS 37.92, further information on litigations, such as the proceedings, risks and related measures and estimated financial effects, uncertainties, the amounts of individual provisions and contingent liabilities and their maturities can be withheld in exceptional cases if disclosing it could significantly prejudice the company’s position.

Financial liabilities

Financial liabilities are generally measured at amortized cost using the effective-interest method. Derivatives with negative fair values, liabilities for contingent consideration in business combinations and liabilities designated at fair value through profit or loss are measured at fair value.

Mandatory convertible notes are assessed to determine whether they should be accounted for entirely as debt or split into an equity component and a debt component. This involves examining whether Bayer’s early conversion rights have economic substance. These rights may have economic substance with respect to maintaining the current credit rating if early conversion can prevent a rating downgrade. In this event, future savings of credit interest would more than offset the cost of early conversion by Bayer. If the right to early conversion is deemed to have economic substance, components of the mandatory convertible notes are classified as equity.

The mandatory convertible notes issued in 2016 and redeemed at maturity in 2019 were accounted for as a hybrid financial instrument. The directly attributable costs along with the debt component, which corresponded to the present value of the future interest payments, were deducted from the proceeds of the issue. The debt component was included in financial liabilities. The remaining amount constituted the equity component, which was reflected in capital reserves.

Financial liabilities with one or multiple embedded derivatives (hybrid financial instruments), where at least one of the derivatives has to be separated from the host contract and significantly modifies the contractual cash flows, can be designated in their entirety at fair value through profit or loss. Use was made of this option for the debt instruments issued in June 2017 (exchangeable bond 2017/2020), which are exchangeable into Covestro shares. Changes in the fair value of these instruments were recognized in other financial income and expenses with the exception of those attributable to Bayer’s own credit risk, which were recognized in other comprehensive income in the statement of comprehensive income.

Financial liabilities are derecognized when the contractual obligation is discharged or canceled, or has expired.

Derivatives

The Bayer Group uses derivatives to mitigate the risk of changes in exchange rates, interest rates or commodity prices (such as for soybeans and corn) and to hedge stock-based compensation programs. The instruments used include forward exchange contracts, interest-rate swaps, forward commodity contracts and forward stock transactions. Derivatives are recognized at the trade date and are remeasured to fair value on each closing date. Positive fair values are reflected in financial assets, negative fair values in financial liabilities.

Raw material supply contracts (at Crop Science, for example) and energy supply contracts that are concluded in order to receive or deliver nonfinancial items for the company's own purposes are treated as pending transactions (own-use exemption) and not accounted for as derivatives. Other raw material supply contracts are accounted for as derivatives at fair value through profit or loss under certain conditions.

Where embedded derivatives are identified in contracts, they are assessed for any close economic relationship with the host contract. If no such relationship is found, they are accounted for separately as derivatives. Financial receivables with embedded derivatives are measured at fair value through profit or loss.

Derivatives are designated as held for trading at fair value through profit or loss unless they qualify for hedge accounting. This mainly applies to the exchange hedging of accounting risks, the effects of which are reflected in other financial income and expenses as exchange gains or losses.

The effective portion of derivatives designated as cash flow hedges is initially recognized outside profit or loss in other comprehensive income. Any ineffective portions are recognized directly in profit or loss. Only when the hedged item is recognized through profit or loss is the effective portion of the hedging instrument also recognized in the income statement. In the case of commodity futures and options, reclassification is to the cost of goods sold. The effects of interest-rate hedges are reflected in interest income or expense. The effects of the hedging of forecasted sales transactions in foreign currencies are recognized in other operating income or expenses at the time of revenue recognition. The hedging of stock-based employee compensation is recognized in the respective operating expense items of "Enabling Functions and Consolidation" over the duration of the Aspire programs.

Changes in the fair values of derivatives designated as fair value hedges are recognized in income along with the adjustments in the carrying amounts of the hedged items (for example, in inventories or as separate assets). This mainly applies to the hedging of firm purchase commitments for goods at Crop Science. These effects are recognized in the cost of goods sold. The effects of interest-rate hedges are reflected in interest income or expense.

Acquisition accounting

Acquired businesses are accounted for using the acquisition method, which in principle requires that the assets acquired and liabilities assumed be recorded at their respective fair values on the date Bayer obtains control. The difference between the consideration transferred (plus the fair value of the pre-existing equity interest in the acquiree in the case of step acquisitions) and the fair values of the acquired assets and assumed liabilities is recognized as goodwill. The results of foreign currency cash flow hedges are factored into the translation of foreign currency purchase price payments. For significant acquisitions, the purchase price allocation is carried out with assistance from independent third-party valuation specialists. The related valuations are based on the information available at the acquisition date. Ancillary acquisition costs are recognized as expenses in the periods in which they occur.

The application of the acquisition method requires certain estimates and assumptions to be made, especially concerning the fair values of the acquired intangible assets, property, plant and equipment and the liabilities assumed at the acquisition date, and the useful lives of the acquired intangible assets, property, plant and equipment. Measurement is based to a large extent on anticipated cash flows. If actual cash flows vary from those used in calculating fair values, this may materially affect the Group's future results of operations. In particular, the estimation of discounted cash flows from intangible assets under development, patented and nonpatented technologies, customer relationships and brands is based on assumptions concerning, for example:

// The outcomes of R&D activities regarding the efficacy of a crop protection product, trait, seed or drug development candidate, and results of clinical trials
// The probability of obtaining regulatory approvals in individual countries
// Long-term sales projections
// Possible selling price erosion due to offerings of unpatented products following patent expirations
// The behavior of competitors (launch of competing products, marketing initiatives, etc.)

Divestment accounting

Divestments of shares in subsidiaries that result in a loss of control are generally accounted for in profit or loss. When shares in a subsidiary are gradually divested in several tranches, a reduction in the majority shareholding without the loss of control is reflected outside profit or loss and results in an increase in the equity attributable to noncontrolling interest. After the loss of control, the interest remaining at the time of the loss of control is recognized at fair value.

Uncertainties arising from the COVID-19 pandemic

The pandemic and the associated uncertainties affect our business activities in a variety of ways that also have implications for our financial reporting. Short- and mid-term effects of changing market conditions are reflected particularly in our planning processes. The Pharmaceuticals Division was impacted by the cancellation or postponement of visits to the doctor due to the global protective measures and contact restrictions, as a result of which nonurgent treatments, in particular, were not carried out, especially in the ophthalmology and women's health areas. Whereas our Consumer Health Division showed strong growth, especially in Nutritionals, due to the heightened focus on health and prevention in connection with the pandemic, the effects of the pandemic increased the pressure on our Crop Science Division. In North America, in particular, lower demand for biofuel led to a drop in prices for agricultural commodities. This adversely affected our corn seed business, for example.

Based on these significant changes in macroeconomic metrics, we tested our entire business for impairment in the first quarter of 2020. We performed further impairment tests on goodwill and other intangible assets in the third quarter, mainly in light of persisting changes in market conditions, such as currency developments, and the associated updates to planning calculations. In the fourth quarter, in which our regular impairment testing is carried out, we again tested our assets for impairment. The results are explained in Note [14].

We also tested further assets, particularly trade accounts receivable and inventories. In the case of trade accounts receivable in particular, we reviewed the expected credit loss model with respect to the estimation of future economic conditions over the course of the pandemic. Here we mainly focused on our customers' past and anticipated future payment behavior. Our accounts receivable are mainly comprised of net unpaid invoices for product sales. Based on this review, we made no observations in relation to our receivables portfolio that would indicate a significant increase in impairments. We will continue to monitor our trade accounts receivable for potential deterioration resulting from the COVID-19 outbreak.

Inventory sales and turnover were also examined. In 2020, we did not identify increases in slow moving, obsolete or expired inventory that would indicate a significant deterioration in the net realizable value of inventories.

We have not identified any further significant effects of the COVID-19 pandemic on our financial position or results of operations.

The COVID-19 pandemic remains an evolving situation, which may lead to increased risks concerning value creation and asset valuation, such as potential impairment of goodwill and intangible assets, trade accounts receivable and inventories. The uncertainties in the global economy may adversely impact suppliers, customers, and other business partners, which may interrupt our supply chain, limit the ability to collect receivables and require other changes to operations. We will continue to closely monitor the effects of the pandemic, including the impact on inventories, customer receivables and significant estimates regarding goodwill and other intangible assets.

4. Segment reporting

At Bayer, the Board of Management – as the chief operating decision-maker – allocates resources to the operating segments and assesses their performance. The reportable segments and regions are identified, and the disclosures selected, in line with the internal financial reporting system (management approach) and based on the Group accounting policies outlined in Note [3].

As of December 31, 2020, the Bayer Group comprised the three reportable segments Crop Science, Pharmaceuticals and Consumer Health. Their activities are as follows:

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Activities of the Segments

Segment	Activities
Crop Science	Development, production and marketing of a broad portfolio of products in seeds and plant traits, crop protection, digital solutions and customer services to promote sustainable agriculture
Pharmaceuticals	Development, production and marketing of prescription products, especially for cardiology and women's health; specialty therapeutics in the areas of oncology, hematology, ophthalmology and – in the medium term – cell and gene therapy; diagnostic imaging equipment and the necessary contrast agents
Consumer Health	Development, production and marketing of mainly nonprescription (OTC = over-the-counter) products in the dermatology, nutritional supplements, digestive health, allergy, cough and cold, and pain and cardiovascular risk prevention categories

Information on other business activities and segments that are not reportable is provided in the Reconciliation under "All Other Segments." These include Bayer 04 Leverkusen Fussball GmbH and Bayer Gastronomie GmbH.

The information provided in the Reconciliation under “Enabling Functions and Consolidation” mainly relates to Group-wide competence centers and business support services as well as “Leaps by Bayer,” which focuses on the development of crucial, cross-species innovations. It also includes the increase or decrease in expenses for Group-wide long-term stock-based compensation (Aspire) arising from fluctuations in the performance of Bayer stock, and the consolidation of intersegment sales (2020: €222 million; 2019: €242 million). Also recognized are gains and losses incurred upon the ongoing revaluation of assets and liabilities and of equity under IAS 29 for Bayer S.A. in Argentina. Included here in addition are income and expenses resulting from certain contingent liabilities unrelated to the current business along with those pertaining to the comparable central functions of the acquired Monsanto Group. Chief among the latter are the matters relating to lawsuits concerning polychlorinated biphenyls (PCBs) referred to in Note [30].

The segment data is calculated as follows:

// The intersegment sales reflect intra-Group transactions effected at transfer prices fixed on an arm’s-length basis.
// The net cash provided by operating activities is the cash flow from operating activities as defined in IAS 7 (Statement of Cash Flows).

The key data by segment is as follows:

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Key Data by Segment

	Crop Science		Pharmaceuticals		Consumer Health	
€ million	**2019**	**2020**	**2019**	**2020**	**2019**	**2020**
Net sales (external)	19,832	18,840	17,962	17,243	5,462	5,054
Currency-and portfolio-adjusted change[1]	1.4 %	1.3%	5.6 %	(1.5)%	2.6%	5.2%
Intersegment sales	13	7	15	47	10	–
Net sales (total)	19,845	18,847	17,977	17,290	5,472	5,054
EBIT[1]	514	(18,629)	4,686	3,467	794	992
EBITDA before special items[1]	4,714	4,536	5,861	6,016	1,142	1,114
EBITDA margin before special items[1]	23.8%	24.1%	32.6%	34.9%	20.9%	22.0%
ROCE[1]	0.7%	(28.6)%	23.8%	15.9%	5.7%	7.7%
Net cash provided by operating activities	4,150	99	4,427	4,064	876	987
Capital expenditures (newly capitalized)	1,414	1,317	974	1,386	222	170
Depreciation, amortization and impairments	3,304	12,029	1,151	844	563	68
of which impairment losses / impairment loss reversals	566	9,335	127	(110)	233	(252)
Clean depreciation and amortization	2,782	2,745	1,038	984	332	321
Research and development expenses	2,264	4,138	2,780	2,743	218	195

2019 figures restated

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group.”

B 4/2 (continued)

Key Data by Segment

	All Other Segments		Reconciliation: Enabling Functions and Consolidation		Group	
€ million	**2019**	**2020**	**2019**	**2020**	**2019**	**2020**
Net sales (external)	243	204	46	59	43,545	41,400
Currency-and portfolio-adjusted change[1]	2.7%	(8.3)%	–	–	3.4%	0.6%
Intersegment sales	204	168	(242)	(222)	–	–
Net sales (total)	447	372	(196)	(163)	43,545	41,400
EBIT[1]	73	110	(1,905)	(2,109)	4,162	(16,169)
EBITDA before special items[1]	143	178	(386)	(383)	11,474	11,461
EBITDA margin before special items[1]	–	–	–	–	26.3%	27.7%
ROCE[1]	–	–	–	–	3.7%	(16.5)%
Net cash provided by operating activities	245	121	(1,715)	(702)	7,983	4,569
Capital expenditures (newly capitalized)	101	66	209	199	2,920	3,138
Depreciation, amortization and impairments	71	68	278	250	5,367	13,259
of which impairment losses / impairment loss reversals	2	(1)	–	4	928	8,976
Clean depreciation and amortization	71	67	276	249	4,499	4,366
Research and development expenses	1	5	38	45	5,301	7,126

2019 figures restated

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Leases between fully consolidated companies continue to be recognized as operating leases under IAS 17 within the segment data in the consolidated financial statements of the Bayer Group even after the first-time application of IFRS 16 as of January 1, 2019. This does not have any relevant impact on the respective key data used in the steering of the company and internal reporting to the Board of Management as the chief operating decision maker.

Reconciliations

The reconciliation of EBITDA before special items, EBIT before special items and EBIT to Group income before income taxes is given in the following table:

B 4/3

Reconciliation of Segments' EBITDA Before Special Items to Group Income Before Income Taxes

€ million	**2019**	**2020**
EBITDA before special items of segments	11,860	11,844
EBITDA before special items of Enabling Functions and Consolidation	(386)	(383)
EBITDA before special items[1]	**11,474**	**11,461**
Depreciation, amortization and impairment losses / loss reversals before special items of segments	(4,223)	(4,117)
Depreciation, amortization and impairment losses / loss reversals before special items of Enabling Functions and Consolidation	(276)	(249)
Depreciation, amortization and impairment losses / loss reversals before special items	**(4,499)**	**(4,366)**
EBIT before special items of segments	7,637	7,727
EBIT before special items of Enabling Functions and Consolidation	(662)	(632)
EBIT before special items[1]	**6,975**	**7,095**
Special items of segments	(1,570)	(21,787)
Special items of Enabling Functions and Consolidation	(1,243)	(1,477)
Special items[1]	**(2,813)**	**(23,264)**
EBIT of segments[2]	6,067	(14,060)
EBIT of Enabling Functions and Consolidation	(1,905)	(2,109)
EBIT[1]	**4,162**	**(16,169)**
Financial result	(1,309)	(1,081)
Income before income taxes	**2,853**	**(17,250)**

2019 figures restated

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

[2] Prior to April 1, 2019, special items pertaining to the integration of Monsanto's corporate functions were reported in the category "acquisition and integration costs" at Crop Science. Since April 1, 2019, we have reported these special items in the category "restructuring" as part of the Bayer 2022 platform program (Reconciliation).

Information on geographical areas

The following table provides a regional breakdown of external sales by market and of intangible assets, property, plant and equipment:

B 4/4

Information on Geographical Areas

	Net sales (external) – by market		Intangible assets and property, plant and equipment	
€ million	2019	2020	2019	2020
Europe / Middle East / Africa	13,185	12,881	24,877	24,426
of which Germany	2,364	2,361	15,267	15,339
of which Switzerland	505	496	5,310	5,119
North America	15,087	14,352	55,785	44,804
of which United States	13,556	12,885	54,090	43,381
Asia / Pacific	8,610	8,267	2,074	1,913
of which China	3,726	3,483	554	588
Latin America	6,663	5,900	3,764	2,676
of which Brazil	3,539	2,994	2,547	1,653
Total	**43,545**	**41,400**	**86,500**	**73,819**

2019 figures restated

Information on major customers

Revenues from transactions with a single customer in no case exceeded 10% of Bayer Group sales in 2020 or 2019.

5. Scope of consolidation; subsidiaries and affiliates

5.1 Changes in the scope of consolidation

Changes in the scope of consolidation in 2020 were as follows:

B 5.1/1

Change in the Number of Consolidated Companies

Bayer AG and consolidated companies	Germany	Other countries	Total
December 31, 2019	49	343	392
Changes in scope of consolidation	(3)	(16)	(19)
Additions	–	13	13
Retirements	–	(1)	(1)
December 31, 2020	**46**	**339**	**385**

In conjunction with the acquisition of the consumer care business of Merck & Co., Inc., United States, Bayer entered into a strategic collaboration with that company in 2014. This collaboration is included in the consolidated financial statements as a joint operation. Bayer and Merck & Co., Inc., have mutually agreed to collaborate on the development, production, life-cycle management and marketing of active ingredients and products in the field of soluble guanylate cyclase (sGC) modulation.

21 (2019: 12) associates and six (2019: five) joint ventures were accounted for in the consolidated financial statements using the equity method. Details of these companies are given in Note [16] .

Flagship Ventures V Agricultural Fund, L.P., United States, was included in the consolidated financial statements and classified as an associate. Bayer has no control over this associate despite owning 99.9% of the capital, but is able to significantly influence its financial and operating policy decisions.

A total of 69 (2019: 62) subsidiaries, including one (2019: one) structured entity and 11 (2019: 12) associates or joint ventures that in aggregate are immaterial to the Bayer Group's financial position and results of operations are neither consolidated nor accounted for using the equity method, but are recognized at fair value. The immaterial subsidiaries accounted for less than 0.1% of Group sales, less than 0.3% of equity and less than 0.1% of total assets.

Details of the companies included in the consolidated financial statements, the subsidiary and affiliated companies of the Bayer Group pursuant to Section 313, Paragraph 2 of the German Commercial Code, and a list of domestic subsidiaries that availed themselves in 2020 of certain exemptions granted under Section 264, Paragraph 3, and Section 264b of the German Commercial Code, are included in the audited consolidated financial statements that have been submitted for publication in the electronic version of the Federal Gazette. This information can also be accessed at www.bayer.com/shareownership2020.

5.2 Business combinations and other acquisitions

Acquisitions in 2020

On September 9, 2020, Bayer completed the acquisition of 100% of the shares in biotech company KaNDy Therapeutics Ltd., Stevenage, United Kingdom, further expanding its development portfolio in women's health. Bayer paid an upfront consideration of €376 million, and will make potential milestone payments of up to around €366 million until launch followed by potential additional sales-based milestone payments in the triple-digit millions. The acquisition does not fall within the scope of IFRS 3 and is presented as a capital expenditure for assets relating to R&D projects. The upfront payment was therefore allocated entirely to the acquired IP R&D. KaNDy Therapeutics is developing NT-814, a first-in-class, non-hormonal, once-daily, oral neurokinin-1,3 receptor antagonist for the treatment of frequent symptoms of the menopause, hot flashes and night sweats (vasomotor symptoms). KaNDY Therapeutics has been allocated to the Pharmaceuticals segment.

On December 1, 2020, Bayer acquired 100% of the shares in Asklepios BioPharmaceutical, Inc. (AskBio), Durham, North Carolina, United States. This company has been fully consolidated since that date. AskBio specializes in the research, development and manufacturing of gene therapies across different therapeutic areas. Its development portfolio includes investigational preclinical and clinical stage development candidates for the treatment of neuromuscular, central nervous system, cardiovascular and metabolic diseases. The acquisition gives Bayer full rights to AskBio's gene therapy platform, including a broad intellectual property portfolio and an established contract development and manufacturing organization (CDMO).

Bayer paid an upfront consideration of around €1,633 million. Further amounts totaling up to around €1,627 million are payable upon the achievement of pre-defined milestones. A liability of €938 million, weighted according to the probability that the respective payments will have to be made, was recognized for this purpose. The purchase price primarily pertains to intangible assets such as technologies for preclinical and clinical-stage development candidates as well as technologies and customer relationships in connection with AskBio's CDMO.

The goodwill mainly reflects the anticipated innovation potential and amounts to €1,678 million based on the current purchase price allocation. The goodwill recognized is not tax-deductible. AskBio was allocated to the Pharmaceuticals segment. The purchase price allocation for AskBio has not yet been completed as the process of compiling and reviewing the underlying financial information is ongoing. It is therefore possible that changes will be made in the allocation of the purchase price to the individual assets and liabilities.

The following table provides an overview of the acquired assets and assumed liabilities:

B 5.2/1

Acquired Assets and Assumed Liabilities AskBio

€ million	Dec. 31, 2020
Goodwill	1,678
Patents and technologies	1,122
R&D projects	239
Other rights	1
Property, plant and equipment	50
Other financial assets	75
Inventories	9
Trade accounts receivable	40
Other current assets	10
Cash and cash equivalents	25
Deferred tax assets	8
Provisions for pensions and other post-employment benefits	(18)
Provisions for collaborations	(114)
Financial liabilities	(12)
Lease liabilities	(16)
Trade accounts payable	(123)
Other liabilities	(3)
Deferred tax liabilities	(340)
Net assets	**2,631**

The acquired businesses have not generated any material sales or after-tax income since the date of first-time consolidation. Had the transaction already been concluded on January 1, 2020, they would have contributed sales of approximately €20 million and earnings of around minus €91 million to the Pharmaceuticals segment.

On November 16, 2020, Bayer increased its interest in Noho Health, Inc. (NoHo), New York, United States, from 11.9% to 70%. The company was fully consolidated as of that date. Bayer is acquiring the shares in five stages for a total purchase price of around €110 million. Further amounts include two milestone payments totaling around €8 million that are expected to be made in 2021. One of these is a sales-based milestone payment, while the other is conditional on the attainment of a predefined target. The remaining shares in circulation, amounting to a 30% stake, are likely to be purchased in early 2022 through the exercise of an agreed put and call option. The purchase price, which is based on the ratio of actual to planned sales, is estimated at around €115 million. The corresponding amount is presented as a liability. The provisional purchase price of around €233 million in total primarily pertains to the Care/of brand. An approximately €26 million revaluation of the already held shares resulted in a gain of €5 million.

NoHo offers consumers a personalized regimen of nutritional supplements under the Care/of brand. The acquisition strengthens Bayer's presence and digital capabilities in this fast-growing business within its Consumer Health segment.

Based on the current purchase price allocation, the acquired goodwill amounts to €187 million and reflects in particular the business' high growth potential and synergies between Bayer products and Care/of's distrubution channels.

The acquired business has not generated any material sales or after-tax income since the date of first-time consolidation. Had the transaction already been concluded on January 1, 2020, they would have contributed sales of approximately around €29 million and earnings of around minus €21 million to the Consumer Health segment.

Acquisitions in 2019

On September 20, 2019, Bayer raised its stake in the joint venture BlueRock Therapeutics L.P., Cambridge, Massachusetts, United States, from 40.8% to 100%. Bayer made an upfront payment of €201 million for the remaining stake. Further amounts totaling up to €325 million are payable upon the achievement of pre-defined research-based milestones. A liability of €185 million was recognized for this purpose. This company, previously accounted for using the equity method, was therefore fully consolidated. Remeasurement of the shares previously accounted for using the equity method resulted in an amount of €296 million. The gain of €245 million resulting from the derecognition of the shares previously accounted for using the equity method was recognized in the financial result. The consideration transferred pertained to goodwill of €501 million, internally developed IP R&D of €114 million and other net assets of €67 million. The goodwill primarily pertains to the expected innovation potential. BlueRock Therapeutics is allocated to the Pharmaceuticals segment and focuses on the development of cell therapies across neurology, cardiology and immunology indications using its proprietary CELL+GENE™ platform for induced pluripotent stem cells (iPSC). Sales of €0 million and after-tax income of minus €14 million were recorded for the acquired business since the date of first-time consolidation. Had the above-mentioned acquisition already been made as of January 1, 2019, this would have had no effect on sales, after-tax income or earnings per share of the Bayer Group owing to the way the joint venture agreement governing profit realization had been structured.

On June 21, 2019, Bayer acquired 28% of the shares of Century Therapeutics LLC, Philadelphia, Pennsylvania, United States. The purchase price was €129 million, comprising an initial payment of €67 million and an assumed liability of €62 million. A further payment of €62 million will be made upon the achievement of certain milestones, bringing Bayer's interest in Century Therapeutics LLC to 36%. In view of Bayer's significant influence, the investment is accounted for in the consolidated financial statements as an associate using the equity method. Century Therapeutics LLC, founded in 2018 by U.S. companies Versant Ventures, San Francisco, and Fujifilm Cellular Dynamics, Inc., Madison, develops allogeneic immune cell therapies for cancer. The foundational technology is built on induced pluripotent stem cells that have unlimited self-renewing capacity.

On June 7, 2018, Bayer acquired 100% of the outstanding shares of Monsanto Company, St. Louis, Missouri, United States. The purchase price allocation for Monsanto was completed in the second quarter of 2019. The effects of adjustments to the purchase price allocation in 2018 and through the second quarter of 2019 on the Group's assets and liabilities were as follows:

B 5.2/2

Acquired Assets and Assumed Liabilities (Fair Values at the Respective Acquisition Dates) and Adjustments (Monsanto)

€ million	Prior to adjustment of the purchase price allocation	Adjustment of the purchase price allocation	After adjustment of the purchase price allocation
Goodwill	22,998	1,746	24,744
Patents and technologies	17,350	(212)	17,138
Trademarks	4,195	(254)	3,941
Marketing and distribution rights	821	24	845
R&D projects	4,300	302	4,602
Production rights	–	11	11
Other rights	394	(34)	360
Property, plant and equipment	6,293	(639)	5,654
Investments accounted for using the equity method	52	–	52
Other financial assets	250	(52)	198
Inventories	4,882	(153)	4,729
Receivables	7,201	54	7,255
Other current assets	27	(1)	26
Cash and cash equivalents	2,657	–	2,657
Deferred tax assets	1,548	302	1,850
Provisions for pensions and other post-employment benefits	(367)	(22)	(389)
Other provisions	(1,297)	(632)	(1,929)
Refund liabilities	(3,321)	8	(3,313)
Financial liabilities	(8,656)	1	(8,655)
Other liabilities	(3,102)	(566)	(3,668)
Deferred tax liabilities	(8,019)	117	(7,902)
Net assets	**48,206**	**–**	**48,206**

Adjustments to the purchase price allocation for Monsanto after December 31, 2018, had no effect on income after income taxes.

5.3 Discontinued operations, assets and liabilities held for sale, and divestments

Discontinued operations

On August 20, 2019, Bayer and Elanco Animal Health Inc. (Elanco), Greenfield, Indiana, United States, signed an agreement for Elanco to acquire the Animal Health business for a purchase price of €6,845 million – comprising €4,792 million in cash, subject to customary purchase price adjustments, and €2,053 million in Elanco stock based on the unaffected 30-day volume-weighted average price of US$33.60 as of August 6, 2019. The number of shares constituting the equity component was fixed within a 7.5% collar. The number of shares Bayer was to receive would therefore increase (decrease) for share price decreases (increases) within this corridor of US$31.26 to US$36.32. The business was transferred to Elanco on August 1, 2020. The price of Elanco shares on August 1, 2020, was US$23.63. Based on the exchange rate as of August 1, 2020, the provisional sale price was €5,857 million, comprising a cash component of €4,401 million and an equity component of €1,456 million. The provisional divestment gain amounts to €5,171 million following adjustments in the fourth quarter of 2020.

On November 29, 2019, Bayer completed the sale of its shares in the chemical park operator Currenta. Bayer had signed an agreement on August 6, 2019, to sell the stake in Currenta to InfraChem Holdings S.à r.l., Luxembourg, Luxembourg, a company managed by Macquarie Infrastructure and Real Assets. Currenta manages and operates infrastructure, energy supply and other essential services across the chemical parks in Leverkusen, Dormagen and Krefeld-Uerdingen. In 2020, Bayer received a purchase price adjustment of €20 million. The final sale price for Bayer's interest in Currenta is €1,124 million. In addition, Bayer sold a real estate and infrastructure portfolio to Currenta for €180 million. Other divested net assets mainly included pension provisions of €1,584 million. The final divestment gain amounts to €1,657 million.

Animal Health and Currenta are presented as discontinued operations in the income statements from the third quarter of 2019 onward and for all prior periods.

The income statements for the discontinued operations are given below:

B 5.3/1

Income Statements for Discontinued Operations

	Currenta		Animal Health		Total	
€ million	2019	2020	2019	2020	2019	2020
Net sales	**1,171**	**–**	**1,571**	**1,150**	**2,742**	**1,150**
Cost of goods sold	(954)	–	(498)	(332)	(1,452)	(332)
Gross profit	**217**	**–**	**1,073**	**818**	**1,290**	**818**
Selling expenses	(9)	–	(514)	(345)	(523)	(345)
Research and development expenses	1	–	(143)	(78)	(142)	(78)
General administration expenses	(59)	–	(124)	(65)	(183)	(65)
Other operating income / expenses	1,624	20	(4)	5,178	1,620	5,198
EBIT[1]	**1,774**	**20**	**288**	**5,508**	**2,062**	**5,528**
Financial result	**(44)**	**–**	**(4)**	**(7)**	**(48)**	**(7)**
Income before income taxes	**1,730**	**20**	**284**	**5,501**	**2,014**	**5,521**
Income taxes	(226)	(3)	(88)	(444)	(314)	(447)
Income after income taxes	**1,504**	**17**	**196**	**5,057**	**1,700**	**5,074**
of which attributable to noncontrolling interest	–	–	–	–	–	–
of which attributable to Bayer AG stockholders (net income)	1,504	17	196	5,057	1,700	5,074

2019 figures restated

[1] For definition see A 2.3 “Alternative Performance Measures Used by the Bayer Group”

Details on the tax effects for 2020 are given in Note [11].

The cash flows for the discontinued operations are as follows:

B 5.3/2

Cash Flows from Discontinued Operations

	Currenta		Animal Health		Total	
€ million	2019	2020	2019	2020	2019	2020
Net cash provided by (used in) operating activities	37	–	187	334	224	334
Net cash provided by (used in) investing activities	(116)	–	(82)	(32)	(198)	(32)
Net cash provided by (used in) financing activities	79	–	(105)	(302)	(26)	(302)
Change in cash and cash equivalents	**–**	**–**	**–**	**–**	**–**	**–**

2019 figures restated

As no cash is assigned to the discontinued operations, the balance of the cash provided is deducted again in financing activities.

Assets and liabilities held for sale

The assets and liabilities held for sale, which in 2019 mainly comprised those of the businesses to be divested to Elanco, are shown in the table below. The 2020 figure pertained in particular to the sale of a biologics facility located at the Pharmaceuticals Division’s Wuppertal site to a German subsidiary of WuXi Biologics, Wu Xi City, China.

B 5.3/3

Assets and Liabilities Held for Sale

€ million	Dec. 31, 2019	Dec. 31, 2020
Goodwill	99	–
Other intangible assets	145	–
Property, plant and equipment	421	113
Other assets	–	–
Deferred taxes	130	–
Inventories	314	–
Trade accounts receivable	6	–
Other receivables	17	–
Claims for income tax refunds	4	–
Cash and cash equivalents	1	–
Assets held for sale	**1,137**	**113**
Provisions for pensions and other post-employment benefits	454	–
Other provisions	39	–
Refund liabilities	53	–
Financial liabilities	2	–
Other liabilities	18	–
Deferred taxes	19	–
Income tax liabilities	29	–
Trade accounts payable	48	–
Liabilities directly related to assets held for sale and discontinued operations	**662**	**–**

Divestments in 2019

On December 13, 2019, Bayer and CRISPR Therapeutics AG, Zug, Switzerland, agreed to terminate their collaboration in the joint venture Casebia, which was established in 2015. As part of the agreement, Bayer transferred its interest in the joint venture to CRISPR and received co-marketing rights and a payment of €14 million. A capital contribution of €59 million, previously recognized in liabilities, to which Bayer had committed but was still outstanding, must no longer be made.

Bayer completed the sale of its Dr. Scholl's™ business on November 1, 2019. Yellow Wood Partners LLC, Boston, United States, had signed an agreement with Bayer on July 19, 2019, to acquire this business. Under IFRS 5 the assets and liabilities pertaining to the business were recognized as held from sale from the second quarter of 2019. Impairment losses of €429 million on the disposal groups, including €208 million on goodwill, were recognized through profit or loss. The final purchase price amounts to €516 million and corresponds to the carrying amount of the derecognized net assets.

On August 30, 2019, Bayer completed the sale of the Coppertone™ business to Beiersdorf AG, Hamburg, Germany, the two companies having signed a purchase agreement in May 2019. Under IFRS 5 the assets and liabilities pertaining to the business were recognized in the second quarter of 2019 as held for sale. The final purchase price amounts to €498 million and corresponds to the carrying amount of the derecognized net assets.

On July 27, 2018, Bayer signed the agreements to sell the prescription dermatology business of its Consumer Health segment to LEO Pharma A/S, Ballerup, Denmark. The U.S. prescription dermatology business was transferred to the acquirer on September 4, 2018. The final purchase price amounted to €58 million and the final divestment gain to €35 million. The remaining global business outside the United States was transferred to the acquirer on July 1, 2019. The divested portfolio comprises prescription brands including Advantan™, Skinoren™ and Travocort™. The final purchase price amounted to €617 million and the final divestment gain to €347 million.

Notes to the Income Statements

6. Net sales

Total reported net sales declined in 2020 by €2,145 million, or 4.9%, to €41,400 million. Sales were derived primarily from product deliveries (€37,744 million; 2019: €40,180 million) and licenses (€3,020 million; 2019: €2,754 million). The license revenues amounted to €2,221 million (2019: €2,009 million) for Crop Science, €789 million (2019: €734 million) for Pharmaceuticals and €3 million (2019: €11 million) for Consumer Health. Breakdowns of net sales by segment and geographical area are given in the overview in Note [4].

Sales of €1,722 million were recognized in 2020 (2019: €1,691 million) from performance obligations already satisfied in previous years. These sales primarily resulted from right-to-use licenses granted against sales-based royalties and from adjustments to refund liabilities for expected product returns and rebates to be granted.

Contractually agreed sales volumes pertaining to performance obligations not yet satisfied as of December 31, 2020, are expected to be reclassified to profit or loss as follows, taking into account anticipated sales deductions:

B 6/1

Allocation of Transaction Price to Unfulfilled Performance Obligations

€ million	2019	2020
Transaction price outstanding as of Dec. 31	**1,204**	**873**
of which to be recognized within 1 year	238	180
of which to be recognized between 1 and 2 years	177	129
of which to be recognized between 2 and 3 years	121	113
of which to be recognized between 3 and 4 years	118	106
of which to be recognized between 4 and 5 years	97	106
of which to be recognized after more than 5 years	453	239

The description above only accounts for customer contracts with an original contractual term of more than one year.

Contract liabilities mainly result from advance payments by customers for product deliveries and are predominantly recognized as sales within one year. In connection with the acquisition of Monsanto, certain Crop Science businesses were transferred to BASF. Portions of the purchase price were recognized as contract liabilities since certain payment components were not yet earned. Further significant amounts of contract liabilities comprised milestone payments already received for right-to-access licenses. The contract liabilities under right-to-access licenses will be recognized as sales over a period of more than five years.

The change in contract liabilities was due to the following factors:

B 6/2

Roll-Forward of Contract Liabilities

€ million	2019	2020
Contract liability balance as of Jan. 1	**4,221**	**4,052**
Changes due to business combinations	–	5
Additions	7,122	7,281
Revenue recognized in the current year that was included in the contract liability balance as of Jan. 1	(3,266)	(3,151)
Revenue recognized in the current year that was not included in the contract liability balance as of Jan. 1	(3,970)	(3,503)
Other	(115)	(38)
Exchange differences	60	(334)
Contract liability balance as of Dec. 31	**4,052**	**4,312**

Amounts for rebates, which are reported separately as refund liabilities, amounted to 9.7% of total net sales in 2020 (2019: 8.5%).

The refund liabilities for product returns amounted to 1.1% of total net sales in 2020 (2019: 1.3%).

7. Other operating income

Other operating income was comprised as follows:

B 7/1

Other Operating Income

€ million	2019	2020
Gains on retirements of noncurrent assets	563	185
Income from reversals of impairment losses on receivables	148	110
Income from reversals of unutilized provisions	11	18
Gains from derivatives	79	345
Sales revenues from products procured through barter transactions	342	338
Miscellaneous operating income	493	544
Total	**1,636**	**1,540**

2019 figures restated

Gains on retirements of noncurrent assets included a €34 million gain from the sale of several noncore brands at Consumer Health.

Miscellaneous operating income included payments from insurers and other reimbursements related to litigations, comprising €85 milion in the Crop Science segment and €37 million in the Pharmaceuticals segment. In addition, a net gain of €27 million was incurred on the ongoing revaluation of nonmonetary assets and liabilities and of equity due to the hyperinflation in Argentina. A gain from the sale of noncapitalized transfer rights was also included here (All Other Segments).

8. Other operating expenses

Other operating expenses were comprised as follows:

B 8/1

Other Operating Expenses

€ million	2019	2020
Losses on retirements of noncurrent assets	(124)	(59)
Impairment losses on receivables	(209)	(158)
Expenses related to significant legal risks	(546)	(13,330)
Losses from derivatives	(262)	(291)
Cost of goods sold for products procured through barter transactions	(334)	(357)
Impairment losses on goodwill	(208)	(2,238)
Miscellaneous operating expenses	(327)	(480)
Total	**(2,010)**	**(16,913)**

2019 figures restated

In 2020, we recorded impairment losses on goodwill of €2,238 million in the Crop Science segment. Details are given in Note [14].

Miscellaneous operating expenses included €49 million in donations to charitable activities (all segments). A further amount of €52 million pertained to restructuring measures in the Pharmaceuticals, Crop Science and Consumer Health segments. The remaining amount comprised a number of individually immaterial items at the subsidiaries.

For information on the legal risks and the provisions established for this purpose, see Notes [23] and [30].

9. Personnel expenses and employee numbers

Personnel expenses decreased by €2,019 million in 2020 to €9,769 million (2019: €11,788 million). This was due to a decline in the number of employees, a decrease in restructuring expenses, and lower allocations to provisions for variable compensation (due to the development of business in 2020).

B 9/1

Personnel Expenses

€ million	2019	2020
Salaries	9,849	7,609
Social expenses and expenses for pensions and other benefits	1,939	2,160
of which for defined contribution pension plans	456	449
of which for defined benefit and other pension plans	512	527
Total	**11,788**	**9,769**

The interest portion of the allocation to personnel-related provisions – mainly for pensions and other post-employment benefits – is included in the financial result under other financial expenses (Note [10.3]).

The average numbers of employees, classified by functional area, were as shown in the table below:

B 9/2

Employees

	2019	2020
Production	42,037	40,696
Marketing and distribution	38,152	36,140
Research and development	16,308	15,379
General administration	9,595	9,244
Total	**106,092**	**101,459**
Apprentices	1,343	1,255

The number of employees on either permanent or temporary contracts is stated in full-time equivalents (FTE), with part-time employees included on a prorated basis in line with their contractual working hours. The figures do not include apprentices.

10. Financial result

The financial result for 2020 was minus €1,081 million (2019: minus €1,309 million), comprising an equity-method loss of €96 million (2019: equity-method income of €160 million), financial expenses of €1,870 million (2019: €1,944 million) and financial income of €885 million (2019: €475 million). Details of the components of the financial result are provided in the following sections.

10.1 Income (loss) from investments in affiliated companies

The net income (loss) from investments in affiliated companies was comprised as follows:

B 10.1/1

Income (Loss) from Investments in Affiliated Companies

€ million	2019	2020
Net income (loss) from investments accounted for using the equity method (equity-method income / loss)	160	(96)
Expenses		
Losses from changes in fair values of investments in affiliated companies	(19)	–
Income		
Gains from changes in fair values of investments in affiliated companies	18	486
Miscellaneous income from investments in affiliated companies	31	16
Total	**190**	**406**

Income from investments accounted for using the equity method included equity-method losses of €47 million (2019: €3 million) pertaining to Century Therapeutics LLC, Philadelphia, United States, and of €11 million (2019: €10 million) pertaining to Joyn Bio LLC, Boston, United States. In the prior year, income from investments accounted for using the equity method comprised equity-method income of €200 million pertaining to the BlueRock joint ventures. This equity-method income contained a gain of €246 million resulting from the remeasurement upon first-time full consolidation of the interest that was accounted for using the equity method until September 2019.

Gains from changes in the fair values of investments in affiliated companies included gains of €392 million and €94 million pertaining to the interests in Elanco and Covestro, respectively. The net change in the fair value of the interest in Covestro in 2019 was minus €1 million.

The miscellaneous income from investments in affiliated companies consisted of the €14 million (2019: €31 million) dividend received on the Covestro shares.

Further details of the companies accounted for using the equity method are given in Note [16].

10.2 Net interest expense

The net interest expense was comprised as follows:

B 10.2/1

Net Interest Expense

€ million	2019	2020
Interest and similar expenses	**(1,575)**	**(1,494)**
of which interest expense relating to nonfinancial liabilities	(18)	(161)
Interest and similar income	**294**	**202**
of which interest income relating to nonfinancial assets	56	74
Total	**(1,281)**	**(1,292)**

10.3 Other financial income and expenses

Other financial income and expenses were comprised as follows:

B 10.3/1

Other Financial Income and Expenses

€ million	2019	2020
Expenses		
Interest portion of interest-bearing provisions	(273)	(102)
Exchange gain (loss)	–	(216)
Miscellaneous financial expenses	(77)	(58)
Income		
Exchange gain (loss)	58	–
Miscellaneous financial income	74	181
Total	**(218)**	**(195)**

The interest portion of noncurrent provisions comprised €96 million (2019: €159 million) in interest expense for pension and other post-employment benefit provisions and minus €6 million (2019: minus €114 million) in effects of interest expense and interest-rate fluctuations for other provisions and corresponding overfunding. The interest expense for pension and other post-employment benefit provisions included €419 million (2019: €595 million) for the unwinding of discount on the present value of the defined benefit obligation and €323 million (2019: €436 million) in interest income from plan assets.

The miscellaneous financial expenses included €18 million in interest-related changes in the fair value of liabilities for contingent consideration and €15 million in negative changes in the fair value of financial investments in debt instruments.

The miscellaneous financial income included gains of €85 million from write-ups (€66 million) of and unwinding of discount on tax receivables in connection with stamp duty in Greece and of €54 million arising from positive changes in the fair value of financial investments in debt instruments.

11. Taxes

The breakdown of tax expenses by origin was as follows:

B 11/1

Tax Expense by Origin

€ million	2019	Of which income taxes	2020	Of which income taxes
Taxes paid or accrued				
Current income taxes				
Germany	(1,080)	(1,080)	(718)	(718)
Other countries	(704)	(704)	(569)	(569)
Other taxes				
Germany	(47)		(43)	
Other countries	(181)		(190)	
	(2,012)	**(1,784)**	**(1,520)**	**(1,287)**
Deferred taxes				
from temporary differences	1,352	1,352	3,000	3,000
from tax loss and interest carryforwards and tax credits	(11)	(11)	(24)	(24)
	1,341	**1,341**	**2,976**	2,976
Total	**(671)**	**(443)**	**1,456**	**1,689**

2019 figures restated

Other taxes mainly included land, vehicle and other indirect taxes and are included in the respective operating expense items.

The deferred tax assets and liabilities were allocable to the following items in the statements of financial position:

B 11/2

Deferred Tax Assets and Liabilities

€ million	Dec. 31, 2019 Deferred tax assets	Dec. 31, 2019 Deferred tax liabilities	Dec. 31, 2020 Deferred tax assets	Dec. 31, 2020 Deferred tax liabilities
Intangible assets	1,155	6,671	1,406	4,732
Property, plant and equipment	241	533	43	727
Financial assets	68	88	37	150
Inventories	1,572	362	1,808	559
Receivables	121	410	204	329
Other assets	104	60	51	8
Provisions for pensions and other post-employment benefits	2,676	367	2,753	374
Other provisions	1,633	64	2,062	8
Liabilities	932	269	1,221	248
Tax loss and interest carryforwards	570	–	496	–
Tax credits	423	–	409	–
	9,495	**8,824**	**10,490**	**7,135**
Set-off	(5,069)	(5,069)	(5,804)	(5,804)
Total	**4,426**	**3,755**	**4,686**	**1,331**

2019 figures restated

The €1,939 million change in deferred tax liabilities for intangible assets was mainly attributable to the recognition of impairment charges in our Crop Science business in the United States. The deferred tax liabilities for intangible assets from the acquisition of the Monsanto Group had to be reduced accordingly.

The use of tax loss carryforwards reduced current income taxes in 2020 by €136 million (2019: €162 million). The use of tax credits reduced current income taxes by €34 million (2019: €278 million).

Of the total tax loss and interest carryforwards of €15,563 million, including interest carryforwards of €345 million (2019: €10,446 million, including interest carryforwards of €189 million), an amount of €4,761 million, including interest carryforwards of €56 million (2019: €3,772 million, including interest carryforwards of €0 million) is expected to be usable within a reasonable period. The increase in total tax loss and interest carryforwards mainly resulted from the expenses in connection with the settlement payments in the United States. Deferred tax assets of €496 million (2019: €570 million) were recognized for the amount of tax loss and interest carryforwards expected to be usable.

The use of €10,802 million of tax loss and interest carryforwards, including interest carryforwards of €289 million (2019: €6,674 million, including interest carryforwards of €189 million) was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount. If these tax loss and interest carryforwards had been fully usable, deferred tax assets of €658 million (2019: €412 million) would additionally have been recognized.

Tax credits of €409 million were recognized in 2020 (2019: €423 million) as deferred tax assets. The use of €524 million (2019: €65 million) of tax credits was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount.

B 11/3

Expiration of Unusable Tax Credits and of Tax Loss and Interest Carryforwards

	Tax credits		Tax loss and interest carryforwards	
€ million	Dec. 31, 2019	Dec. 31, 2020	Dec. 31, 2019	Dec. 31, 2020
Within one year	1	1	105	67
Within two years to five years	7	13	604	297
Thereafter	57	510	5,965	10,438
Total	**65**	**524**	**6,674**	**10,802**

The use of €4,561 million (2019: €0 million) of deductible temporary differences was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount. If these temporary differences had been fully usable, deferred tax assets of €1,124 million (2019: €0 million) would have been recognized.

In 2020, subsidiaries that reported losses for 2020 or 2019 recognized net deferred tax assets totaling €1,211 million (2019: €1,569 million) from temporary differences, tax credits and tax loss carryforwards. These assets were considered to be unimpaired because the companies concerned were expected to generate taxable income in the future or sufficiently taxable temporary differences.

Deferred tax liabilities of €54 million were recognized in 2020 (2019: €16 million) for planned dividend payments by subsidiaries. Deferred tax liabilities were not recognized for differences on €17,477 million (2019: €17,557 million) of retained earnings of subsidiaries because these earnings are to be reinvested for an indefinite period.

The reconciliation of expected to actual income tax income or expense (2020: expense of €2,553 million; 2019: income of €184 million) and of the expected to the effective tax rate for the Group was as follows:

B 11/4

Reconciliation of Expected to Actual Income Tax Income or Expense

	2019		2020	
	€ million	%	€ million	%
Expected income tax (income) and expense[1] and expected tax rate	**627**	**22.0**	**(4,242)**	**24.6**
Tax reduction from tax free income	(216)	(7.6)	(133)	0.8
Tax reductions from recognition of previously unrecognized deferred tax assets on tax loss and interest carryforwards, and from utilization of carryforwards without previously recognized deferred tax assets	(218)	(7.6)	(89)	0.5
Increase in taxes due to non-tax-deductible expenses				
Expenses related to the operating business	255	8.9	174	(1.0)
Impairment losses on investments in affiliated companies	36	1.3	–	–
Tax expense for expected unrecoverable temporary differences, tax loss and interest carryforwards	158	5.5	1,818	(10.5)
Tax (income) and expenses relating to other periods	(131)	(4.6)	30	(0.2)
Tax effects of changes in tax rates	107	3.8	7	–
Other tax effects	(175)	(6.1)	746	(4.4)
Actual income tax (income) and expense and effective tax rate	**443**	**15.6**	**(1,689)**	**9.8**

2019 figures restated

[1] Expected income tax (income) and expense is calculated by applying an expected weighted average tax rate to the pre-tax income of the Group. This average rate was determined on the basis of expected tax rates for the individual Group companies.

The €1,818 million tax expenses from unrecoverable temporary differences, tax loss and interest carryforwards primarily pertain to the nonrecognition of deferred tax assets arising from temporary differences in connection with the settlement agreements in the United States. Their utilization is subject to legal and economic restrictions.

In 2019 the other tax effects primarily comprised an amount of minus €65 million due to a change in the accounting method applied for the investment in BlueRock Therapeutics L.P. from equity method to full consolidation, and an amount of minus €109 million pertaining to tax credits.

The reconciliation of expected to actual income tax income or expense only includes the reconciliation items for continuing operations. The tax expense for discontinued operations in 2020 amounted to €447 million (2019: €310 million). In 2020, we recorded tax expense of €122 million pertaining to the ongoing activities of discontinued operations, and tax expense of €325 million relating to the divestment of this business.

12. Income/losses attributable to noncontrolling interest

Income attributable to noncontrolling interest amounted to €8 million (2019: €19 million). Losses attributable to noncontrolling interest amounted to €0 million (2019: €0 million). The income primarily related to BCS Limited, India.

13. Earnings per share

Earnings per share are determined according to IAS 33 (Earnings Per Share) by dividing the net income for the period attributable to Bayer AG stockholders by the weighted average number of shares. As no dilutive financial instruments were in circulation at the end of the reporting period, diluted earnings per share were equivalent to basic earnings per share.

The number of shares in the previous year was affected by the conversion of mandatory convertible notes on November 22, 2019. Further details of the mandatory convertible notes are provided in Note [24]. The conversion of these notes resulted in the issuance of a total of 50 million new shares, which were included on a prorated basis as of the date of conversion when calculating the number of shares. The final conversion price was €80.15 per share.

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Earnings per Share

	€ million		Earnings per share (€)	
	2019	**2020**	**2019**	**2020**
Income after income taxes (attributable to Bayer AG stockholders)	**4,091**	**(10,495)**	**4.17**	**(10.68)**
of which income after income taxes from continuing operations (attributable to Bayer AG stockholders)	2,391	(15,569)	2.44	(15.85)
of which income after income taxes from discontinued operations (attributable to Bayer AG stockholders)	1,700	5,074	1.73	5.17
Weighted average number of shares (million)[1]	**981.69**	**982.42**	**–**	**–**

2019 figures restated

Notes to the Statements of Financial Position

14. Goodwill and other intangible assets

Changes in intangible assets in 2020 were as follows:

B 14/1

Changes in Intangible Assets

€ million	Acquired goodwill	Patents and technologies	Trademarks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
Cost of acquisition or generation, December 31, 2019	**40,881**	**30,690**	**13,514**	**3,677**	**1,806**	**5,572**	**2,333**	**98,473**
Acquisitions	1,923	1,163	43	1	–	245	9	3,384
Capital expenditures	–	87	–	80	–	500	521	1,188
Retirements	–	(34)	(143)	(18)	(75)	(29)	(45)	(344)
Transfers	–	203	–	(78)	–	(193)	68	–
Transfers (IFRS 5)	5	1	5	3	–	(1)	(3)	10
Divestments / changes in scope of consolidation	(9)	(14)	–	–	(1)	(1)	11	(14)
Inflation adjustment (IAS 29)	(2)	2	–	–	–	–	2	2
Exchange differences	(3,048)	(1,611)	(636)	(157)	(5)	(412)	(116)	(5,985)
December 31, 2020	**39,750**	**30,486**	**12,783**	**3,508**	**1,725**	**5,681**	**2,780**	**96,713**
Accumulated amortization and impairments, December 31, 2019	**1,569**	**12,589**	**5,412**	**1,586**	**1,748**	**81**	**1,467**	**24,452**
Retirements	–	(27)	(141)	(18)	(75)	(23)	(38)	(322)
Amortization and impairment losses	2,238	5,962	1,748	527	11	1,405	315	12,206
Amortization	–	1,627	416	201	11	–	310	2,565
Impairment losses	2,238	4,335	1,332	326	–	1,405	5	9,641
Impairment loss reversals	–	(278)	(316)	(10)	–	(89)	–	(693)
Transfers	–	33	–	(15)	–	(35)	17	–
Transfers (IFRS 5)	–	1	2	2	–	–	–	5
Divestments / changes in scope of consolidation	–	(4)	–	–	–	–	12	8
Inflation adjustment (IAS 29)	6	2	–	–	–	–	2	10
Exchange differences	(143)	(500)	(214)	(89)	(4)	(47)	(65)	(1,062)
December 31, 2020	**3,670**	**17,778**	**6,491**	**1,983**	**1,680**	**1,292**	**1,710**	**34,604**
Carrying amounts, December 31, 2020	**36,080**	**12,708**	**6,292**	**1,525**	**45**	**4,389**	**1,070**	**62,109**
Carrying amounts, December 31, 2019	**39,312**	**18,101**	**8,102**	**2,091**	**58**	**5,491**	**866**	**74,021**

2019 figures restated

The amortization of intangible assets is allocated to the individual functional costs on the basis of the economic substance of the underlying asset. The amortization of brands and of marketing and distribution rights is generally reflected in selling expenses, and the amortization of production rights in the cost of goods sold. The amortization of patents and technologies is mainly included in the cost of goods sold or in research and development expenses. Acquired goodwill, research and development projects, and advance payments made are not subject to amortization.

In the Crop Science segment, unscheduled impairment testing in the third quarter of 2020 resulted in the recognition of €9,250 million in impairment charges on intangible assets, including €2,238 million on goodwill. The impairment charges recognized on cash-generating units concerned Corn Seed & Traits (€3,867 million, comprising €785 million on research and development projects, €2,448 million on patents and technologies, €542 million on brands and €92 million on marketing and distribution rights), Soybean Seed & Traits (€1,197 million, comprising €189 million on research and development projects, €869 million on patents and technologies, €112 million on brands and €27 million on marketing and distribution rights), glyphosate (€930 million, comprising €276 million on patents and technologies, €491 million on brands and €163 million on marketing and distribution rights), dicamba (€129 million, comprising €23 million on patents, €95 million on brands and €11 million on marketing and distribution rights), Vegetable Seeds (€757 million, comprising €273 million on research and development projects, €393 million on patents and technologies, €65 million on brands and €26 million on marketing and distribution rights), and the canola business (€132 million, comprising €48 million on research and development projects, €82 million on patents and technologies and €2 million on brands). The impairment charges on goodwill were recognized in other operating expenses. The impairment charges on the assets of the cash-generating units were allocated to the cost of goods sold, selling expenses, and research and development expenses.

The impairment charges arose against the backdrop of a challenging market environment, especially in North and Latin America, which resulted in a deterioration in the outlook for the agricultural market. This was driven by an anticipated decline in prices for key crops in the future, intense competition in soy, and lower biofuel consumption. These factors are compounded by in some cases significant negative currency effects and by a substantial increase in the weighted average cost of capital.

Our regular annual impairment testing as of December 31, 2020, resulted in adjustments being made to the impairment charges recorded in the Crop Science segment in the third quarter. This included the recognition of impairment loss reversals in the cash-generating unit Corn Seed & Traits (€440 million, comprising €89 million on research and development projects, €278 million on patents and technologies, €62 million on brands and €11 million on marketing and distribution rights), and of further impairment charges in the cash-generating units Soybean Seed & Traits (€176 million, comprising €28 million on research and development projects, €128 million on patents and technologies, €16 million on brands and €4 million on marketing and distribution rights) and cotton seed (€162 million, comprising €9 million on research and development projects, €136 million on patents and technologies, €15 million on brands and €2 million on marketing and distribution rights). The adjustments were primarily attributable to changes in carrying amounts due to exchange rate fluctuations and changes in the weighted average cost of capital at the end of the fourth quarter. The impairment losses and loss reverals were included in the cost of goods sold, selling costs, and research and development expenses. As was the case in the impairment testing conducted in the third quarter of 2020, the respective figures were determined on the basis of fair value less costs of disposal.

The table below indicates the capital cost factors used in the impairment testing on the cash-generating units in the third and fourth quarters of 2020.

B 14/2

Impairment Testing Parameters

	After-tax cost of capital	
%	**Q3 2020**	**Q4 2020**
Corn Seeds & Traits	7.9	7.4
Soy Seeds & Traits	7.3	7.0
Glyphosate	9.0	8.0
Dicamba	5.5	5.7
Cotton	5.9	6.0
Canola	5.9	5.7
Vegetable Seeds	9.2	8.9

In the Consumer Health segment, the annual impairment tests gave rise to a total of €253 million in impairment loss reversals that pertained to the Claritin™ allergy brand (€199 million) and the Afrin™ cold brand (€54 million) and were mainly due to improved business prospects.

Changes in intangible assets in 2019 were as follows:

B 14/3

Changes in Intangible Assets (Previous Year)

€ million	Acquired goodwill	Patents and technol-ogies	Trade-marks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
Cost of acquisition or generation, December 31, 2018	**40,175**	**30,253**	**14,642**	**3,427**	**1,857**	**5,286**	**2,075**	**97,715**
Acquisitions	586	–	69	–	–	114	–	769
Capital expenditures	–	90	–	245	–	144	432	911
Retirements	–	(9)	(53)	(22)	–	(15)	(117)	(216)
Transfers	–	6	–	43	(5)	(38)	(6)	–
Transfers (IFRS 5)	(503)	(15)	(1,328)	(56)	(48)	(10)	(78)	(2,038)
Divestments/changes in scope of consolidation	–	(2)	(3)	–	–	2	(1)	(4)
Inflation adjustment (IAS 29)	8	3	–	1	–	–	3	15
Exchange differences	615	364	187	39	2	89	25	1,321
December 31, 2019	**40,881**	**30,690**	**13,514**	**3,677**	**1,806**	**5,572**	**2,333**	**98,473**
Accumulated amortization and impairments, December 31, 2018	**1,547**	**10,738**	**5,538**	**1,418**	**1,782**	**79**	**1,289**	**22,391**
Retirements	–	(7)	(44)	(22)	–	(6)	(81)	(160)
Amortization and impairment losses	208	1,850	677	199	18	7	272	3,231
Amortization	–	1,829	456	199	18	–	268	2,770
Impairment losses	208	21	221	–	–	7	4	461
Impairment loss reversals	–	–	(214)	–	–	–	–	(214)
Transfers	–	–	–	–	(5)	–	5	–
Transfers (IFRS 5)	(208)	(21)	(595)	(24)	(47)	–	(34)	(929)
Divestments/changes in scope of consolidation	–	(2)	(1)	–	–	–	(1)	(4)
Inflation adjustment (IAS 29)	3	3	1	–	–	–	3	10
Exchange differences	19	28	50	15	–	1	14	127
December 31, 2019	**1,569**	**12,589**	**5,412**	**1,586**	**1,748**	**81**	**1,467**	**24,452**
Carrying amounts, December 31, 2019	**39,312**	**18,101**	**8,102**	**2,091**	**58**	**5,491**	**866**	**74,021**
Carrying amounts, December 31, 2018	**38,628**	**19,515**	**9,104**	**2,009**	**75**	**5,207**	**786**	**75,324**

2019 figures restated

The growth rates and capital cost factors used in the regular impairment testing of goodwill in 2019 and the fourth quarter of 2020 are shown in the following table:

B 14/4

Impairment Testing Parameters

	Growth rate		After-tax cost of capital	
%	2019	2020	2019	2020
Crop Science	2.0	2.0	6.7	7.8
Pharmaceuticals	0.0	0.0	5.9	5.3
Consumer Health	1.0	1.0	6.4	6.3

A growth rate of 2% and an after-tax cost of capital of 8.5% was applied in the unscheduled testing of goodwill for impairment in the Crop Science segment in the third quarter of 2020.

Testing goodwill for impairment involves calculating the fair value less costs to sell. In 2019, no impairment losses were recognized on goodwill.

A sensitivity analysis undertaken for the impairment testing of goodwill in the Pharmaceuticals and Consumer Health segments at year-end was based on a 10% reduction in future cash flows, a 10% increase in the weighted average cost of capital or a one-percentage-point reduction in the long-term growth rate. As in the prior year, the sensitivity analysis showed that no impairment loss would need to be recognized for the Pharmaceuticals and Consumer Health segments in the event of a 10% reduction in future cash flows, a 10% increase in the weighted average cost of capital, or a one percentage point reduction in the long-term growth rate. Crop Science operates in a volatile market environment that shows a robust long-term growth trend driven by an increasing world population, declining acreages per capita and Crop Science's own innovation strength. For the goodwill impairment test a mid-term market recovery is expected, leading to a steady state on which the terminal value calculation is based. The assumptions used for the forecast period were average sales growth of 2.5% and an increase in the EBITDA margin before special items (for definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group") to close to 30%. If the cash flow decreased by 12.9%, the weighted average cost of capital increased by 0.9 percentage points or the long-term growth rate decreased by one percentage point, the recoverable amount of the Crop Science reporting segment would correspond to the carrying amount.

The levels at which impairment testing is performed are explained in Note [3]. Goodwill and unamortized intangible assets that are of material significance for the Bayer Group are allocated to the following segments:

B 14/5

Intangible Assets with an Indefinite Useful Life

Reporting segment	Goodwill (€ million)		Material intangible assets with indefinite useful life (€ million)	
	2019	2020	2019	2020
Crop Science	27,595	22,911	4,834	3,079
Pharmaceuticals	7,797	9,237	731	1,297
Consumer Health	3,919	3,932	34	13

2019 figures restated

Research and development projects not yet available for use were included in unamortized intangible assets at a total amount of €4,389 million as of the end of 2020 (2019: €5,491 million). In the case of research and development projects, the point in time from which a capitalized asset can be expected to generate an economic benefit for the company cannot be determined. Such assets are therefore classified as having an indefinite useful life.

Another unamortized intangible asset is the Bayer Cross, which was reacquired for the North America region in 1994, having been awarded to the United States and Canada under the reparations agreements at the end of the First World War. The period for which the Bayer Group will derive an economic benefit from this name cannot be determined as Bayer intends to make continuous use of it. The Bayer Cross is capitalized at €108 million (2019: €108 million).

15. Property, plant and equipment

Changes in property, plant and equipment in 2020 were as follows:

B 15/1

Changes in Property, Plant and Equipment

€ million	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
Cost of acquisition or construction, December 31, 2019	**9,367**	**10,228**	**2,087**	**2,698**	**24,380**
Acquisitions	30	1	17	6	54
Capital expenditures	353	235	208	1,192	1,988
Retirements	(315)	(296)	(266)	(34)	(911)
Transfers	255	611	272	(1,138)	–
Transfers (IFRS 5)	(49)	(363)	(16)	15	(413)
Divestments / changes in the scope of consolidation	(12)	(13)	(8)	–	(33)
Inflation adjustment (IAS 29)	23	27	6	2	58
Exchange differences	(581)	(589)	(153)	(167)	(1,490)
December 31, 2020	**9,071**	**9,841**	**2,147**	**2,574**	**23,633**
Accumulated depreciation and impairments, December 31, 2019	**3,768**	**6,020**	**1,384**	**729**	**11,901**
Retirements	(247)	(276)	(234)	14	(743)
Depreciation and impairment losses	533	800	348	116	1,797
Depreciation	520	790	313	–	1,623
Impairment losses	13	10	35	116	174
Impairment loss reversals	(73)	(70)	(5)	(14)	(162)
Transfers	128	113	9	(250)	–
Transfers (IFRS 5)	(4)	(273)	(12)	–	(289)
Divestments / changes in the scope of consolidation	(3)	(3)	(7)	–	(13)
Inflation adjustment (IAS 29)	–	21	6	–	27
Exchange differences	(169)	(286)	(89)	(51)	(595)
December 31, 2020	**3,933**	**6,046**	**1,400**	**544**	**11,923**
Carrying amounts, December 31, 2020	**5,138**	**3,795**	**747**	**2,030**	**11,710**
Carrying amounts, December 31, 2019	**5,599**	**4,208**	**703**	**1,969**	**12,479**

Impairment losses on property, plant and equipment amounted to €174 million (2019: €692 million) and mainly included impairment losses of €161 million (2019: €522 million) in the Crop Science segment. These primarily pertained to the halting of construction work on the dicamba production facility (Herbicides unit). The main reasons for this were a higher volume of capital expenditures, an anticipated unfavorable development of sales volumes in view of additional capacities in the market, and reduced or delayed sales potential, especially in Argentina.

In 2020, borrowing costs of €34 million (2019: €45 million) were capitalized as components of the cost of acquisition or construction of qualifying assets, applying an average interest rate of 3.1% (2019: 3.0%).

Right-of-use assets totaling €1,100 million (2019: €1,273 million) held under leases were capitalized in property, plant and equipment. Further information on leases is given in Note [28].

Changes in property, plant and equipment in 2019 were as follows:

B 15/2

Changes in Property, Plant and Equipment (Previous Year)

€ million	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
Cost of acquisition or construction, December 31, 2018	**9,195**	**11,332**	**2,036**	**2,895**	**25,458**
Additions from leases	726	13	273	–	1,012
Cost of acquisition or construction, January 1, 2019	**9,921**	**11,345**	**2,309**	**2,895**	**26,470**
Acquisitions	15	–	4	7	26
Capital expenditures	320	313	240	1,366	2,239
Retirements	(145)	(231)	(164)	(74)	(614)
Transfers	378	798	130	(1,306)	–
Transfers (IFRS 5)	(1,212)	(2,084)	(450)	(216)	(3,962)
Divestments / changes in the scope of consolidation	(5)	(1)	(4)	1	(9)
Inflation adjustment (IAS 29)	44	39	6	(4)	85
Exchange differences	51	49	16	29	145
December 31, 2019	**9,367**	**10,228**	**2,087**	**2,698**	**24,380**
Accumulated depreciation and impairments, December 31, 2018	**4,045**	**6,694**	**1,291**	**485**	**12,515**
Retirements	(98)	(198)	(144)	(64)	(504)
Depreciation and impairment losses	638	941	383	592	2,554
Depreciation	602	896	364	–	1,862
Impairment losses	36	45	19	592	692
Impairment loss reversals	–	(1)	(2)	(8)	(11)
Transfers	32	193	24	(249)	–
Transfers (IFRS 5)	(866)	(1,630)	(177)	(18)	(2,691)
Divestments / changes in the scope of consolidation	(12)	(10)	(4)	(5)	(31)
Inflation adjustment (IAS 29)	17	26	6	–	49
Exchange differences	12	5	7	(4)	20
December 31, 2019	**3,768**	**6,020**	**1,384**	**729**	**11,901**
Carrying amounts, December 31, 2019	**5,599**	**4,208**	**703**	**1,969**	**12,479**
Carrying amounts, December 31, 2018	**5,150**	**4,638**	**745**	**2,410**	**12,943**

Investment property

The total carrying amount of investment property as of December 31, 2020, was €141 million (December 31, 2019: €96 million). The fair value of this property was €623 million (2019: €444 million). The rental income from investment property was €14 million (2019: €16 million), and the operating expenses directly allocable to this property amounted to €3 million (2019: €5 million).

16. Investments accounted for using the equity method

Twenty-one (2019: 12) associates and six (2019: five) joint ventures were accounted for in the consolidated financial statements using the equity method. A list of these companies is available at www.bayer.com/shareownership2020.

The following table contains a summary of the aggregated income statement data and aggregated carrying amounts of the associates and joint ventures accounted for using the equity method:

B 16/1

Earnings Data and Carrying Amounts of Companies Accounted for Using the Equity Method

	Associates		Joint ventures	
€ million	**2019**	**2020**	**2019**	**2020**
Income after income taxes	(24)	(133)	(136)	(28)
Other comprehensive income after income taxes	32	(13)	–	–
Total comprehensive income after income taxes	8	(146)	(136)	(28)
Share of income after income taxes	**(6)**	**(76)**	**166**	**(20)**
Share of total comprehensive income after income taxes	21	(86)	166	(20)
Carrying amount as of December 31	**356**	**345**	**166**	**146**

17. Other financial assets

The other financial assets were comprised as follows:

B 17/1

Other Financial Assets

	Dec. 31, 2019		Dec. 31, 2020	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
AC[1]	809	643	1,414	1,256
FVTPL[1]	2,304	1,291	7,386	6,381
of which debt instruments	1,821	808	6,856	5,851
of which equity instruments	483	483	530	530
FVTOCI[1]	568	285	399	55
of which equity instruments (no recycling)	568	285	399	55
Receivables from derivatives	181	107	294	247
Lease receivables	–	–	2	1
Total	**3,862**	**2,326**	**9,495**	**7,940**

[1] Measurement categories in accordance with IFRS 9
AC: at amortized cost
FVTOCI: at fair value through other comprehensive income
FVTPL: at fair value through profit or loss

The AC category included €1,200 million (2019: €630 million) in bank deposits. No material impairment losses were recognized for expected credit losses in 2020 or 2019.

The debt instruments in the FVTPL category included capital of €653 million (2019: €652 million) provided to Bayer-Pensionskasse VVaG (Bayer-Pensionskasse) for its effective initial fund, and jouissance right capital (Genussrechtskapital) of €156 million (2019: €154 million), also provided to Bayer-Pensionskasse. Also reported in this category were investments of €5,663 million (2019: €634 million) in money market funds.

The equity instruments in the FVTPL category comprised the €273 million (2019: €483 million) interest in Covestro AG and the €257 million (2019: €0 million) interest in Elanco Animal Health Inc. 6.2 million shares in Covestro AG were sold in 2020. At the end of 2020, Bayer held 5.4 million Covestro AG shares. Bayer received 72.9 million Elanco shares in connection with the divestment of the Animal Health business unit, and sold 62.7 million of them in 2020.

The equity instruments in the FVTOCI category comprised the following investments:

B 17/2

Equity Instruments Measured at Fair Value Through Other Comprehensive Income

Company name	Fair value as of Dec. 31, 2019	Fair value as of Dec. 31, 2020
Arvinas Inc., U.S.A.	49	55
Recursion Pharmaceuticals Inc., U.S.A.	–	42
Innovative Seed Solutions LLC, U.S.A.	55	38
AMR Action Fund L.P., U.S.A.	–	38
Flagship Ventures Fund V, L.P., U.S.A.	28	30
Matys Healthy Products LLC, U.S.A.	19	18
Medopad Ltd., U. K.	13	13
Hokusan Co. Ltd., Japan	13	12
CRISPR Therapeutics AG, Switzerland	285	–
Other investments	106	153
Total	**568**	**399**

In December 2019, Bayer and CRISPR Therapeutics AG, Switzerland, agreed to terminate their collaboration in the joint venture Casebia Therapeutics, which had been established in 2015. In this connection, the interest in CRISPR Therapeutics AG, Switzerland, was divested in 2020.

No material dividends were received in 2020 or 2019.

Further information on the accounting for receivables from derivatives is given in Note [27].

18. Inventories

Inventories were comprised as follows:

B 18/1

Inventories

€ million	Dec. 31, 2019	Dec. 31, 2020
Raw materials and supplies	2,531	2,652
Work in process, finished goods and goods purchased for resale	8,003	8,210
Rights of return	111	92
Advance payments	5	7
Total	**10,650**	**10,961**

2019 figures restated

Impairment losses recognized on inventories were reflected in the cost of goods sold. They were comprised as follows:

B 18/2

Impairments of Inventories

€ million	2019	2020
Accumulated impairment losses, January 1	**(131)**	**(127)**
Impairment losses in the reporting period	(102)	(63)
Impairment loss reversals or utilization	107	87
Exchange differences	(1)	19
Accumulated impairment losses, December 31	**(127)**	**(84)**

The cost of goods sold included acquisition and production costs of inventories amounting to €12,581 million (2019: €13,486 million) that were recognized as expenses.

19. Trade accounts receivable

Trade accounts receivable less impairment losses amounted to €9,555 million (2019: €11,678 million) on the closing date and pertained to the following regions and countries:

B 19/1

Trade Accounts Receivable

€ million	2019	2020
North America	3,255	2,854
of which U.S.A.	3,009	2,669
Europe / Middle East / Africa	3,575	2,979
of which Germany	823	714
Asia / Pacific	2,203	1,878
Latin America	3,326	2,465
of which Brazil	1,712	1,295
Trade accounts receivable (before impairments)	**12,359**	**10,176**
Accumulated impairment losses	(681)	(621)
Carrying amount, December 31	11,678	9,555
of which noncurrent	509	345

Trade accounts receivable mainly comprise amounts outstanding from diverse customer groups and distribution channels (including dealers and retailers for all units of the company, pharmacies for Pharmaceuticals and Consumer Health, and farmers for Crop Science). These receivables expose the company to a credit risk, though not to significant credit risk concentrations because the risk is spread among a large number of counterparties and customers. Receivables that were not individually impaired were classified as recoverable on the basis of established credit management processes and individual estimates of customer risks. The impairment losses recognized at the closing date contained appropriate risk provisions.

Noncurrent trade accounts receivable comprised receivables of €214 million (2019: €436 million) in connection with rights to use technologies outlicensed to a customer that were acquired through the acquisition of Monsanto.

The gross carrying amounts of trade accounts receivable were as follows:

B 19/2

Trade Accounts Receivable – Gross Carrying Amounts

€ million	Trade accounts receivable for which lifetime expected credit losses are calculated (collectively assessed)	Trade accounts receivable that are credit-impaired	Total
Gross carrying amounts as of January 1, 2019	**11,745**	**612**	**12,357**
Changes resulting from trade accounts receivable recognized, derecognized or written-off in the reporting period	429	–	429
Transfer to credit-impaired trade accounts receivable	(377)	377	–
Transfer from credit-impaired trade accounts receivable	93	(93)	–
Write-offs	–	(28)	(28)
Changes due to modifications that did not result in derecognition	–	(3)	(3)
Other changes:			–
from acquisitions / divestments	(323)	(17)	(340)
from exchange differences	(50)	(6)	(56)
Gross carrying amounts as of December 31, 2019	**11,517**	**842**	**12,359**
Changes resulting from trade accounts receivable recognized, derecognized or written-off in the reporting period	(1,726)	(283)	(2,009)
Transfer to credit-impaired trade accounts receivable	(35)	35	–
Transfer from credit-impaired trade accounts receivable	11	(11)	–
Write-offs	–	(16)	(16)
Changes due to modifications that did not result in derecognition	–	2	2
Other changes:			
from exchange differences	(554)	(43)	(597)
Gross carrying amounts as of December 31, 2020	**9,213**	**526**	**9,739**

Only including receivables covered by the impairment model

Credit losses on trade accounts receivable were as follows:

B 19/3

Trade Accounts Receivable – Loss Allowances

€ million	Lifetime expected credit losses (collectively assessed)	Trade accounts receivable that are credit-impaired	Total
Loss allowances as of January 1, 2019	**112**	**531**	**643**
Changes resulting from loss allowances newly recognized or derecognized in the reporting period and additions to / reductions in existing loss allowances	76	3	79
Transfer to loss allowances for credit-impaired trade accounts receivable	(53)	53	–
Transfer from loss allowances for credit-impaired trade accounts receivable	20	(20)	–
Changes due to write-offs	–	(28)	(28)
Changes due to modifications that did not result in derecognition	–	2	2
Other changes:			–
from acquisitions / divestments	(7)	–	(7)
from exchange differences	(3)	(5)	(8)
Loss allowances as of December 31, 2019	**145**	**536**	**681**
Changes resulting from loss allowances newly recognized or derecognized in the reporting period and additions / reductions to existing loss allowances	104	(207)	(103)
Transfer to loss allowances for credit-impaired trade accounts receivable	(1)	1	–
Transfer from loss allowances for credit-impaired trade accounts receivable	2	(2)	–
Changes due to write-offs	–	(16)	(16)
Changes due to modifications that did not result in derecognition	–	17	17
Other changes:			–
from exchange differences	3	39	42
Loss allowances as of December 31, 2020	**253**	**368**	**621**

Only including receivables covered by the impairment model

The expected loss rates were as follows:

B19/4

Trade Accounts Receivable – Expected Loss Rates

	Expected loss rates				Credit impaired	Total
€ million	**0 to 1%**	**>1 to 5%**	**>5 to 10%**	**>10%**		
Gross carrying amount	7,177	1,579	126	332	525	**9,739**
Loss allowance provision	204	20	10	20	367	**621**

Only including receivables covered by the impairment model

B19/5

Trade Accounts Receivable – Expected Loss Rates (Previous Year)

	Expected loss rates				Credit impaired	Total
€ million	**0 to 1%**	**>1 to 5%**	**>5 to 10%**	**>10%**		
Gross carrying amount	8,498	2,432	81	506	842	**12,359**
Loss allowance provision	23	60	6	56	536	**681**

An excess-of-loss policy exists for the Pharmaceuticals and Consumer Health segments as part of a global credit insurance program. More than 80% of the receivables of these segments are insured up to a maximum total annual compensation payment of €150 million (2019: €150 million). A global excess-of-loss policy is in place for the Crop Science segment. In this global credit insurance program, more than 80% of this segment's receivables are insured up to a maximum total annual compensation payment of €500 million (2019: €300 million).

A further €735 million (2019: €992 million) of receivables was secured by advance payments, letters of credit or guarantees or by liens on land, buildings or harvest yields.

20. Other receivables

Other receivables were comprised as follows:

B 20/1

Other Receivables

	Dec. 31, 2019		Dec. 31, 2020	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Other tax receivables	859	840	869	837
Deferred charges	316	290	342	313
Net defined benefit asset	237	–	306	–
Assets related to other long-term employee benefits	98	–	153	–
Company owned life insurance ("COLI")	92	–	87	–
Receivables from employees	40	40	43	43
Reimbursement claims	290	282	39	33
Miscellaneous receivables	630	359	663	441
Total	**2,562**	**1,811**	**2,502**	**1,667**

Other receivables are stated net of impairment losses of €3 million (2019: €69 million). The impairment losses of €66 million on tax reimbursement claims included in the prior years were fully reversed in 2020 based on a court judgment.

21. Equity

The foremost objectives of our financial management are to help bring about a sustained increase in Bayer's value for the benefit of all stakeholders and to ensure the Group's creditworthiness and liquidity. The pursuit of these goals means reducing our cost of capital, optimizing our capital structure, improving our financing cash flow and effectively managing risk.

The contracted rating agencies assess Bayer as follows: S & P Global assigns a long-term rating of BBB and a short-term rating of A-2 with a stable outlook, Moody's a Baa1 / P-2 with a negative outlook, and Fitch Ratings a BBB+ / F2 with a stable outlook. These investment grade ratings from all three agencies reflect the company's high solvency and ensure access to a broad investor base for financing purposes. The Group's capital management is based on the debt indicators used by the rating agencies. These indicators, which vary in their design, represent the ratio of period earnings to debt. The aim of our financial strategy is to regain long-term "A" ratings in the future.

Apart from utilizing cash inflows from our operational business to reduce net financial debt, we are implementing our financial strategy by way of vehicles such as the subordinated hybrid bonds issued in July 2014, April 2015 and November 2019, and a potential share buyback program.

The individual equity components and the changes therein during 2019 and 2020 are shown in the Bayer Group Consolidated Statements of Changes in Equity.

Capital stock and capital reserves

The capital stock of Bayer AG on December 31, 2020, amounted to €2,515 million (2019: €2,515 million), divided into 982,424,082 (2019: 982,424,082) registered no-par shares, and was fully paid in. Each no-par share confers one voting right.

The authorizations issued by the Annual Stockholders' Meeting on April 29, 2014, to increase the capital stock out of authorized and conditional capital expired in 2019 and were not renewed.

Capital reserves contain premiums from the issuance of shares.

Accumulated comprehensive income

Accumulated comprehensive income comprises retained earnings and accumulated other comprehensive income. The retained earnings comprise prior years' undistributed income of consolidated companies and all remeasurements of the net defined benefit liability for pension or other post-employment benefits that are recognized outside profit or loss. The accumulated other comprehensive income comprises exchange rate effects recognized outside profit or loss that arise from the translation of the annual financial statements of subsidiaries outside the eurozone, the changes in fair values of cash flow hedges and equity instruments, the revaluation surplus and reserves for the change in the company's own credit risk.

Dividend

Under the German Stock Corporation Act (AktG), the dividend payment is determined by the distributable profit reported in the annual financial statements of Bayer AG, which are prepared according to the German Commercial Code. Retained earnings were diminished by payment of the dividend of €2.80 per share for 2019. The proposed dividend for the 2020 fiscal year is €2.00 per share, which – based on the current number of shares – would result in a total dividend payment of €1,965 million. Payment of the proposed dividend is contingent upon approval by the stockholders at the Annual Stockholders' Meeting and therefore is not recognized as a liability in the consolidated financial statements.

Equity attributable to non-controlling interest

The changes in noncontrolling interest in equity during 2019 and 2020 are shown in the following table:

B 21/1

Changes in Noncontrolling Interest in Equity

€ million	2019	2020
January 1	**171**	**180**
Changes in equity not recognized in profit or loss		
Remeasurements of the net liability under defined benefit pension plans	(1)	–
Exchange differences on translation of operations outside the eurozone	(1)	(27)
Other changes in equity	(4)	31
Dividend payments	(4)	(17)
Income after income taxes	**19**	**8**
December 31	**180**	**175**

As of December 31, 2020, a material subsidiary with third-party noncontrolling interest holders was Bayer CropScience Limited, India, where the interest and share of voting rights attributable to noncontrolling interest amounted to 28.6% as of December 31, 2020 (December 31, 2019: 28.6%). The equity attributable to noncontrolling interest as of December 31, 2020, amounted to €134 million (2019: €170 million).

22. Provisions for pensions and other post-employment benefits

Provisions were established for defined benefit obligations pertaining to pensions and other post-employment benefits. The net liability was accounted for as follows:

B 22/1

Net Defined Benefit Liability Reflected in the Statement of Financial Position

	Pensions		Other post-employment benefits		Total	
€ million	Dec. 31, 2019	Dec. 31, 2020	Dec. 31, 2019	Dec. 31, 2020	Dec. 31, 2019	Dec. 31, 2020
Provisions for pensions and other post-employment benefits (net liability)	**7,987**	**8,271**	**226**	**183**	**8,213**	**8,454**
of which Germany	6,878	7,181	–	–	6,878	7,181
of which other countries	1,109	1,090	226	183	1,335	1,273
Assets arising from overfunded pension plans (net asset)	**237**	**296**	**–**	**10**	**237**	**306**
of which Germany	21	21	–	–	21	21
of which other countries	216	275	–	10	216	285
Net defined benefit liability	**7,750**	**7,975**	**226**	**173**	**7,976**	**8,148**
of which Germany	6,857	7,160	–	–	6,857	7,160
of which other countries	893	815	226	173	1,119	988

The expenses for defined benefit plans for pensions and other post-employment benefits comprised the following components:

B 22/2

Expenses for Defined Benefit Plans

	Pension plans						Other post-employment benefit plans	
	Germany		Other countries		Total		Other countries	
€ million	2019	2020	2019	2020	2019	2020	2019	2020
Current service cost	394	374	105	132	499	506	14	16
Past service cost	5	3	(7)	(5)	(2)	(2)	(2)	(1)
of which plan curtailments	–	–	(8)	(3)	(8)	(3)	–	(4)
Plan settlements	–	–	(10)	(1)	(10)	(1)	1	1
Plan administration cost paid out of plan assets	2	2	10	6	12	8	–	–
Net interest	108	68	38	19	146	87	14	9
Total	**509**	**447**	**136**	**151**	**645**	**598**	**27**	**25**

In addition, a total of minus €125 million (2019: minus €1,347 million) in effects of remeasurements of the net defined benefit liability was recognized in 2020 outside profit or loss. Of this amount, minus €144 million (2019: minus €1,398 million) related to pension obligations, €11 million (2019: €47 million) to other post-employment benefit obligations, and €8 million (2019: €4 million) to the effects of the asset ceiling. There were no significant plan curtailments in 2020 (2019: minus €8 million).

The net defined benefit liability developed as follows:

B 22/3

Changes in Net Defined Benefit Liability

€ million	Defined benefit obligation	Fair value of plan assets	Effects of the asset ceiling	Net defined benefit liability
Germany				
January 1, 2020	**(17,175)**	**10,318**	**–**	**(6,857)**
Acquisitions	–	–	–	–
Divestments / changes in the scope of consolidation	93	(53)	–	40
Current service cost	(374)			(374)
Past service cost	(3)			(3)
Net interest	(172)	104	–	(68)
Net actuarial gain / (loss)	(598)			(598)
of which due to changes in financial parameters	(609)			(609)
of which due to changes in demographic parameters	(1)			(1)
of which experience adjustments	12			12
Return on plan assets excluding amounts recognized as interest income		472		472
Employer contributions		20		20
Employee contributions	(72)	30		(42)
Payments due to plan settlements	–	–		–
Benefits paid out of plan assets	174	(174)		–
Benefits paid by the company	417			417
Plan administration cost paid from plan assets		(2)		(2)
Reclassification to assets / liabilities held for sale	(256)	91		(165)
December 31, 2020	**(17,966)**	**10,806**	**–**	**(7,160)**
Other countries				
January 1, 2020	**(9,437)**	**8,339**	**(21)**	**(1,119)**
Acquisitions	–	–	–	–
Divestments / changes in the scope of consolidation	(26)	–	–	(26)
Current service cost	(132)			(132)
Past service cost	5			5
Gains / (losses) from plan settlements	(1)			(1)
Net interest	(232)	216	(3)	(19)
Net actuarial gain / (loss)	(677)			(677)
of which due to changes in financial parameters	(651)			(651)
of which due to changes in demographic parameters	25			25
of which experience adjustments	(51)			(51)
Return on plan assets excluding amounts recognized as interest income		670		670
Remeasurement of asset ceiling			8	8
Employer contributions		75		75
Employee contributions	(18)	18		–
Payments due to plan settlements	22	(22)		–
Benefits paid out of plan assets	412	(412)		–
Benefits paid by the company	136			136
Plan administration costs paid out of plan assets		(6)		(6)
Reclassification to current assets / liabilities held for sale	(28)	24	–	(4)
Exchange differences	665	(569)	6	102
December 31, 2020	**(9,311)**	**8,333**	**(10)**	**(988)**
of which other post-employment benefits	(682)	509		(173)
Total, December 31, 2020	**(27,277)**	**19,139**	**(10)**	**(8,148)**

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Changes in Net Defined Benefit Liability (Previous Year)

€ million	Defined benefit obligation	Fair value of plan assets	Effects of the asset ceiling	Net defined benefit liability
Germany				
January 1, 2019	**(17,948)**	**10,756**		**(7,192)**
Acquisitions				
Divestments / changes in the scope of consolidation				
Current service cost	(423)			(423)
Past service cost	(5)			(5)
Net interest	(322)	196		(126)
Net actuarial gain / (loss)	(2,680)			(2,680)
of which due to changes in financial parameters	(2,692)			(2,692)
of which due to changes in demographic parameters				
of which experience adjustments	12			12
Return on plan assets excluding amounts recognized as interest income		1,101		1,101
Employer contributions		49		49
Employee contributions	(35)	35		
Payments due to plan settlements				
Benefits paid out of plan assets	195	(195)		
Benefits paid by the company	409			409
Plan administration cost paid from plan assets		(2)		(2)
Reclassification to assets / liabilities held for sale	3,634	(1,622)		2,012
December 31, 2019	**(17,175)**	**10,318**		**(6,857)**
Other countries				
January 1, 2019	**(8,621)**	**7,203**	**(23)**	**(1,441)**
Acquisitions	(6)	1		(5)
Divestments / changes in the scope of consolidation	1			1
Current service cost	(120)			(120)
Past service cost	10			10
Gains / (losses) from plan settlements	10			10
Net interest	(311)	261	(2)	(52)
Net actuarial gain / (loss)	(808)			(808)
of which due to changes in financial parameters	(1,013)			(1,013)
of which due to changes in demographic parameters	178			178
of which experience adjustments	27			27
Return on plan assets excluding amounts recognized as interest income		1,038		1,038
Remeasurement of asset ceiling			4	4
Employer contributions		81		81
Employee contributions	(18)	18		
Payments due to plan settlements	15	(15)		
Benefits paid out of plan assets	413	(413)		
Benefits paid by the company	181			181
Plan administration costs paid out of plan assets		(10)		(10)
Reclassification to current assets / liabilities held for sale	11	(7)		4
Exchange differences	(194)	182		(12)
December 31, 2019	**(9,437)**	**8,339**	**(21)**	**(1,119)**
of which other post-employment benefits	(733)	507		(226)
Total, December 31, 2019	**(26,612)**	**18,657**	**(21)**	**(7,976)**

Currenta and Animal Health are included in the development of the net defined benefit liability.

The benefit obligations pertained mainly to Germany (66%; 2019: 65%), the United States (18%; 2019: 20%) and the United Kingdom (8%; 2019: 7%). In Germany, current employees accounted for about 39% (2019: 42%), retirees or their surviving dependents for about 51% (2019: 50%) and former employees with vested pension rights for about 10% (2019: 8%) of entitlements under defined benefit plans. In the United States, current employees accounted for about 26% (2019: 27%), retirees or their surviving dependents for about 51% (2019: 58%) and former employees with vested pension rights for about 23% (2019: 15%) of entitlements under defined benefit plans.

The actual return on the assets of defined benefit plans for pensions and for other post-employment benefits amounted to €1,401 million (2019: €2,512 million) and €61 million (2019: €84 million), respectively.

The following table shows the defined benefit obligations for pensions and other post-employment benefits along with the funded status of the funded obligations.

B 22/5

Defined Benefit Obligation and Funded Status

	Pension obligation		Other post-employment benefit obligation		Total	
€ million	**2019**	**2020**	**2019**	**2020**	**2019**	**2020**
Defined benefit obligation	**25,879**	**26,595**	**733**	**682**	**26,612**	**27,277**
of which unfunded	652	644	153	126	805	770
of which funded	25,227	25,951	580	556	25,807	26,507
Funded status of funded obligations						
Overfunding	258	281	–	1	258	282
Underfunding	7,279	7,612	74	47	7,353	7,659

Pension and other post-employment benefit obligations

Group companies provide retirement benefits for most of their employees, either directly or by contributing to privately or publicly administered funds. The benefits vary depending on the legal, fiscal and economic conditions of each country. The obligations relate both to existing retirees' pensions and to pension entitlements of future retirees.

Bayer has set up funded pension plans for its employees in various countries. The most appropriate investment strategy is determined for each defined benefit pension plan based on the risk structure of the obligations (especially demographics, the current funded status, the structure of the expected future cash flows, interest sensitivity, biometric risks, etc.), the regulatory environment and the existing level of risk tolerance or risk capacity. A strategic target investment portfolio is then developed in line with the plan's risk structure, taking capital market factors into consideration. Further determinants are risk diversification, portfolio efficiency and the need for both a country-specific and a global risk / return profile centered on ensuring the payment of all future benefits. As the capital investment strategy for each pension plan is developed individually in light of the plan-specific conditions listed above, the investment strategies for different pension plans may vary considerably. The investment strategies are generally aligned less toward maximizing absolute returns and more toward the maximum probability of being able to finance pension commitments over the long term. For pension plans, stress scenarios are simulated and other risk analyses (such as value at risk) undertaken with the aid of risk management systems.

Bayer-Pensionskasse VVaG (Bayer-Pensionskasse), Leverkusen, Germany, is by far the most significant of the pension plans. It has been closed to new members since 2005. This legally independent fund is regarded as a life insurance company and therefore is subject to the German Insurance Supervision Act. The benefit obligations covered by Bayer-Pensionskasse comprise retirement, surviving dependents' and disability pensions. It constitutes a multi-employer plan, to which the active members and their employers contribute. The company contribution is a certain percentage of the employee contribution. This percentage is the same for all participating employers, including those outside the Bayer Group, and is set by agreement between the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. It takes into account the differences between the actuarial estimates and the

actual values for the factors used to determine liabilities and contributions. Bayer may also adjust the company contribution in agreement with the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. The plan's liability is governed by Section 1, Paragraph 1, Sentence 3 of the German Law on the Improvement of Occupational Pensions (BetrAVG). This means that if the pension plan exercises its right under the articles of association to reduce benefits, each participating employer has to make up the resulting difference. Bayer is not liable for the obligations of participating employers outside the Bayer Group, even if they cease to participate in the plan.

Pension entitlements for people who joined Bayer in Germany in 2005 or later are granted via Rheinische Pensionskasse VVaG, Leverkusen. Future pension payments from this plan are based on contributions and the return on plan assets; a guaranteed interest rate applies.

Another important pension provision vehicle is Bayer Pension Trust e. V. (BPT). This covers further retirement provision arrangements of the Bayer Group, such as deferred compensation, pension obligations previously administered by Schering Altersversorgung Treuhand e. V., and components of other direct commitments.

The defined benefit pension plans in the United States are frozen and no significant new entitlements can be earned under these plans. The assets of all the U.S. pension plans are held by a master trust for reasons of efficiency. The applicable regulatory framework is based on the Employee Retirement Income Security Act (ERISA), which includes a statutory 80% minimum funding requirement to avoid benefit restrictions. The actuarial risks, such as investment risk, interest-rate risk and longevity risk, remain with the company.

The defined benefit pension plans in the United Kingdom have been closed to new members for some years. Plan assets in the U.K. are administered by independent trustees, who are legally obligated to act solely in the interests of the beneficiaries. A technical assessment is performed every three years in line with U.K. regulations. This serves as the basis for developing a plan to cover any potential financing requirements. Here, too, the actuarial risks remain with the company.

The other post-employment benefit obligations outside Germany mainly comprised health care benefit payments for retirees in the United States.

The fair value of the plan assets to cover pension and other post-employment benefit obligations was as follows:

B 22/6

Fair Value of Plan Assets as of December 31

	Pension obligations				Other post-employment obligations	
	Germany		Other countries		Other countries	
€ million	2019	2020	2019	2020	2019	2020
Plan assets based on quoted prices in active markets						
Real estate and special real estate funds	–	–	216	282	5	9
Equities and equity funds	2,832	2,916	2,004	2,011	104	114
Callable debt instruments	–	–	78	71	–	–
Noncallable debt instruments	–	–	2,920	2,961	317	329
Bond funds	4,695	4,868	1,635	1,673	23	20
Derivatives	5	3	3	2	–	–
Cash and cash equivalents	297	491	87	21	10	4
Other	–	–	130	–	–	–
	7,829	**8,278**	**7,073**	**7,021**	**459**	**476**
Plan assets for which quoted prices in active markets are not available						
Real estate and special real estate funds	418	471	195	175	–	–
Equities and equity funds	143	176	89	81	–	–
Callable debt instruments	843	739	–	4	–	–
Noncallable debt instruments	978	1,020	–	–	–	–
Bond funds	–	–	88	115	–	–
Derivatives	–	–	2	–	–	–
Other	107	122	385	428	48	33
	2,489	**2,528**	**759**	**803**	**48**	**33**
Total plan assets	**10,318**	**10,806**	**7,832**	**7,824**	**507**	**509**

Plan assets included assets with a carrying amount of €3,364 million (2019: €3,296 million) whose fair values are not determined based on quoted prices in active markets.

The fair value of plan assets in Germany included real estate leased by Group companies, recognized at a fair value of €77 million (2019: €77 million), and Bayer AG shares and bonds held through investment funds, recognized at their fair values of €24 million (2019: €33 million) and €17 million (2019: €10 million), respectively.

The other plan assets comprised mortgage loans granted, other receivables and qualified insurance policies.

Risks

The risks from defined benefit plans arise partly from the defined benefit obligations and partly from the investment in plan assets. These risks include the possibility that additional contributions will have to be made to plan assets in order to meet current and future pension obligations, and negative effects on provisions and equity.

Demographic / biometric risks

Since a large proportion of the defined benefit obligations comprises lifelong pensions or surviving dependents' pensions, longer claim periods or earlier claims may result in higher benefit obligations, higher benefit expense and / or higher pension payments than previously anticipated.

Investment risks

If the actual return on plan assets were below the return anticipated on the basis of the discount rate, the net defined benefit liability would increase, assuming there were no changes in other parameters. This could happen as a result of a drop in share prices, increases in market rates of interest for certain bonds, default of individual debtors or the purchase of low-risk but low-interest bonds, for example.

Interest-rate risk

A decline in capital market interest rates, especially for high-quality corporate bonds, would increase the defined benefit obligation. This effect would be at least partially offset by the ensuing increase in the market values of the corresponding debt instruments held.

Measurement parameters and their sensitivities

The following weighted parameters were used to measure the obligations for pensions and other post-employment benefits as of December 31 of the respective year:

B 22/7

Parameters for Benefit Obligations

	Germany		Other countries		Total	
%	2019	2020	2019	2020	2019	2020
Pension obligations						
Discount rate	1.00	0.90	2.60	1.95	1.55	1.25
of which U.S.A.			3.20	2.50	3.20	2.50
of which U.K.			1.95	1.30	1.95	1.30
Projected future salary increases	2.50	2.25	3.10	3.10	2.70	2.50
Projected future benefit increases	1.40	1.60	2.80	2.60	1.85	1.90
Other post-employment benefit obligations						
Discount rate	–	–	3.90	3.05	3.90	3.05

In Germany the Heubeck RT 2018 G mortality tables were used, in the United States the MP-2020 Mortality Tables, and in the United Kingdom 100% of S3NMA and 101% of S3NFA.

The following weighted parameters were used to measure the expense for pension and other post-employment benefits in the respective year:

B 22/8

Parameters for Benefit Expense

	Germany		Other countries		Total	
%	2019	2020	2019	2020	2019	2020
Pension obligations						
Discount rate	1.90	1.00	3.55	2.60	2.40	1.55
Projected future salary increases	2.75	2.50	3.65	3.10	3.00	2.70
Projected future benefit increases	1.60	1.40	3.05	2.80	2.05	1.85
Other post-employment benefit obligations						
Discount rate	–	–	4.85	3.90	4.85	3.90

The method for determining the pension discount rate in the eurozone was modified as of December 31, 2020. The discount rate is no longer calculated solely from a reference portfolio of AA-rated corporate bonds. Since only a small number of representative bonds exist in this category, long-term yields are calculated based on public-sector bonds plus a spread to cover the difference in credit ratings between these and corporate bonds. This method gives a discount rate of 0.90% for Germany as of December 31, 2020. The discount rate based on the previous reference portfolio would have been 1.00%. Applying this rate would have reduced pension provisions by approximately €0.3 billion.

The parameter sensitivities were computed by expert actuaries based on a detailed evaluation similar to that performed to obtain the data presented in Table B 22/3. Altering individual parameters by 0.5 percentage points or mortality by 10% per beneficiary while leaving the other parameters unchanged would have impacted pension and other post-employment benefit obligations as of year-end 2020 as follows:

B 22/9

Sensitivity of Benefit Obligations

	Germany		Other countries		Total	
€ million	**Increase**	**Decrease**	**Increase**	**Decrease**	**Increase**	**Decrease**
Pension obligations						
0.5%-pt. change in discount rate	(1,461)	1,699	(563)	633	(2,024)	2,332
0.5%-pt. change in projected future salary increases	65	(60)	69	(64)	134	(124)
0.5%-pt. change in projected future benefit increases	880	(802)	194	(146)	1,074	(948)
10% change in mortality	(643)	731	(249)	257	(892)	988
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(35)	38	(35)	38
10% change in mortality	–	–	(21)	24	(21)	24

B 22/10

Sensitivity of Benefit Obligations (prior year)

	Germany		Other countries		Total	
€ million	**Increase**	**Decrease**	**Increase**	**Decrease**	**Increase**	**Decrease**
Pension obligations						
0.5%-pt. change in discount rate	(1,489)	1,711	(559)	620	(2,048)	2,331
0.5%-pt. change in projected future salary increases	81	(75)	61	(58)	142	(133)
0.5 %-pt. change in projected future benefit increases	881	(803)	203	(155)	1,084	(958)
10% change in mortality	(628)	712	(240)	242	(868)	954
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(36)	40	(36)	40
10% change in mortality	–	–	(22)	25	(22)	25

Provisions are also established for the obligations, mainly of U.S. subsidiaries, to provide post-employment benefits in the form of health care cost payments for retirees. The valuation of health care costs was based on the assumption that they will increase at a rate of 6.8% (2019: 7.0%). As in the previous year, it was assumed that this rate of increase will gradually decline to 5.0% by 2028.

The following table shows the impact on other post-employment benefit obligations and total benefit expense of a one-percentage-point change in the assumed cost increase rates:

B 22/11

Sensitivity to Health Care Cost Increases

	Increase of one percentage point		Decrease of one percentage point	
€ million	**2019**	**2020**	**2019**	**2020**
Impact on other post-employment benefit obligations	51	45	(43)	(38)
Impact on benefit expense	2	2	(2)	(1)

Payments made and expected future payments

The following payments or asset contributions correspond to the employer contributions made or expected to be made to funded benefit plans:

B 22/12

Employer Contributions Paid or Expected

	Germany			Other countries		
€ million	**2019**	**2020**	**2021 expected**	**2019**	**2020**	**2021 expected**
Pension obligations	49	20	102	96	91	76
Other post-employment benefit obligations	–	–	–	(15)	(16)	2
Total	**49**	**20**	**102**	**81**	**75**	**78**

Bayer is currently committed to making deficit contributions for its U.K. pension plans of approximately GBP27 million annually through 2022 (inclusive). For its U.S. pension plans, Bayer did not make any deficit contributions in 2020 or in 2019, and expects to make zero or only very low regular payments in 2021 as most of these plans are closed and frozen.

Pensions and other post-employment benefits payable in the future from funded and unfunded plans are estimated as follows:

B 22/13

Future Benefit Payments

	Payments out of plan assets				Payments by the company			
		Pensions	Other post-employment benefits			Pensions	Other post-employment benefits	
€ million	**Germany**	**Other countries**	**Other countries**	**Total**	**Germany**	**Other countries**	**Other countries**	**Total**
2021	182	394	21	597	442	100	22	564
2022	183	398	21	602	438	92	22	552
2023	183	398	20	601	441	93	22	556
2024	184	407	21	612	444	94	23	561
2025	185	411	21	617	447	98	22	567
2026–2030	923	2,042	108	3,073	2,231	554	109	2,894

The weighted average term of the pension obligations is 17.7 years (2019: 17.9 years) in Germany and 13.4 years (2019: 13.2 years) in other countries. The weighted average term of the obligations for other post-employment benefits in other countries is 10.9 years (2019: 11.0 years).

23. Other provisions

Changes in the various provision categories in 2020 were as follows:

B 23/1

Changes in Other Provisions

€ million	Other taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
December 31, 2019	**78**	**655**	**1,267**	**240**	**1,206**	**2,520**	**1,051**	**7,017**
Acquisitions / divestments	–	–	–	(1)	–	15	117	131
Additions	39	84	384	286	13,354	2,337	593	17,077
Utilization	(43)	(32)	(480)	(121)	(4,192)	(2,110)	(411)	(7,389)
Reversal	(8)	(27)	(131)	(21)	(21)	(746)	(114)	(1,068)
Reclassification to liabilities held for sale	–	–	(9)	–	–	(3)	–	(12)
Interest cost	–	9	–	–	18	8	2	37
Exchange differences	(11)	(59)	(10)	(40)	(1,065)	(110)	(49)	(1,344)
December 31, 2020	**55**	**630**	**1,021**	**343**	**9,300**	**1,911**	**1,189**	**14,449**
of which current	39	51	346	215	7,824	1,268	384	10,127

The provisions were partly offset by claims for compensation from insurers in the amount of €31 million (2019: €77 million), which were recognized as receivables. These claims were primarily for refunds related to product liability.

Environmental protection

Provisions for environmental protection are mainly established for the expected costs of ensuring compliance with environmental regulations, remediation work on contaminated land, recultivation of landfills, and redevelopment and water protection measures.

Restructuring

Provisions for restructuring only cover expenses that arise directly from restructuring measures, are necessary for restructuring and are not related to future business operations. Such expenses include severance payments to employees and compensation payments in respect of rented property that is no longer used.

Restructuring measures may include the sale or termination of business units, site closures, relocations of business activities or fundamental reorganizations of business units.

Provisions for restructuring included €980 million (2019: €1,203 million) for severance payments and €41 million (2019: €64 million) for other restructuring expenses, which mainly comprised other costs related to the outsourcing of research activities. The breakdown of provisions by segment was as follows: €227 million (2019: €185 million) at Crop Science, €181 million (2019: €292 million) at Pharmaceuticals, €21 million (2019: €31 million) at Consumer Health and €592 million (2019: €759 million) in Enabling Functions / All Other Segments.

Provisions continued to be established in all segments in 2020 in connection with the restructuring program already ongoing since the end of 2018 to further strengthen Bayer's core businesses, adapt the infrastructure and increase productivity and earning power through a series of measures to be implemented through 2022. In addition, it was announced in September 2020 that further operational savings are planned to advance the company in the market environment and accelerate its transformation. The respective new measures, which may also lead to additional job reductions, are currently being developed and discussed in detail. Since the measures were not specifically communicated to employees

or their representatives in 2020, a provision did not have to be established under IAS 37. Further provisions are therefore expected to be established in 2021 as soon as the planned measures have been sufficiently communicated.

As in previous years, the main focus of restructuring activities in the Crop Science segment was on organizational adjustments following the integration of Monsanto.

The restructuring measures in the Pharmaceuticals segment related to the reorganization in the research and development areas and in supply chain management. Moreover, extensive restructuring measures were implemented in the sales function in Japan. The provisions established in prior years were utilized for these purposes.

At Consumer Health, the “Fit to Win” restructuring program was continued with the aim of making this segment a market leader by driving the transformation in the health care industry and creating a more agile and faster organization with fewer decision-making levels.

Under Enabling Functions and Consolidation, which forms part of the Reconciliation, provisions were established in 2020 for severance payments, primarily in France. A substantial part of the IT function in Germany was outsourced to external service providers. Employee transfers were effected utilizing the provisions established in the prior year.

Trade-related commitments

Trade-related provisions are recorded mainly for obligations related to services performed but not yet invoiced and to sales commissions not recognized under trade accounts payable.

Litigations

The legal risks currently considered to be material, and their development, are described in Note [30].

Personnel commitments

Personnel-related provisions include those for variable, performance-related one-time payments to employees, stock-based payments, and payments related to long-service anniversaries, early retirement programs and pre-retirement part-time working arrangements. Provisions for severance payments resulting from restructuring are reflected in provisions for restructuring.

Stock-based compensation programs

Bayer offers the stock-based compensation programs Aspire 2.0 and BayShare 2020 collectively to different groups of employees. As required by IFRS 2 (Share-based Payment) for compensation systems involving cash settlement, provisions are established for all awards to be made under the Aspire 2.0 program. The provisions are recognized in the amount of the fair value of the obligations existing as of the date of the financial statements. All resulting valuation adjustments are recognized in profit or loss.

The following table shows the changes in the provisions established for Aspire 2.0:

B 23/2

Changes in Provisions

€ million	Aspire 2.0
December 31, 2019	**582**
Additions	538
Utilization	(155)
Reversal	(480)
Exchange differences	(31)
December 31, 2020	**454**

The value of the Aspire 2.0 tranche that was fully earned at the end of 2020, resulting in payments at the beginning of 2021, was €131 million (2019: €132 million).

The net expense for all stock-based compensation programs was €63 million (2019: €303 million), including €5 million (2019: €5 million) for the BayShare stock participation program. For information on the hedging of obligations under stock-based employee compensation programs see Note [27.3].

Long-term incentive program Aspire 2.0

Aspire 2.0 is based on a percentage of each employee's annual base salary, the percentage varying according to their position. This target value is multiplied by the employee's STI (short-term incentive) payment factor for the previous year to give the Aspire grant value. The STI payment factor reflects the business performance under the global short-term incentive program. The Aspire grant value is converted into virtual Bayer shares by dividing it by the share price at the start of the program. The program's performance is based on these virtual shares. Each tranche runs for four years. The Board of Management's stock-based compensation is explained in detail in A 4.4 "Compensation Report."

The fair value of the obligations is determined from the price of Bayer stock at year-end and the dividends paid up to that time. The payment made at the end of each tranche is determined by multiplying the number of virtual shares by the Bayer share price at that time and adding an amount equivalent to the dividends paid during the period of the tranche. The maximum payment for Aspire 2.0 is 250% of the Aspire grant value.

At the start of 2021, a payment of 64% was made for the tranche issued in 2017.

BayShare 2020

All management levels and nonmanagerial employees were offered a stock participation program known as BayShare, under which Bayer subsidizes their personal investment in the company's stock.

The discount under this program in 2020 was 20% (2019: 20%) of the subscription amount. Employees stated a fixed amount that they wished to invest in shares. The maximum subscription amount in Germany was set at €2,500 (2019: €2,500) or €5,000 (2019: €5,000), depending on the employee's position. The shares purchased must be retained until December 31, 2021.

In 2020, around 538,000 shares were purchased under the BayShare program (2019: 334,000 shares).

Other

Miscellaneous provisions include those for other liabilities, contingent liabilities from business combinations, except where these are allocable to other provision categories, and asset retirement obligations other than those included in provisions for environmental protection.

A sensitivity analysis undertaken for certain provisions that examined the impact of a five percentage point change in the probabilities of occurrence in each case did not produce any material deviations from the amount of provisions established.

24. Financial liabilities

Financial liabilities were comprised as follows:

B 24/1

Financial Liabilities

	Dec. 31, 2019		Dec. 31, 2020	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Bonds and notes	33,569	1,001	36,745	4,494
Liabilities to banks	4,062	675	3,671	3,654
Lease liabilities	1,251	299	1,137	212
Liabilities from derivatives	123	122	136	136
Other financial liabilities	89	85	77	74
Total	**39,094**	**2,182**	**41,766**	**8,570**

A breakdown of financial liabilities by contractual maturity is given below:

B 24/2

Maturities of Financial Liabilities

€ million	**Dec. 31, 2019**	€ million	**Dec. 31, 2020**
2020	2,182	2021	8,570
2021	8,513	2022	2,248
2022	2,205	2023	3,511
2023	3,715	2024	3,630
2024	2,274	2025	2,657
2025 or later	20,205	2026 or later	21,150
Total	**39,094**	**Total**	**41,766**

The Bayer Group has issued the following bonds and notes:

B 24/3

Bonds and Notes

	Nominal volume as of Dec. 31, 2019	Carrying amount as of Dec. 31, 2019 € million	Nominal volume as of Dec. 31, 2020	Carrying amount as of Dec. 31, 2020 € million
Hybrid bonds[1]				
Hybrid bond 2014/2024[2]/2074	EUR 1,500 million	1,497	EUR 1,500 million	1,497
Hybrid bond 2015/2022[2]/2075	EUR 1,300 million	1,295	EUR 1,300 million	1,297
Hybrid bond 2019/2025[2]/2079	EUR 1,000 million	990	EUR 1,000 million	991
Hybrid bond 2019/2027[2]/2079	EUR 750 million	746	EUR 750 million	747
Exchangeable bond[1]				
Exchangeable bond[3] 2017/2020	EUR 1,000 million	1,001	–	–
USD bonds[1, 4]				
Maturity < 1 year	–	–	USD 4,500 million	3,665
Maturity > 1 year < 5 years	USD 10,750 million	9,510	USD 9,364 million	7,614
Maturity > 5 years	USD 13,914 million	12,144	USD 10,800 million	8,584
EUR bonds[1, 4]				
Maturity < 1 year	–	–	EUR 750 million	750
Maturity > 1 year < 5 years	EUR 3,000 million	2,997	EUR 3,750 million	3,738
Maturity > 5 years	EUR 3,250 million	3,225	EUR 7,750 million	7,704
JPY bonds[1]				
Maturity < 1 year	–	–	JPY 10 billion	79
Maturity > 1 year < 5 years	JPY 20 billion	164	JPY 10 billion	79
Maturity > 5 years	–	–	–	–
Total		**33,569**		**36,745**

[1] The bonds are issued in the functional currency of the issuing entity and mainly have a fixed coupon.
[2] Date of first option to redeem the bond early at par
[3] Bond was redeemed in cash at maturity.
[4] Bonds with nominal volumes of US$2,500 million and €750 million bear variable rates of interest.

Hybrid bonds

The hybrid bonds issued by Bayer AG are subordinated, and 50% of their amount is treated by the rating agencies as equity. They therefore have a more limited effect on the Group's rating-specific debt indicators than senior borrowings.

In 2019, Bayer AG repurchased the €1.75 billion hybrid bond maturing in 2075 (callable on July 1, 2020) before the first call date. The repurchase was financed through the issuance of two hybrid bonds with nominal volumes of €1 billion and €750 million.

Mandatory convertible notes

On November 22, 2016, Bayer Capital Corporation B.V., Mijdrecht, Netherlands, placed subordinated mandatory convertible notes in the amount of €4 billion, which were converted into no-par shares of Bayer AG at maturity on November 22, 2019.

Exchangeable bond

On June 14, 2017, Bayer AG issued bonds with a nominal value of €1 billion which matured in 2020. These bonds could be settled in cash, by delivery of Covestro shares or by a combination thereof. They were designated as financial liabilities at fair value through profit or loss upon first-time recognition. Bayer AG repaid the bonds in cash in June 2020.

Other bonds

Bayer AG placed bonds with a total volume of €6 billion in 2020. The issuance comprises four €1.5 billion tranches with maturities of 4 years, 6.5 years, 9.5 years and 12 years. The coupons on the notes are 0.375% p.a., 0.75% p.a., 1.125% p.a. and 1.375% p.a., respectively.

Three bonds with a total nominal volume of US$2.5 billion and a bond with a nominal volume of JPY10 billion were redeemed at maturity in 2019.

Liabilities to banks

Liabilities to banks included the outstanding amount of €3.1 billion (US$3.8 billion) from the syndicated credit facility drawn in June 2018 as bridge financing for the acquisition of Monsanto.

Lease liabilities

Further information on lease liabilities is given in Note [28].

Other information

A total of €4.5 billion in undrawn credit facilities remained available to the Bayer Group as of December 31, 2020 (December 31, 2019: €4.5 billion).

Further information on the accounting for liabilities from derivatives is given in Note [27].

The development of financial liabilities in 2020 is outlined in Note [31].

25. Trade accounts payable

Trade accounts payable comprised €5,671 million (2019: €6,404 million) due within one year and €12 million (2019: €22 million) due after one year.

26. Other liabilities

Other liabilities comprised the following:

B 26/1

Other Liabilities

	Dec. 31, 2019		Dec. 31, 2020	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Other tax liabilities	693	682	610	601
Liabilities from derivatives	219	166	281	199
Accrued interest on liabilities	266	253	240	240
Liabilities for social expenses	130	128	223	221
Liabilities to employees	230	215	154	153
Deferred income	50	27	59	36
Miscellaneous liabilities	1,334	1,012	1,806	582
Total	**2,922**	**2,483**	**3,373**	**2,032**

The deferred income included €21 million (2019: €20 million) in grants and subsidies received from governments, of which €3 million (2019: €3 million) was reversed through profit or loss.

Miscellaneous liabilities included liabilities of €938 million for potential future milestone payments that arose in connection with the acquisition of Asklepios BioPharmaceutical, Inc., (AskBio), Durham, North Carolina, United States. The acquisition of Noho Health, Inc., (NoHo), New York, United States, resulted in a further €118 million in liabilities relating to commitments to purchase additional shares and to milestone payments. Also reflected here are financing commitments to joint ventures amounting to €84 million (2019: €116 million). In 2019, miscellaneous liabilities also included a liability in the amount of €346 million for the settlement payment due in connection with the Xarelto™ litigation. The payment was made in January 2020.

27. Financial instruments

The system used by the Bayer Group to manage credit risks, liquidity risks and the different types of market price risk (interest-rate, currency and commodity price risks), together with its objectives, methods and procedures, is outlined in the Opportunity and Risk Report, which forms part of the Combined Management Report.

27.1 Financial instruments by category

The following tables show the carrying amounts and fair values of the individual financial assets and liabilities by category of financial instrument under IFRS 9 and a reconciliation to the corresponding line items in the statements of financial position. Since the line items “Trade accounts receivable,” “Other receivables,” “Financial liabilities” and “Other liabilities” contain both financial instruments and nonfinancial assets or liabilities (such as other tax receivables), the reconciliation is shown in the column headed “Nonfinancial assets / liabilities.”

B 27.1/1

Carrying Amounts and Fair Values of Financial Instruments

Dec. 31, 2020

Measurement category (IFRS 9)[1]	Carried at amortized cost	Carried at fair value [fair value for information[4]]			Nonfinancial assets / liabilities	
		Based on quoted prices in active markets (Level 1)	Based on observable market data (Level 2)	Based on unobservable inputs (Level 3)		
€ million	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Total**
Trade accounts receivable	9,120	246			189	9,555
AC	9,120					9,120
FVTPL, mandatory[2]		246				246
Nonfinancial assets					189	189
Other financial assets	1,416	3,714	3,078	1,287		9,495
AC	1,414		[1,414]			1,414
FVTPL, mandatory[2]		3,642	2,813	931		7,386
FVTOCI (no recycling), designated[3]		55		344		399
Derivatives – hedge accounting			134			134
Derivatives – no hedge accounting		17	131	12		160
Lease receivables	2		[2]			2
Other receivables	323			77	2,102	2,502
AC	323		[323]			323
FVTPL, mandatory[2]				77		77
Nonfinancial assets					2,102	2,102
Cash and cash equivalents	4,191					4,191
AC	4,191		[4,191]			4,191
Total financial assets	**15,050**	**3,960**	**3,078**	**1,364**		**23,452**
of which AC	15,048					15,048
of which FVTPL		3,888	2,813	1,008		7,709
Financial liabilities	41,560		136		70	41,766
AC	40,423	[34,189]	[9,824]			40,423
Derivatives – no hedge accounting			136			136
Lease liabilities	1,137		[1,175]			1,137
Nonfinancial liabilities					70	70
Trade accounts payable	5,683					5,683
AC	5,683					5,683
Other liabilities	858	56	224	1,248	987	3,373
AC	858		[858]			858
FVTPL (nonderivative), mandatory[2]				1,247		1,247
Derivatives – hedge accounting			208			208
Derivatives – no hedge accounting		56	16	1		73
Nonfinancial liabilities					987	987
Total financial liabilities	**48,101**	**56**	**360**	**1,248**		**49,765**
of which AC	46,964					46,964
of which derivatives – no hedge accounting		56	152	1		209

[1] AC: at amortized cost
FVTOCI: at fair value through other comprehensive income
FVTPL: at fair value through profit or loss
[2] Measured at fair value through profit or loss as required by IFRS 9
[3] Measured at fair value through other comprehensive income under IFRS 9, paragraph 5.7.5
[4] Fair value of the financial instruments at amortized cost under IFRS 7, paragraph 29(a)

B 27.1/2

Carrying Amounts and Fair Values of Financial Instruments

Dec. 31, 2019

Measurement category (IFRS 9)[1]	Carried at amortized cost	Carried at fair value [fair value for information[5]] Based on quoted prices in active markets (Level 1)	Based on observable market data (Level 2)	Based on unobservable inputs (Level 3)	Nonfinancial assets / liabilities	
€ million	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Total**
Trade accounts receivable	11,430		80		168	11,678
AC	11,430					11,430
FVTPL, mandatory[2]			80			80
Nonfinancial assets					168	168
Other financial assets	809	1,692	195	1,166		3,862
AC	809		[809]			809
FVTPL, mandatory[2]		1,353	29	922		2,304
FVTOCI (no recycling), designated[3]		336		232		568
Derivatives – hedge accounting			71			71
Derivatives – no hedge accounting		3	95	12		110
Other receivables	287			65	2,210	2,562
AC	287		[287]			287
FVTPL, mandatory[2]				65		65
Nonfinancial assets					2,210	2,210
Cash and cash equivalents	3,185					3,185
AC	3,185		[3,185]			3,185
Total financial assets	**15,711**	**1,692**	**275**	**1,231**		**18,909**
of which AC	15,711					15,711
of which FVTPL		1,353	109	987		2,449
Financial liabilities	37,896	1,001	123		74	39,094
AC	36,645	[33,285]	[5,389]			36,645
FVTPL (nonderivative), designated[4]		1,001				1,001
Derivatives – no hedge accounting			123			123
Lease liabilities	1,251		[1,385]			1,251
Nonfinancial liabilities					74	74
Trade accounts payable	6,426					6,426
AC	6,426					6,426
Other liabilities	1,156	3	211	198	1,354	2,922
AC	1,156		[1,156]			1,156
FVTPL (nonderivative), mandatory[2]				193		193
Derivatives – hedge accounting			177			177
Derivatives – no hedge accounting		3	34	5		42
Nonfinancial liabilities					1,354	1,354
Total financial liabilities	**45,478**	**1,004**	**334**	**198**		**47,014**
of which AC	44,227					44,227
of which FVTPL (nonderivative)		1,001		193		1,194
of which derivatives – no hedge accounting		3	157	5		165

2019 figures restated

[1] AC: at amortized cost
FVTOCI: at fair value through other comprehensive income
FVTPL: at fair value through profit or loss

[2] Measured at fair value through profit or loss as required by IFRS 9

[3] Measured at fair value through other comprehensive income under IFRS 9, paragraph 5.7.5

[4] Designated as FVTPL upon first-time recognition under IFRS 9

[5] Fair value of the financial instruments at amortized cost under IFRS 7 paragraph 29(a)

Due to the short maturities of most trade accounts receivable and payable, other receivables and liabilities, and cash and cash equivalents, their carrying amounts at the closing date do not significantly differ from the fair values.

The fair values of financial assets and liabilities measured at amortized cost that are given for information are the present values of the respective future cash flows. The present values are determined by discounting the cash flows at a closing-date interest rate, taking into account the term of the assets or liabilities and also the creditworthiness of the counterparty in certain cases. Where a market price is available, however, this is deemed to be the fair value.

The fair values of financial assets measured at fair value correspond to quoted prices in active markets (Level 1), or are determined using valuation techniques based on observable market data as of the end of the reporting period (Level 2) or are the present values of the respective future cash flows, determined on the basis of unobservable inputs (Level 3).

The fair values of derivatives for which no publicly quoted prices exist in active markets (Level 1) are determined using valuation techniques based on observable market data as of the end of the reporting period (Level 2). In applying valuation techniques, credit or debt value adjustments are determined to account for the credit risk of the contractual party or Bayer.

Currency and commodity forward contracts are measured individually at their forward rates or forward prices on the closing date. These depend on spot rates or prices, including time spreads. The fair values of interest-rate hedging instruments and cross-currency interest-rate swaps were determined by discounting future cash flows over the remaining terms of the instruments at market rates of interest, taking into account any foreign currency translation as of the closing date in certain cases.

Fair values measured using unobservable inputs are categorized within Level 3 of the fair value hierarchy. This applies to certain debt or equity instruments, in some cases to the fair values of embedded derivatives, and to obligations for contingent consideration in business combinations. Credit risk is frequently the principal unobservable input used to determine the fair values of debt instruments classified as “FVTPL – at fair value through profit or loss” by the discounted cash flow method. Here the credit spreads of comparable issuers are applied. A significant increase in credit risk could result in a lower fair value, whereas a significant decrease could result in a higher fair value. However, a relative change of 10% in the credit spread does not materially affect the fair value.

When determining the fair values of contingent consideration within the “FVTPL (nonderivative) – at fair value through profit or loss” category, the principal unobservable input is the estimation of the probability that, for example, pre-defined milestones for research and development projects will be achieved or that sales targets will be attained, as well as the timing of the payments. Changes in these estimates may lead to significant increases or decreases in fair value.

Embedded derivatives are separated from their respective host contracts, provided these are not financial instruments. Such host contracts are generally sale or purchase agreements relating to the operational business. The embedded derivatives cause the cash flows from the contracts to vary with exchange-rate or price fluctuations, for example. The internal measurement of embedded derivatives is mainly performed using the discounted cash flow method, which is based on unobservable inputs. These include planned sales and purchase volumes, and prices derived from market data. Regular monitoring is carried out based on these fair values as part of quarterly reporting.

The maximum default risk from financial assets that are measured at amortized cost and are subject to the impairment model is €15,050 million (2019: €15,711 million).

The maximum default risk from existing loan commitments that are subject to the impairment model is €1,165 million (2019: €1,165 million). In this connection, expected credit losses of €1 million (2019: €5 million) were recognized through profit or loss.

The maximum default risk from financial assets not subject to the impairment model is €8,402 million (2019: €3,198 million).

The exchangeable bond issued in June 2017 was measured at fair value through profit or loss. This bond was a hybrid financial instrument containing a debt instrument as a nonderivative host contract and multiple embedded derivatives. It was repaid in cash at maturity in June 2020.

The interest in Covestro is measured at fair value through profit or loss, as are the shares in Elanco Animal Health Inc., Greenfield, United States, received in connection with the sale of the Animal Health business unit.

The changes in the amount of financial assets and liabilities recognized at fair value based on unobservable inputs (Level 3) for each financial instrument category were as follows:

B 27.1/3

Development of Financial Assets and Liabilities (Level 3)

€ million	Assets – FVTPL[1]	FVTOCI (no recycling)[1]	Derivatives (net)	Liabilities – FVTPL (non-derivative)[1]	Total
Carrying amounts (net), January 1, 2020	**987**	**232**	**7**	**(193)**	**1,033**
Gains (losses) recognized in profit or loss	39	–	5	(18)	26
of which related to assets / liabilities recognized in the statements of financial position	39	–	5	(18)	26
Gains (losses) recognized outside profit or loss	–	31	–	–	31
Additions of assets / (liabilities)	3	93	–	(1,078)	(982)
Settlements of (assets) / liabilities	(11)	(8)	–	–	(19)
Changes in scope of consolidation	–	12	–	–	12
Exchange differences	(10)	(16)	(1)	42	15
Carrying amounts (net), December 31, 2020	**1,008**	**344**	**11**	**(1,247)**	**116**

[1] See table B 27.1/1 for definition of measurement categories

B 27.1/4

Development of Financial Assets and Liabilities (Level 3)

€ million	Assets – FVTPL[1]	FVTOCI (no recycling)[1]	Derivatives (net)	Liabilities – FVTPL (non-derivative)[1]	Total
Carrying amounts (net), January 1, 2019	**937**	**186**	**32**	**(20)**	**1,135**
Gains (losses) recognized in profit or loss	44	–	(1)	4	47
of which related to assets / liabilities recognized in the statements of financial position	44	–	(1)	4	47
Gains (losses) recognized outside profit or loss	–	2	–	–	2
Additions of assets / (liabilities)	5	37	–	(187)	(145)
Settlements of (assets) / liabilities	–	–	(26)	6	(20)
Changes in scope of consolidation	–	6	–	–	6
Exchange differences	1	1	2	4	8
Carrying amounts (net), December 31, 2019	**987**	**232**	**7**	**(193)**	**1,033**

[1] See table B 27.1/2 for definition of measurement categories

The changes recognized in profit or loss were included in other operating income / expenses, as well as in the financial result in interest income, exchange gains or losses and other financial income and expenses.

Income, expense, gains and losses on financial instruments can be assigned to the following categories:

B 27.1/5

Income, Expense, Gains and Losses on Financial Instruments

	2020						
€ million	Assets – AC[1]	Assets – FVTPL[1]	FVTOCI (no recycling)[1]	Derivatives – no hedge accounting	Liabilities – AC[1]	Liabilities – FVTPL (non-derivative)[1]	Total
Interest income	50	38	–	11	29	–	128
Interest expense	–	–	–	(8)	(1,325)	–	(1,333)
Income / expenses from affiliated companies	–	14	2	–	–	–	16
Changes in fair value	–	563	–	18	–	(18)	563
Impairment losses	(158)	–	–	–	–	–	(158)
Impairment loss reversals	111	–	–	–	–	–	111
Exchange gains / losses	(672)	–	–	(129)	631	–	(170)
Other financial income / expenses	–	–	–	–	(15)	–	(15)
Net result	**(669)**	**615**	**2**	**(108)**	**(680)**	**(18)**	**(858)**

[1] See table B 27.1/1 for definition of measurement categories

B 27.1/6

Income, Expense, Gains and Losses on Financial Instruments

	2019						
€ million	Assets – AC[1]	Assets – FVTPL[1]	FVTOCI (no recycling)[1]	Derivatives – no hedge accounting	Liabilities – AC[1]	Liabilities – FVTPL (non-derivative)[1]	Total
Interest income	147	39	–	–	52	–	238
Interest expense	(56)	–	–	(10)	(1,490)	(1)	(1,557)
Income / expenses from affiliated companies	–	31	–	–	–	–	31
Changes in fair value	–	52	–	11	–	(1)	62
Impairment losses	(209)	–	–	–	–	–	(209)
Impairment loss reversals	148	–	–	–	–	–	148
Exchange gains / losses	125	–	–	83	(290)	–	(82)
Other financial income / expenses	(3)	(12)	–	–	(33)	–	(48)
Net result	**152**	**110**	**–**	**84**	**(1,761)**	**(2)**	**(1,417)**

2019 figures restated

[1] See table B 27.1/2 for definition of measurement categories

The interest income and expense from assets and liabilities within the AC category also included income and expenses from interest-rate derivatives that qualified for hedge accounting. Income and expenses from lease receivables and lease liabilities, respectively, are also included here.

The changes in the fair value of assets within the FVTPL category also included changes in the fair value of the interests in Covestro and Elanco. Dividend income is reflected in income from affiliated companies, while interest income from debt instruments within the FVPTL category is included in interest income. The changes in the fair value of derivatives that do not qualify for hedge accounting related mainly to forward commodity contracts and embedded derivatives.

Changes in the fair value of (nonderivative) liabilities within the FVTPL category included changes in the fair value of obligations for contingent consideration in connection with business acquisitions.

Derivatives that form part of a master netting arrangement, constitute a financial asset or liability and can only be netted in the event of breach of contract by, or insolvency of, one of the contracting parties do not satisfy, or only partially satisfy, the criteria for offsetting in the statement of financial position according to IAS 32. The volume of such derivatives with positive fair values was €245 million (2019: €109 million), and the volume with negative fair values was €331 million (2019: €298 million). Included here is an amount of €111 million (2019: €74 million) in positive and negative fair values of derivatives concluded with the same contracting party.

27.2 Maturity analysis

The liquidity risks to which the Bayer Group was exposed from its financial instruments at the end of the reporting period comprised obligations for future interest and repayment installments on financial liabilities and the liquidity risk arising from derivatives.

There were also loan commitments under as yet unpaid €965 million (2019: €965 million) and €200 million (2019: €200 million) portions of the effective initial funds of Bayer-Pensionskasse VVaG and Rheinische Pensionskasse VVaG, respectively, which may result in further payments by Bayer AG in subsequent years.

B 27.2/1

Maturity Analysis of Financial Instruments

	Dec. 31, 2020	2021	2022	2023	2024	2025	after 2025
€ million	**Carrying amount**					**Interest and repayment**	
Refund liabilities	4,463	4,455	6	2	–	–	–
Financial liabilities							
Bonds and notes	36,745	5,287	2,963	4,241	4,337	3,198	27,157
Liabilities to banks	3,601	3,596	6	–	–	3	8
Remaining liabilities	1,214	335	255	199	148	117	423
Trade accounts payable	5,683	5,671	9	2	1	–	–
Other liabilities							
Accrued interest on liabilities	240	240	–	–	–	–	–
Remaining liabilities	1,865	719	427	322	280	249	191
Liabilities from derivatives							
Derivatives – hedge accounting	208	126	41	41	–	–	–
Derivatives – no hedge accounting	209	209	–	–	–	–	–
Receivables from derivatives							
Derivatives – hedge accounting	134	98	8	7	3	–	–
Derivatives – no hedge accounting	160	123	16	–	–	–	11
Loan commitments	–	1,165	–	–	–	–	–
Financial guarantees	–	–	–	–	–	–	1

B 27.2/2

Maturity Analysis of Financial Instruments

€ million	Dec. 31, 2019 Carrying amount	2020	2021	2022	2023	2024	after 2024
						Interest and repayment	
Refund liabilities	4,239	4,134	103	2	–	–	–
Financial liabilities							
Bonds and notes	33,569	1,900	5,895	3,010	4,528	3,025	27,171
Liabilities to banks	3,988	672	3,455	–	–	–	–
Remaining liabilities	1,340	443	335	193	137	98	377
Trade accounts payable	6,426	6,404	11	2	1	1	7
Other liabilities							
Accrued interest on liabilities	266	253	2	2	1	1	7
Remaining liabilities	1,083	788	87	150	31	1	26
Liabilities from derivatives							
Derivatives – hedge accounting	177	127	49	–	1	–	–
Derivatives – no hedge accounting	165	165	2	1	–	–	–
Receivables from derivatives							
Derivatives – hedge accounting	71	10	8	28	2	1	–
Derivatives – no hedge accounting	110	66	17	1	–	–	–
Loan commitments	–	1,165	–	–	–	–	–
Financial guarantees	–	–	–	–	–	–	1

27.3 Information on derivatives

Asset and liability fair values and future cash flows are exposed to currency, interest-rate and commodity price risks. Derivatives are used to reduce this risk. In some cases they are designated as hedging instruments in a hedge accounting relationship.

Currency risks

Foreign currency receivables and liabilities are hedged using foreign exchange derivatives without the existence of a hedge accounting relationship. In addition, cross-currency interest-rate swaps are concluded to hedge intra-Group loans. Some of these swaps are designated as cash flow hedges in hedge accounting.

Fluctuations in future cash flows resulting from forecasted foreign currency transactions and procurement activities are avoided partly through derivatives contracts, most of which are designated as cash flow hedges.

Interest-rate risk

The interest-rate risks from fixed-interest borrowings are managed in part using interest-rate swaps. Two interest-rate swaps in the total amount of €200 million were designated as fair value hedges for the €750 million bond issued in 2014 and maturing in 2021. In addition, two interest-rate swaps totaling US$500 million were designated as fair value hedges for the US$2.5 billion bond issued in 2018 and maturing in 2025. The carrying amounts of these bonds as of December 31, 2020, were €750 million and €2,029 million, respectively. Hedge-related fair value adjustments of €0 million and €26 million increased the carrying amounts to €750 million and €2,055 million, respectively. No material ineffective portions of these hedges required recognition through profit or loss.

Interest-rate risks in connection with the issuance of new bonds were partially hedged through interest-rate derivatives designated as cash flow hedges. The fair values of these derivatives as of the issuance date will be amortized from reserves for cash flow hedges into interest income and expense over the term of the bonds.

Commodity price risks

Hedging contracts are also used to partly reduce exposure to fluctuations in future cash inflows and outflows resulting from price changes on procurement and selling markets. Some of these contracts are designated as cash flow hedges or fair value hedges.

Hedging of obligations under stock-based employee compensation programs

A portion of the obligations to make variable payments to employees under stock-based compensation programs (Aspire) is hedged against share price fluctuations using derivatives contracts that are settled in cash at maturity. These derivatives are designated as cash flow hedges.

Further information on cash flow hedges

Other comprehensive income from cash flow hedges increased in 2020 by €87 million (2019: decreased by €115 million) due to changes in the fair values of derivatives. Total changes of €6 million in the fair values of derivatives were recognized as income in 2020 (2019: €107 million recognized as expense) through profit or loss.

The following table shows changes in reserves for cash flow hedges (before taxes), broken down by risk category:

B 27.3/1

Changes in Reserves for Cash Flow Hedges (Before Taxes)

€ million	Currency hedging of recorded transactions	Currency hedging of forecasted transactions	Interest-rate hedging of forecasted transactions	Commodity price hedging	Hedging of stock-based employee compensation programs	Total
December 31, 2018	**11**	**(35)**	**245**	**(17)**	**(89)**	**115**
Changes in fair values	–	(236)	–	(1)	122	(115)
Reclassified to profit or loss	(11)	196	(36)	–	(42)	107
Reclassified to inventories	–	–	–	17	–	17
December 31, 2019	**–**	**(75)**	**209**	**(1)**	**(9)**	**124**
Changes in fair values	–	258	(3)	17	(185)	87
Reclassified to profit or loss	–	(117)	(36)	1	146	(6)
Reclassified to inventories	–	–	–	14	–	14
December 31, 2020	**–**	**66**	**170**	**31**	**(48)**	**219**

No material ineffective portions of these hedges required recognition through profit or loss in 2020.

The fair values of the derivatives in the major categories as of year-end are indicated in the following table together with the included volumes of hedges:

B 27.3/2

Fair Values of Derivatives

€ million	Dec. 31, 2019 Notional amount[1]	Positive fair value	Negative fair value	Dec. 31, 2020 Notional amount[1]	Positive fair value	Negative fair value
Currency hedging of recorded transactions[2, 3]	**15,895**	**60**	**(123)**	**16,518**	**112**	**(136)**
Forward exchange contracts	15,711	59	(122)	16,388	69	(136)
Cross-currency interest-rate swaps	184	1	(1)	130	43	–
Currency hedging of forecasted transactions[2, 4]	**5,395**	**17**	**(91)**	**3,965**	**107**	**(40)**
Forward exchange contracts	5,279	16	(91)	3,707	102	(34)
of which cash flow hedges	5,121	14	(85)	3,323	97	(32)
Currency options	116	1	–	258	5	(6)
of which cash flow hedges	116	1	–	258	5	(6)
Interest-rate hedging of recorded transactions[2, 3]	**645**	**16**	**–**	**608**	**29**	**–**
Interest-rate swaps	645	16	–	608	29	–
of which fair value hedges	645	16	–	608	29	–
Interest-rate hedging of forecasted transactions[2, 4]	**–**	**–**	**–**	**2,100**	**–**	**(8)**
Interest-rate swaps	–	–	–	2,100	–	(8)
of which cash flow hedges	–	–	–	2,100	–	(8)
Commodity price hedging[2, 4]	**823**	**23**	**(22)**	**925**	**20**	**(50)**
Forward commodity contracts	797	21	(22)	917	18	(50)
of which cash flow hedges	426	14	(5)	512	3	–
Commodity option contracts	26	2	–	8	2	–
Hedging of stock-based employee compensation programs[2, 4]	**706**	**26**	**(87)**	**482**	**–**	**(162)**
Forward share transactions	706	26	(87)	482	–	(162)
of which cash flow hedges	706	26	(87)	482	–	(162)
Total	**23,464**	**142**	**(323)**	**24,598**	**268**	**(396)**
of which current derivatives	21,793	86	(272)	23,640	234	(314)
for currency hedging	20,913	65	(213)	20,436	203	(176)
for interest-rate hedging[5]	–	2	–	2,300	11	(8)
for commodity price hedging	690	19	(22)	743	20	(50)
for hedging of stock-based employee compensation programs	190	–	(37)	161	–	(80)

[1] The notional amount is reported as gross volume, which also contains economically closed hedges.
[2] Derivatives with positive fair values are recognized under “Other financial assets” in the statement of financial position.
[3] Derivatives with negative fair values are recognized under “Financial liabilities” in the statement of financial position.
[4] Derivatives with negative fair values are recognized under “Other liabilities” in the statement of financial position.
[5] The portion of the fair value of long-term interest-rate swaps that relates to short-term interest payments is reported as current.

The hedging rates for the material currency pairs of the currency hedging derivatives existing at year-end that qualified for hedge accounting were as follows:

B 27.3/3

Hedging Rates of Derivatives – Hedge Accounting

	Dec. 31, 2019	Dec. 31, 2020
	Short-term derivatives	Short-term derivatives
	Average hedging rate	**Average hedging rate**
Currency hedging of forecasted transactions		
Forward exchange contracts – cash flow hedges		
EUR/BRL	4.62	6.17
EUR/CNH	7.99	8.08
EUR/USD	121.88	122.86

28. Leases

Lease contracts in which Bayer is the lessee mainly pertain to real estate, machinery, equipment or vehicles. Lease contracts are negotiated individually and each contain different arrangements on extension, termination or purchase options, for example.

Land and building leases in which Bayer is the lessee have average terms of 7.7 years (2019: 6.5 years). In many cases, the payments agreed under these leases are adjusted annually based on the development of the consumer price index for the respective country. Building leases generally contain clauses that prohibit subleasing except with the consent of the lessor. Leases of assets other than land or buildings have average terms of 6.4 years (2019: 4.2 years).

Approximately half (2019: approximately half) of all contracts (excluding vehicle leases) contain an option for Bayer as lessee to terminate the lease on a date specified in the contract, while roughly half (2019: roughly one-third) of all contracts with a fixed minimum term (excluding vehicle leases) grant Bayer as lessee an extension option. Vehicle leases generally contain a right of early return and an extension option.

The following right-of-use assets are recognized under property, plant and equipment:

B 28/1

Right-of-Use Assets

€ million	Dec. 31, 2019	Dec. 31, 2020
Land and buildings	765	760
Investment property	4	5
Plant installations and machinery	165	131
Furniture, fixtures and other equipment	243	198
Construction in progress and advance payments	96	6
Total	**1,273**	**1,100**

Additions to right-of-use assets in 2020 amounted to €386 million (2019: €333 million).

The maturities of the outstanding lease payments were as follows:

B 28/2

Maturities of Lease Payments

€ million	Dec. 31, 2019	Dec. 31, 2020
Maturing within 1 year	358	262
Maturing in 1–5 years	759	717
Maturing after 5 years	377	423
Total	**1,494**	**1,402**

Further details of lease liabilities are given in Note [24].

The depreciation of right-of-use assets in 2020 pertained to the following asset groups:

B 28/3

Depreciation of Right-of-Use Assets

€ million	2019	2020
Land and buildings	236	219
Plant installations and machinery	29	60
Furniture, fixtures and other equipment	119	107
Total	**384**	**386**

In addition, the following amounts were recognized in the income statement in 2020 in connection with lease contracts in which Bayer was the lessee:

B 28/4

Income Statement Impact of Leases

€ million	2019	2020
Interest expense for the unwinding of discount on lease liabilities	(65)	(64)
Expenses for short-term leases with terms longer than one month and up to 12 months	(275)	(258)
Expenses for leases with low-value underlying assets (excluding short-term leases)	(8)	(2)
Expenses for variable lease payments not included in the measurement of the lease liability	(10)	(11)
Income from subleasing of right-of-use assets	5	5
Gains or losses on sale-and-leaseback transactions	1	2
Total	**(352)**	**(328)**

Cash outflows related to lessee activities in 2020 amounted to €687 million (2019: €793 million). Unrecognized liabilities of €17 million existed as of December 31, 2020, for short-term leases that had not yet commenced (December 31, 2019: €15 million). Leases signed but not yet commenced as of December 31, 2020 (other than short-term leases) amounted to €176 million (2019: €31 million).

29. Contingent liabilities and other financial commitments

Contingent liabilities

The following warranty contracts and other contingent liabilities existed at the end of the reporting period:

B 29/1

Contingent Liabilities

€ million	Dec. 31, 2019	Dec. 31, 2020
Warranties	98	122
Other contingent liabilities	3,099	2,764
Total	**3,197**	**2,886**

Other contingent liabilities as of December 31, 2020, amounted to approximately €2,764 million (December 31, 2019: €3,099 million) and primarily related to tort, tax or labor law and other matters in countries including Germany, the United States, Brazil and Italy.

Other financial commitments

The other financial commitments were as follows:

B 29/2

Other Financial Commitments

€ million	Dec. 31, 2019	Dec. 31, 2020
Commitments under purchase agreements for property, plant and equipment	841	702
Contractual obligation to acquire intangible assets	227	203
Capital contribution commitments	413	357
Unpaid portion of the effective initial fund	1,165	1,165
Potential payment obligations under collaboration agreements	2,620	3,703
Sales-based milestone payment commitments from the acquisition of intangible assets	3,084	2,493
Total	**8,350**	**8,623**

The potential maturities of payment obligations under collaboration agreements and revenue-based milestone payment commitments arising from the acquisition of intangible assets are as follows:

B 29/3

Maturities of Other Financial Liabilities

	Payment obligations under collaboration agreements		Revenue-based milestone payment commitments	
€ million	2019	2020	2019	2020
Maturing within 1 year	215	174	75	-
Maturing in 1–5 years	661	1,039	1	76
Maturing after 5 years	1,744	2,490	3,008	2,417
Total	**2,620**	**3,703**	**3,084**	**2,493**

The Bayer Group has entered into cooperation agreements with third parties under which it has agreed to fund various projects or has assumed other payment obligations based on the achievement of certain milestones or other specific conditions. The amounts shown represent the maximum payments to be made, and it is unlikely that they will all fall due. Since the achievement of the conditions for payment is highly uncertain, both the amounts and the dates of the actual payments may vary considerably from those stated in the table. The increase in 2020 in potential payment obligations under collaboration agreements was largely due to new collaboration and licensing agreements with Atara Biotherapeutics, Inc., South San Francisco, United States, Systems Oncology, LLC, Scottsdale, United States, Curadev Pharma Pvt Ltd, New Delhi, India, and Exscientia Ltd., Oxford, United Kingdom. The decline in commitments to make sales-based milestone payments was due to contractual adjustments to existing agreements

30. Legal risks

As a global company with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks, particularly in the areas of product liability, competition and antitrust law, anticorruption, patent disputes, tax assessments and environmental matters. The outcome of any current or future proceedings cannot normally be predicted. It is therefore possible that legal or regulatory judgments or future settlements could give rise to expenses that are not covered, or not fully covered, by insurers' compensation payments and could significantly affect our sales and earnings. Legal proceedings we currently consider to be material are outlined below. The legal proceedings referred to do not represent an exhaustive list.

Product-related litigation

Xarelto™: In the United States, a large number of plaintiffs alleged personal injuries from the use of Xarelto™, an oral anticoagulant for the treatment and prevention of blood clots. Alleged injuries include cerebral, gastrointestinal or other bleeding and death. Plaintiffs seek compensatory and punitive damages. They claim, among other things, that Xarelto™ is defective and that Bayer knew or should have known of these risks associated with the use of Xarelto™ and failed to adequately warn its users. In 2019, after prevailing in all six cases that went to trial, Bayer and Janssen Pharmaceuticals reached a global agreement to settle virtually all pending US cases for US$775 million. In January 2020, the settlement – split equally between the two companies – was fully funded and all pending appeals have been dismissed. The claims administrator has begun the process of fund allocation and dismissals of the settled cases will follow. Any remaining cases will need to satisfy requirements or be subject to dismissal.

As of February 3, 2021, eleven Canadian lawsuits relating to Xarelto™ seeking class action certification and one individual action had been served upon Bayer. Two of the proposed class actions have been certified. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Essure™: In the United States, a large number of lawsuits by users of Essure™, a medical device offering permanent birth control with a nonsurgical procedure, had been served upon Bayer. Plaintiffs allege personal injuries from the use of Essure™, including hysterectomy, perforation, pain, bleeding, weight gain, nickel sensitivity, depression and unwanted pregnancy, and seek compensatory and punitive damages.

By February 3, 2021, Bayer had reached agreements in principle with plaintiff law firms to resolve approximately 99% of the nearly 40,000 total filed and unfiled U.S. Essure™ claims involving women who allege device-related injuries. The settlements include all of the jurisdictions with significant volumes of Essure™ cases, including the state of California Joint Council Coordinated Proceedings (JCCP) and the Federal District Court for the Eastern District of Pennsylvania (EDPA). The company will pay approximately US$1.6 billion to resolve these claims, including an allowance for outstanding claims, and is in resolution discussions with counsel for the remaining plaintiffs. At the same time, we continue to support the safety and efficacy of the Essure™ device and are prepared to vigorously defend it in litigation where no amicable resolution can be achieved.

As of February 3, 2021, two Canadian lawsuits relating to Essure™ seeking class action certification had been served upon Bayer. One of the proposed class actions was certified. Certification in the other class action has been denied; the decision is not yet final. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Class actions over neonicotinoids in Canada: Proposed class actions against Bayer were filed in Quebec and Ontario (Canada) concerning crop protection products containing the active substances imidacloprid and clothianidin (neonicotinoids). The plaintiffs are honey producers, who have filed a proposed nationwide class action in Ontario and a Quebec-only class action in Quebec. Plaintiffs claim for compensatory damages and punitive damages and allege Bayer and another crop protection company were negligent in the design, development, marketing and sale of neonicotinoid pesticides. The proposed Ontario class action is in a very early procedural phase. In Quebec, a court certified a class proposed by plaintiffs in 2018. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Roundup™ (glyphosate): As of February 3, 2021, lawsuits from approximately 61,800 plaintiffs claiming to have been exposed to glyphosate-based products manufactured by Bayer's subsidiary Monsanto had been served upon Monsanto in the United States. Glyphosate is the active ingredient contained in a number of Monsanto's herbicides, including Roundup™-branded products. Plaintiffs allege personal injuries resulting from exposure to those products, including non-Hodgkin lymphoma (NHL) and multiple myeloma, and seek compensatory and punitive damages. Plaintiffs claim, inter alia, that the glyphosate-based herbicide products are defective and that Monsanto knew, or should have known, of the risks allegedly associated with such products and failed to adequately warn its users. Additional lawsuits are anticipated. The majority of plaintiffs have brought actions in state courts in Missouri and California. Cases pending in U.S. federal courts have been consolidated in an MDL in the Northern District of California for common pre-trial management.

In June 2020, Monsanto reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the current Roundup™ litigation, involving most of the total approximately 125,000 then known filed and unfiled claims, and to put in place a mechanism to resolve potential future claims. The total costs of the executed and additional inventory settlements for all outstanding claims are currently expected to be up to US$9.6 billion. Monsanto continues in its efforts to reach settlement in a substantial number of the outstanding claims in the coming months. Monsanto may withdraw from the various settlement agreements if certain eligibility and participation rates are not satisfied. Plaintiffs who opt out of a settlement have the right to pursue their claims separately against the company.

As regards potential future litigation, the company intends to make an additional payment to support a separate class agreement between Monsanto and plaintiffs' counsel. In July 2020, Judge Chhabria of the U.S. District Court for the Northern District of California issued a pre-trial order raising concerns about certain aspects of the class settlement agreement and stating that he was tentatively inclined to deny the motion. The parties subsequently withdrew their motion, worked to comprehensively address the court's questions, and on February 3, 2021 filed with the court a revised class agreement and accompanying motion for preliminary approval of that settlement. Bayer remains strongly committed to a resolution that simultaneously addresses the current litigation on reasonable terms and provides a viable solution to manage and resolve future litigation.

The three cases that have so far gone to trial – Johnson, Hardeman and Pilliod – are continuing through the appeals process and are not covered by the settlement. In July 2020, the Court of Appeal of the State of California (First Appellate District) affirmed the judgment in favor of Johnson but reduced the total judgment from US$78.5 million to approximately US$20.5 million. The court reduced the total compensatory damages award from US$39.3 million to approximately US$10.25 million and the punitive damages award to the same amount. The parties have separately petitioned for appeal to the Supreme Court of California. In October 2020, the court denied the request to review the appeal. Both parties have the option to petition for appeal to the U.S. Supreme Court. Oral argument before the Ninth Circuit Court of Appeal in the first federal case to go to trial (Hardeman) took place in October 2020. A decision by the court is expected for mid-2021. Briefing is complete in the Pilliod case appeal, and no date for oral argument has yet been scheduled. Bayer is convinced that the verdicts are not supported by the evidence at trial and the law and therefore intends to pursue the appeals vigorously.

As of February 3, 2021, a total of 22 Canadian lawsuits relating to Roundup™ and 14 seeking class action certification had been served upon Bayer.

Bayer believes it has meritorious defenses and intends to defend the safety of glyphosate and our glyphosate-based formulations vigorously.

Dicamba: As of February 3, 2021, lawsuits from approximately 250 plaintiffs had been served upon Bayer's subsidiary Monsanto and co-defendant BASF in both state and federal courts in the United States alleging that Monsanto's XtendiMax™ herbicide as well as other products containing dicamba caused crop damage from off-target movement. Plaintiffs claim, inter alia, that Monsanto and BASF knew or should have known that the application of dicamba would cause such damage and failed to prevent it. In 2018, 35 separate cases were coordinated in an MDL before a federal court in Missouri; the number of cases in the MDL as of February 3, 2021, is approximately 80. In February 2020, the first trial in the MDL proceeding (Bader Farms) resulted in a US$265 million award to the plaintiff, consisting of compensatory damages of US$15 million and punitive damages of US$250 million. We disagreed with the decision and filed post-trial motions asking the court to vacate the entire verdict, order a new trial, and/or significantly reduce the punitive damages amount. There was no competent evidence presented at trial which showed that Monsanto's products were present on the farm and were responsible for the alleged losses. In November 2020, the court denied the post-trial motions but lowered the punitive damages from US$250 million to US$60 million and left intact the US$15 million compensatory award, thereby making the total award US$75 million. Both Monsanto and BASF are jointly and severally liable for the total US$75 million award. Monsanto has appealed to the U.S. Court of Appeals for the 8th Circuit.

In June 2020, Monsanto reached a global agreement with the plaintiffs to settle the dicamba litigation. The settlement provides for the payment of substantiated claims by soybean growers in crop years 2015–2020 who can demonstrate a yield loss due to the application of dicamba products over an Xtend crop. That portion of the settlement is capped at US$300 million. The settlement also provides additional funds of up to US$100 million to pay for claims of dicamba damage by growers of other, non-soybean crops, as well as attorneys' fees, litigation costs, and settlement administration. The settlement assumes a minimum participation rate of 97% of the existing dicamba cases and claims, failing which Monsanto has an option to cancel the settlement agreement. The Bader Farms case is not included in the settlement. In July 2020, a group of approximately 50 Texas vineyard growers approached Monsanto and asserted claims relating to alleged dicamba damage to their vineyards. Those claimants have not yet filed suit, and Monsanto has entered into a tolling and standstill agreement in order to evaluate their claims.

Insurance against statutory product liability claims

In connection with the above-mentioned product-related litigations, Bayer is insured against statutory product liability claims to the extent customary in the respective industries and has, based on the information currently available, taken corresponding accounting measures. The accounting measures relating to, in particular, Essure™, dicamba and Roundup™ (glyphosate) claims exceed the available insurance coverage.

Patent disputes

Adempas™: In 2018, Bayer filed patent infringement lawsuits in a U.S. federal court against Alembic Pharmaceuticals Limited, Alembic Global Holding SA, Alembic Pharmaceuticals, Inc. and INC Research, LLC (together "Alembic"), against MSN Laboratories Private Limited and MSN Pharmaceuticals Inc. (together "MSN") and against Teva Pharmaceuticals USA, Inc. and Teva Pharmaceutical Industries Ltd. (together "Teva"). In 2017, Bayer had received notices of an Abbreviated New Drug Application with a paragraph IV certification ("ANDA IV") pursuant to which Alembic, MSN and Teva each seek approval of a generic version of Bayer's pulmonary hypertension drug Adempas™ in the United States. In 2018, the court decided, upon a joint request by Bayer and Teva, that Bayer's patent is valid and infringed by Teva. This terminated the patent dispute with Teva. In 2019, the lawsuit against Alembic was dismissed after the expiry of the only patent at issue in the dispute with Alembic. The patent upheld in the proceeding against Teva continued to be at issue in the dispute with MSN. In December 2020, the parties entered into a settlement agreement pursuant to which MSN was granted a license under the relevant patents to market a generic version of Adempas™ tablets beginning on a date shortly before the expiration of Bayer's patent for the active ingredient in 2026 (or earlier under certain circumstances). This terminates the patent disputes regarding Adempas™.

Betaferon™/Betaseron™: In 2010, Bayer filed a complaint against Biogen Idec MA Inc. in a U.S. federal court seeking a declaration by the court that a patent issued to Biogen in 2009 is invalid and not infringed by Bayer's production and distribution of Betaseron™, Bayer's drug product for the treatment of multiple sclerosis. Biogen is alleging patent infringement by Bayer through Bayer's production and distribution of Betaseron™ and Extavia™ and has sued Bayer accordingly. Bayer manufactures Betaseron™ and distributes the product in the United States. Extavia™ is also a drug product for the treatment of multiple sclerosis; it is manufactured by Bayer, but distributed in the United States by Novartis Pharmaceuticals Corporation, another defendant in the lawsuit. In 2016, the U.S. federal court decided a disputed issue regarding the scope of the patent in Biogen's favor. Bayer disagrees with the decision, which may be appealed at the conclusion of the proceedings in the U.S. federal court. In 2018, a jury decided that Biogen's patent is invalid at the end of a trial regarding Biogen's claims against EMD Serono, Inc. ("Serono") and Pfizer Inc. ("Pfizer") for infringement of the same patent. In the same year, the court overturned the jury decision and granted judgment in favor of Biogen. Serono and Pfizer appealed. In September 2020, the U.S. Court of Appeals for the Federal Circuit decided that Biogen's patent is invalid. Biogen may seek a review of the decision.

Jivi™ (BAY94-9027): In 2018, Nektar Therapeutics ("Nektar"), Baxalta Incorporated and Baxalta U.S., Inc. (together "Baxalta") filed another complaint in a U.S. federal court against Bayer alleging that BAY94-9027, approved as Jivi™ in the United States for the treatment of hemophilia, infringes five patents by Nektar. The five patents are part of a patent family registered in the name of Nektar and further comprising a European patent application with the title "Branched polymers and their conjugates." This patent family is different from the one at issue in the earlier patent disputes still pending in the United States and Germany. In 2018, Bayer filed a lawsuit in the administrative court of Munich, Germany, claiming rights to the European patent application based on a past collaboration between Bayer and Nektar in the field of hemophilia. In 2017, Baxalta and Nektar had already filed a complaint in the same U.S. federal court against Bayer alleging that BAY94-9027 infringes seven other patents by Nektar. The seven patents are part of a patent family registered in the name of Nektar and further comprising European patent applications with the title "Polymer-factor VIII moiety conjugates" which are at issue in a lawsuit Bayer had filed against Nektar in 2013 in the district court of Munich, Germany. In this proceeding, Bayer claims rights to the European patent applications based on a past collaboration between Bayer and Nektar in the field of hemophilia. However, Bayer believes that the patent families do not include any valid patent claim relevant for Jivi™. In parallel proceedings before the same U.S. district court over infringement of a Bayer patent by Baxalta's hemophilia treatment Adynovate™, the court ordered Baxalta in 2019 to pay US$181 million to Bayer following a jury trial; the order is subject to an appeal filed by Baxalta.

Bollgard II RR Flex™ / Intacta™: In 2019, the Cotton Producers Association of the State of Mato Grosso (AMPA) in Brazil filed a patent invalidity action in federal court seeking to invalidate four of Bayer's patents covering Bollgard II RR Flex™, a cotton technology owned by Bayer. In January 2020, the Brazilian patent office, in the court proceedings, acknowledged the validity of all four challenged patents. Two of the patents are also being challenged in administrative nullity proceedings before the Brazilian patent office. One of the patents, the promoter patent, is also at issue in a patent invalidation action filed in Brazilian federal court by the Soybean Growers Association from the State of Mato Grosso (Aprosoja/MT) in 2017 regarding the Intacta™ soybean technology. In addition to the patent invalidity claims, both lawsuits seek a refund of twice the amount of the paid royalties. Both lawsuits were filed as collective actions and are proceeding before the same federal judge. Bayer's Intacta™ soybean technology is further protected by two other patents, one of which has been challenged in administrative nullity proceedings before the Brazilian patent office by the Soybean Growers Association from the State of Rio Grande do Sul (Aprosoja/RS).

Bayer believes it has meritorious defenses in the above ongoing patent disputes and intends to defend itself vigorously.

Further legal proceedings

Trasylol™ / Avelox™: A qui tam complaint relating to marketing practices for Trasylol™ (aprotinin) and Avelox™ (moxifloxacin) filed by a former Bayer employee is pending in the U.S. District Court in New Jersey. The case is proceeding with discovery. The U.S. government has declined to intervene at the present time.

Baycol™: A qui tam complaint (filed by the same relator as in the Trasylol™ / Avelox™ complaint) asserting Bayer fraudulently induced a contract with the Department of Defense is pending in the U.S. District Court in Minnesota. The case is proceeding with discovery.

BASF arbitration: In 2019, Bayer was served with a request for arbitration by BASF SE. BASF alleges to have indemnification claims under the asset purchase agreements signed in 2017 and 2018 related to the divestment of certain Crop Science businesses to BASF. BASF alleges that particular cost items, including certain personnel costs, had not been appropriately disclosed and allocated to some of the divested businesses. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Newark Bay environmental matters: In the United States, Bayer is one of numerous parties involved in a series of claims brought by federal and state environmental protection agencies. The claims arise from operations by entities which historically were conducted near Newark Bay or surrounding bodies of water, or which allegedly discharged hazardous waste into these waterways or onto nearby land. Bayer and the other potentially responsible parties are being asked to remediate and contribute to the payment of past and future remediation or restoration costs and damages. In 2016, Bayer learned that two major potentially responsible parties had filed for protection under Chapter 11 of the U.S. Bankruptcy Code. While Bayer remains unable to determine the extent of its liability for these matters, this development is likely to adversely affect the share of costs potentially allocated to Bayer.

In the Lower Passaic River matter, a group of more than 60 companies including Bayer is investigating contaminated sediments in the riverbed under the supervision of the United States Environmental Protection Agency (EPA) and other governmental authorities. Future remediation will involve some form of dredging, the nature and scope of which are not yet defined, and potentially other tasks. Occidental Chemical Company ("OCC"), one of the parties potentially liable for cleanup costs in the Lower Passaic River, is performing the remedial design under a consent order with the EPA. Bayer will ultimately be asked to share in the cost of the investigation and the remediation work, which may be substantial if the final remedy involves extensive dredging and disposal of impacted sediments. Bayer, along with a number of other parties, is participating in an EPA-sponsored but non-binding allocation process before an independent allocator. In December 2020, the allocator issued its final report, which the company is evaluating. In 2018, OCC filed a lawsuit in New Jersey federal court seeking contribution and cost recovery from dozens of other potentially responsible parties, including a Bayer subsidiary, for past and future response costs. Discovery is proceeding and Bayer is currently unable to determine the extent of its liability in this matter. In the Newark Bay matter, OCC is currently conducting an investigation of sediments in Newark Bay under EPA supervision. The investigation is in a preliminary stage. Bayer has contributed to certain investigation costs in the past and may incur costs for future response activities in Newark Bay.

Bayer has also been notified by governmental authorities acting as natural resource trustees that it may have liability for natural resource damages arising from the contamination of the Lower Passaic River, Newark Bay and surrounding water bodies. Bayer is currently unable to determine the extent of its liability.

Asbestos: In many cases, plaintiffs allege that Bayer and co-defendants employed third parties on their sites in past decades without providing them with sufficient warnings or protection against the known dangers of asbestos. Additionally, a Bayer affiliate in the United States is the legal successor to companies that sold asbestos products until 1976. Union Carbide has agreed to indemnify Bayer for this liability. Similarly, Bayer's subsidiary Monsanto faces numerous claims based on exposure to asbestos at Monsanto premises without adequate warnings or protection and based on the manufacture and sale of asbestos-containing products. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

PCBs: Bayer's subsidiary Monsanto has been named in lawsuits brought by various governmental entities in the United States claiming that Monsanto, Pharmacia and Solutia, collectively as a manufacturer of PCBs, should be responsible for a variety of damages due to PCBs in the environment, including bodies of water, regardless of how PCBs came to be located there. PCBs are chemicals that were widely used for various purposes until the manufacture of PCBs was prohibited by the EPA in the United States in 1979.

In June 2020, Bayer reached an agreement for a nation-wide class settlement to settle claims of approximately 2,500 municipal government entities across the United States for a total payment, including class benefits and attorney fees, of approximately US$650 million. This settlement assumes a minimum participation rate of 98% of all qualified municipal entities, failing which Monsanto will have the option to cancel the settlement agreement. In November 2020, the court denied, without prejudice, the motion for preliminary approval and identified certain discreet areas of concern. In December 2020, the parties filed a revised class agreement. This agreement will require court approval before it becomes effective.

Additionally, in June 2020, Bayer reached agreements to settle individual suits brought by the Attorneys General of the States of New Mexico and Washington, as well as the District of Columbia for a total amount of approximately US$170 million. Individual suits by Attorneys General of the States of Ohio, Pennsylvania, New Hampshire and Oregon remain pending. Bayer will continue its vigorous defense of any case that remains pending.

Monsanto also faces numerous lawsuits claiming personal injury and/or property damage due to use of and exposure to PCB products. Recently, we have seen an increasing number of claims and lawsuits alleging health damage due to exposure at the claimant's former or current workplace in buildings contaminated with PCB. We believe that we also have meritorious defenses in these matters and intend to defend ourselves vigorously.

Tax proceedings

Stamp taxes in Greece: In 2014, 2016 and 2017, a Greek administrative court of first instance dismissed Bayer's lawsuits against the assessment of stamp taxes and contingent penalties in a total amount of approximately €130 million on certain intra-Group loans to a Greek subsidiary. In November 2020, the Greek Supreme Court decided in favor of Bayer in all cases.

Notes to the Statements of Cash Flows

The statement of cash flows shows how cash inflows and outflows during the fiscal year affected the cash and cash equivalents of the Bayer Group.

Of the cash and cash equivalents, an amount of €0 million (2019: €19 million) had limited availability due to foreign exchange restrictions.

The cash flows reported by consolidated companies outside the eurozone are translated at average monthly exchange rates. Cash and cash equivalents are translated at closing rates. The "Change in cash and cash equivalents due to exchange rate movements" is reported in a separate line item.

31. Net cash provided by (used in) operating, investing and financing activities

The operating cash flow (total) in 2020 amounted to €4,903 million (2019: €8,207 million), of which €4,569 million (2019: €7,983 million) pertained to continuing operations. The decline compared with the prior year was attributable in particular to payments of €3.9 billion made to resolve litigations, mainly within our Crop Science Division.

Net cash used in investing activities in 2020 amounted to €4,073 million (2019: €671 million). Cash outflows for additions to property, plant and equipment and intangible assets totaled €2,418 million (2019: €2,650 million). Cash inflows from divestments came to €4,315 million and mainly arose from the sale of the Animal Health business unit. Cash of €143 million was transferred in this transaction. Cash outflows for acquisitions amounted to €2,294 million. This includes the acquisitions of Asklepios BioPharmaceutical, Inc., (AskBio), Durham, North Carolina, United States, and KaNDy Therapeutics Ltd., Stevenage, United Kingdom, among others. Cash of €31 million was acquired with the transactions. Net cash outflows for current financial assets were €4,455 million (2019: €303 million), the increase from the previous year being mainly due to investments in money market funds. The inflows of €1.5 billion in the fourth quarter from the sale of Elanco shares were also included in this line item and had an opposing effect.

Net cash of €423 million was provided by financing activities in 2020 (2019: net cash of €8,389 million was used in financing activities). There were net borrowings of €4,467 million (2019: net loan repayments of €4,296 million). The change from the prior year was partly attributable to the €6.0 billion bond issuance in July 2020 and bond repayments of €3.6 billion in the fourth quarter of the prior year. Net interest payments declined to €1,276 million (2019: €1,478 million). The dividend payment amounted to €2,768 million (2019: €2,615 million).

The changes in financial liabilities in 2020 are presented in the following table:

B 31/1

Financial Liabilities

		Cash flows	Noncash changes				
€ million	Dec. 31, 2019		Acquisition divestment	Currency effects	New contracts IFRS 16	Fair value changes[1]	Dec. 31, 2020
Bonds and notes	33,569	4,868	–	(1,777)	–	85	36,745
Liabilities to banks	4,062	16	12	(419)	–	–	3,671
Lease liabilities	1,251	(371)	8	(76)	307	18	1,137
Liabilities from derivatives	123	(180)	–	(9)	–	202	136
Other financial liabilities	89	134	–	(146)	–	–	77
Total	**39,094**	**4,467**	**20**	**(2,427)**	**307**	**305**	**41,766**

[1] Including effects of unwinding of discount

The changes in financial liabilities in 2019 were as follows:

B 31/2

Financial Liabilities

		Cash flows	Noncash changes				
€ million	Dec. 31, 2018		Acquisition divestment	Currency effects	New contracts IFRS 16[2]	Fair value changes[1]	Dec. 31, 2019
Bonds and notes / promissory notes	35,402	(2,518)	–	637	–	48	33,569
Liabilities to banks	4,865	(789)	(4)	(10)	–	–	4,062
Lease liabilities	399	(442)	(30)	10	1,309	5	1,251
Liabilities from derivatives	172	(70)	–	68	–	(47)	123
Other financial liabilities	556	(477)	–	5	–	5	89
Total	**41,394**	**(4,296)**	**(34)**	**710**	**1,309**	**11**	**39,094**

[1] Including effects of unwinding of discount

[2] Lease liabilities increased by €1.0 billion as of January 1, 2019 due to the first-time application of IFRS 16.

Other Information

32. Audit fees

Prof. Frank Beine signed the Independent Auditor's Report for the first time for the year ended December 31, 2017, and Michael Mehren for the first time for the year ended December 31, 2019. Prof. Frank Beine is the responsible auditor.

The following fees for the services of the worldwide network of Deloitte or Deloitte GmbH Wirtschaftsprüfungsgesellschaft (Deloitte GmbH WPG) were recognized as expenses:

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Audit Fees

	Deloitte		of which Deloitte GmbH WPG	
€ million	**2019**	**2020**	**2019**	**2020**
Financial statements auditing	14	13	5	5
Audit-related services and other audit work	8	5	7	2
Tax consultancy	4	3	–	–
Other services	3	–	–	–
Total	**29**	**21**	**12**	**7**

The fees for the financial statements audit services of Deloitte GmbH Wirtschaftsprüfungsgesellschaft primarily comprised those for the audits of the consolidated financial statements of the Bayer Group and of the financial statements of Bayer AG and its subsidiaries. The audit-related services and other audit work performed by Deloitte GmbH Wirtschaftsprüfungsgesellschaft in 2020 mainly concerned the sale of Animal Health and largely consisted of voluntary financial statements audits and reviews. In addition, other Deloitte companies performed financial statements audit services for subsidiaries of Bayer AG, compliance-related tax consultancy services that do not materially or directly impact the consolidated financial statements of the Bayer Group or the financial statements of Bayer AG.

33. Related parties

Related parties as defined in IAS 24 are those legal entities and natural persons that are able to exert influence on Bayer AG and its subsidiaries or over which Bayer AG or its subsidiaries exercise control or joint control or have a significant influence. They include, in particular, nonconsolidated subsidiaries accounted for at fair value, joint ventures and associates accounted for at fair value or using the equity method, and post-employment benefit plans. Related parties also include the corporate officers of Bayer AG whose compensation is reported in Note [34] and in the Compensation Report, which forms part of the Combined Management Report.

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Related Parties

	Sales of goods and services		Purchase of goods and services		Receivables		Liabilities	
€ million	**2019**	**2020**	**2019**	**2020**	**2019**	**2020**	**2019**	**2020**
Nonconsolidated subsidiaries	3	17	3	1	14	26	33	30
Joint ventures	3	3	–	–	5	–	58	21
Associates	5	–	–	–	–	–	63	46
Post-employment benefit plans	–	–	–	–	871	886	156	160

Intercompany profits and losses for companies accounted for in the consolidated financial statements using the equity method were immaterial in 2020 and 2019.

Bayer AG has undertaken to provide jouissance right capital *(Genussrechtskapital)* in the form of an interest-bearing loan with a nominal volume of €150 million (2019: €150 million) for Bayer-Pensionskasse VVaG. The entire amount remained drawn as of December 31, 2020. The carrying amount was €156 million (2019: €154 million). The loan capital provided to Bayer-Pensionskasse VVaG for its effective initial fund had a nominal volume of €635 million as of December 31, 2020 (December 31, 2019: €635 million). The carrying amount was €653 million (2019: €652 million). The outstanding receivables, comprised of different tranches, are each subject to a five-year interest-rate adjustment mechanism. Interest income of €13 million was recognized in 2020 (2019: €12 million) along with income of €13 million (2019: income of €22 million) due to fair value changes.

No material impairment losses on receivables from related parties were recognized in 2020 or 2019.

34. Total compensation of the Board of Management and the Supervisory Board, advances and loans

In 2020, the compensation of the Board of Management and the Supervisory Board totaled €20,137 thousand (2019: €39,035 thousand), with the compensation of the Supervisory Board amounting to €3,866 thousand (2019: €3,938 thousand) and that of the Board of Management to €16,271 thousand (2019: €35,097 thousand). The compensation of the Supervisory Board was comprised entirely of short-term components. The total compensation of the Board of Management comprised a short-term component of €9,684 thousand (2019: €15,211 thousand) and a long-term component of €6,587 thousand (2019: €11,172 thousand). The long-term component included stock-based compensation of €3,212 thousand (2019: €7,733 thousand). In 2019, a severance payment of €8,714 thousand was granted in connection with the termination of a service contract.

Pension payments to former members of the Board of Management and their surviving dependents in 2020 amounted to €12,315 thousand (2019: €12,078 thousand). The defined benefit obligation for former members of the Board of Management and their surviving dependents amounted to €208,524 thousand (2019: €199,454 thousand). There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2020, or at any time during 2020 or 2019.

Further details of the compensation of the Board of Management and Supervisory Board are given in the Compensation Report, which forms part of the Management Report.

35. Events after the end of the reporting period

Bond issuance

On January 7, 2021, Bayer AG placed bonds with a total volume of €4 billion. The four tranches with volumes between €0.8 billion and €1.2 billion have maturities of 4 years, 8 years, 10.5 years and 15 years and bear coupons of 0.050%, 0.375%, 0.625% and 1.000%, respectively.

Repayment of financial liabilities

The outstanding amount of US$3.8 billion from the syndicated credit facility drawn in June 2018 as bridge financing for the acquisition of Monsanto was repaid in full on January 20, 2021. On January 25, 2021, Bayer AG repaid a €750 million bond at maturity.

Sales of Covestro shares

The remaining interest in Covestro AG (5.4 million shares) was sold in January 2021.

Leverkusen, February 16, 2021
Bayer Aktiengesellschaft

The Board of Management

Responsibility Statement

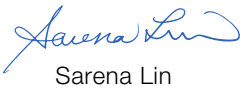
To the best of our knowledge, and in accordance with the applicable reporting principles for financial reporting, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Bayer Group, and the combined management report includes a fair review of the development and performance of the business and the position of the Bayer Group and Bayer AG, together with a description of the principal opportunities and risks associated with the expected development of the Bayer Group and Bayer AG.

Leverkusen, February 16, 2021
Bayer Aktiengesellschaft

The Board of Management


Werner Baumann


Liam Condon


Sarena Lin


Wolfgang Nickl


Stefan Oelrich


Heiko Schipper

Independent Auditor's Report

To: Bayer Aktiengesellschaft, Leverkusen/Germany

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE COMBINED MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of Bayer Aktiengesellschaft, Leverkusen/Germany, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at December 31, 2020, and the consolidated statement of profit or loss and other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the financial year from January 1 to December 31, 2020, and the notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the combined management report for the parent and the group of Bayer Aktiengesellschaft, Leverkusen/Germany, for the financial year from January 1 to December 31, 2020. In accordance with the German legal requirements, we have not audited the content of those parts of the combined management report set out in the appendix to the auditor's report.

In our opinion, on the basis of the knowledge obtained in the audit,

// the accompanying consolidated financial statements comply, in all material respects, with the IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) German Commercial Code (HGB) and, in compliance with these requirements, give a true and fair view of the assets, liabilities and financial position of the Group as at December 31, 2020 and of its financial performance for the financial year from January 1 to December 31, 2020, and
// the accompanying combined management report as a whole provides an appropriate view of the Group's position. In all material respects, this combined management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the combined management report does not cover the content of those parts of the combined management report set out in the appendix to the auditor's report.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the combined management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the combined management report in accordance with Section 317 HGB and the EU Audit Regulation (No 537/2014; referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW). We performed the audit of the consolidated financial statements in supplementary compliance with the International Standards on Auditing (ISA). Our responsibilities under those requirements, principles and standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) letter (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the combined management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from January 1 to December 31, 2020. These matters were addressed in the context of our audit of the consolidated financial statements as a whole and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In the following, we present the key audit matters we have determined in the course of our audit:

1. impairment of goodwill and other intangible assets,
2. depiction of risks arising from product-related legal disputes and arbitration proceedings, and
3. depiction of restructuring matters.

Our presentation of these key audit matters has been structured as follows:

a) description (including reference to corresponding information in the consolidated financial statements), and
b) auditor's response.

1. Impairment of goodwill and other intangible assets

a) In the consolidated financial statements, an amount of mEUR 36,080 (31% of the Group's total assets) is reported under the item of the statement of financial position "goodwill". "Other intangible assets" also include patents and technologies of mEUR 12,708 (11% of the Group's total assets), trademark rights of mEUR 6,292 (5% of the Group's total assets) and research and development projects of mEUR 4,389 (4% of the Group's total assets). The Company allocates the goodwill to the reporting segments within the Bayer Group. Regular impairment testing for goodwill and R&D projects as well as impairment testing for other intangible assets is carried out as appropriate, comparing the respective carrying amounts with their respective recoverable amounts. In principle, the recoverable amount is determined on the basis of the fair value less costs to sell. The present value of future cash flows is used as a basis, since in general, no market values are available for the individual strategic business entities. The present value is calculated using discounted cash flow models based on the Bayer Group's medium-term planning prepared by the executive directors and extrapolated using assumptions for long-term growth rates. Discounting is based on the weighted average cost of capital of the reporting segments concerned. The result of this valuation depends to a large extent on the estimates by the executive directors of the future cash flows of the strategic business entity concerned and the discount rate used, and is therefore subject to significant uncertainty. In the light of this, and owing to the underlying complexity of the valuation models, this issue was of particular importance within the framework of our audit.

   The disclosures provided by the executive directors on goodwill and the other intangible assets are contained in sections 3 and 14 of the notes to the consolidated financial statements.

b) In our audit, among other things, we reconstructed the methodology used to perform the impairment tests and assessed the calculation of the weighted cost of capital. We convinced ourselves of the appropriateness of the future cash inflows used in the valuation, among other things by recording and critically assessing the underlying planning process. In addition, we assessed appropriateness of the future cash flows used in the valuation, in particular by comparing this information with the Company's medium-term planning and by consulting on selected planning assumptions with general and industry-specific market expectations. For this, we also convinced ourselves that the cost of the group functions included in the Enabling Functions and Consolidation segment of segment reporting were appropriately taken into account in the impairment test of the reportable strategic business entity concerned. We intensively studied the parameters used to determine the discount rate applied and assessed the completeness and correctness of the calculation scheme. Owing to the material significance of goodwill, we further performed additional sensitivity analyses of our own for the reportable segments (carrying amount in comparison with the recoverable amount).

2. Depiction of risks arising from product-related legal disputes and arbitration proceedings

a) Bayer Group companies are involved in legal and out-of-court proceedings with public authorities, competitors and other parties. These give rise to legal risks, in particular in the areas of product liability, competition and anti-trust law, patent law, tax law, and environmental protection.

Among other cases, lawsuits seeking compensatory and punitive damages have been served upon Bayer's subsidiary Monsanto Company, St. Louis/U.S.A., (Monsanto) in the United States. In this series of litigations, plaintiffs allege personal injuries resulting from exposure to glyphosate-based products manufactured by Monsanto. In addition, lawsuits from users of Essure™ have been served upon Bayer primarily in the United States. Essure™ is a medical device offering permanent birth control with a nonsurgical procedure. Plaintiffs assert personal injuries in connection with Essure™ and seek compensation for damages and punitive damages. Monsanto has been named in lawsuits brought by various governmental entities in the United States claiming that Monsanto and its predecessor companies, collectively as a manufacturer of PCBs, should be responsible for a variety of damages due to PCBs in the environment, including bodies of water. Monsanto also faces lawsuits claiming personal injury and/or property damage due to use of and exposure to PCB products. Lawsuits seeking compensatory and punitive damages have also been served upon Monsanto in the series of dicamba litigations in the United States. Plaintiffs claim that Monsanto's herbicide Xtendimax™ as well as other products containing dicamba, applied over dicamba-tolerant Xtend crops, caused crop damage from off-target movements. In the above series of litigations, Bayer has concluded settlement agreements each covering varying scopes with some of the plaintiffs or plaintiff law firms in the past financial year to resolve part of the litigations concerned. Some of these agreements are subject to court approval before entering into force. In September 2019, Bayer was additionally served with an arbitration claim in which BASF SE seeks damages under the purchase agreements signed in 2017 and 2018 under which BASF had acquired certain businesses of Bayer's Crop Science Division.

Whether and to what extent one or several of the present legal disputes make the recognition of a provision to cover the risk necessary is determined to a large extent by estimates and discretionary assumptions by the executive directors. Against this background and due to the amount of the claims asserted, the above-mentioned product-related disputes of the Bayer Group were, in our opinion, of particular significance for the audit.

The information and explanations provided by the legal executives on the legal disputes mentioned are contained in section 30 of the notes to the consolidated financial statements.

b) During our audit, we assessed, among other things, the process established by the Company to recognize and assess the outcome of the judicial and out-of-court proceedings and the appropriate presentation of a legal dispute in the statement of financial position. In addition, we held regular discussions throughout the year with the Company's internal legal department in order to have the current developments and reasons that led to the corresponding estimates regarding the expected outcome of the proceedings explained to us. We critically examined and assessed the explanations and the information and evidence received in each case. This was particularly true of the mediation process in connection with the legal cases involving products containing glyphosate and of the settlement agreements in connection with the major litigations in the financial year. We also checked the recognition and the measurement of the relevant provisions for these by performing sample-based comparisons with the underlying settlement agreements. The evolution of material legal disputes, including the estimates by the executive directors with regard to the possible outcome of proceedings, was made available to us in writing by the Company. As of the balance sheet date, we also obtained external attorney confirmations, which we compared with the risk assessment made by the executive directors regarding the product-related disputes and arbitration proceedings listed under "Description of the facts" and critically assessed. Taking these estimates into account, we also critically assessed the assumptions underlying the provisions for expected defense costs and checked the amount of the provisions for plausibility on the basis of experience from similar proceedings in the past and on other evidence.

3. Depiction of restructuring matters

a) At the end of 2018, the executive directors of Bayer Aktiengesellschaft announced a comprehensive restructuring program for the entire Group. The program essentially involves the cutback of up to 12,000 jobs in the next three financial years. A not inconsiderable part of the job cuts is attributable to Germany, where redundancies for operational reasons are excluded until 2025 owing to works agreements. Following initial discussions with the employee committees and with the employees of the divisions concerned in the prior years, almost all employees of the divisions concerned were finally identified and informed in the reporting period, and appropriate termination agreements have already been signed with them. In addition, Bayer Aktiengesellschaft announced another restructuring program in late September 2020 that is to generate group-wide savings of up to bEUR 1.5 by 2024. As a consequence, further redundancies in Germany are likely. As of December 31, 2020, a provision in the amount of mEUR 980 was reported for the severance payment obligations specified by the end of the financial year. In our view, this matter was of particular importance for our audit, as the recognition and measurement of the provision are to a large extent based on discretionary estimates and assumptions made by the executive directors.

The information provided by the legal executives on the restructuring provision is contained in section 23 of the notes to the consolidated financial statements.

b) We investigated whether a restructuring provision that is in accordance with the definition in IAS 37.10 has been recognized. To this end, we verified compliance with the general recognition and measurement requirements for provisions, including the criteria of IAS 37.70 et seq. that further specify these requirements and – insofar as provisions for employee benefits in connection with the termination of employment are involved – with the relevant provisions of IAS 19. For this purpose, we verified the corresponding evidence and calculation documents of the executive directors. We critically assessed and verified the plausibility of the executive directors' estimates and assumptions on which the evidence and calculation principles are based as to the extent to which the recognition and the measurement of the provisions are appropriate. In particular in respect of the new restructuring program announced in September 2020, we evaluated evidence (resolutions, minutes, presentations) on the implementation status and the negotiations with employees and employee representatives for the purpose of assessing the recognition criteria, mainly as to whether the employees were sufficiently informed thereby in concrete terms about the restructuring program and individual components of the planned restructuring measures in the financial year 2020. For the severance agreements already concluded with employees by the end of the reporting period in relation to the first restructuring program implemented in 2018, we examined whether the provisions set up for this purpose result from the underlying contractual agreements. Where individual severance agreements have not yet been concluded, in order to check the plausibility of the amount of the provisions, we have, among other things, analyzed the restructuring programs developed in the personnel departments for job cuts with regard to the assumptions made regarding the scope and amount of the severance offers to employees and the expected acceptance rates – also on the basis of experience to date and/or de facto contracting – and discussed them with the persons responsible in the personnel departments. We also examined the disclosures in the notes to the consolidated financial statements relating to the restructuring measures in the light of the relevant requirements of IAS 37.

Other Information

The executive directors and the supervisory board are responsible for the other information. The other information comprises:

- the Chairman's Letter, the report of the supervisory board,
- the unaudited content of those parts of the combined management report specified in the appendix to the auditor's report,
- the executive directors' confirmation pursuant to Section 297 (2) sentence 4 and Section 315 (1) sentence 5 HGB, respectively, regarding the consolidated financial statements and the combined management report, and
- all the remaining parts of the annual report,
- but not the consolidated financial statements, not the audited content of the combined management report and not our auditor's report thereon.

The supervisory board is responsible for the report of the supervisory board. The executive directors and the supervisory board as well are responsible for the declaration according to Section 161 German Stock Corporation Act (AktG), which is part of the corporate governance statement included in section "Corporate Governance Report" of the combined management report. Apart from that the executive directors are responsible for the other information.

Our audit opinions on the consolidated financial statements and on the combined management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our group audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the combined management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Combined Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB, and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

Furthermore, the executive directors are responsible for the preparation of the combined management report that as a whole provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a combined management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the combined management report.

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

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Combined Management Report

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

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) and in supplementary compliance with the ISA will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this combined management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also

- identify and assess the risks of material misstatement of the consolidated financial statements and of the combined management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures relevant to the audit of the combined management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.
- evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the combined management report or, if such disclosures are inadequate, to modify our respective audit opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.

- evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRS as adopted by the EU and with the additional requirements of German commercial law pursuant to Section 315e (1) HGB.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the combined management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.
- evaluate the consistency of the combined management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.
- perform audit procedures on the prospective information presented by the executive directors in the combined management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Report on the Audit of the Electronic Files of the Consolidated Financial Statements and of the Combined Management Report prepared for Publication pursuant to Section 317 (3b) HGB

Audit Opinion

In accordance with Section 317 (3b) HGB, we have assessed with reasonable assurance whether the electronic files of the consolidated financial statements and of the combined management report (hereafter referred to as "ESEF files") prepared for publication, contained in the accompanying file, which has the SHA-256 value A9F85C91BC17F0CAB84C8C5CA616047CDF56C71E1944D8BFEA518CC52CDB325A, meet, in all material respects, the requirements concerning the electronic reporting format ("ESEF format") pursuant to Section 328 (1) HGB. In accordance with the German legal requirements, this audit only covers the transfer of the consolidated financial statements' and the combined management report's information into the ESEF format, and therefore covers neither the information contained in these electronic files nor any other information contained in the file stated above.

In our opinion, the electronic files of the consolidated financial statements and of the combined management report prepared for publication contained in the accompanying file stated above meet, in all material respects, the requirements concerning the electronic reporting format pursuant to Section 328 (1) HGB. Beyond this audit opinion and our audit opinions on the accompanying consolidated financial statements and on the accompanying combined management report for the financial year from January 1 to December 31, 2020 contained in the above "Report on the Audit of the Consolidated Financial Statements and of the Combined Management Report", we do not express any audit opinion on the information contained in these electronic files and on any other information contained in the file stated above.

Basis for the Audit Opinion

We conducted our audit of the electronic files of the consolidated financial statements and of the combined management report contained in the accompanying file stated above in accordance with Section 317 (3b) HGB and on the basis of the IDW Draft Auditing Standard: Audit of the Electronic Files of the Annual Financial Statements and of the Management Report prepared for Publication pursuant to Section 317 (3b) HGB (IDW Draft AuS 410) and the International Standard on Assurance Engagements 3000 (Revised). Our responsibilities in this context are further described in the "Auditor's Responsibilities for the Audit of the ESEF Files" section. Our audit firm has applied the Quality Assurance Standard: Quality Assurance Requirements in Audit Practices (IDW QS 1) promulgated by the Institut der Wirtschaftsprüfer (IDW).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Files

The executive directors of the parent are responsible for the preparation of the ESEF files based on the electronic files of the consolidated financial statements and of the combined management report according to Section 328 (1) sentence 4 no. 1 HGB and for the tagging of the consolidated financial statements according to Section 328 (1) sentence 4 no. 2 HGB.

In addition, the executive directors of the parent are responsible for such internal control as they have determined necessary to enable the preparation of ESEF files that are free from material violations against the requirements concerning the electronic reporting format pursuant to Section 328 (1) HGB, whether due to fraud or error.

The executive directors of the parent are also responsible for the submission of the ESEF files together with the auditor's report and the accompanying audited consolidated financial statements and the audited combined management report as well as other documents to be filed with the publisher of the Federal Gazette.

The supervisory board is responsible for overseeing the preparation of the ESEF files as part of the financial reporting process.

Group Auditor's Responsibilities for the Audit of the ESEF Files

Our objectives are to obtain reasonable assurance about whether the ESEF files are free from material irregularities, whether due to fraud or error, in relation to the requirements pursuant to Section 328 (1) HGB. We exercise professional judgment and maintain professional skepticism throughout the audit. We also

- identify and assess the risks of material violations against the requirements pursuant to Section 328 (1) HGB, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinion.
- obtain an understanding of internal control relevant to the audit of the ESEF files in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these controls.
- assess the technical validity of the ESEF files, i.e. whether the file containing the ESEF files meets the requirements of the Delegated Regulation (EU) 2019/815 in the version applicable as of the balance sheet date as to the technical specification of this file.
- evaluate whether the ESEF files enable a XHTML copy of the audited consolidated financial statements and of the audited combined management report whose content is identical with these documents.
- evaluate whether the ESEF files have been tagged using inline XBRL technology (iXBRL) in a way that enables an appropriate and complete machine-readable XBRL copy of the XHTML copy.

Further Information Pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the stockholders' meeting on April 28, 2020. We were engaged by the supervisory board on May 3, 2020. We have been the group auditor of Bayer Aktiengesellschaft, Leverkusen/Germany, without interruption since the financial year 2017.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Prof. Dr. Frank Beine.

Munich/Germany, February 18, 2021

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Prof. Dr. Frank Beine
Wirtschaftsprüfer
(German Public Auditor)

Michael Mehren
Wirtschaftsprüfer
(German Public Auditor)

Appendix to the Auditor's Report: Parts of the Combined Management Report Whose Contents are Unaudited

We have not audited the content of the following parts of the combined management report:

- the statement on corporate governance pursuant to Section 289f and Section 315d HGB included in section 4.1 of the combined management report,
- table A 1.2.1/2 "Non-financial Group targets through 2030" and the indents regarding the non-financial targets of the Group below, and
- the information given on scope 3 emissions in table A 1.7/1.

Limited Assurance Report of the Independent Practitioner Regarding Sustainability Information contained in the Combined Management Report

To Bayer Aktiengesellschaft, Leverkusen/Germany

Engagement

As requested, we have performed a limited assurance engagement on the following sections of the combined management report 2020 of Bayer Aktiengesellschaft, Leverkusen/Germany, for the period from January 1 to December 31, 2020: table A 1.2.1/2 “Nonfinancial Group Targets Throughout 2030” and the following text passages marked with dotted lines describing the non-financial group targets and the information on scope 3 emissions as presented in table A 1.7/1 “Greenhouse Gas Emissions” (hereafter referred to as: “information”).

This engagement has been performed in connection with our limited assurance engagement on the sustainability report 2020 of Bayer Aktiengesellschaft, as well as the other non-financial information contained in the combined management report 2020 of Bayer Aktiengesellschaft.

Our engagement does not include links to web pages of the Group, interviews and personal statements.

Responsibilities of the Executive Directors

The executive directors of Bayer Aktiengesellschaft are responsible for the preparation of the information in accordance with the principles stated in the Sustainability Reporting Standards of the Global Reporting Initiative (hereafter referred to as “GRI Principles”) and the method papers developed by Bayer.

These responsibilities of the executive directors of the Company include the selection and application of appropriate methods for the reporting and the use of assumptions and estimates for individual disclosures which are reasonable under the given circumstances. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of information that is free from material misstatement, whether due to fraud or error.

The accuracy and completeness of environmental data is subject to inherent boundaries, which result from the nature and type of data collection, data aggregation and respective necessary assumptions.

Responsibilities of the Independent Practitioner

Our responsibility is to express a conclusion on the information based on our work performed within our limited assurance engagement.

We are independent of Bayer Aktiengesellschaft in accordance with the requirements of German commercial and professional law, and we have fulfilled our other professional responsibilities in accordance with these requirements.

Our audit firm applies the German national legal requirements and the German professional pronouncements on quality control, in particular the Professional Charter for German Public Auditors and German Sworn Auditors (Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer) as well as the Quality Assurance Standard: Quality Assurance Requirements in Audit Practices (IDW QS 1) promulgated by the Institut der Wirtschaftsprüfer (IDW), which comply with the International Standard on Quality Control 1 (ISQC 1) issued by the International Auditing and Assurance Standards Board (IAASB).

We conducted our work in accordance with the International Standard on Assurance Engagements 3000 (Revised): Assurance Engagements Other than Audits or Reviews of Historical Financial Information (ISAE 3000 (Revised)), issued by the IAASB. This standard requires that we plan and perform the assurance and engagement so that we can conclude with limited assurance that no matters have come to our attention to cause us to believe that the denoted sustainability information contained in the management report of Bayer Aktiengesellschaft for the period from January 1 to December 31, 2020 have not been prepared, in all material respects, in accordance with the GRI Standards. The procedures performed in a limited assurance engagement are less in extent than for a reasonable assurance engagement; consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. The choice of assurance work is subject to the practitioner's professional judgment.

Within the scope of our limited assurance engagement, which we performed between October 2020 and February 2021, we notably performed the following procedures and activities:

// Gaining an understanding of the structure of the sustainability organization and of the stakeholder engagement
// Procedures to validate the processes and data for the non-financial group targets of the Company in accordance with the GRI Principles and the respective method papers developed by Bayer
// Decentralized site visits to assess the data underlying the information
// Inquiries of relevant personnel involved in the preparation of the information about the preparation process and about the internal control relating to this process
// Identification of potential risks of material misstatements
// Analytical evaluation of the information
// Assessment of the presentation of the information

Practitioner's Conclusion

Based on the work performed and the evidence obtained, nothing has come to our attention that causes us to believe that the denoted information contained in the management report 2020 of Bayer Aktiengesellschaft for the period from January 1 to December 31, 2020 has not been prepared, in all material respects, in accordance with the Principles as well as the method papers developed by Bayer.

Our conclusion does not include links to web pages of the Group, interviews and personal statements.

Purpose of the Assurance Report

We issue this report as stipulated in the engagement letter agreed with Bayer Aktiengesellschaft. The limited assurance engagement has been performed for the purposes of Bayer Aktiengesellschaft and the report is solely intended to inform Bayer Aktiengesellschaft about the result of the assurance engagement.

Liability

This report is not intended to be used by third parties as a basis for making (financial) decisions. We are liable solely to Bayer Aktiengesellschaft and our liability is also governed by the engagement letter "STATEMENT OF WORK between Bayer Aktiengesellschaft and Deloitte GmbH Wirtschaftsprüfungsgesellschaft for the Bayer Nonfinancial Group Targets Throughout 2030 and Scope 3 emissions as part of the Bayer management report 2020" agreed with Bayer Aktiengesellschaft as well as the "General Engagement Terms for Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften (German Public Auditors and Public Audit Firms)" promulgated by the Institut der Wirtschaftsprüfer (IDW) in the version dated January 1, 2017. We assume no responsibility with regard to any third parties.

Munich/Germany, February 18, 2021

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Prof. Dr. Frank Beine
Wirtschaftsprüfer
(German Public Auditor)

Sebastian Dingel

C Further Information

Governance Bodies

Supervisory Board

Members of the Supervisory Board held offices as members of the supervisory board or a comparable supervising body of the corporations listed (as at December 31, 2020, or the date on which they ceased to be members of the Supervisory Board of Bayer AG) and as shown attended the meetings of the Supervisory Board and committees to which he or she belonged.

Prof. Dr. Norbert Winkeljohann
Osnabrück, Germany
(born November 5, 1957)

Chairman of the Supervisory Board effective April 2020

Member of the Supervisory Board effective May 2018

Independent management consultant

Memberships on other supervisory boards:

- Bohnenkamp AG (Chairman) (effective April 2020)
- Deutsche Bank AG
- Georgsmarienhütte Holding GmbH
- heristo aktiengesellschaft (Chairman) (until January 2021)
- Sievert AG (Chairman)

Attendance at Supervisory Board and committee meetings: 19 of 19

Werner Wenning
Leverkusen, Germany
(born October 21, 1946)

Chairman of the Supervisory Board until April 2020

Chairman of the Supervisory Board of Bayer AG

Memberships on other supervisory boards:

- Henkel Management AG
- Siemens AG (Vice Chairman)

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee)

Attendance at Supervisory Board and committee meetings: 8 of 8

Oliver Zühlke
Solingen, Germany
(born December 11, 1968)

Vice Chairman of the Supervisory Board effective July 2015

Member of the Supervisory Board effective April 2007

Chairman of the Bayer Central Works Council

Attendance at Supervisory Board and committee meetings: 15 of 19

Dr. Paul Achleitner
Munich, Germany
(born September 28, 1956)

Member of the Supervisory Board effective April 2002

Chairman of the Supervisory Board of Deutsche Bank AG

Memberships on other supervisory boards:

- Daimler AG (until July 2020)
- Deutsche Bank AG (Chairman)

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee)

Attendance at Supervisory Board and committee meetings: 15 of 16

Dr. rer. nat. Simone Bagel-Trah
Düsseldorf, Germany
(born January 10, 1969)

Member of the Supervisory Board effective April 2014

Chairwoman of the Supervisory Board of Henkel AG & Co. KGaA and Henkel Management AG and of the Shareholders' Committee of Henkel AG & Co. KGaA

Memberships on other supervisory boards:

- Henkel AG & Co. KGaA (Chairwoman)
- Henkel Management AG (Chairwoman)
- Heraeus Holding GmbH

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee, Chairwoman)

Attendance at Supervisory Board and committee meetings: 10 of 10

Horst Baier*
Hanover, Germany
(born October 20, 1956)

Member of the Supervisory Board effective April 2020

Independent consultant

Memberships in comparable supervising bodies of German or foreign corporations:

- DIAKOVERE gGmbH
- Ecclesia Holding GmbH
- Whitbread PLC (Board of Directors)

Attendance at Supervisory Board and committee meetings: 12 of 12

Dr. Norbert W. Bischofberger
Hillsborough, U.S.A.
(born January 10, 1956)

Member of the Supervisory Board effective April 2017

President and Chief Executive Officer of Kronos Bio, Inc.

Memberships in comparable supervising bodies of German or foreign corporations:

- InCarda Therapeutics, Inc. (Board of Directors) (until February 2020)
- Kronos Bio, Inc. (Board of Directors)
- Morphic Therapeutic, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 13 of 13

André van Broich
Dormagen, Germany
(born June 19, 1970)

Member of the Supervisory Board effective April 2012

Chairman of the Bayer Group Works Council

Chairman of the Works Council of the Dormagen site

Attendance at Supervisory Board and committee meetings: 18 of 18

Ertharin Cousin
Chicago, U.S.A.
(born May 12, 1957)

Member of the Supervisory Board effective October 2019

Independent consultant

Memberships in comparable supervising bodies of German or foreign corporations:

- Camelot North America (Board of Directors)

Attendance at Supervisory Board meetings: 10 of 10

Dr. Thomas Elsner
Düsseldorf, Germany
(born April 24, 1958)

Member of the Supervisory Board effective April 2017

Chairman of the Bayer Group Managerial Employees' Committee

Chairman of the Managerial Employees' Committee of Bayer AG Leverkusen

Attendance at Supervisory Board and committee meetings: 16 of 16

Johanna W. (Hanneke) Faber
Amstelveen, Netherlands
(born April 19, 1969)

Member of the Supervisory Board effective April 2016

President Foods & Refreshments at Unilever N.V. / plc

Attendance at Supervisory Board meetings: 9 of 10

Colleen A. Goggins
Princeton, U.S.A.
(born September 9, 1954)

Member of the Supervisory Board effective April 2017

Independent consultant

Memberships in comparable supervising bodies of German or foreign corporations:

- The Toronto-Dominion Bank (Board of Directors)
- IQVIA Holdings Inc. (Board of Directors)
- SIG Combibloc Services AG (Board of Directors)

Attendance at Supervisory Board and committee meetings: 11 of 12

Robert Gundlach
Velten, Germany
(born November 23, 1957)

Member of the Supervisory Board effective December 2019

Chairman of the Works Council of the Berlin site

Attendance at Supervisory Board and committee meetings: 10 of 10

Heike Hausfeld
Leverkusen, Germany
(born September 19, 1965)

Member of the Supervisory Board effective April 2017

Chairwoman of the Works Council of the Leverkusen site

Memberships on other supervisory boards:

- Bayer Business Services GmbH (Vice Chairwoman) (until July 2020)

Attendance at Supervisory Board and committee meetings: 12 of 13

Reiner Hoffmann
Wuppertal, Germany
(born May 30, 1955)

Member of the Supervisory Board effective October 2006

Chairman of the German Trade Union Confederation

Attendance at Supervisory Board meetings: 10 of 10

Frank Löllgen
Cologne, Germany
(born June 14, 1961)

Member of the Supervisory Board effective November 2015

North Rhine District Secretary of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Evonik Industries AG
- IRR-Innovationsregion Rheinisches Revier GmbH

Attendance at Supervisory Board and committee meetings: 6 of 14

Prof. Dr. Wolfgang Plischke
Aschau im Chiemgau, Germany
(born September 15, 1951)

Member of the Supervisory Board effective April 2016

Independent consultant

Memberships on other supervisory boards:

- Evotec SE (Chairman)

Attendance at Supervisory Board and committee meetings: 17 of 17

Petra Reinbold-Knape
Gladbeck, Germany
(born April 16, 1959)

Member of the Supervisory Board effective April 2012

Member of the Executive Committee of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Covestro AG (effective January 2020)
- Covestro Deutschland AG (effective January 2020
- Lausitz Energie Bergbau AG (Vice Chairwoman) (until July 2020)
- Lausitz Energie Kraftwerk AG (Vice Chairwoman) (until July 2020)

Attendance at Supervisory Board and committee meetings: 15 of 15

Andrea Sacher
Berlin, Germany
(born May 8, 1981)

Member of the Supervisory Board effective September 2020

Vice Chairwoman of the Works Council of the Berlin site

Vice Chairwoman of the Bayer Central Works Council (effective December 2020)

Attendance at Supervisory Board meetings: 6 of 6

Sabine Schaab
Mettmann, Germany
(born June 25, 1966, died August 4, 2020)

Member of the Supervisory Board until August 2020

Vice Chairwoman of the Works Council of the Elberfeld site

Attendance at Supervisory Board and committee meetings: 4 of 5

Michael Schmidt-Kießling
Schwelm, Germany
(born March 24, 1959)

Member of the Supervisory Board effective April 2012

Chairman of the Works Council of the Elberfeld site

Attendance at Supervisory Board meetings: 10 of 10

Prof. Dr. med. Dr. h.c. mult. Otmar D. Wiestler
Berlin, Germany
(born November 6, 1956)

Member of the Supervisory Board effective October 2014

President of the Hermann von Helmholtz Association of German Research Centres e.V.

Attendance at Supervisory Board and committee meetings: 13 of 13

* Expert member pursuant to Section 100, Paragraph 5 of the German Stock Corporation Act (AktG)

Standing committees of the Supervisory Board of Bayer AG (as at December 31, 2020)

Presidial Committee / Mediation Committee
Winkeljohann (Chairman), Achleitner, Reinbold-Knape, Zühlke

Audit Committee
Baier* (Chairman), Elsner, Löllgen, Plischke, Winkeljohann, Zühlke

Human Resources Committee
Winkeljohann (Chairman), Achleitner, van Broich, Hausfeld

Nomination Committee
Winkeljohann (Chairman), Achleitner, Bagel-Trah, Goggins

Innovation Committee
Plischke (Chairman), Bischofberger, van Broich, Gundlach, Reinbold-Knape, Winkeljohann Wiestler, Zühlke

Glyphosate Litigation Committee
Winkeljohann (Chairman), Achleitner, Baier*, van Broich, Elsner, Goggins, Reinbold-Knape, Zühlke

Board of Management

Members of the Board of Management held offices as members of the supervisory board or a comparable supervising body of the corporations listed (as at February 25, 2021, inclusion of newly appointed Board of Management member due to appointment prior to the date the financial statements were prepared):

Werner Baumann
(born October 6, 1962)

Member of the Board of Management effective January 1, 2010, appointed until April 30, 2024

Chairman

Labor Director until January 31, 2021

Liam Condon
(born February 27, 1968)

Member of the Board of Management effective January 1, 2016, appointed until December 31, 2023

Crop Science

Sarena Lin
(born January 9, 1971)

Member of the Board of Management effective February 1, 2021, appointed until January 31, 2024

Transformation and Talent

Labor Director effective February 1, 2021

Wolfgang Nickl
(born May 9, 1969)

Member of the Board of Management effective April 26, 2018, appointed until April 25, 2025

Finance

- Bayer Business Services GmbH (Chairman) (until July 2020)

Stefan Oelrich
(born June 1, 1968)

Member of the Board of Management effective November 1, 2018, appointed until October 31, 2021

Pharmaceuticals

- InforMed Data Systems Inc. (Board of Directors)

Heiko Schipper
(born August 21, 1969)

Member of the Board of Management effective March 1, 2018, appointed until February 28, 2025

Consumer Health

- Royal FrieslandCampina N.V.

Financial Calendar

Annual Stockholders' Meeting 2021	*April 27, 2021*
Planned dividend payment day	*April 30, 2021*
Q1 2021 Quarterly Statement	*May 12, 2021*
2021 Half-Year Report	*August 5, 2021*
Q3 2021 Quarterly Statement	*November 9, 2021*
2021 Annual Report	*March 1, 2022*
Annual Stockholders' Meeting 2022	*April 29, 2022*
Q1 2022 Quarterly Statement	*May 10, 2022*

Masthead

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This Annual Report may contain forward-looking statements based on current assumptions and forecasts made by Bayer management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

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